1. Legal Ad

    Documents:

        PB LEGAL AD 3-27-18.PDF

2. Agenda

    Documents:

        PB AGENDA 3-27-18.PDF

3. 1006 Congress Street (AT THE REQUEST OF THE APPLICANT, THIS ITEM IS BEING POSTPONED)

4. 24 St. Lawrence Street

    Documents:

        ST. LAWRENCE ST. - 24 (MEMO).PDF
        ST. LAWRENCE ST. - 24 (MEMO ATTACHMENTS).PDF
        ST. LAWRENCE ST. - 24 (PUBLIC COMMENT).PDF
        ST. LAWRENCE ST. - 24 (APPLICANTS SUBMITTAL).PDF
        ST. LAWRENCE ST. - 24 (PLANS).PDF

    4.I. Additional Public Comment

        Documents:

            ROB WHITTEN 1-8-18 (UPDATED 3-26-18).PDF
            ROB WHITTEN 11-6-17 (FROM SUMMIT GEOENGINEERING).PDF
            PAMELA DAY AND MARTICA SAWIN 1-18-18 (FROM CASCO BAY ENGINEERING).PDF
            ROB WHITTEN 3-13-18.PDF

5. 25 Monument Street

    Documents:

        MONUMENT ST. - 25 (MEMO).PDF
        MONUMENT ST. - 25 (STAFF ATTACHMENTS).PDF
        MONUMENT ST. - 25 (PUBLIC COMMENTS).PDF
        MONUMENT ST. - 25 (APPLICANTS SUBMITTAL).PDF
        MONUMENT ST. - 25 (PLANS).PDF

6. 22 Bramhall Street (MMC)

    6.I. First Workshop 1-23-18

        Documents:

            1-23-18 WORKSHOP MMC (MEMO).PDF
            1-23-18 WORKSHOP MMC (APPLICANTS SUBMITTAL) 1 OF 3.PDF
            1-23-18 WORKSHOP MMC (APPLICANTS SUBMITTAL) 2 OF 3.PDF
            1-23-18 WORKSHOP MMC (APPLICANTS SUBMITTAL) 3 OF 3.PDF
            1-23-18 WORKSHOP MMC (PLANS) 1 OF 2.PDF

1-23-18 WORKSHOP MMC (PLANS) 2 OF 2.PDF

6.II. Second Workshop 2-27-18

Documents:

2-27-18 CURRENT WORKSHOP MMC (APPLICANTS SUBMITTAL).PDF
2-27-18 CURRENT WORKSHOP MMC (MEMO).PDF
2-27-18 CURRENT WORKSHOP MMC (PLANS).PDF

6.III. Public Hearing 3-27-18

Documents:

3-27-18 PUBLIC HEARING MMC (REPORT).PDF
3-27-18 PUBLIC HEARING MMC (PUBLIC HEARING ATTACHMENTS 3-27-18).PDF
3-27-18 PUBLIC HEARING MMC (PUBLIC COMMENT).PDF
3-27-18 PUBLIC HEARING MMC (APPLICANTS SUBMITTAL).PDF
3-27-18 PUBLIC HEARING MMC (A. PLANS).PDF
3-27-18 PUBLIC HEARING MMC (B. PLANS).PDF

6.III.i. Additional Public Comment

Documents:

JENNY MACKENZIE 3-27-18.PDF

7. 60 Parris Street

Documents:

PARRIS ST. - 60 (REPORT).PDF
PARRIS ST. - 60 (REPORT ATTACHMENTS).PDF
PARRIS ST. - 60 (APPLICANTS SUBMITTAL).PDF
PARRIS ST. - 60 (PLANS).PDF

8. 147 Washington Avenue

Documents:

WASHINGTON AVE. - 147 (REPORT).PDF
WASHINGTON AVE. - 147 (REPORT ATTACHMENTS).PDF
WASHINGTON AVE. - 147 (APPLICANTS SUBMITTAL).PDF
WASHINGTON AVE. - 147 (PLANS).PDF

8.I. Additional Public Comment

Documents:

PC1 ELDON MAYER 3-26-18.PDF

9. 75 Chestnut Street

9.I. Report And Attachments

Documents:

CHESTNUT ST. 75 (REPORT).PDF
CHESTNUT ST. - 75 (REPORT ATTACHMENTS).PDF
CHESTNUT ST. - 75 (APPLICANT SUBMITTAL).PDF
CHESTNUT ST. - 75 (PLANS - SET A).PDF
CHESTNUT ST. - 75 (PLANS - SET B).PDF

LEGAL ADVERTISEMENT
PORTLAND PLANNING BOARD - MEETING AGENDA

The Portland Planning Board will hold a meeting on Tuesday, March 27, 2018, Council Chambers, 2nd Floor, City Hall, 389 Congress Street. Public comments will be taken for each item on the agenda during the estimated allotted time and written comments should be submitted to planningboard@portlandmaine.gov

Workshop – 4:30 p.m.

i. **AT THE REQUEST OF THE APPLICANT, THIS ITEM IS BEING POSTPONED**
Zoning Map Amendment, IL to B-2, 1006 Congress Street, Richard Packer, Applicant. (4:30 – 5::00 p.m. estimated time) The Board will hold a workshop to consider a proposal for a zoning map amendment to rezone 1006 Congress Street from the Industrial I-L to the Community Business B-2 zone. The site is on the corner of Congress and Westfield Streets. The B-2 zone allows for commercial and mixed-use development.

ii. Level III Subdivision and Site Plan, 5 unit building, 24 St. Lawrence Street, HR Property Management Applicant. (5:00 – 5:45 p.m. estimated time) The Board will hold a workshop on the application to build a four-story building for five (5) residential condominiums at 24 St. Lawrence Street. The bedroom mix includes 4 two-bedroom units and 1 three-bedroom unit. Six parking spaces are proposed on the first level. The site is in the R-6 zone and is subject to the standards of the subdivision and site plan ordinances.

iii. Level III Subdivision and Site Plan, 5 unit building, 25 Monument Street, Monument Partners, LLC, Applicant. (5:45 p.m. to 6:30 p.m. estimated time) The Board will hold a workshop on the application for a four-story building with 20,122 sq. ft. building that includes five (5) three-bedroom condominiums and eight (8) vehicle parking spaces on the first level. The 9,989 sq. ft. lot is located in both the Residential R-6 and Neighborhood Business B-1 zone. The proposal is subject to the standards of the subdivision and site plan ordinance.

Public Hearing – 7:00 p.m.

i. Level III Site Plan; Maine Medical Center (MMC) East Tower and Visitor Parking Garage Vertical Expansions; 22 Bramhall Street, Maine Medical Center, Applicant. (7:00 -8:00 p.m. estimated time) The Planning Board will hold a public hearing to consider the proposal to add two (2) floors to the East Tower, relocate the heliport to the East Tower, and to expand the visitor garage with three (3) levels of parking for 225 vehicles. The proposal adds 137,961 sq. ft. to the MMC hospital complex. The property is within the Institutional Overlay Zone (IOZ) and MMC has an Institutional Development Plan approved by the Planning Board.

ii. Level III Site Plan and Subdivision; 23 Unit Condominium; 56 Parris Street; Horton, LLC., Applicant. (8:00- 8:45 p.m. estimated time) The Planning Board will hold a public hearing to consider a proposal for the construction of a 14,132 sq. ft., 23 unit condominium. Parking for 23 vehicles and 23 bicycles are also proposed on the site. The property is located in the B-2b zone and is subject to review under Portland's subdivision and site plan standards.

iii. Level III Site Plan, Mixed use building, 149-155 Washington Avenue, Diving Rock, LLC, Applicant (8:45 p.m. estimated time) The Planning Board will hold a public hearing on a mixed use building at 149-155 Washington Avenue. The proposed 113,093 sq. ft. building with a building footprint of 3,866 sq ft is

proposed with retail on the first floor and office space on the upper three floors. Twenty (20) parking spaces are proposed on site. The existing building that is a workshop/bicycle shop will remain. The site is in the B-1 zone and is subject to Portland's Site Plan Ordinance.

SEAN DUNDON, CHAIR – PORTLAND PLANNING BOARD

CITY OF PORTLAND, MAINE

PLANNING BOARD



Sean Dundon, Chair
Brandon Mazer, Vice Chair
David Eaton
David Silk
Austin Smith
Maggie Stanley
Lisa Whited

AGENDA
PORTLAND PLANNING BOARD MEETING

The Portland Planning Board will hold a meeting on Tuesday, March 27, 2018, Council Chambers, 2nd Floor, City Hall, 389 Congress Street. **Public comments will be taken for each item on the agenda during the estimated allotted time and written comments should be submitted to** planningboard@portlandmaine.gov

WORKSHOP – 4:30 p.m.

i. **AT THE REQUEST OF THE APPLICANT, THIS ITEM IS BEING POSTPONED**
Zoning Map Amendment, IL to B-2, 1006 Congress Street, Richard Packer, Applicant.

ii. Level III Subdivision and Site Plan, 5 unit building, 24 St. Lawrence Street, HR Property Management Applicant. (4:30 – 5:30 p.m. estimated time) The Board will hold a workshop on the application to build a four-story building for five (5) residential condominiums at 24 St. Lawrence Street. The bedroom mix includes 4 two-bedroom units and 1 three-bedroom unit. Six parking spaces are proposed on the first level. The site is in the R-6 zone and is subject to the standards of the subdivision and site plan ordinances.

iii. Level III Subdivision and Site Plan, 5 unit building, 25 Monument Street, Monument Partners, LLC, Applicant. (5:30 p.m. to 6:30 p.m. estimated time) The Board will hold a workshop on the application for a four-story building with 20,122 sq. ft. building that includes five (5) three-bedroom condominiums and eight (8) vehicle parking spaces on the first level. The 9,989 sq. ft. lot is located in both the Residential R-6 and Neighborhood Business B-1 zone. The proposal is subject to the standards of the subdivision and site plan ordinance.

PUBLIC HEARING – 7:00 p.m.

1. **ROLL CALL AND DECLARATION OF QUORUM**
2. **COMMUNICATIONS AND REPORTS**
3. **REPORT OF ATTENDANCE AT THE MEETINGS HELD ON MARCH 22, 2018:**
Workshop: Dundon, Mazer, Eaton, Smith, Stanley, Silk, and Whited (arrival 4:55 pm)
Public Hearing: All present.

4. REPORT OF DECISIONS AT THE MEETINGS HELD ON MARCH 22, 2018:

i. Level III Subdivision; 44 Hanover Street; City of Portland Economic Development Department, Applicant. Mazer moved and Stanley seconded a motion to waive the requirement for underground utilities. Vote: 7-0 Mazer moved and Stanley seconded a motion to approve the subdivision plan with 5 conditions of approval. Vote: 7-0

ii. Level III Site Plan and Subdivision; 510 Stevens Avenue; 510 Stevens Ave., LLC., Applicant. Mazer moved and Stanley seconded a motion to waive the parking aisle width to allow 21 feet. Vote: 7-0 Mazer moved and Stanley seconded a motion to waive the parking standard to allow 3 or 37.5% of the vehicle spaces to be compact. Vote: 7-0 Mazer moved and Stanley seconded a motion to approve the subdivision plan with one condition of approval. Vote: 7-0 Mazer moved and Stanley seconded a motion to approve the site plan with 7 conditions of approval. Vote: 7-0

5. NEW BUSINESS

i. Level III Site Plan; Maine Medical Center (MMC) East Tower and Visitor Parking Garage Vertical Expansions; 22 Bramhall Street, Maine Medical Center, Applicant. (7:00 -8:00 p.m. estimated time) The Planning Board will hold a public hearing to consider the proposal to add two (2) floors to the East Tower, relocate the heliport to the East Tower, and to expand the visitor garage with three (3) levels of parking for 225 vehicles. The proposal adds 137,961 sq. ft. to the MMC hospital complex. The property is within the Institutional Overlay Zone (IOZ) and MMC has an Institutional Development Plan approved by the Planning Board.

ii. Level III Site Plan and Subdivision; 23 Unit Condominium; 56 Parris Street; Horton, LLC., Applicant. (8:00- 8:45 p.m. estimated time) The Planning Board will hold a public hearing to consider a proposal for the construction of a 14,132 sq. ft., 23-unit condominium. Parking for 23 vehicles and 23 bicycles are also proposed on the site. The property is located in the B-2b zone and is subject to review under Portland's subdivision and site plan standards.

iii. Level III Site Plan, Mixed-use building, 149-155 Washington Avenue, Diving Rock, LLC, Applicant (8:45 p.m. estimated time) The Planning Board will hold a public hearing on a mixed-use building at 149-155 Washington Avenue. The proposed 113,093 sq. ft. building with a building footprint of 3,866 sq. ft. is proposed with retail on the first floor and office space on the upper three floors. Twenty (20) parking spaces are proposed on site. The existing building that is a workshop/bicycle shop will remain. The site is in the B-1 zone and is subject to Portland's Site Plan Ordinance.

Evening Workshop - Immediately Following Public Hearing

i. **This item was tabled from the 3-22-18 meeting.** Amended Level III Site Plan and Subdivision; 75 Chestnut Street; A & M Partners, Inc., Applicant (estimated time 8:30 p.m.) The Portland Planning Board will hold an evening workshop on a proposal by A & M Partners, Inc. to amend the previously approved proposals for the project entitled "Westerlea View Lofts" to construct a 7 story residential building including commercial space. The key amendments relate to the design of the roof, window sizes, and decks, and modify the building footprint. The site is in the B-7 zone.

Memorandum
Planning and Urban Development Department
Planning Division

To: Sean Dundon, Chair and Members of the Portland Planning Board
From: Shukria Wiar, Planner
Date: March 23, 2018
Re: Five-Unit Condominium, 24 St. Lawrence Street, Kelly and Walter Williams
Project #: 2017-242 CBL: 016 J006001
Meeting Date: March 27, 2018

I. INTRODUCTION

Will Savage of Acorn Engineering on behalf of Kelly and Walter Williams has submitted a Level III Site Plan and Subdivision application for the construction of a five-unit condominium building on a 4,671 square feet site at 24 St. Lawrence Street in the East End. It is surrounded by single and multifamily houses. The site is in the Residential R-6 zone.



Figure 1: Aerial of the Proposed Site

This proposal is being reviewed under the Site Plan and Subdivision Ordinance of Land Use Code. The project will also be reviewed against the R-6 Small Infill Development Design Principles & Standards *(Appendix 7 of the Design Manual) and the* Two-Family, Special Needs Independent Living Units, Multiple-Family, Lodging Houses, Bed and Breakfasts, and Emergency Shelters Standards *(Sections (d) and (l), and Appendix 2 of the Design Manual).* This project was submitted on October 10, 2017, which is prior to the Council's action to enact the Interim Overlay Zoning, so this project is not subject to the interim provisions.

Notices were sent upon receipt of the application and one hundred and eighty-three (183) notices were sent to area residents within 500 feet of the site and the interested party list for the public hearing. A notice also appeared in the March 19th and 20th 2018 editions of the *Portland Press Herald.*

Applicant Name	Kelly and Walter Williams
Consultants	
Engineer	Will Savage of Acorn Engineering, Inc.
Architect	Andy Hyland, Port City Architecture
Surveyor	Owen Haskell, Owen Haskell, Inc.

Project Reviews

Review	*Applicable Standards*
Site Plan	14-526
Subdivision	14-491
Design Manual	R-6 Small Infill Development Design Principles & Standards (Appendix 7 of the Design Manual) and the Two-Family, Special Needs Independent Living Units, Multiple-Family, Lodging Houses, Bed and Breakfasts, and Emergency Shelters Standards (Sections (d) and (l), and Appendix 2 of the Design Manual)

II. PROJECT DATA

Existing Zoning	Residential R-6
Existing Use	Residential – Two Family
Proposed Use	Residential
Proposed Development Program	5 residential units
- Bedroom Mix	4 two-bedroom units, 1 three-bedroom units
Parcel Size	4,671 SF
Proposed Parking	6 spaces

	Existing	*Proposed*	*Net Change*
Building Footprint	1,526 SF	2,823 SF	1,297 SF
Building Floor Area	4,038 SF	12,312 SF	11,258 SF
Impervious Surface Area	2,872 SF	8,951 SF	6,079 SF
Parking Spaces (on site) - handicapped	2 0	5 (2 required) 1	4 1
Bicycle Parking Spaces	0	4 internal	4
Estimated Cost of Project	$2.4 Million		

III. EXISTING CONDITIONS

24 St. Lawrence Street is located on the west side of St. Lawrence Street on Munjoy Hill and is surrounded by residential uses, including both single and multi-family homes. The property is currently developed with a two and half stories, two-family house and a paved surface parking. The existing driveway will be closed and a new driveway will be introduced.; due to this, one on-street parking space will be lost. The site is within the Residential R-6 zone.

The site also has retaining walls at the rear and southwest corner to stabilize the slopes and create a buildable envelope.

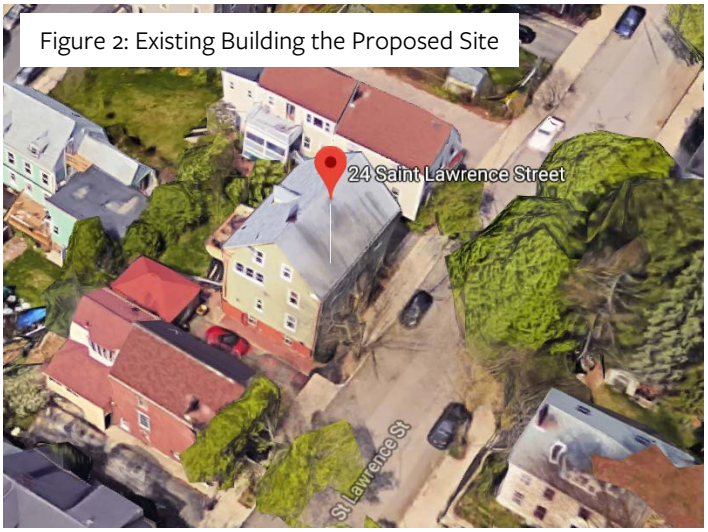


Figure 2: Existing Building the Proposed Site

IV. PROPOSED DEVELOPMENT

The proposal, including floor plans and elevations, are included in the plan set and have been revised to address some of staff concerns. The development project is proposed as new construction of a five-unit apartment building with four two-bedrooms units and the fifth unit with three-bedrooms. The building has two stair towers and an elevator at the front of the building. The second stair tower is required by international building code because building is higher than three stories. The building will be four stories high with a building height of 44.96 feet and 2,823 SF footprint. At four stories high, the scale of this apartment building will need to be in balance the residential uses of the street and neighborhood.

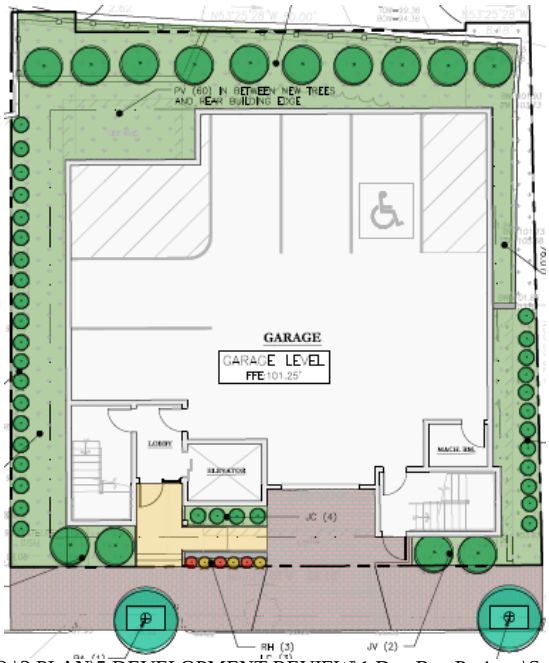


Figure 3: Proposed Site Plan

All three of the units will share access via a common entrance on St. Lawrence Street. Vehicular circulation will be centrally located on the site accessed from St. Lawrence Street. Parking for each unit will be located underneath the new building. The R-6 zone does not require parking spaces for the first three units. However, the applicant is proposing six parking spaces. Two bicycle parking spaces are also proposed as part of this project. A designated area for snow storage is located adjacent to the proposed building. Landscaping is shown at the front and rear of the property.

Below are renderings of the proposed building.



Figure 4: Rendering of Front of Proposed Building



Figure 5: Rendering of Rear of Proposed Building

V. PUBLIC COMMENT

As of the writing of this report, there has been fourteen individuals, some of which have submitted multiple written comments for a total of 23 comments, that have submitted public comment. Concerns raised by abutters were focused mostly on the design of the building, especially the height and massing. Public comments are included in Attachments PC1 to PC14.

The applicant held a neighborhood meeting on November 2, 2018 and twenty-four (24) members of the public attended, see Attachment V for the meeting minutes.

VI. RIGHT, TITLE AND INTEREST AND FINANCIAL/TECHNICAL CAPACITY

a. The owner of the property is Kelly and Walter Williams. The applicant has provided a copy of a quitclaim deed of sale, recorded at the Cumberland County Registry of Deeds (Book 25609 Page 269), which demonstrates their right, title and interest in the property.

b. The estimated cost of the development is $2,400,000. The applicant has submitted a letter from Gorham Savings Bank, dated October 3, 2017, as demonstration of their financial and technical capacity to complete the proposed development.

VII. ZONING ASSESSMENT

The proposed project is to build a four-story five-unit apartment building. The property is located in the R-6 Residential Zone. The proposed five residential are a permitted use and meet the density requirements in the Residential R-6 zone. The height of the building is 44.96 feet, the maximum building height is 45 feet. Under the R-6 zone most of the dimensional requirements are being met except for lot coverage; the zoning requires 60% and the development exceeds this percentage due to balconies and decks. The building and site plan need to be revised to meet the 60% requirement of the lot coverage. For off street parking, Division 20 requires no parking for the first three units and one parking space per unit for residential uses after the first three in the R-6 zone. Even though two parking spaces are required, the applicant is proposing six parking spaces as shown on the site plan.

VIII. DEVELOPMENT REVIEW

A. SITE PLAN SUBMISSION REQUIREMENTS (Section 14-527) and SUBDIVISION PLAT AND RECORDING PLAT REQUIREMENTS (Section 14-496)

The applicant has submitted a recording plat. The final plat will need to be revised to reflect any waivers and conditions of approval that relate to the subdivision plan. Any waivers granted must be recorded at the Registry of Deeds within 90 days of a Planning Board decision. As writing of this report, there is one waiver request.

B. SUBDIVISION (Section 14-497)

The proposed development has been reviewed by staff for conformance with the relevant review standards of Portland's Subdivision Ordinance and applicable regulations. Staff comments are listed below.

1. *Will Not Result in Undue Water and Air Pollution (Section 14-497 (a) 1), and Will Not Result in Undue Soil Erosion (Section 14-497 (a) 4)*
   Lauren Swett, P.E. with Woodard and Curran Engineering, has reviewed the erosion and sediment control plan and is satisfied with the proposed plans. Confirmation of ability to serve letters for water and sewer from PWD and DPS have been submitted to the Planning Division.

2. *Sufficient Water Available (Section 14-497 (a) 2 and 3)*
   The project will be served by the existing utility services located in St. Lawrence Street. The existing building is currently served with a ¾-inch domestic water service; the size of this service is undersized for the proposed use. This service will be terminated and a new 4-inch line is proposed to tap into the main with a parent child connection in the right-of-way. A 2-inch line will split off of the 4-inch line and serve as the domestic water line with the 4-inch line functioning as the fire sprinkler line. A capacity letter from Portland Water District has been provided. Ms. Swett has reviewed this information and notes the following:

   Notes should be added to the plan to coordinate retirement of existing services with the respective utilities. It is noted that for the retirement of a sewer service, a permit is required, and the Sewer Maintenance Division must be on site for the work.

   The Applicant has received an Ability to Serve approval letter from the Portland Water District. The Applicant should ensure that any changes to the utility plan are reviewed again by PWD as necessary. It's noted that the layout and location of gate valves and tapping sleeves does not appear to be in accordance with the PWD standards.

3. *Will Not Cause Unreasonable Traffic Congestion (Section 14-497 (a) 5)*
   The project proposes the removal of the existing driveway and replacing with a 12.75-foot driveway. The proposed entrance will lead into the proposed 10-foot wide parking garage entrance. One curb cut is proposed at this entrance, with the existing curb cut being closed. Furthermore, the proposed driveway/curb cut maintains over 20 feet of face to face separation from the abutting driveways. Tom Errico, P.E. Ty Lin reviewed the proposal's details including the access, parking, and vehicle circulation (Attachment 1). Mr. Errico finds the project to be acceptable.

   The proposed project is not anticipated to cause unreasonable traffic congestion. The staff finds the proposed project is in conformance with this standard. Mr. Errico states:

   I have reviewed the application materials and I find the project to be acceptable from a traffic engineering perspective. I would note that the driveway width, apron detail and separation to the nearest driveway to the north meet City Technical Standards. On-site parking and circulation is also acceptable.

4. *Will Provide for Adequate Sanitary Sewer and Stormwater Disposal (Section 14-497 (a) 6), and Will Not Cause an Unreasonable Burden on Municipal Solid Waste and Sewage (Section 14-497 (a) 7)*
   An existing sewer service was located within St. Lawrence Street. Prior to demolition, the existing service will be disconnected from the main. A new 6" service is proposed to be tied into the existing main as seen on the Utility Plan. Confirmation of ability to serve letter for sewer from Department of Public Service has been submitted to the Planning Division. Ms. Swett has reviewed this information and notes that "*per Chapter 2 of the City's Technical Manual, when services 8 inches or greater in size are connected to the main, they should be connected via a manhole structure*".

5. *Scenic Beauty, Natural, Historic, Habitat and other Resources (Section 14-497 (a) 8)*
   The proposal site is not within an historic district. It is in an urban neighborhood surrounded by a variety of residential building types. The proposed building does not impact the natural beauty of the area or adversely affect any significant wildlife habitat, rare or irreplaceable natural areas, or any public access to the shoreline. The staff finds the proposal in conformance with this standard.

6. *Comprehensive Plan (Section 14-497 (a) 9)*
   The development has been designed to be consistent with the City's Comprehensive Plan, adopted June 2017.

C. SITE PLAN STANDARDS (Section 14-526)

The proposed development has been reviewed by staff for conformance with the relevant review standards of Portland's site plan ordinance and applicable regulations. Staff comments are listed below.

1. *Transportation Standards*

a. Impact on Surrounding Street Systems and Access and Circulation- see Subdivision, Paragraph VIII (B) (3), above.

b. Sidewalks

The applicant is proposing to install new brick sidewalk along their frontage on St. Lawrence Street. This site is in the brick district.

c. Public Transit Access

The public transit requirements do not apply to this project.

d. Parking

There are six parking spaces and these are located inside the building and screened from the street view.

e. Bicycle Parking

The proposal includes two bicycle parking spaces in the garage of the building, which meets the ordinance standard of two bicycle spaces per 5 vehicle spaces.

1. *Environmental Quality Standards*

a. Preservation of Significant Natural Features

There are no known significant natural features on the site.

b. Landscaping and Landscape Preservation

There is one existing, mature tree within the right of way and it is proposed that this tree be removed to accommodate the new driveway entrance. Landscaping in the form of trees, shrubs, perennials, and grasses around the building will replace this tree as well as the two proposed 'Accolade' Cherry trees within the right-of-way, as the suggestion of Jeff Tarling, City Arborist, due to overhead utilities. All of Mr. Tarling's previous recommendations have been addressed.

The applicant is proposing two street trees on St. Lawrence Street, in front of the building. The site will have landscaping along the front of the building as well as on the side of the property. Due to site restrictions, the remaining three street trees cannot be planted on the site. Therefore, the applicant will need to contribute to the City's Tree Fund for the three trees, which is a total of $1,200.

The site also has retaining walls at the rear and southwest corner to stabilize the slopes and create buildable area; the walls are on this and the abutting properties. The majority of the retaining walls will not be improved but the portions that are on the applicant's property will be upgraded. More information on the geotechnical has been requested of the applicant.

c. Water Quality, Storm Water Management and Erosion Control

The proposed development disturbs approximately 4,800 square feet (approximately 0.1 acres). According to Section 5 of the City of Portland Technical Manual, a Level III development project is required to submit a stormwater management plan pursuant to the regulations of MaineDEP Chapter 500 Stormwater Management Rules, including conformance with the Basic, General, and Flooding Standards.

There is currently no drainage infrastructure on site. It is proposed to install a field inlet along the northerly side of the property to help drain runoff from the site and adjacent properties. This inlet will then tie into the foundation drain which will then wye into a storm drain along with the roof drain. The 8″ storm drain will connect to the combined sewer. A separate storm drain has been designed so that if the sanitary sewer main is separated in the future along St. Lawrence Street, the storm/groundwater will be able to discharge to the separated storm main.

Lauren Sweat, Consultant Engineer has reviewed the stormwater information and states following

comments:

General Standards: The project will result in a de minimis increase in impervious area of approximately 543 square feet. As such, the project is not required to include any specific stormwater management features for stormwater quality control. We encourage the Applicant to review the City's Stormwater Service Charge Credit Manual (available online) to evaluate whether they may want to incorporate stormwater quality treatment measures that qualify for a future Stormwater Service Charge credit.

Flooding Standards: The project will result in a de minimis increase in impervious area of approximately 543 square feet. As such, the project is not required to include any specific stormwater management features to control the rate or quantity of stormwater runoff from the site.

A backflow preventer should be provided on the foundation drain connection to the sewer.

2. *Public Infrastructure and Community Safety Standards*

a. Consistency with Master Plans

See Subdivision, Paragraph VIII (B)6 above.

b. Public Safety and Fire Prevention

The Crime Prevention through Environmental Design (CPTED) standards in the site plan ordinance address the principles of natural surveillance, access control and territorial reinforcement so that the design of developments enhance the security of public and private spaces and reduce the potential for crime. The applicant has introduced wall mounted lighting at all entrance ways and along the balcony of each unit. Wall mounted lighting will also be provided for the area by the parking garage. The entrances to the building will be well-lit and visible from the street and adjacent walkways to provide natural surveillance.

The Fire Department has reviewed the project and finds majority of the project acceptable except for the separation distance between the proposed building and the existing abutting home at 20 St. Lawrence Street. The existing house has windows on the side of the building that faces the development. The standard is that there be a separation of 10 feet between buildings when there is are windows on the side of buildings. Captain Mike Thompson of the Fire Department has requested more information on the "*height of the second-floor window sill, from sill to ground, on the side of 20 St. Lawrence Street facing the proposed structure*".

c. Availability and Adequate Capacity of Public Utilities

The project will be served by the existing utility services located in St. Lawrence Street. The Applicant has contacted the Portland Water District and the City Department of Public Services requesting ability to serve letters for water and sewer demand. A capacity letter from PWD has been provided. Confirmation of ability to serve letters for sewer from DPS should be forwarded to the Planning Authority prior to the public hearing.

3. *Site Design Standards*

a. Snow and Ice Loading

Snow removal will only be necessary for the parking garage entrance and walkways. Removal will be minimal and accommodated on site. The applicant is proposing on-site snow storage area to the south of the site.

b. View Corridors

This site is not within a Protected View Corridor as per the "View Corridor Protection Plan" approved by the Portland City Council in 2001.

c. Historic Resources

The site is outside the 100-foot setback of the West End historic district; therefore, the project does not have to be reviewed by Historic Preservation.

d. Exterior Lighting

The proposal has noted wall mounted lighting along all the entrances and at the balconies. According to the applicant, any proposed lighting will be full cutoffs.

e. Noise and Vibration

The mechanical equipment will be on the roof of the proposed building and will be screened from St. Lawrence Street by the proposed Mezzanine. All heating, ventilation and air conditioning equipment (HVAC), air handling units (AHU), emergency generators, and similar equipment will have to be shown on the plans and meet state and federal emissions requirements. These mechanical equipment should be located to the interior of the site, away from abutting residential properties and be screened from view from any public street and from adjacent sites by structure walls, evergreen landscaping, fencing, masonry wall or a combination thereof. This information will have to be submitted for review by the Planning Authority prior to the final site plan and building permit.

f. Signage and Wayfinding

This standard does not apply to the proposal.

f. Zoning Related Design Standards

A design review according to the City of Portland Design Manual Standards was performed for the proposed new construction of a multi-family dwelling at 24 St. Lawrence Street. The review was performed by Caitlin Cameron, Urban Designer, Shukria Wiar, Planner, along with Jeff Levine, Department Director, all within the Planning Division of the Department of Planning & Urban Development. The project was reviewed against the *R-6 Small Infill Development Design Principles & Standards* (Appendix 7 of the Design Manual) as well as the *Two-family, Special Needs Independent Living Units, Multiple-family, Lodging Houses, Bed and Breakfasts, and Emergency Shelters* (Section I of the Design Manual).

Design Review Criteria:

The project was reviewed with the *R-6 Alternative Design Review* which has the following criteria:

a. Proposed design is consistent with all of the Principle Statements
b. The majority of the Standards within each Principle are met
c. The guiding principle for new construction under the alternative design review is to be compatible with the surrounding buildings in a two-block radius in terms of size, scale, materials, and siting, as well as the general character of the established neighborhood, thus Standards A-1 through A-3 shall be met.
d. The design plan is prepared by an architect registered in the State of Maine.

Findings of the Design Review:

The design review memo prepared by Caitlin Cameron, Urban Designer, is included as Attachment 4. The staff review of the proposed building does not pass all of the criteria of the R-6 Alternate Design Review. In particular, Principle A Overall Context and Principle B Massing are not met. In addition, Principle D Proportion and Scale are partially met. Refer to the design memo (Attachment 3) for the specific comments. The staff is also requesting additional information from the applicant for the design review:

- Label the materials on the elevations; clarify discrepancy between materials on elevations and renderings
- Provide a design narrative that explains how the proposal meets the design standards
- Project exceeds the 60% lot coverage

Comments for the specific standards are provided in Attachment 3.

VII. NEXT STEPS

1. Address staff comments;
2. Address additional comments of the Planning Board;
3. Prepare final plan submission, including subdivision and site plan submittal requirements as included in 14-496(a) and (b) and 14-527(e) and (f) for review by the Planning Authority and Planning Board; and
4. Hold final Planning Board Hearing.

IV. ATTACHMENTS

Staff Review Comments

1. Traffic Engineering Review (Tom Errico, T Y Lin), comments dated
2. Civic Engineer Review, Lauren Swett, dated 02.01.2018

3. Urban Designer Review, Caitlin Cameron, dated 03.16.2018
4. Fire Department Review, Capt. Mike Thompson, dated

Public Comments

PC 1. Ariana van den Akkar 11-2-17
PC 2. Beth Snyder 1-10-18
PC 3. Carol Stillwell 1-7-18
Carol Stillwell 11-1-17
Carol Stillwell Photo Attachment
PC 4. J. Wuesthoff 1-11-18
PC 5. Jayne Hurley 1-8-18
PC 6. Karen Snyder 10-20-17
Karen Snyder 11-7-17
PC 7. Katherine Collins 11-15-17
PC 8. Kelly Williams 10-23-17
PC 9. Lynn Hallett 11-7-17
PC 10. Maggie W. 1-4-18
PC 11. Martica Douglas 1-8-18
Martica Douglas 12-2-17
PC 12. Martica Sawin 2-23-18
Martica Sawin 10-24-17
Martica Sawin 12-5-17
PC 13. Michael Petit and Pamela Day 10-24-17
Pamela Day 1-3-18
Pamela Day and Michael Petit
PC 14. Rob Whitten 1-8-18
Rob Whitten 11-20-17

Applicant's Submittal

A. Cover Letter
B. Level III Final Site Plan Application
C. Wastewater Capacity
D. Right, Title, or Interest
E. Financial Capacity
F. Construction Management Plan
G. Stormwater Management Report
H. Erosion and Sedimentation Control Report
I. Utilities
J. Solid Waste
K. Fire Department Letter
L. Conformity with Land Use Ordinance
M. Request for Waivers
N. Written Easements
O. Architectural Design Narrative
P. Lighting
Q. Parking Analysis
R. Comment Response Letter
S. Certification Letter
T. Neighborhood Meeting Invitation
U. Sign-In Sheet
V. Neighborhood Meeting Minutes

Plans

Plan1 Cover Sheet
Plan2 General Notes
Plan3 Existing Conditions Plan
Plan4 Construction Management Plan
Plan5 Stormwater Management Plan

Plan6	Site Plan
Plan7	Landscaping Plan
Plan8	Utility Plan
Plan9	Grading & Drainage Plan
Plan10	Site Details 1
Plan11	Site Details 2
Plan12	Utility Details 1
Plan13	Utility Details 2
Plan14	Erosion & Sedimentation Control Details
Plan15	Ground Floor Plan
Plan16	Upper Floor Plans
Plan17	Building Elevations
Plan18	Front Rendering A - Front Rendering A
Plan19	Front Rendering B - Front Rendering B
Plan20	Rear Rendering - Rear Rendering
Plan21	Lower Street Rendering - Lower Street Rendering
Plan22	Upper Street Rendering - Upper Street Rendering
Plan23	Subdivision Recording Plat

Att. 1

Portland Maine Yes. Google's good here.

Shukria Wiar <shukriaw@portlandmaine.gov>

24 St. Lawrence Street - Final Traffic Comment

Tom Errico <thomas.errico@tylin.com> Fri, Feb 9, 2018 at 5:06 PM
To: Shukria Wiar <shukriaw@portlandmaine.gov>
Cc: Keith Gray <kgray@portlandmaine.gov>, Jeremiah Bartlett <JBartlett@portlandmaine.gov>, "Hyman, Bruce" <bhyman@portlandmaine.gov>, "Jeff Tarling (JST@portlandmaine.gov)" <JST@portlandmaine.gov>

Hi Shukria – I have reviewed the application materials and I find the project to be acceptable from a traffic engineering perspective. I would note that the driveway width, apron detail and separation to the nearest driveway to the north meet City Technical Standards. On-site parking and circulation is also acceptable.

If you have any questions, please contact me.

Best regards,

Thomas A. Errico, PE
Senior Associate
Traffic Engineering Director
TY LIN INTERNATIONAL
12 Northbrook Drive
Falmouth, ME 04105
+1.207.781.4721 main
+1.207.347.4354 direct
+1.207.400.0719 mobile
+1.207.781.4753 fax
thomas.errico@tylin.com
Visit us online at www.tylin.com
Twitter | Facebook | LinkedIn | Google+

"One Vision, One Company"

COMMITMENT & INTEGRITY
DRIVE RESULTS

41 Hutchins Drive
Portland, Maine 04102
www.woodardcurran.com

T 800.426.4262
T 207.774.2112
F 207.774.6635

Att. 2

MEMORANDUM

TO: Shukria Wiar, Planner
FROM: Lauren Swett, P.E. & Loren Joyce, E.I.T.
DATE: February 1, 2018
RE: 24 St. Lawrence Street, Level III Site Plan Application

Woodard & Curran has reviewed the Level III Site Plan Application for the proposed development located at 24 St. Lawrence Street in Portland, Maine. The project involves the demolition of an existing building containing two (2) single family units and construction of a five (5) unit condominium with a six (6) car parking garage at the ground level.

Documents Reviewed by Woodard & Curran

- Level III Site Plan Application and attachments, dated October 9, 2017, prepared by Acorn Engineering, Inc. on behalf of Kelly & Walter Williams.
- Plan Sheets 1-14, dated October 6, 2017, prepared by Acorn Engineering, Inc. on behalf of Kelly & Walter Williams.

Comments

1) In accordance with Section 5 of the City of Portland Technical Manual, a Level III development project is required to submit a stormwater management plan pursuant to the regulations of MaineDEP Chapter 500 Stormwater Management Rules, including conformance with the Basic, General, and Flooding Standards. We offer the following comments:
   a) Basic Standards: Plans, notes, and details have been provided to address erosion and sediment control requirements, inspection and maintenance requirements, and good housekeeping practices in accordance with Appendix A, B, & C of MaineDEP Chapter 500.
   b) General Standards: The project will result in a de minimis increase in impervious area of approximately 543 square feet. As such, the project is not required to include any specific stormwater management features for stormwater quality control. We encourage the Applicant to review the City's Stormwater Service Charge Credit Manual (available online) to evaluate whether they may want to incorporate stormwater quality treatment measures that qualify for a future Stormwater Service Charge credit.
   c) Flooding Standards: The project will result in a de minimis increase in impervious area of approximately 543 square feet. As such, the project is not required to include any specific stormwater management features to control the rate or quantity of stormwater runoff from the site.
2) General Comments:
   a) A backflow preventer should be provided on the foundation drain connection to the sewer.
   b) Per Chapter 2 of the City's Technical Manual, when services 8 inches or greater in size are connected to the main, they should be connected via a manhole structure.
   c) Notes should be added to the plan to coordinate retirement of existing services with the respective utilities. It is noted that for the retirement of a sewer service, a permit is required, and the Sewer Maintenance Division must be on site for the work.
   d) The Applicant has received an Ability to Serve approval letter from the Portland Water District. The Applicant should ensure that any changes to the utility plan are reviewed again by PWD as necessary. It's noted that the layout and location of gate valves and tapping sleeves does not appear to be in accordance with the PWD standards.

Planning and Urban Development Department
Planning Division

Subject: R-6 Small Infill Design Review – 24 St. Lawrence Street

Written by: Caitlin Cameron, Urban Designer

Date of Review: Friday, March 16, 2018

A design review according to the *City of Portland Design Manual* Standards was performed for the proposed new construction of a multi-family dwelling at 24 St. Lawrence Street. The review was performed by Caitlin Cameron, Urban Designer, Shukria Wiar, Planner, along with Jeff Levine, Department Director, all within the Planning Division of the Department of Planning & Urban Development. The project was reviewed against the *R-6 Small Infill Development Design Principles & Standards* (Appendix 7 of the Design Manual) as well as the *Two-family, Special Needs Independent Living Units, Multiple-family, Lodging Houses, Bed and Breakfasts, and Emergency Shelters* (Section I of the Design Manual).

Design Review Criteria:
The project was reviewed with the Alternative Design Review which has the following criteria:

A. Proposed design is consistent with all of the Principle Statements
B. The majority of the Standards within each Principle are met
C. The guiding principle for new construction under the alternative design review is to be compatible with the surrounding buildings in a two-block radius in terms of size, scale, materials, and siting, as well as the general character of the established neighborhood, thus Standards A-1 through A-3 shall be met.
D. The design plan is prepared by an architect registered in the State of Maine.

Findings of the Design Review:
The proposed design **does not pass** all of the criteria of the R6 Alternate Design Review – please refer to comments below.

- **Label the materials on the elevations; clarify discrepancy between materials on elevations and renderings**
- **Provide a design narrative that explains how the proposal meets the design standards.**
- **Project exceeds the 60% lot coverage**

Design Review Comments *(red text denotes principles or standards that are not met)**:***
Appendix 7: R-6 Infill Development
Principle A Overall Context –Not Met – see below.

- *A-1 Scale and Form:* The building scale is larger than most buildings on this street which is exacerbated by the placement of the circulation on the front and by creating a broad front façade without a proportionate open space buffer on the sides. Of the larger multi-family buildings in the neighborhood, usually the scale is mitigated either by building only 3 stories or if building 4 stories, a narrower, vertical proportion is used. In

those rare instances where a larger scale, wider building has been built, the scale is mitigated by keeping wider setbacks as a buffer and through elements such as bay windows, balconies and porches, varied rooflines, and/or massing changes at the street. Some scale mitigation has been achieved by varying the massing, lowering the height where possible, and varying materials. Staff suggests that massing and programmatic changes should be made to mitigate the bulk and scale of this project – the roof form could be modified to further reduce the scale impacts. It appears the proposed project exceeds the maximum Lot Coverage.

- *A-2 Composition of Principal Facades:* The façade composition, though providing local symmetry and windows to accentuate the massing variation, does not follow the typical two or three-bay composition. The façade composition is largely impacted by placement of all the circulation at the front façade with no living space facing the street. The current façade composition places hierarchy at the corner with a "tower" but that does not correspond to the main entrance of the building.
- *A-3 Relationship to the Street:* The street wall is maintained and building placement in relationship to St. Lawrence Street is consistent with the neighboring properties. The project deviates from the pattern of building placement on the lot and the spacing of the residential fabric in this neighborhood. The ground floor is raised a whole story which is higher than typical residential development patterns but common for contemporary projects – this elevated living space is created by the ground floor garage. There is no living space on the ground floor beyond the entrance foyer.

Principle B Massing – Not Met – There is concern about the bulk and mass of the building compared with the size of the lot and the established patterns on the surrounding streets. The building is larger in scale than what is found in the context in both height and width of the building. The massing is reflective of the program arranged to place all circulation facing the street. The project does vary the massing which is encouraged.

- *B-1 Massing:* The proposed mass is wider on the street than the typical building context.
- *B-2 Roof Forms:* The proposed flat roof form is in keeping with the traditional multi-family building types found in the context.
- *B-3 Main Roofs and Subsidiary Roofs:* Met – there is a clear main roof form.
- *B-4 Roof Pitch:* The standard requires that mono pitched roofs shall not have a pitch of less than 7:12.
- *B-5 Façade Articulation:* The project employs a covered and recessed entry.
- *B-6 Garages:* The garage is attached, the door is slightly set back from the front façade and includes living space above. The garage door is less than 40% of the building width.

Principle C Orientation to the Street – Partially Met – The project appropriately provides a sense of transition and privacy for the residential uses, however, the ground floor minimally reinforces a sense of the public realm –there is a recessed, covered entry facing the street but no ground floor living space to enhance the pedestrian friendliness and sociability of the streetscape as desired in this principle statement.

- *C-1 Entrances:* The main entry is emphasized with the canopy and recess.
- *C-2 Visual Privacy:* Visual privacy is adequately addressed; all living spaces are above the ground floor.
- *C-3 Transition Spaces:* The project uses a canopy and a vestibule for transition space.

Principle D Proportion and Scale – Partially Met – The proportion of the front façade is not one typically found in the context which is usually a discernable vertical proportion. Individual building elements are human-scaled.

- *D-1 Windows:* The majority of windows are rectangular. Windows in the stair towers are square, but the other window type has a vertical proportion, though different size and proportion from what is found in the context.
- *D-2 Fenestration:* The project appears to meet the 12% fenestration requirement and appropriately scaled to the massing of the building. The front façade is predominantly circulation space, rather than living space - this program rationalizes the use of smaller, square windows.
- *D-3 Porches:* Not applicable

Principle E Balance – Met – The building façade composition creates a sense of balance with good use of overall and local symmetry and articulation of façade materials.

- *E-1 Window and Door Height:* The majority of window and door head heights align along a common horizontal datum.
- *E-2 Window and Door Alignment:* The majority of windows shall stack so that centerlines of windows are in vertical alignment.
- *E-3 Symmetricality:* Primary window compositions are arranged symmetrically around discernable vertical axes.

Principle F Articulation – Met – Articulation is provided through material and trim texture, changes in façade planes, and recessed entry with canopy.

- *F-1 Articulation:* The design uses dimensional trim and the texture of the material to provide surface articulation and visual interest.
- *F-2 Window Types:* Two window types are used.
- *F-3 Visual Cohesion:* The visual cohesion of the façade is good.
- *F-4 Delineation between Floors:* The ground floor is delineated with a different material and trim board. Otherwise, the windows and board provide some delineation of the upper floors.
- *F-5 Porches, etc.:* The stoop and canopy are well integrated into the overall design.
- *F-6 Main Entries:* The main entry is emphasized with prominent placement facing the street, the use of a canopy, and a recess. The secondary entrance should continue to be subsidiary to the main entrance, but could be a nicer door with glass or similar considering its placement so close to the street.
- *F-7 Articulation Elements:* It appears the rake of the roof meets the 6" requirement; the trim details are not clear but trim is provided at the windows, ground floor, and cornice; offsets in the principal façade are at least 12".

Principle G Materials – Information Needed – There is a discrepancy between the materials depicted in the elevations and the renderings. Provide material labels on the elevations. The material choices are contextual and fine-grained. Material placement should be used to help mitigate the scale of the building.

- *G-1 Materials:* The residential context is predominantly clapboards with occasional shingle or brick. The shingle and clapboard are fine-grain materials in keeping with the context. Brick at the ground floor is logical and grounds the building. Staff question the use of brick on the four-story "tower" as being too heavy. Clapboard or shingle is recommended.

- *G-2 Material and Façade Design:* The materials are appropriately placed according to their nature, except there is some concern about carrying the brick for the full four stories at the corner of the building. The material placement helps break down the façade composition, however, the ground floor delineation and change in material does emphasize the width of the building.
- *G-3 Chimneys:* Not applicable.
- *G-4 Window Types:* Two window types are used on the front façade.
- *G-5 Patios and Plazas:* Entrance areas use brick and concrete.

(i) Two-family, Special Needs Independent Living Units, Multiple-Family, Lodging Houses, Bed and Breakfasts, and Emergency Shelters *(red text denotes standards that are not met)**:***

Standard 1 – Partially Met – See R-6 comments above.

Standard 2 – Partially Met – The building sits close to the street with a slight front yard setback buffer consistent with residential architecture in this neighborhood. However, the established pattern on this street is the building placed uphill with a sideyard driveway downhill. This spacing is very common in the R-6 context – the proposed project occupies the full width of the lot with building and places the driveway and garage in the center of the lot.

Standard 3 – Met – The project provides balcony space for each dwelling unit.

Standard 4 – Met – The project has a high level of fenestration and the provision of balconies also contributes to residents' access to light and air. Storage is provided within each unit.

Standard 5 – Met – The parking is structured and screened from view. The garage door meets the zoning for maximum width.

Standard 6 – Not Applicable

MEMORANDUM

To: FILE

From: Shukria Wiar

Subject: Application ID: 2017-242

Date: 3/22/2018

Comments Submitted by: Robert Thompson/Fire on 2/5/2018

This building will be required to be sprinkled. Sprinkler connection to be at the front of the building.

Comments Submitted by: Robert Thompson/Fire on 2/5/2018

Street address shall be marked on the street side of the structure and shall be as approved by the City E911 Addressing Officer.

Comments Submitted by: Robert Thompson/Fire on 2/5/2018

Fire Department access to the proposed building is sufficient.

Comments Submitted by: Robert Thompson/Fire on 2/5/2018

There are adaquate fire hydrants in the area.

Comments Submitted by: Robert Thompson/Fire on 2/5/2018

The new building shall not affect the egress or required fire department access for the neighboring building

Google Groups

RE: Development at 24 St. Lawrence St.

Ariana van den Akker <ariana.daly@gmail.com> Nov 2, 2017 12:14 PM
Posted in group: **Planning Board**

Dear Chair and Board Members:

I'm writing regarding the plan to demolish 24 St. Lawrence Street and rebuild as condos. As a former renter at 28 St. Lawrence (next door), and a current resident of Munjoy Hill, I have several concerns:

1. The increasing lack of affordable rental/housing units in Munjoy Hill. Munjoy Hill is full of expensive new condo projects offering units at rates that most people who live and work in Portland year-round cannot afford. As an employee of a non-profit, I can only afford to live in Portland because of landlords like Martica Sawin at 28 St. Lawrence, who rented her unit at a reasonable rate because she didn't want to push people like my roommate (who also works at a non-profit) and me out of the neighborhood. This project will push current renters out, decrease the diversity of the neighborhood, and worsen the problem of the lack of affordable housing.

1. The building does not fit the character of those around it. One of the best aspects of St. Lawrence Street is how much space there is between houses, which allows for more gardens and green space than other places in the city. Although there are several multiple family houses and condos already on St. Lawrence St., there is adequate spacing between them and neighboring buildings. This building at 24 St. Lawrence as proposed is unnecessarily tall and close to neighboring houses.

1. The plan, as rendered, blocks essentially all sunlight to the neighboring property of 28 St. Lawrence Street, which decreases property value and quality of life.

Thank you for your consideration of this matter,

Ariana van den Akker

Google Groups

Re: proposed tear-down and construction at 24 Lawrence Street

me <jmy@portlandmaine.gov> Jan 10, 2018 8:45 AM
Posted in group: **Planning Board**

Good Morning,

Thank you for your e-mail. Your public comment will be included in the review and will become part of the public record.

If you have any further questions, please contact me.

Jennifer Munson, Office Manager
Planning and Urban Development Department
4th Floor, 389 Congress Street
Portland, ME 04101
Phone: (207)874-8719
Email: planningboard@portlandmaine.gov

On Wednesday, January 10, 2018 at 6:30:19 AM UTC-5, Beth Snyder wrote:

> To the Planning Board of the City of Portland,
>
> I live at 81 North Street, a brick house built in 1854 by Moses Gould. I value the historic character of our Munjoy Hill neighborhood and have watched homes being torn down and replaced with structures that are jarring with the character of the neighborhood.
>
> I'm writing you to oppose the proposed project at 24 Lawrence Street. After attending a meeting at our East End Elementary School where the architects showed drawings and explained their design for a new structure, I was dismayed. It looked like a medical building. It promoted no engagement on the street. Cars would enter the first floor parking and residents would take an elevator to their condo, in which all activity was oriented to the back of the building. The structure was huge in scale. It would look ridiculous between the flanking, much smaller homes. It would block light and destroy the appeal of the surrounding homes.
>
> I remember well how upset the large number of neighbors were after seeing and hearing the presentation that evening. The developer and the architects have not fully considered and implemented the the rules specified in the City's Design Manual in Appendix 7, the Design Principles listed in Section II, and the Alternative Design Review in Section IV.
>
> "*The Planning Authority may request that consideration be made of buildings in the neighborhood that are comparable in size, scale and use to that which is being proposed, or that consideration be made of the characteristics of buildings which were originally designed for a similar use to that which is proposed. The Planning Authority may determine other considerations that shall be made of the proposed building in relation to the neighborhood, due to unique characteristics of a given site.*"
>
> ***PRINCIPLE A*** *Overall Context*

A building design shall contribute to and be compatible with the predominant character-defining architectural features of the neighborhood.

Explanatory Note: The central idea behind good design in an established neighborhood is to reinforce positive features of the surrounding area, which provide its unique identity. To a large degree, the scale, mass, orientation, and articulation of an infill building should be compatible with that of the buildings that surround it.

Compatibility refers to the recognition of patterns and characteristics which exist in a given setting and the responsiveness of a new design with respect to these established patterns and characteristics. While there is no one specific solution for a given setting, there are a number of building characteristics which can be used to gauge visual compatibility of new residential construction in an existing neighborhood. These characteristics include design elements such as:

1. Scale and Form: height, massing, proportion of principal facades, roof shapes and scale of the architectural features of the structure.
2. Composition of Principal Facades: proportion of facades; orientation of openings; ratio of solids to openings; rhythm of fenestration; entrance porches and other projections; and
relations of materials, texture and color.
3. Relationship to the Street: walls of continuity; rhythm of spacing and structures on streets; and orientation of principal elevations and entrances to the street.

Please hold developers and designers to the standards outlined by the city. We do not want to regret ten or twenty years from now our actions, or inactions, of today.

Thank you,

Beth Snyder
81 North Street
Portland, ME 04101

PC3

Google Groups

24 St.Lawrence Street proposed plans

rstillwell@maine.rr.com <rstillwell@maine.rr.com> Jan 7, 2018 3:42 PM
Posted in group: **Planning Board**

To the city of Portland planning board members,
I am writing in regard to the proposed tearing down of the 2-family house at 24 St.Lawrence St. and the building of a 5-unit, 4-story building on that site. My husband, Richard Stillwell and I live next door and own the property at 20 St. Lawrence Street. Richard bought our house in 1975. I have lived there with him since 1983. We are abutting neighbors to this proposed project.

A project of this size causes a lot of forethought, foresight and unfortunately, worry.
We, as well as our immediate neighbors, would like to see a plan of action that we feel will protect our properties. That will ensure that the ground work is done beforehand to ensure this project can be done in a safe manner and is in keeping with the neighborhood.

Our concerns. Our connected retaining walls, our foundations. The proximity of the project proposed is 5 feet from our property lines.

We would like to be assured by the developer and the property owners of 24 St.Lawrence Street that the construction activity will not harm our retaining walls, our house's foundations and walls. An additional in depth engineering study should be conducted, showing due diligence.
A bond of guarantee against damages should be in place beforehand.

A pest control plan should be mobilized before approval of the tear down to eradicate any existing rodents.

Hours of construction activity should be agreed upon and adhered to.

Property lines should be agreed upon.

The scale of this project is huge, it uses 75% of the property. It is not in keeping with the neighborhood. The proposed building stands alone in it's height.
We feel is should be scaled down.

The form does not integrate into the neighborhood. It is rear-facing. It does not share like features of the surrounding houses. There is nothing that joins this building with the others.
There should be a higher standard.
For the integrity of the street and the neighborhood.

There has been an inflexibility with the developer and thus presented, their credibility and approach, to us is in question. There has not been to this point a desire to integrate this project with neighbors in mind or the neighborhood.

I am enclosing a photo of the section of the retaining wall at the rear of 24 St. Lawrence Street and the rear of the property at 25 Waterville Street, owned by Michael Petit and Pamela Day. The distance between our common retaining wall and their building is illustrated.

This project is just too close for comfort or safety.

Thank you for your consideration in evaluating this proposed project.

Sincerely,
Carol Stillwell

Google Groups

24 St.Lawrence Street proposed plans

rstillwell@maine.rr.com <rstillwell@maine.rr.com> Nov 1, 2017 3:51 PM
Posted in group: **Planning Board**

October 31,2017

I am writing from 20 St. Lawrence Street regarding the proposed tearing down and building of a 5 unit structure at 24 St. Lawrence St.
My husband has owned our 1890 brick building since 1975, where he has lived and I have lived since 1983. We are opposed to this project for several reasons.

We do not feel that it's scale or design is appropriate in the neighborhood. I have enclosed photos, starting with the property north of 24 St. Lawrence, 20 St. Lawrence and the houses that follow south to the end of the street. When I see the architectural rendering of the proposed property, I say, " What is wrong with this picture?". Sighting chapter 14 of the Land Usage Zoning Ordinance, it does not fit the scale of the surrounding buildings. It shares no architectural features. It looms by itself. It is not a cohesive blend.

Our other concern is a concern of safety. The proximity of the building, the footprint is 5 feet from our property lines. Living on a hill,we are concerned about the stability of our retaining walls during the tearing down of the present house and the deep, vibrating process of drilling for construction for the new 4 story building. We have, throughout the years repaired and replaced walls on our steep embankments. We have shared walls with our neighbors on Waterville Street. The proximity of the proposed building is at best alarming. What guarantee do we have that we will not have damaged or collapsed walls or damage to our close proximity home. I also am enclosing, as the last photograph, a photo taken from my wall, that we share with Michael Petit and Pamela Day's Waterville Street property. In the photo, it shows how close this wall is to their house and the reason for our concern.

Thank you for your time and consideration.
Carol Stillwell




THULE





PC4

Google Groups

24 St. Lawrence St. Development Proposal

J Wuesthoff <jwuest@maine.rr.com> Jan 11, 2018 12:39 PM

Posted in group: **Planning Board**

Dear Members :

Since the late ’60’s I have worked or lived in Portland currently,and for the last 19 years,on Morning Street.

I am familiar with the above site and the attractive structure sitting on it.The proposed replacement does not add to nor enhance that neighborhood.While there may be several buildings in a 2 block radius which might be compatible with the proposed structure in terms of size,scale and character they are not indicative of the general character of the established neighborhood.

I ask that you deny a permit for the proposed development.

Thank you.

R. John Wuesthoff
11 Morning St(780-6557)

PC5

Google Groups

24 St Lawrence St Proposed Condominiums

Jayne Hurley <jhurley@cspinet.org> Jan 8, 2018 4:26 PM

Posted in group: **Planning Board**

Dear City of Portland Planning Board:

I am writing to express my concern about the proposed condo development at 24 St Lawrence St. Like the developers of 31 Fore St., 30 Merrill St., and other recently constructed buildings on Munjoy Hill, it appears the architect chose to follow the "*Alternate Design Review* "option which allows builders to bypass current architectural standards and build "big box" condominium buildings that are hugely out of scale with the rest of the neighborhood and exhibit none of the characteristics of the surrounding buildings.

Craig Cooper, owner of Rainbow Construction, and the builder for another big box gem slated for construction at 25 Monument St., said to me, "If Portland doesn't want developers to build these types of buildings, why did they write the R6 zoning codes to allow it?" And, "Obviously builders are going to construct the biggest building allowed to get the most bang for the buck."

Take another look at the changing landscape of Munjoy Hill. It seems that developers, builders, and architects have gotten your (unintended?) message loud and clear: go big or go home.

It's not too late to send 24 St Lawrence St. back to the drawing board! Make the necessary adjustments now so that the new building will blend more seamlessly into the existing neighborhood.

Thank you for considering my comments.

Jayne G. Hurley

11 St. Lawrence St.

Portland, ME 04101

PC6

Google Groups

New Newsflash 24 St. Lawrence Street - Concerns- Another Example

Karen Snyder <karsny@yahoo.com> Oct 20, 2017 8:49 AM
Posted in group: **Planning Board**

Greetings Planning Board Members and City Planner Wiar,

I am writing to voice my concerns and protest to the below 24 St. Lawrence submitted plan by a property management investment company called HR Property Management.

This submitted plan is a perfect example of what is wrong with the Portland Planning Board process and the Portland City Planning department and it's lack of effort in protecting Munjoy Hill's rich historical New England architecture and housing stock for the local residents in an attempt to replace with a generically modern architecturally-sterile looking building with condos not affordable to most Portlanders (See attached photos).

Unlike the West End which is historically protected, the East End needs also needs preservation/conservation protection before the historic charm of what is loved about Munjoy Hill is ruined and destroyed for ever.

I have attached the photos of what is currently on site versus proposed for 24 St. Lawrence. It is quite disturbing to surrounding property owners.

When surrounding neighbors and property owners are virtually in tears or appalled by a submitted plan, then there is something seriously wrong with the Portland planning board process and the City Planning Dept in allowing this to continue. Portland City Planning Dept mission statement reads ...."The Planning and Urban Development Department promotes and plans for the future vitality, livability and prosperity of this remarkable city and all its people." Who exactly is the Portland Planning Department mission statement geared towards because it appears to be just lip service while the city coffers grow off of the backs of pushing out Portlanders/local residents from their own city and ruining the current vitality of the neighborhoods that made Portland so popular in the first place.

We would appreciate you to seriously think about scaling this submitted plan down so that it fits with the surrounding neighborhood appropriately in size and architecture as well as consider affordable housing for some of the units if a perfectly habitable property is proposed to be demolished.

Regards,
Karen Snyder
72 Waterville St

Attachments:
24SaintLawrence_20171019.JPG
24SaintLawrenceProposed_20171019.JPG

View this in your browser

October 19, 2017

24 St. Lawrence Street

… Read on

You are receiving this message because you are subscribed to New Development Review Project Notices on www.portlandmaine.gov. To unsubscribe, click the following link: Unsubscribe

----- Forwarded Message -----
From: New Development Review Project Notices <listserv@civicplus.com>
To: karsny@yahoo.com
Sent: Thursday, October 19, 2017 11:18 AM
Subject: New Newsflash 24 St. Lawrence Street For cp-stcity2.civicplus.com




PORT
ARCHITE

Portland Maine | Yes. Google's good here.

Jennifer Munson <jmy@portlandmaine.gov>

11/7/2017 Week - Efforts for Saving Munjoy Hill Neighorhood

Karen Snyder <karsny@yahoo.com> Tue, Nov 7, 2017 at 8:02 AM
Reply-To: Karen Snyder <karsny@yahoo.com>
To: Mary Casale <dirtgirl1@aol.com>, Douglas Martica <tica1529@gmail.com>, "Maggy W." <mswnola@gmail.com>, Pa Ag <pagopian1@yahoo.com>, Pamela Day <pday2304@gmail.com>, Pam Macomber <pam@ninestonesspa.com>, Barbara Vestal <vestal@chesterandvestal.com>, Ian Jacob <iancasperjacob@gmail.com>, Rob Whitten <rob@whittenarchitects.com>, Berry Manter <berrymanter@yahoo.com>, Peter Macomber <pbm@macomber.com>, Carol and Richard Stillwell <rstillwell@maine.rr.com>, Peter Murray <pmurray@gwi.net>, Jayne Hurley <jhurley@cspinet.org>, Stacy Mitchell <stacy.ilsr@gmail.com>
Cc: Jmy <jmy@portlandmaine.gov>

Hi All,

Since all of you were either at the Neighborhood Meetings for 25 Monument and/or 24 St. Lawrence last week, you realized that not one of us surrounding property owners was happy with both or either proposed development designs.

We ALL need to be consistent and voice our opinions to the city this week the following ways:

Action #1: Please send email to City-Planning Board/Planning Dept regarding 25 Monument and/or 24 St. Lawrence Neighborhood meeting (separate emails if you do both)

Send to: planningboard@portlandmaine.gov, jlevine@portlandmaine.gov, sgo@portlandmaine.gov; jmy@portlandmaine.gov
Copy: Anyone you wish and if you want Councilor Belinda Ray bsr@portlandmaine.gov

Action #2: Attend and voice your concern at the District 1 Meeting this Wedensday, 11/8/2017 at 6:30pm at East End Community School
- Please voice your concern at this meeting.

Action #3: Please send this email to anyone else you know that needs to get involved with this. The more of us Munjoy Hill property owners/tenants that group together to voice our concern, the more they will take notice.

If there are any questions, concerns or issues, please do not hesitate to contact me.

Regards,
Karen Snyder
72 Waterville

Google Groups

24 Saint Lawrence Street

Katherine Collins <collins.katherine.m@gmail.com> Nov 15, 2017 10:53 PM
Posted in group: **Planning Board**

Dear Elizabeth, Sean, David, Brandon, Carol, Maggie, and Lisa,

First of all, thank you for taking the time to sit on the planning board for this great city! It takes a team of dedicated and thoughtful individuals to successfully mange the growth and development of a community.

My letter is specifically in regard to the development planned for 24 Saint Lawrence Street.

As a member of the Munjoy Hill community for the past 10 years, it has been exciting to experience the revitalization of the hill in so many ways. As someone who lives and works in the city, I have felt so fortunate to be a part of such a beautiful and engaging neighborhood.

Something that continues to be concerning, however, is a trend away from multi-family units and houses towards luxury condos. It is no secret that the city, like many burgeoning cities across the country, is experiencing a housing crisis. During my tenure in Portland, I have lived in 7 separate apartments in the East End, all within a ½ mile radius. The first two bedroom I rented was $700 with heat included. Two bedroom apartments now, in the same area, have sky rocketed to $1500 or more within a decade. I see the affects of this first hand as someone who's job involves helping others secure housing. I scour craigslist regularly and with each month that passes it becomes harder and harder to find affordable housing in the city. A one-bedroom apartment is often over $1,000 and well beyond what is reasonable for the wages most Portlanders earn.

I understand, of course, that rents will naturally increase as communities develop and make space to include more individuals, however, this rapid expansion has many negative implications for the city as a whole.

- Part of what makes Portland charming and attractive is that it is accessible. It lends itself to being a small city that has the amenities of a big city while feeling like a neighborhood because it is made up of people who both work and live here. It's life blood is the lobstermen, restaurant workers, social workers, teachers, and hospitality workers who commute by foot or public transit to most of their places of employment. This is only possible while Portland retains its affordability, which it is already at risk of shedding. As a social worker myself, I brace myself with each move wondering if this will be the time that I cannot afford to stay in the city. And thankfully through much diligence I have found a handful of property owners committed to keeping Portland affordable. I've had at least two property owners say that they specifically want to keep the city economically diverse and try to manage their rent so that individuals with lower incomes can afford to live here, but that possibility is quickly dissolving. The more we allow luxury condos into the city the sooner we resign ourselves to losing our identify as a city as it will necessarily be filled by wealthy investors from away.

- With each new condo that goes up in residential neighborhoods, several other homes lose sunlight and "breathing room." This is especially true for the planned structure at 24 Saint Lawrence St. The potential new

building would be stories higher than the buildings surrounding it, blocking the light considerably and affecting the quality of life for those who live on either end.

- Additionally, the proposed architectural plan is massively out of sync with the character of the street and neighborhood as a whole. In the rendering, the building looks foolishly out of place. There are many opportunities to build new, efficient structures that fit the aesthetic of the neighborhood while still adding a modern flair, such as the Avesta buildings in the center of Munjoy Hill. Filling an entire lot with a condo building completely eliminates one of the reasons the neighborhood and city is so attractive: opportunity to utilize outside space.

For these reasons, please reconsider the approval of tearing down 24 Saint Lawrence Street in favor of a four-story luxury condo building.

Thank you for your time,

Katherine Collins

proud resident of Munjoy Hill!

PC8

Google Groups

Fwd: 24 Saint Lawrence Street Condo Project

Kelly Williams <kellyamaine@gmail.com> Oct 23, 2017 1:00 PM
Posted in group: **Planning Board**

Sent from my iPhone

Begin forwarded message:

From: Kelly <kellyamaine@gmail.com>
Date: October 23, 2017 at 12:13:25 PM EDT
To: "planningboard@portlandmainegov.com" <planningboard@portlandmainegov.com>
Cc: bsr@portlandmaine.gov, Will W <will@hrpmanagement.com>, William Savage <wsavage@acorn-engineering.com>
Subject: 24 Saint Lawrence Street Condo Project

Dear Planning Board members,

We are in receipt of Karen Snyder's email to your board and would like to clarify a few points.

We have lived at 24 St. Lawrence Street since 2004 and our daughter attended Portland Public schools. Prior to that we lived on Vesper Street and two other homes on the West End. If our development moves forward we will still be living at the property and returning one additional unit as a rental. So we are not reducing housing stock but rather adding it, at the same time with 6 car parking on site we would be reducing the number of cars parking on our street. Originally we looked into making changes to the existing building but found it not to be cost effective or meet our desired needs in the future, as we get older.

I wonder who exactly Ms Snyder is referencing when she speaks of local people? Our neighbor whom she is referring to is at 28 St. Lawrence Street, a two unit owned by an out of state owner with a New York address. They are not happy about losing some of their views and have made it clear to us that they would try to block us from moving forward before we even had any drawings or plans done. On the other hand, I AM the local person. I lived on Elmwood Street as a child and attended a local school that is no longer there. My father worked at Westbrook College when it was there and at UMPG before it became USM. We shopped for school clothes at Levinsky's and I remember the pool on the Hill. I am from "here".

As for Ms. Snyder's comments on modern architecture, I would guess that most people would find 118 Congress (end of our street) and 9-11 St. Lawrence Street to be much more modern design than ours. Almost behind our house sits Peter Bass's 3 unit building on Waterville, another building neighbors said didn't fit, but our neighbor Rob Whitten spoke out in their behalf during that time.

In terms of scale and fitting in with the neighborhood - you can see all over the hill there are new buildings- including on the next street, probably less than 500 feet away is 31 Fore Street, which our neighbors did not object to. We feel it is a " not in my backyard" push. 118 Congress Street, a 12 unit, was said to be too large for the space, but there it sits at the end of our street. There are other buildings on St. Lawrence Street that are comparable size to ours.
29, almost across the street is 6160 sq ft
47 (6 unit) 5659 sq ft
57 (7 unit). 9600 sq ft
65 (6 unit) 7040
On every street on the Hill there is a mix of large and small buildings, pitched roof, flat roof, new, old, single family, condo.....

My husband and I have worked hard for everything we have and have invested what is a lot of money to us, into this project.

In closing, this is our home, has been our home, and we want to continue to live here. So I

agree with Ms. Snyder, if preference is given (and again,we are not asking for any changes or variances- only want the same zoning rules that are being applied to other development in this area) it should be given to locals not people moving here that feel entitled to change the rules for their benefit. We greatly appreciate your taking the time to read this and for your consideration on this. Sincerely. Kelly and Will Williams

Sent from my iPad

PC9

Google Groups

Re: 24 St. Lawrence Street Neighborhood Meeting

Lynn Hallett <lhallett@townandshore.com> Nov 7, 2017 9:07 AM

Posted in group: **Planning Board**

Hello All,

I attended the neighborhood meeting regarding the proposed project at 24 St. Lawrence Street held last week at the East End school. This meeting was well-attended by neighbors from throughout the Munjoy Hill neighborhood. All those in attendance voiced deep concerns about the scope and aesthetics of the proposed project at 24 St. Lawrence.

Although the proposal fits within the guidelines set forth by the R-6 zoning rules, the building would be an aberration in terms of aesthetics, size and density. The proposed building would be roughly three times the square footage of the existing house. The number of inhabitants and vehicles would also increase by three-fold, at a minimum. The design of the proposed building is frankly offensive, as the street-side facade is a wall with small-scale windows and there is an absence of design elements that reflect the neighborhood's traditional lines.

This is a small and close neighborhood, and it is a quiet side street. It is a lovely mix of historic and 'modern' buildings. I will note that I live at 9 Saint Lawrence Street, which was constructed along with #11 in 2015. Although the style of my house may not be to everyone's taste, it is an architect's design that blends minimalist, modern aesthetics with traditional New England elements. The roofline and dimensions of the building are reflective of the colonial-style 'New Englanders' that line this street. The volume and occupancy of #'s 9-11 are consistent with the building that was formerly on the site.

Perhaps it is time to re-visit the decision to make the changes to the R-6 zone that have given rise to this hyper-development. It is my impression that these changes were intended to stimulate the construction of affordable housing.

As a realtor, I am a proponent of development. I am also cognizant of the fact that we must only approve development that is not detrimental to the quality of life in our City.

Thank you for your consideration of my thoughts and views.

Regards,
Lynn Hallett

--

LYNN HALLETT

Associate Broker / Owner

Town & Shore Associates, LLC

One Union Wharf

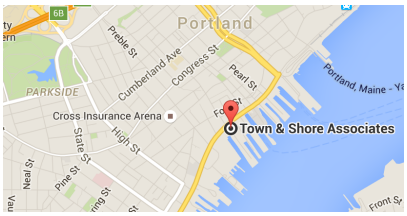
Portland, Maine 04101

c. 207-671-8187

lhallett@townandshore.com

www.townandshore.com

#1 Office In Sales Volume On Portland's Peninsula for 2016!



Google Groups

24 Saint Lawrence project

Maggy W <mswnola@gmail.com> Jan 4, 2018 9:40 AM
Posted in group: **Planning Board**

To City of Portland Planning Board.

I live at 28 Saint Lawrence Street, which abuts the 24 St. Lawrence Street property which is the site of the proposed project. I am very concerned about the proposed development at #24 for several reasons and request that the Planning Board deny site approval for the project as it is currently proposed.

1 - Primarily, it seems that the developer has ignored the rules delineated in the City's Design Manual in Appendix 7, the Design Principles listed in Section II, and the Alternative Design Review in Section IV.

"*Special attention shall be given to the existing buildings on both sides of the street within the block of the proposed site*."

And this: "*The Planning Authority may request that consideration be made of buildings in the neighborhood that are comparable in size, scale and use to that which is being proposed, or that consideration be made of the characteristics of buildings which were originally designed for a similar use to that which is proposed. The Planning Authority may determine other considerations that shall be made of the proposed building in relation to the neighborhood, due to unique characteristics of a given site.*"

Even the Alternative Design Review described in Section IV uses the same language above as well as the following:

"The guiding principle for new construction under the alternative design review is to be compatible with the
surrounding buildings in a two block radius, in size, scale, materials and siting, as well as the general character of the established neighborhood."

The proportions of the proposed building are hugely out of scale with the neighboring buildings, dwarfing them and robbing them of their own character. The "big box" design reflects none of the characteristics of the neighboring houses. This building will stick out not only in the streetscape up and down St. Lawrence Street but also from Waterville Street and

in the view of Munjoy Hill from the harbor, from where we currently see a harmonious pattern of houses stepping up the hill.

2. Historic character - . Many of the houses on the slope down to Fore Street pre-date the Great Fire of 1866 and are older even than most of the buildings in the Old Port; visitors to our city are very interested by this aspect of our unique neighborhood. If the Williams replace their 1850 house with something that is comparable in scale, at least we will preserve the historic character of the rest of the street. The proposed building will interrupt the existing roof lines and stick out like a sore thumb on the Munjoy Hill streetscape.

3. Loss of daylight - their proposed height would dwarf the building where I reside, although we are uphill from the proposed development. Currently the houses on the hill reflect the slope, with a gradual step up the incline of Saint Lawrence Street, allowing each uphill house to have a bit of daylight and "breathing room". The proposed building at 24 is designed to use the maximum height and minimum set-backs allowed by the zoning land use. This would mean that my 2nd floor apartment will be looking out on what amounts to an air-shaft with no view of the sky.

4. Retaining walls - currently the lots on this section of Munjoy Hill fit together like a jigsaw puzzle with interlocking retaining walls. If one of these walls collapses, there is a great risk that others will be compromised as well. There is a retaining wall separating the property at 28 Saint Lawrence from the proposed building, which if undermined in any way, could lead to serious damage to the 19th century house at #28.

For these reasons the proposed project should not receive site plan approval. In addition, as the Planning Board considers any possible redevelopment of this site, the following steps should be taken.

A. An elevation survey should be done prior to submittal of site plans. The renderings show that the rear lot has been elevated up to the level of the uphill retaining wall, which may lead to an erroneous average grade calculation. The current elevation of that parcel, which is 3-4 feet lower than the retaining wall should be used for height calculations.

B. An engineering study should be done of the areas of the site near retaining walls and no proposal should be considered that does not guarantee that those walls and neighboring properties will not be displaced or damaged.

I plan to attend any hearings scheduled on this application and to submit additional information for the Planning Board to consider in ruling on it. Please keep me advised of all filings in this case and of any workshops or hearings .

Sincerely,

Maggy Wolf

28 Saint Lawrence St, Apt 2

Portland, ME

Google Groups

24 St. Lawrence St.

Martica S. Douglas <mdouglas@dougden.com> Jan 8, 2018 1:26 PM
Posted in group: **Planning Board**

To City of Portland Planning Board:

As a 40+ year resident of Munjoy Hill, I write to ask the Board to deny approval of site plan for the project proposed for 24 St. Lawrence St. This building is an affront to residents of the street and the neighborhood.

The City's Design Manual states that an applicant has a "public responsibility to add to and enhance the neighborhood." The fact that the neighbors are up in arms over this proposal reflects the fact that the project not only would not enhance the neighborhood- it would despoil it.

The Manual requires an applicant to demonstrate that the proposal is consistent with five distinct "Design Principles." [App. 7, Section I: Purpose] The proposed design must be consistent with all five principles even under the Alternative Design Review, which states:

> **The guiding principle for new construction under the alternative design review is to be compatible with the surrounding buildings in a two block radius in terms of size, scale, materials and siting, as well as the general character of the established neighborhood, thus Standards A-1 through A-3 shall be met.**

PRINCIPLE A relates to "Overall Context" and states:

> **A BUILDING DESIGN SHALL CONTRIBUTE TO AND BE COMPATIBLE WITH THE PREDOMINANT CHARACTER-DEFINING ARCHITECTURAL FEATURES OF THE NEIGHBORHOOD.**

Standards A-1, A-2, and A-3 identify the key components of Principle A as scale and form, composition of principal facades, and relationship to the street. Special attention must be given to the existing streetscape on both side of the street within the block of the proposed site. The proposed building is big box that dwarfs and crowds the neighboring buildings- like a big bully on the block to whom the rules do not apply.

PRINCIPLE B relates to “Massing” and states:

THE MASSING OF THE BUILDING REFLECTS AND REINFORCES THE TRADITIONAL BUILDING CHARACTER OF THE NEIGHBORHOOD THROUGH A WELL COMPOSED FORM, SHAPE AND VOLUME.

The explanatory note states**: “**Massing is a significant factor that contributes to the character of a building. The building’s massing (as defined by its bulk, size, physical volume, scale, shape and form) should be harmonious with the massing of existing buildings in a two block radius.” Again, the proposed building dwarfs and crowds the neighboring buildings- to say that its massing is harmonious is preposterous.

PRINCIPLE C relates to “Orientation to the Street” and states:

THE BUILDING’S FAÇADE SHALL REINFORCE A SENSE OF THE PUBLIC REALM OF THE SIDEWALK WHILE PROVIDING A SENSE OF TRANSITION INTO THE PRIVATE REALM OF THE HOME.

This building has no transition space, no clearly articulated street entrance, no porch, no stoop, no recessed entry- nothing to enhance pedestrian friendliness or the sociability of the streetscape. As originally designed, the building is dead to the street, presenting the neighbors with two stairwells and an elevator shaft.

PRINCIPLE D relates to “Proportion and Scale” and states:

BUILDING PROPORTIONS MUST BE HARMONIOUS AND INDIVIDUAL BUILDING ELEMENTS SHALL BE HUMAN SCALED.

PRINCIPLE E relates to “Balance” and states:

THE BUILDING’S FAÇADE ELEMENTS MUST CREATE A SENSE OF BALANCE BY EMPLOYING LOCAL OR OVERALL SYMMETRY AND BY APPROPRIATE ALIGNMENT OF BUILDING FORMS, FEATURES AND ELEMENTS.

This building is just a giant box designed in accordance with an entirely different “Principle:” hogging every square inch to maximize sellable living space. There is nothing balanced or harmonious about the proposed building.

Aesthetics have been entirely sacrificed to this Principle, as has respect for the neighbors and the neighborhood. No effort has been made to accommodate the needs of the immediate neighbors for space and sunlight.

Again, an applicant must demonstrate that the proposed design is consistent with all five of the above principles under both standards of review set forth in the manual. The applicant cannot make this showing with the project as proposed.

For the sake of the neighborhood and the neighbors, I ask that you deny approval for the proposed site plan.

Thank you for considering my views.

Tica Douglas

11 Munjoy St.

Google Groups

Re: 24 St. Lawrence St.- proposed 5 condo project

me <jmy@portlandmaine.gov> Dec 4, 2017 8:23 AM
Posted in group: **Planning Board**

Good Morning,

Thank you for your e-mail. Your public comment will be included in the review and will become part of the public record.

If you have any further questions, please contact me.

Jennifer Munson, Office Manager
Planning and Urban Development Department
4th Floor, 389 Congress Street
Portland, ME 04101
Phone: (207)874-8719
Email: planningboard@portlandmaine.gov

On Saturday, December 2, 2017 at 4:24:27 PM UTC-5, Martica S. Douglas wrote:

> Dear Planning Board:
>
> I write to urge you to deny the pending application to tear down the 2-family house at 24 St. Lawrence St. and put up a 5-condo complex. The proposed building is grossly disproportionate to the surrounding buildings—it's like a bully on the block- elbowing the neighbors on both sides out of its way- towering over them, encroaching on their space- stealing their sunlight. It's destructive of neighborhood integrity and ignores unique neighborhood characteristics, both of which have consistently been identified as important values in Portland's planning documents, including, e.g. the Eastern Waterfront Master Plan and the 2017 Comprehensive Plan. It's also just plain ugly.
>
> At one of the neighborhood meetings even owner Will Williamson admitted that the proposed building was "not the greatest looking building." Its "design" is clearly dictated solely by maximizing dollars. It turns its back on the street. Stairwells and an elevator shaft are presented street-side.
>
> I suggest that in the course of reviewing this project you all walk up St. Lawrence street. It's a beautiful street- the houses are mostly 19th century—most have small yards, front steps, and respect their neighbors' space and light and air. There are also a few newer buildings that integrate well into the existing architectural fabric. I understand that not all older buildings can or should be preserved-- some are not in good condition- others may have little historic value- but new buildings should bear some correspondence to the height and mass of the surrounding buildings.
>
> Please send these folks back to the drawing board with a directive to reduce the number of units to 3; to have the building face the street so that passers-by can see signs of life, and to incorporate design features that relate to the other buildings on the street.
>
> Thank you for your time and attention.

Tica Douglas

11 Munjoy St.

PC12

Martica Sawin
Fitch House LLC
28 St. Lawrence Street
Portland, ME 04101

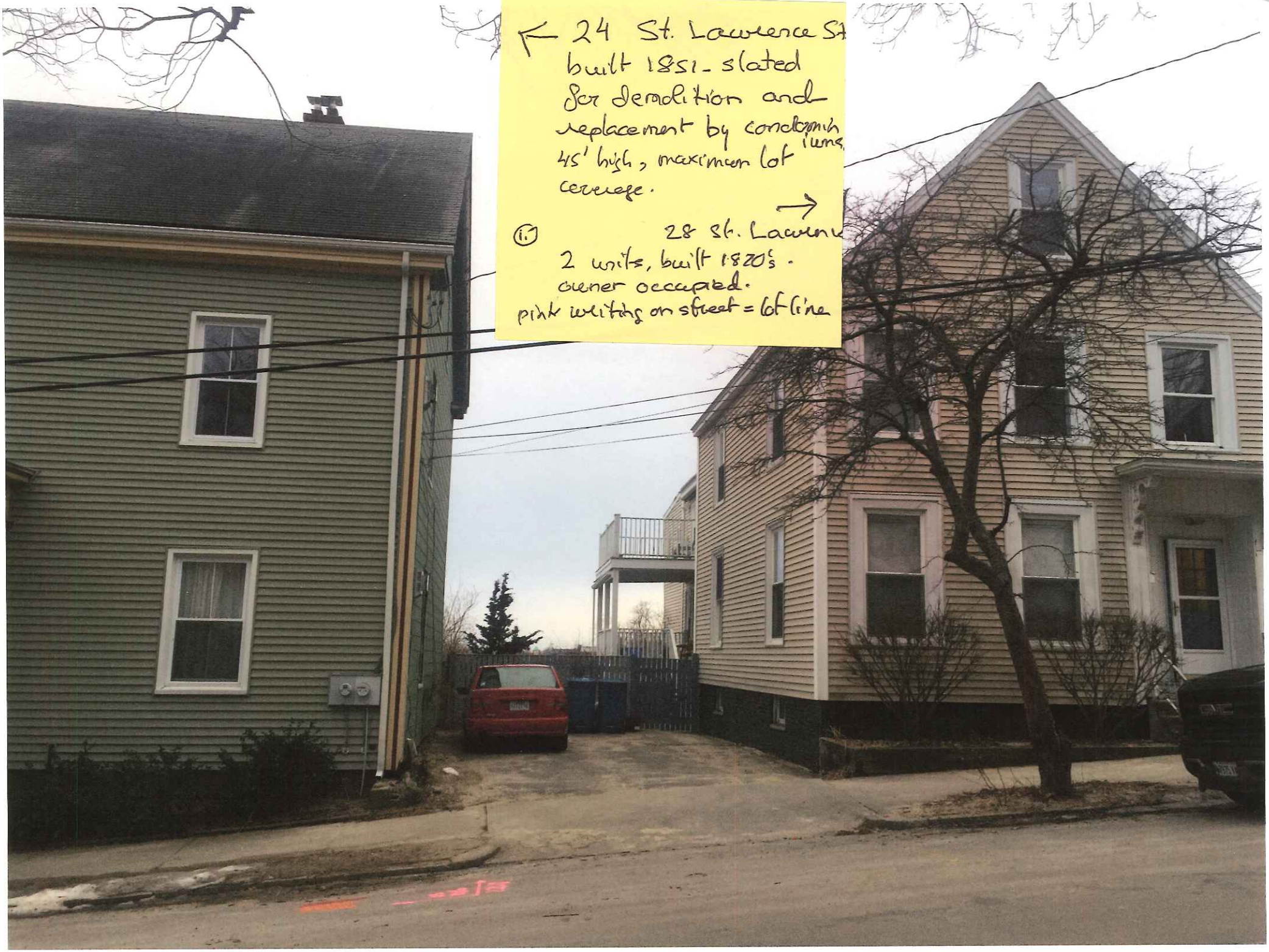
February 23, 2018

To: City of Portland Planning Board
Re: Application ID# 2017-242

I have previously written to the Planning Board regarding plans filed with the city to demolish the 2 - unit building #24 St. Lawrence Street and replace it with a 45' high 6 condominium building. As the closest abutter, at 28 St. Lawrence, there are numerous ways in which my property will be negatively affected, but my most immediate concern is the proposed removal of a 30' concrete retaining wall along the boundary between #24 and #28, built in 1973 by the previous owners of #28 and long considered to be on their property. Removal would result in the collapse of one yard into another and on-going problems with erosion and run-off. Enclosed are recent photographs that may clarify my earlier written explanation of the necessity of keeping this wall in place.

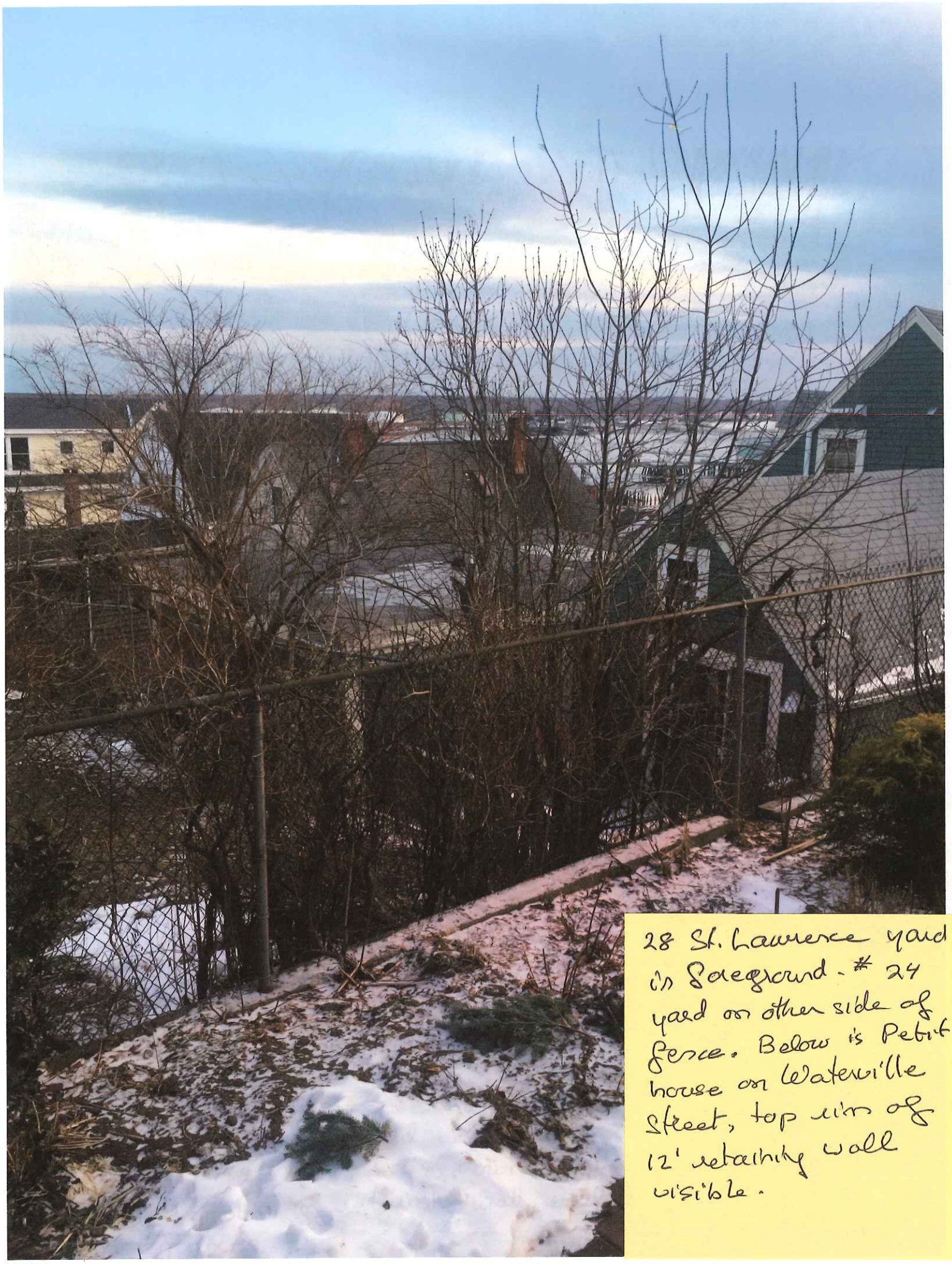
Thank you for your consideration.

Martica Sawin


← 24 St. Lawrence St
built 1851 - slated
for demolition and
replacement by condominium
45' high, maximum lot
coverage.
→ 28 St. Lawrence
2 units, built 1820's.
owner occupied.
pink writing on street = lot line



24 St. Lawrence Street, northwest corner, fence + concrete wall built in 1973 by previous owners of 28 St. Lawrence on land always assumed to be part of #28 lot. Fence runs 30', imbedded in concrete wall ranging from 30" to 48", above ground height.



28 St. Lawrence yard is foreground. # 24 yard on other side of fence. Below is Petit house on Waterville Street, top rim of 12' retaining wall visible.

PLAN NOTES:

1) THE OWNER OF RECORD IS FITCH HOUSE, LLC.

2) THE DEED OF RECORD IS RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN BOOK 23732 PAGE 44.

3) THE CADASTRAL REFERENCE IS CITY OF PORTLAND TAX MAP 18 BLOCK J LOT 5.

4) THE PARCEL DOES NOT FALL IN A "SPECIAL FLOOD HAZARD AREA" PER F.E.M.A. SEE COMMUNITY #230051 PANEL #0014B, EFFECTIVE DATE JULY 17, 1986.

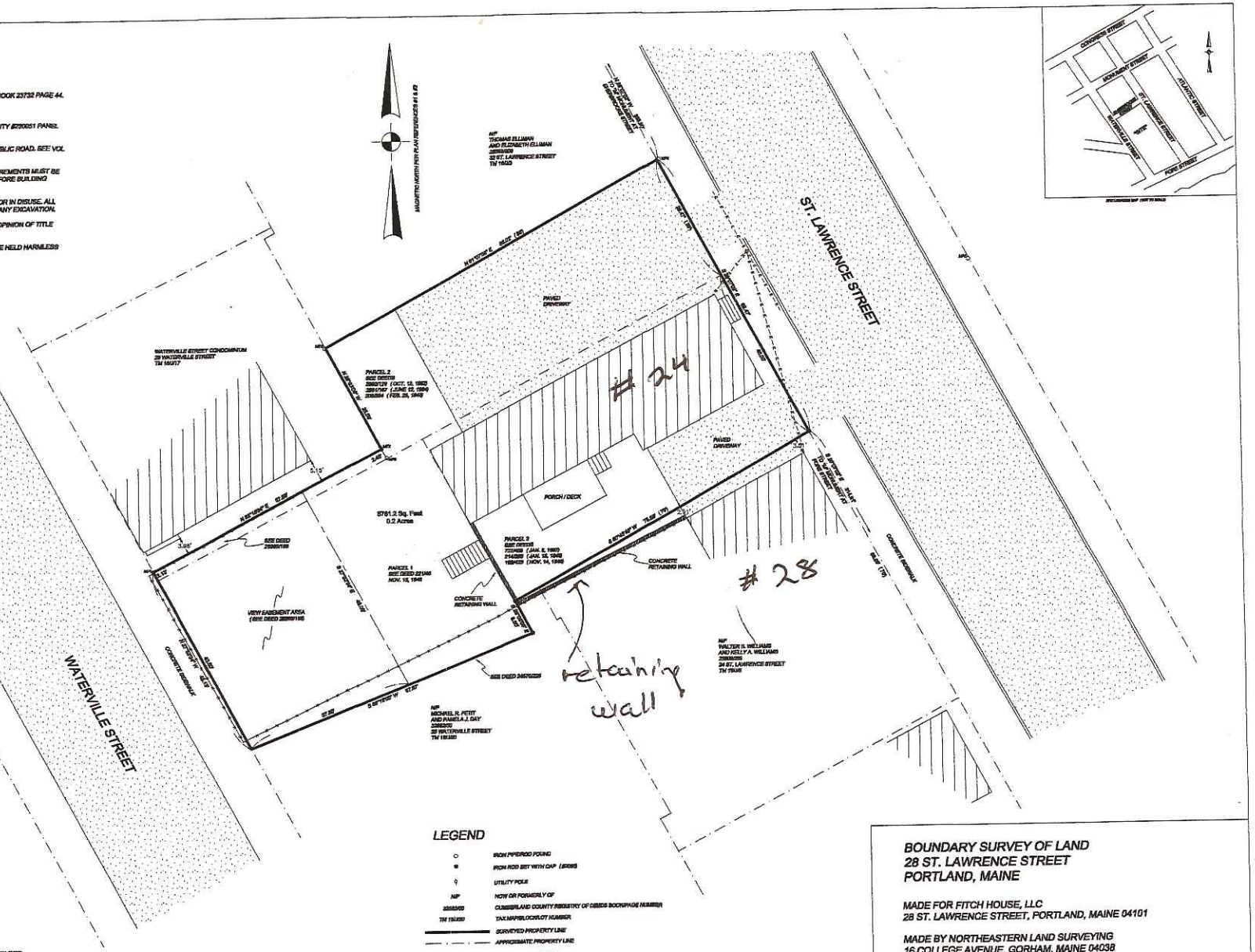
5) WATERVILLE STREET ST. IS A 50' WIDE PUBLIC ROAD. ST. LAWRENCE STREET IS A 50' WIDE PUBLIC ROAD. SEE VOL #1 PG. 79 ACCEPTED OCTOBER 14, 1946.

6) ZONING: THE PARCEL IS IN THE "R-6" ZONE. AN OFFICIAL ZONING DETERMINATION AND REQUIREMENTS MUST BE OBTAINED FROM THE CITY OF PORTLAND AND ALL OTHER APPLICABLE REGULATORY BODIES BEFORE BUILDING IMPROVEMENTS OR CONVEYING LAND OR INTEREST.

8) UTILITY LOCATION SHOWN IS APPROXIMATE. THIS PLAN MAY NOT SHOW ALL UTILITIES USED OR IN DISUSE. ALL APPROPRIATE OFFICES AND THE "DIGSAFE" PROGRAM SHOULD BE CONTACTED BEFORE DOING ANY EXCAVATION.

10) THIS PLAN IS NOT INTENDED TO DEPICT LIMITS OR EXTENTS OF FEE TITLE OWNERSHIP. AN OPINION OF TITLE SHOULD BE RENDERED BY AN ATTORNEY.

10) NORTHEASTERN LAND SURVEYING AND THE SIGNING SURVEYOR RESERVE THE RIGHT TO BE HELD HARMLESS FROM ALL THIRD PARTY CLAIMS.



PLAN REFERENCES:

1) "BOUNDARY SURVEY AT 28 LAWRENCE STREET, PORTLAND, MAINE MADE FOR FITCH HOUSE, LLC" BY OWEN HASKELL, INC. AND DATED JULY 6, 2006. UNRECORDED.

2) "CONDOMINIUM PLAT AND BOUNDARY SURVEY, THE GOOD YELLOW HOUSE CONDOMINIUM AT 18 ST. LAWRENCE STREET, PORTLAND, MAINE" BY BACK BAY BOUNDARY AND DATED OCTOBER 6, 2006. RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN PLAN BOOK 208 PAGE 808.

3) "CONDOMINIUM PLAT, WATERVILLE CONDOMINIUM, 29 WATERVILLE STREET, PORTLAND, MAINE" BY OWEN HASKELL AND DATED MARCH 20, 2008. RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN PLAN BOOK 210 PAGE 387.

4) "BOUNDARY AND TOPOGRAPHIC SURVEY AT 24 ST. LAWRENCE STREET, PORTLAND, MAINE. MADE FOR RECORD OWNER WALTER S. & KELLY A. WILLIAMS" BY OWEN HASKELL AND DATED NOVEMBER 30, 2016. UNRECORDED.

LEGEND

- IRON PIPE/ROD FOUND
- IRON ROD SET WITH CAP (ES#)
- UTILITY POLE
- MP — NOW OR FORMERLY OF
- 2839/200 — CUMBERLAND COUNTY REGISTRY OF DEEDS BOOK/PAGE NUMBER
- TM 18/J/22 — TAX MAP/BLOCK/LOT NUMBER
- SURVEYED PROPERTY LINE
- APPROXIMATE PROPERTY LINE
- EXISTING WOOD FENCE
- VIEW EASEMENT BOUNDARY
- EXISTING CHAIN LINK FENCE
- OVERHEAD UTILITY LINE
- BITUMINOUS PAVEMENT
- EXISTING BUILDINGS

MONUMENTATION FOUND
(FIELD EVIDENCE)

MF1) IRON ROD 1" TALL
MF2) IRON ROD W/CAP "OWEN HASKELL #1252"
MF3) IRON ROD W/CAP "WAYNE WOOD #1328"
MF4) 1.5" IRON PIPE 2" BELOW GRADE
MF5) NAIL W/DISC "OWEN HASKELL #1252"
MF6) 1" IRON PIPE 16" BELOW GRADE

BOUNDARY SURVEY OF LAND
28 ST. LAWRENCE STREET
PORTLAND, MAINE

MADE FOR FITCH HOUSE, LLC
28 ST. LAWRENCE STREET, PORTLAND, MAINE 04101

MADE BY NORTHEASTERN LAND SURVEYING
16 COLLEGE AVENUE, GORHAM, MAINE 04038

FEBRUARY 6, 2017 JOB #17-006 SHEET 1 OF 1

SCALE 1" = 10'

0' 10' 20' 30'

QUALIFIED SEAL
(PLAN NOT VALID WITHOUT)

2nd SEAL

STATE OF MAINE
EUGENE SCHLEH
1252
REGISTERED
LAND SURVEYOR

I HEREBY STATE TO FITCH HOUSE, LLC ALONE AND EXCLUSIVE OF ALL THIRD PARTIES, THAT TO THE BEST OF MY KNOWLEDGE, INFORMATION AND BELIEF, THIS PLAN SUBSTANTIALLY CONFORMS WITH THE MAINE BOARD OF LICENSURE FOR PROFESSIONAL LAND SURVEYORS RULES EFFECTIVE APRIL 1, 2001

EUGENE SCHLEH PLS #1252

COPYRIGHT 2017 NORTHEASTERN LAND SURVEYING
ALL RIGHTS RESERVED

Google Groups

Application ID#2017-242

Martica Sawin <m.sawin@verizon.net> Oct 24, 2017 12:18 PM
Posted in group: **Planning Board**

To: planningboard@portlandmaine.gov
regarding Application ID# 2017-24

This letter is in response to the application to build a four-story building at 24 St. Lawrence Street. I am the sole owner of Fitch House LLC at 28 St. Lawrence Street, a 2 unit building, ca. 1875, which directly abuts the site in question. (16-J-5) The proposal to demolish the building at 24 St. Lawrence Street and to replace it by a building of twice the bulk and an additional story in height has serious consequences for my property. I had acquired the property in 2006 with intention of building a demonstration solar-powered house on the urban renewal lot (25-27 Waterville Street) attached to the original house lot. Although the 1975 deed stated "for purposes of urban renewal," permission to build on that lot was denied by the zoning administrator. In the existing house there has been a tenant in the first floor apartment since 2007 and since 2013 the second floor has been occupied by my widowed daughter.

When the tenant's lease expired on Oct. 1, 2017 I began minor renovations to make the first floor apartment handicapped accessible so I could move into it myself. I am 88 years old and have degenerative spinal stenosis and am looking forward to living in it as my retirement home. The proposed new building will effectively block the sunlight from the first floor and considerably darken the second floor, porch and side-yard garden. In addition I and my tenant will be subjected to many months of noise, dust and debris from demolition and construction ten feet from our windows. Plans made with Revision Energy for solar panels on the roof will have to be cancelled. According to a current appraisal, the blocking out of the prospect from this hillside site will result in a considerable loss in property value.

Just as disconcerting as the personal loss is the disregard for St. Lawrence Street itself, a tree-lined residential street of largely later 19th century buildings of fairly similar proportions (with the exception of recent construction at the corners of Congress and Fore Streets).
The Williams luxury condominium project is drastically out of scale and would be an intrusive presence on one of the streets that give Portland its distinctive character.

The recent changes in the R6 zoning regulations fail to take into account the neighborhood impact of so much potential new construction. Clearly modifications and additional provisions are called for if the intended purpose of zoning and planning is to be observed.

Submitted by Martica Sawin, Fitch House LLC
28 St. Lawrence Street, Portland, ME 04101

Google Groups

ID#2017-24 Proposed construction at 24 St. Lawrence Street

Martica Sawin <m.sawin@verizon.net> Dec 5, 2017 11:34 AM

Posted in group: **Planning Board**

Boundary and Retaining Wall Problems at #24 St. Lawrence Street (owner Kelly and Walter Williams) and #28 St. Lawrence Street (owner Fitch House LLC, sole proprietor Martica Sawin.)

Having examined the site plan for the proposed construction at #24 St. Lawrence Street and met with the project manager for the new building, I would like to bring the following to the attention of the Portland Planning Board:

The existing 2 family building at 24 St. Lawrence Street stands part way down the slope followed by St.Lawrence Street as it runs from Congress Street to Fore Street. The 2 unit building on the abutting property, 28 St. Lawrence Street, stands up hill from #24, separated by a 10' wide parking area near the street, then by a concrete retaining wall running 33' west along the property line . Frederick and Lorraine Ruminski purchased #28 St. Lawrence Street in 1967. In 1973 they constructed a reinforced concrete retaining wall where there was a sharp drop-off between the two properties due to the ledge and boulders that run along the entire ridge. A chain-link fence was embedded in this wall. The wall starts at the northwest corner of the Williams' house and runs west 33', increasing in height from 30" to 44" (not including the buried portion) During the intervening 44 years the concrete retaining wall was accepted as part of the #28 lot. Now, however, the Williams' plans as filed include removing the retaining wall. Due to the slope of the land removal of the wall would have serious consequences for both properties and would result in the collapse of the yard at #28 into the yard at #24, subsequent continuous downward pressure of soil, water, and shifting boulders and a threat to the stability of the foundation of the #28 building.

In 2006 the Ruminski property was purchased by Fitch House L.L.C. At this time Fitch House L.L.C. commissioned a boundary survey from John Schwanda of Owen Haskell, Surveyors. On July 6, 2006, Owen Haskell Inc. submitted a "report of survey." It included the following paragraph:

"The deed descriptions for this lot are vague. It appears that very little, if any, surveying was done on any of these lots. The Portland Renewal Authority bought and later sold some of these lots. It appears that little surveying was done at that time and the deed vagueness was perpetuated." On the accompanying map several "possible deed lines" are indicated.

Obviously before any demolition can start, ownership of the retaining wall should be resolved. More important the consequences of its removal as shown in the site plan need to be taken into consideration
and measures for remediation stipulated, along with appropriate waivers of liability for #28.

Thank you for your consideration.

Martica Sawin
28 St. Lawrence Street
Portland, ME 04101

October 24, 2017

RE: Application ID# 2017-242

City of Portland Planning Board:

We have received notice from the City of Portland Planning Division regarding the site plan application of Kelly and Walter Williams to build a four-story building for five residential condominiums at 24 St. Lawrence Street.

We are writing to voice our concerns and opposition to this project. We believe such a structure poses a threat to the safety and authenticity of several abutting properties, including our own at 25 Waterville Street. Approximately 80' feet border directly on the property to be developed. The area is defined by two steep hills which drain directly onto our property including a rock wall that separates 24 St. Lawrence and 25 Waterville Street. We believe the stability of the wall would be seriously jeopardized by such a large undertaking, moving earth, foundations, drilling, etc. While the wall appears secure in its current usage, we do not think it could withstand heavy construction within feet of it.

The wall rests a few inches from a portion of our home and if it collapsed it would surely plunge into our house. Further, any damage to the wall would require an intervention from Waterville Street which is currently inaccessible because of a unique stone 2 car garage which fronts the street and completely blocks access to the rear. We anticipate that the cost of repairing the wall, should it collapse, would be very high. This, in addition to possible harm to people living here and existing structures, is of great concern.

In reviewing the documents, we have not seen reference to an engineer's assessment of the stability of the wall and surrounding property. Clearly, such an assessment by a neutral party will be essential before any further actions are taken.

In addition to these critical safety concerns, it is important to note that the proposed project would replace an historic home and that the surrounding homes are also historic and well maintained, as opposed to "tear downs." In view of the historic nature of the neighborhood, we believe that the size and scope of the proposed project is ***contrary*** to several key elements of the City of Portland Comprehensive Plan, including:

- Maintaining and enhancing the integrity of our neighborhoods.
- Stabilizing and enhancing historic areas of the city by ensuring quality investment in existing structures and compatible infill development.
- Promoting historic preservation as a key economic, sustainability and community development strategy.
- Ensuring an appropriate balance of continuity and change as Portland grows and evolves.

We are including one photo of the wall and will send additional photos shortly. We urge members of the Planning Board and staff to visit the development site and to evaluate for themselves the precarious nature of the wall and the lack of fit between this proposed building and the surrounding neighborhood.

Please keep us apprised of all developments.

Sincerely,

Michael Petit and Pamela Day
25 Waterville Street
Portland 04101
207-229-4372; Mpetit417@gmail.com
207-461-1461; Pday2304@gmail.com



Google Groups

RE: Application ID# 2017-242

Pamela Day <pday2304@gmail.com> Jan 3, 2018 11:25 AM
Posted in group: **Planning Board**

City of Portland Planning Board:

We are writing to voice our continued concerns and opposition to the site plan application of Kelly and Walter Williams to build a four-story building for five residential condominiums at 24 St. Lawrence Street.

As noted in our letter of October 24, 2017, the proposed structure raises serious concerns about the security and safety of several abutting properties, including our own at 25 Waterville Street. Our immediate personal concern is that a 15' high stone retaining wall between our two properties could collapse during construction activities near the boundary, damaging our home. This could result in physical harm to individuals and a cost likely in six figures to rebuild the wall. We are including an additional photo of the retaining wall for your reference.

We also oppose the scale, mass and form of the proposed structure and the negative impact such a structure would have on this neighborhood of single and dual-family homes.

Please inform us of all meetings regarding this application. We plan to appear at hearings and to present additional information at that time.

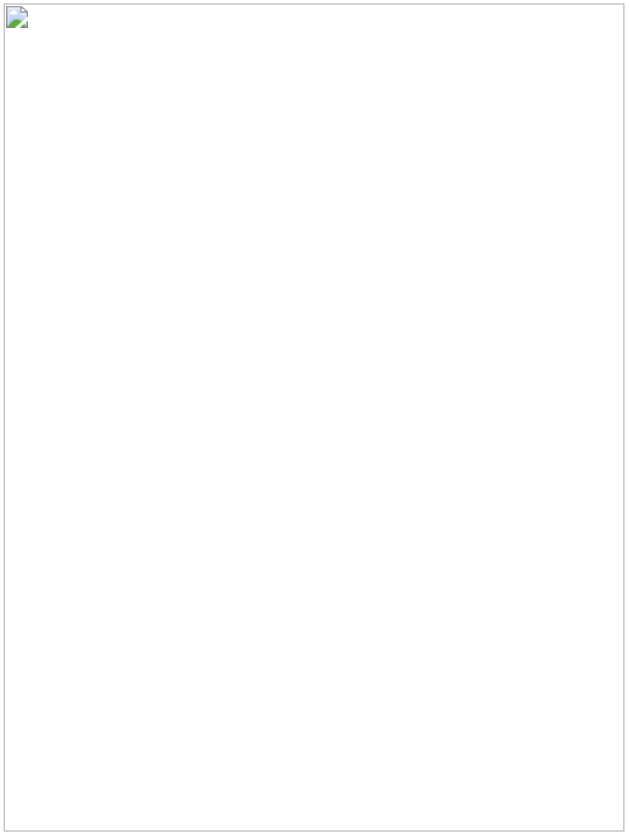
Thank you for your attention to this matter.

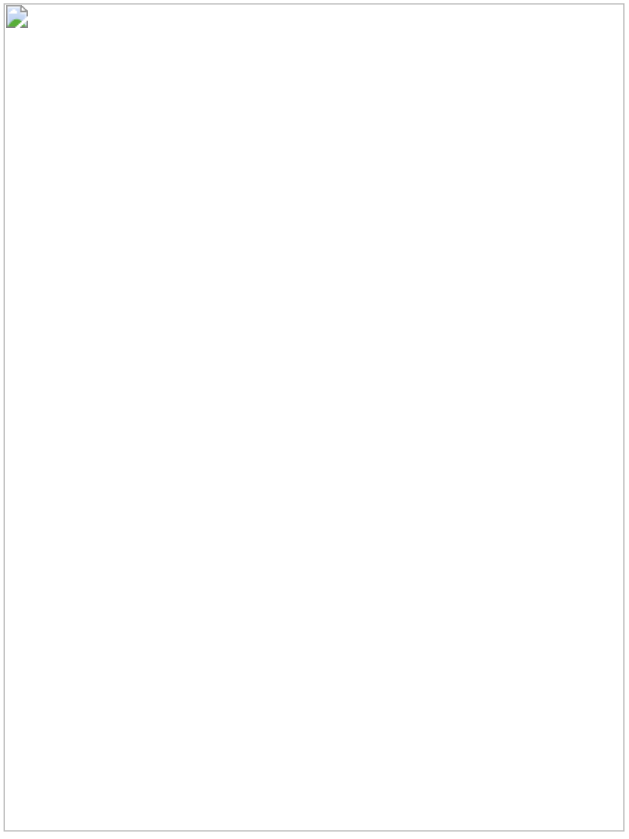
Sincerely,

Michael Petit and Pamela Day
25 Waterville Street
Portland 04101
207-229-4372; Mpetit417@gmail.com
207-461-1461; Pday2304@gmail.com



Retaining wall between 25 Waterville Street and 24 St. Lawrence Street







January 22, 2018

Re: Application ID# 2017-242

City of Portland Planning Board:

We are writing to provide additional information regarding the retaining walls between 24 St. Lawrence Street and our properties at 25 Waterville Street and 28 St. Lawrence Street, and to reiterate our opposition to the proposed project. As described in our previous correspondence, these retaining walls provide critical protection to both of our properties and are at risk because of the proposed construction. We are attaching engineering reports from Casco Bay Engineering and Summit Geoengineering Services. The reports raise questions and concerns regarding the proposed project and discuss potential impacts and other factors that need to be addressed by the applicant.

We ask that the Planning Board require the applicant to do the following:

- Prepare and submit a plan to address these questions and concerns, including a complete engineering study to determine whether the proposed structure can be safely constructed along our boundaries and under what conditions it would be safe to build, if at all.
- Guarantee that there will be no damage to our properties from the building itself, the weight of the building to be added to the lot, or related construction activities.
- Develop a written agreement that clearly states how the applicant will remedy any damage that does occur to the walls and adjacent properties.
- Obtain a bond to secure their guarantee.

Thank you for your attention to our concerns.

Respectfully,

Pamela Day and Michael Petit
25 Waterville Street
Portland 04101
Pday2304@gmail.com

Martica Sawin
(sole owner, Fitch House, LLC)
28 St. Lawrence Street
Portland 04101
m.sawin@verizon.net

CASCO BAY ENGINEERING

CIVIL & STRUCTURAL ENGINEERING
www.cascobayengineering.com

424 Fore St., Portland, ME 04101 Phone 207.842.2800 Fax 207.842.2828

January 18, 2018

Ms. Pamela Day
25 Waterville Street
Portland, ME 04101

Martica Sawin
28 St. Lawrence Street
Portland, ME 04101

Re: Existing Stone/Concrete Retaining Wall Observation
25 Waterville Street and 28 St. Lawrence Street, Portland, Maine

Project Number: 18-003

Dear Pamela and Martica:

Eric Dube, P.E. of Casco Bay Engineering made a site visit to observe the existing retaining wall at the above referenced property on January 3, 2017. The purpose of the field visit was to observe the condition of the existing retaining wall and to render an opinion.

The existing retaining wall is comprised of variable types and sized stone with some concrete mixed in and also has some areas that are comprised of concrete. The depth of the wall into the existing earth is unknown at this time. The wall is approximately 80 feet long along the 25 Waterville Street property line, directly behind the existing building(s), the wall has a 90 degree jog for approximately 5 feet and then extends another 40 feet behind the 28 St. Lawrence Street property. The wall travels in the Southeast to Northwest direction and varies in height from approximately 8 feet high to 15 feet high directly behind the rear buildings. There are multiple 4 inch tile foundation drain stubs that extend through the wall. It is unknown if there is a drain line that exists behind the wall that potentially provides appropriate drainage relief. The wall is approximately 12 to 18 inches behind the rear building wall at 25 Waterville Street and the wall supports the rear building wall at 28 St. Lawrence Street. The retaining wall appears to be in adequate condition at this time.

I understand that a new 4 to 5 story building is planned to be constructed directly adjacent to the existing rear retaining wall within the next year and you both have specific concerns with regards to the performance of the wall during and after construction. The preliminary site application shows a location of the proposed building but does not give specific foundation details for the proposed construction. The proposed foundation design for the new building is a crucial design factor and will most likely impact the existing stone retaining wall. The following comments discuss possible impacts and other factors that need to be addressed before and/or during the adjacent construction:

1. The depth and proximity of the excavation will most likely impact the wall and needs to be thoroughly planned before the start of construction.
2. The depth of the proposed concrete foundation could impact the existing wall in a negative way if the influence line of the proposed footing is not located below the existing stone wall.

3. If vibratory equipment, pile driving or other similar type equipment is used during the proposed adjacent construction this could negatively impact the structural integrity of the existing retaining wall.
4. If existing tile drains behind the wall are impacted during construction this could negatively impact the future performance of the existing stone retaining wall.
5. Other miscellaneous impacts during construction may be unforeseen and may lead to ongoing future impacts to the existing retaining wall.

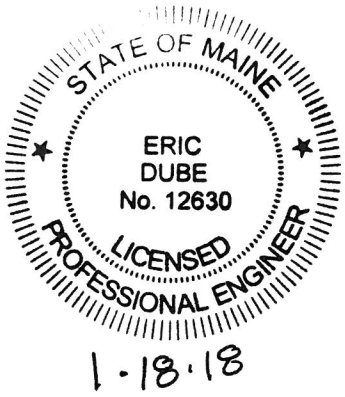
In my professional opinion, prior to any groundbreaking on this project, the developer of the 24 St. Lawrence property should prepare and submit a plan to address the above noted concerns. In addition I recommend that you should have a written agreement in place that clearly states what will happen if any damage occurs either during or after construction. Possible damages to property such as, but not limited to, could be a partial or total collapse of the wall or damage to the adjacent existing structure(s). Please also note that photo documentation and a survey of the existing wall before adjacent construction starts is highly recommended.

Please note that our observations and recommendations should be understood in the context that they are preliminary in nature. The retaining wall structure was not analyzed. Our report is based on visual observations only and should any unforeseen conditions present themselves, our conclusions may change accordingly.

Please let us know if you have any questions.

Sincerely,

Eric Dube, P.E.
Casco Bay Engineering



1·18·18

SUMMIT
GEOENGINEERING SERVICES

November 6, 2017
SGS #17329

Rob Whitten
23 St Lawrence Street
Portland, Maine 04101

Reference: Retaining Wall Evaluation, 23 to 25 Waterville Street, Portland, Maine

Dear Mr. Whitten;

Summit Geoengineering Services (SGS) has completed our evaluation of the existing retaining wall located at the back or north side of the 25 Waterville Street property. The following letter is a summary of our observations and evaluations.

Existing Conditions

The portion of the wall evaluated extends from the northwest corner of the 25 Waterville Street (Tax Map G10SE Lots 016 J020 and 016 J021) to the southeast corner. For the purposes of this report the wall in the northwest corner of the site will be referred to as the western section and the wall section in the southeast corner of the property will be referred to as the eastern section.

The existing wall is separated into three construction types. The eastern portion (first portion) of the wall consists of cast in place concrete. The exposed portion of this wall was about 4.5 feet high. The exposed concrete was in good condition and no cracks or tilting was observed. It is not clear how far this portion of the wall extends below grade. Stacked rock and soil fill was present to a height of 7 feet below the exposed face of this wall section.

The second wall portion (middle section) located directly behind the house is a segment about 21 feet long and consists of a 4.5 feet tall wall over what appears to be a cast in place concrete wall approximately 2 feet thick. The 2 foot thick concrete wall abuts the back of the existing house and appears to extend to the ground surface on the southeast side of the house. This section of wall was not fully accessible. The eastern 15 feet of the upper 4.5 foot wall appears to be cast in place concrete, similar to the eastern portion of the wall. The last 7 feet of this segment consists of a rock wall. The rocks appear to be dry laid with no mortar. A concrete cap has been placed on the dry laid rock section.

The third segment (eastern portion) of the wall consists of a rock and mortar wall with a cast in place concrete cap. The wall extends up 11.5 feet from the surface of a raised bed. The

bed height is about 3 feet. The base of the wall is unknown, but we expect that the wall extends below the bottom of the raised bed. There are a significant number of various size pipes penetrating this wall. The sources of water flowing through these pipes is unknown. The wall appears to have been repointed recently. There is a small crack located in the concrete cap at about the halfway point on this wall. The crack in the cap appears to extend a short distance into the rock and mortar wall. This wall is in good condition overall.

Evaluation

The eastern or first portion of the cast in place concrete wall section is in good condition. This wall is nearly plumb and no cracks or significant deterioration were observed. The thickness, total height, and embedment depth of this wall is not known. This wall appears to be stable in its current condition.

The wall section behind the house (second portion) was not fully accessible and could not be fully evaluated. The eastern 15 or so feet of this wall appears to be cast in place concrete extending from the first wall portion. The concrete appears to be in good condition and overall this section of wall appears to be stable. The last 7 feet of this segment consists of dry laid rocks (no mortar). This wall segment also appears to be stable in its current condition. The underlying 2 foot thick concrete wall was inaccessible.

The eastern wall section is in good condition. There does not appear to be any unstable or structurally unsound portions. In general it is stable in its current condition.

In summary, the existing retaining wall is composed of varying materials and is of varying geometry's and heights. All three wall segments appear to be in good condition for their age and we have no concerns about their overall stability under the current conditions.

Recommendations

We understand that a new multi-story residential building will be constructed on the lot at 24 St Lawrence. The subject retaining wall forms or is close to the back property line of this lot. The two items that could affect the stability of the existing wall are loadings from new wall footings and loads and disturbance from activities during construction of the new building. Of particular concern is the section of dry laid rocks behind the existing house. Construction loadings, vibrations, impacts, and other construction activities may have a significant effect on the condition and stability of the existing wall. Failure of this section of wall will cause significant damage to the adjacent property, especially the existing back wall of the house.

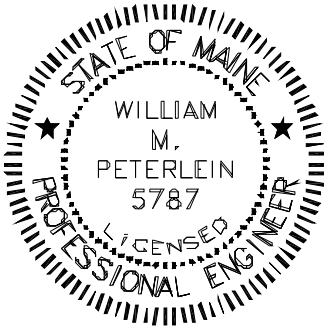
We strongly recommend that the developer of the 24 St. Lawrence Street lot retain the services of a geotechnical consultant to do a more thorough evaluation of the existing retaining wall and evaluate the effects of new building loads and construction activities on

its condition and stability. Information on the composition of the soil behind the existing wall should be obtained as part of this investigation. This investigation should be completed prior to the beginning of construction of the new development.

If there are any questions, please contact me.

Respectfully Submitted,
Summit Geoengineering Services, Inc.

William M. Peterlein, P.E.
President & Principal Engineer



SUMMIT
GEOENGINEERING SERVICES

PHOTOGRAPHIC LOG

Project Name:	**Project No.**
Retaining Wall Evaluation, 25 Waterville Street, Portland	17239

Photo No. 1

Date: 11-1-2017

Description:

Existing wall on the western side of the house at 25 Waterville Street.



Photo No. 2

Date: 11-1-2017

Description:

Wall section directly behind house. Note the rocks of the wall in the foreground appear to be loosely placed (no mortar).



SUMMIT
GEOENGINEERING SERVICES

PHOTOGRAPHIC LOG

Project Name:	**Project No.**
Retaining Wall Evaluation, 25 Waterville Street, Portland	17239

Photo No. 3

Date: 11-1-2017

Description:

Eastern section of wall on the 25 Waterveille Street property.

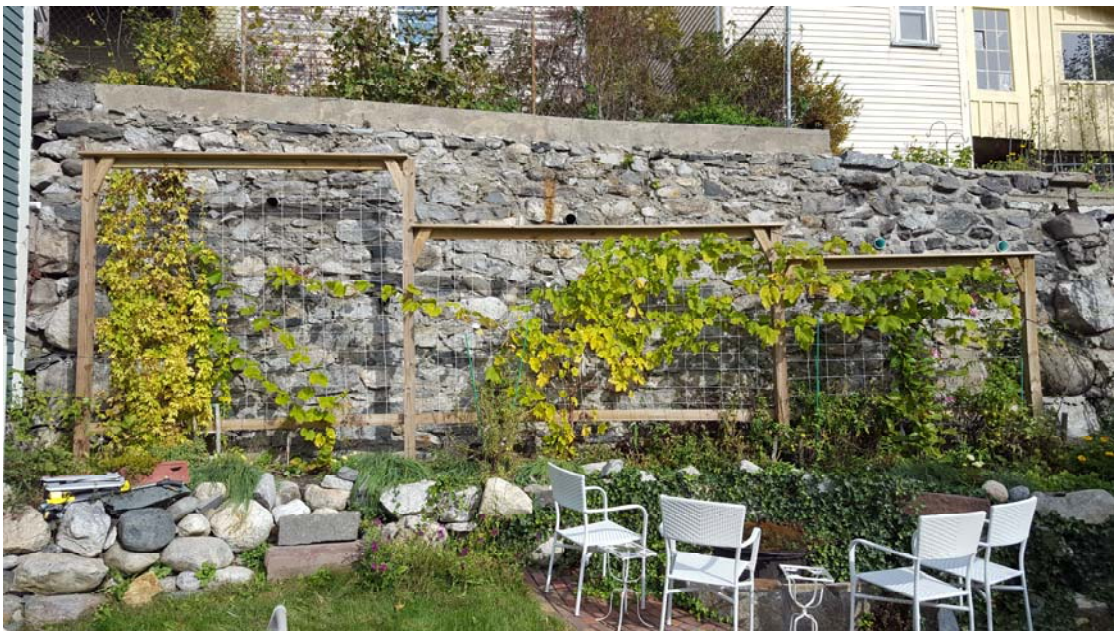
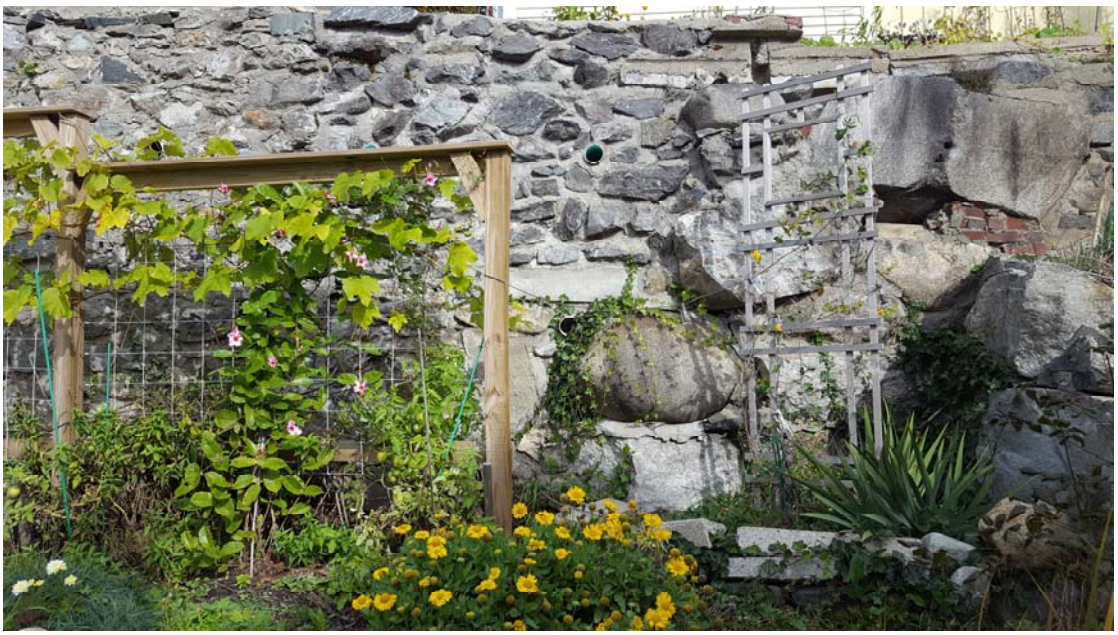


Photo No. 4

Date: 11-1-2017

Description:

Eastern section of wall partially on 25 Waterville property and partially on the adjacent property.



PC14

Google Groups

Fwd: 24 St. Lawrence Street

Shukria Wiar <shukriaw@portlandmaine.gov> Jan 9, 2018 9:09 AM
Posted in group: **Planning Board**

---------- Forwarded message ----------
From: **Rob Whitten** <rob@whittenarchitects.com>
Date: Mon, Jan 8, 2018 at 7:49 PM
Subject: Re: 24 St. Lawrence Street
To: Caitlin Cameron <CCameron@portlandmaine.gov>, "Wiar, Shukria" <shukriaw@portlandmaine.gov>
Cc: "Levine, Jeff" <jlevine@portlandmaine.gov>

To Shukria Wiar, Caitlin Cameron, the Portland Planning Department, and members of the Portland Planning Board,

My wife, Robin F. Whitten, and I are are long term residents, property owners, business owners, and Portland neighbors at 23 St. Lawrence Street. I am a trained, qualified, Maine registered architect who specializes in residential design.

We are strongly opposed and are writing in opposition to the proposed 24 St. Lawrence Street Redevelopment submitted by HR Property Management.

The proposed Redevelopment of 24 St. Lawrence Street does not comply with the City of Portland Design Manual, the design requirements for small residential lot development proposed in the R6 Zone, and Appendix 7 including !V. Alternate Design Review. I did attend the Neighborhood Meeting about 24 St. Lawrence on November 2 at the East End School and expressed my concerns at that meeting; and we have expressed our concerns to the Williams, the owners of 24 St. Lawrence Street.

With respect to the first three Principals of Appendix 7 and the proposed 24 St. Lawrence Street Redevelopment:

Principal A; Overall Context: "To a large degree, the scale, mass, orientation, and articulation of an infill building should be compatible with the buildings that surround it.

1. Scale and Form:
Existing: the existing structure at 24 St. Lawrence and the surrounding homes are 2 story brick and frame structures with pitched roofs of less than 3000 square feet of space.
Proposed: the Redevelopment is a 4 story structure, with a flat roof and a total building area of 8951 square feet of space **-185% increase of footprint, 311% increase of scale and mass, no defining architectural features of the neighborhood.**
2. Composition of Principal Facades:
Existing: the existing structure at 24 St. Lawrence and the surrounding homes have 2 story facades w/ distinct trim, eaves, and rakes; they have 2:1 proportion windows approximately 2.5' wide to 5' high; a centrally located, protected entries, facades of brick, shingle, clapboard with contrasting trim.
Proposed: the Redevelopment windows are 1:1 or 4:1 proportions, the cornice and first floor band are 2 to 4 times wider than surrounding homes. **- 4 story facade, with no windows at street level.**
3. Relationship to the street:
Existing: the existing structure at 24 St. Lawrence and the surrounding homes have equal and evenly spaced yards between neighboring structures, the principal facades face the street with windows and occupied living areas on the street.
Proposed: the Redevelopment street level is a parking garage entry, an elevator core, two stairwells and egress corridors - **no living spaces on the street, no defining architectural features of the neighborhood.**

Principal B; Massing: " The massing of the building reflects and reinforces the traditional building character of the neighborhood through a well composed form, shape and volume."

B-1 Massing:

Existing: the existing structure at 24 St. Lawrence and the surrounding homes are 2 story brick and frame structures with pitched roofs of less than 3000 square feet of space.
Proposed: the Redevelopment is a 4 story structure, a total building area of 8951 square feet of space **-185% increase of footprint, 311% increase of bulk, size, physical volume, scale, and flat form.**
B-2 Roof Forms:
Existing: the existing structure at 24 St. Lawrence and the surrounding homes are 2 story brick and frame structures with pitched roofs that contribute and are compatible with the predominate character-defining architectural features of the neighborhood.
Proposed: The Redevelopment has a flat roof on the street side, flat roofs on the side yards visible from the street - **no pitch roof compatible with the predominate character-defining architectural features of the neighborhood.**
B-3 Main Roofs and Subsidiary Roofs:
Existing: the existing structure at 24 St. Lawrence and the surrounding homes are 2 story brick and frame structures with pitched Main roofs, subsidiary pitched ell roofs, and subsidiary pitched dormers.
Proposed: The Redevelopment has a flat roof on the street side, flat roofs on the side yard visible from the street - **no clear main roof form.**
B-4 Roof Pitch:
Existing: the existing structure at 24 St. Lawrence and the surrounding homes are 2 story brick and frame structures with pitched roofs that vary from 7:12 to 12:12; the slope of the roof is either parallel or perpendicular to the street.
Proposed: The Redevelopment has a flat roof on the street side, flat roofs on the side yard visible from the street - **all flat roofs with no pitch.**
B-5 Facade Articulation:
Existing: the existing structure at 24 St. Lawrence and the surrounding homes have gables and dormers, recessed entries, covered porches, covered entries, covered stoops, bay windows.
Proposed: The Redevelopment has a recessed entry, two projecting stairwells, and protected garage entry **-no dormers, no gables, no bay windows.**
B-6 Garages:
Existing: the existing structure at 24 St. Lawrence and three of the surrounding homes have garages.
Proposed: The Redevelopment does have a recessed garage entry, living space above the garage, the garage door is less than 40% of the width of the building.

Principal C; Orientation to the Street: “The building’s facade shall reinforces a sense of the public realm of the sidewalk while providing a sense of transition into the private realm of the home.” "Design of dwellings can enhance the pedestrian friendliness and sociability of the street while protecting the privacy of the residents’ internal home life."

Existing: the existing structure at 24 St. Lawrence Street and the surrounding homes have entrances from central halls that lead to living spaces on the street level. The existing facades, windows and and first floor living levels include the occupants and neighbors in an active pedestrian and sidewalk experience.
Proposed: the Redevelopment no living spaces in all four levels that face the street. The facade is composed of a central parking entry, a street level garage, an elevator core, and two stair wells **-no living space on the facade, no orientation to the street, no neighborhood participation.**

The 24 St. Lawrence Street Redevelopment project that does not comply with Appendix 7 and the size, scale, and predominant character defining architectural features of the neighborhood.

Please let us know the date of the upcoming Planning Department workshop for the Redevelopment of 24 St. Lawrence Street. I hope the linked images and files help with the Planning Department’s evaluation of the 24 St. Lawrence Street Redevelopment.

Sincerely, Rob.

Rob Whitten / AIA

Whitten Architects
207.774.0111 x101
37 Silver Street
Portland, Maine 04101
www.whittenarchitects.com

https://drive.google.com/open?id=1xuhri-gBRrtVRH7XTLWVMM9A0VxsyWfX

Rob Whitten / AIA

Whitten Architects
207.774.0111 x101
37 Silver Street
Portland, Maine 04101
www.whittenarchitects.com

--

Shukria Wiar, Planner
Planning Division
City of Portland 389 Congress Street
Portland, ME 04101
Ph: 207.756.8083
Fax: 207.756.8258

Google Groups

24 St.Lawrence St, 25 Monument Street

Rob Whitten <rob@whittenarchitects.com> Nov 20, 2017 9:54 AM
Posted in group: **Planning Board**

Hello,

My wife, Robin F. Whitten, and I live at 23 St. Lawrence Street on Munjoy Hill. We are very concerned about the proposed demolition of 24 St. Lawrence Street and 25 Monument Street. Both are viable structures that could be renovated and improved. They are part of the fabric of our neighborhood.

Please include us in the public notification list for the pending Planning Board Workshops for both structures.

Thank you.

Sincerely, Rob.

Rob Whitten / AIA

Whitten Architects
207.774.0111 x101
37 Silver Street
Portland, Maine 04101
www.whittenarchitects.com

ACORN ENGINEERING, INC.

Planning Division
City of Portland, Maine
389 Congress Street, 4th Floor
Portland, ME 04101

October 10, 2017

Subject: Level III Final Site Plan and Subdivision Application
Redevelopment of 24 St. Lawrence Street - Portland, Maine

To Whom It May Concern,

On behalf of Kelly & Walter Williams, we are pleased to submit the accompanying package of submission materials related to the proposed redevelopment of 24 St. Lawrence Street.

This submission package is intended to meet the City's Final Submission requirements as outlined in the Level III Site Plan Application procedures. The proposed project site is located at 24 St. Lawrence Street between Fore Street and Congress Street with the R-6 zone. The lot is currently occupied by a 2,880 square-foot building, containing two single-family units, and a 15 x 20 ft. garage. The property is proposed to be redeveloped into a four-story, five-unit condominium with a six-car parking garage on the ground level.

Along the St. Lawrence Street frontage, the building features several recesses. The setback from the property line ranges from 3.5 feet to 11.9 feet with a weighted average of 7 feet. In comparison, the average setback of the two abutters is 3.7 feet and the required front yard setback in the R-6 zone is 5 feet. Please refer to Site Plan and Section L for more information regarding the zoning standards.

The following documents and drawings will be uploaded onto the City's electronic submission site per the procedure outlined in the application:

<u>Documents:</u>

- Section A: Cover Letter
- Section B: Level III Final Site Plan Application
- Section C: Wastewater Capacity
- Section D: Right. Title, or Interest
- Section E: Financial Capacity
- Section F: Construction Management Report
- Section G: Stormwater Management Report
- Section H: Erosion and Sedimentation Control Report
- Section I: Utilities
- Section J: Solid Waste Disposal
- Section K: Fire Department Letter

- Section L: Conformity with Land Use Ordinance
- Section M: Request for Waivers
- Section N: Summary of Written Easements
- Section O: Architectural Design Narrative
- Section P: Lighting
- Section Q: Parking Analysis

Drawings:

- Civil Site Plan Set, Dated 10/6/2017
- Architectural Plan Set, Dated 10/6/17

Kelly & Walter Williams and the design team look forward to your review of this project and are requesting to be placed on the next available workshop meeting with the Planning Board. If you have any questions regarding these materials or the completeness of the application materials, please contact us within the next five (5) days.

Sincerely,



William H. Savage, P.E.
Principal - Project Manager
Acorn Engineering, Inc.

Level III – Preliminary and Final Site Plans
Development Review Application
Portland, Maine

Planning and Urban Development Department
Planning Division

Portland's Planning and Urban Development Department coordinates the development review process for site plan, subdivision and other applications under the City's Land Use Code. Attached is the application form for a Level III: Preliminary or Final Site Plan. Please note that Portland has delegated review from the State of Maine for reviews under the Site Location of Development Act, Chapter 500 Stormwater Permits, and Traffic Movement Permits.

Level III: Site Plan Development includes:

- New structures with a total floor area of 10,000 sq. ft. or more except in Industrial Zones.
- New structures with a total floor area of 20,000 sq. ft. or more in Industrial Zones.
- New temporary or permanent parking area(s) or paving of existing unpaved parking areas for more than 75 vehicles.
- Building addition(s) with a total floor area of 10,000 sq. ft. or more (cumulatively within a 3 year period) except in Industrial Zones.
- Building addition(s) with a total floor area of 20,000 sq. ft. or more in Industrial Zones.
- A change in the use of a total floor area of 20,000 sq. ft. or more in any existing building (cumulatively within a 3 year period).
- Multiple family development (3 or more dwelling units) or the addition of any additional dwelling unit if subject to subdivision review.
- Any new major or minor auto business in the B-2 or B-5 Zone, or the construction of any new major or minor auto business greater than 10,000 sq. ft. of building area in any other permitted zone.
- Correctional prerelease facilities.
- Park improvements: New structures greater than 10,000 sq. ft. and/or facilities encompassing 20,000 sq. ft. or more (excludes rehabilitation or replacement of existing facilities); new nighttime outdoor lighting of sports, athletic or recreation facilities not previously illuminated.
- Land disturbance of 3 acres or more (includes stripping, grading, grubbing, filling or excavation).

Portland's development review process and requirements are outlined in the Land Use Code (Chapter 14), Design Manual and Technical Manual.

Planning Division
Fourth Floor, City Hall
389 Congress Street
(207) 874-8719
planning@portlandmaine.gov

Office Hours
Monday thru Friday
8:00 a.m. – 4:30 p.m.

I. Project Information (Please enter n/a on those fields that are not applicable)

Project Name:	24 St. Lawrence Street Redevelopment
Proposed Development Address:	24 St. Lawrence Street
Project Description:	Urban infill redevelopment into 4-story building with a parking garage and 5 condo's
Chart/Block/Lot:	16-J-006
Preliminary Plan	N/A
Final Plan	See attached

II. Contact Information (Please enter n/a on those fields that are not applicable)

APPLICANT

Name:	Kelly & Walter Williams
Business Name:	
Address:	24 St. Lawrence Street
City/State:	Portland, ME
Zip Code:	04101
Work #:	(207) 671-1193
Home #:	N/A
Cell #:	N/A
Fax #:	N/A
E-mail:	will@hrpmanagement.com

OWNER

Name:	Kelly & Walter Williams
Address:	24 St. Lawrence Street
City/State:	Portland, ME
Zip Code:	04101
Work #:	(207) 671-1193
Home #:	N/A
Cell #:	N/A
Fax #:	N/A
E-mail:	will@hrpmanagement.com

AGENT/REPRESENTATIVE

Name:	Acorn Engineering, Inc
Address:	P.O. Box 3372
City/State:	Portland, ME
Zip Code:	04104
Work #:	(207) 775-2655
Home #:	N/A
Cell #:	(207) 317-1884
Fax #:	N/A
E-mail:	wsavage@acorn-engineering.com

BILLING (to whom invoices will be forwarded to)

Name:	Kelly & Walter Williams
Address:	24 St. Lawrence Street
City/State:	Portland, ME
Zip Code:	04101
Work #:	(207)671-1193
Home #:	N/A
Cell #:	N/A
Fax #:	N/A
E-mail:	will@hrpmanagement.com

ENGINEER

Name:	Acorn Engineering, Inc
Address:	P.O. Box 3372
City/State:	Portland, ME
Zip Code:	04104
Work #:	(207) 775-2655
Home #:	N/A
Cell #:	(207) 317-1884
Fax #:	N/A
E-mail:	wsavage@acorn-engineering.com

SURVEYOR

Name:	Owen Haskell, Inc, Professional Land Surveyors
Address:	390 U.S. Route One
City/State:	Falmouth, ME
Zip Code:	04105
Work #:	(207) 774-0424
Home #:	N/A
Cell #:	N/A
Fax #:	(207) 774-0511
E-mail:	ohi@owenhaskell.com

ARCHITECT

Name:	Port City Architecture
Address:	65 Newbury Street
City/State:	Portland, ME
Zip Code:	04101
Work #:	(207)761-9000
Home #:	N/A
Cell #:	N/A
Fax #:	N/A
E-mail:	mark@portcityarch.com

ATTORNEY

Name:	Tom Jewell
Address:	477 Congress St.
City/State:	Portland, ME
Zip Code:	04101
Work #:	(207) 774-6665
Home #:	
Cell #:	
Fax #:	
E-mail:	tjewell@jewellandbulger.com

DESIGNATED PERSON(S) FOR UPLOADING INTO e-PLAN

Name:	Alyssa Gartley
E-mail:	agartley@acorn-engineering.com
Name:	Sam Lebel
E-mail:	slebel@acorn-engineering.com
Name:	
E-mail:	

III. APPLICATION FEES

LEVEL III DEVELOPMENT (check applicable review)

☑	Less than 50,000 sq. ft.	$750.00
☐	50,000 – 100,000 sq. ft.	$1,000.00
☐	100,000 – 200,000 sq. ft.	$2,000.00
☐	200,000 – 300,000 sq. ft.	$3,000.00
☐	Over 300,000 sq. ft.	$5,000.00
☐	Parking lots over 100 spaces	$1,000.00
☐	After-the-fact Review	$1,000.00 + applicable application fee above

PLAN AMENDMENTS (check applicable review)

☐	Planning Staff Review	$250.00
☐	Planning Board Review	$500.00

OTHER REVIEWS (check applicable review)

☐	Traffic Movement	$1,500.00
☐	Stormwater Quality	$250.00
☑	Subdivision	$500.00 + applicable fee for lots/units below
	# of Subdivision Lots/Units [5] x $25.00 each	$ 125.00
☐	Site Location	$3,500.00 + applicable fee for lots/units below
	# of Site Location Lots/Units [ ] x $200.00 each	$
☐	Change of Use	
☐	Flood Plain	
☐	Shoreland	
☐	Design Review	
☐	Housing Replacement	
☐	Historic Preservation	
	TOTAL APPLICATION FEE DUE:	$ 1,375.00

IV. FEES ASSESSED AND INVOICED SEPARATELY

- Notices to abutters (receipt of application, workshop and public hearing meetings) ($.75 each)
- Legal Ad in the Newspaper (% of total ad)
- Planning Review ($52.00 hour)
- Legal Review ($75.00 hour)
- Third Party Review (all outside reviews or analysis, eg. Traffic/Peer Engineer, are the responsibility of the applicant and will be assessed and billed separately)

V. PROJECT DATA (Please enter n/a on those fields that are not applicable)

TOTAL AREA OF SITE	4,671	sq. ft.
PROPOSED DISTURBED AREA OF THE SITE	4,250	sq. ft.
If the proposed disturbance is greater than one acre, then the applicant shall apply for a Maine Construction General Permit (MCGP) with DEP and a Stormwater Management Permit, Chapter 500, with the City of Portland.		
IMPERVIOUS SURFACE AREA		
Impervious Area (Total Existing)	2,803	sq. ft.
Impervious Area (Total Proposed)	3,346	sq. ft.
Building Ground Floor Area and Total Floor		
Building Footprint (Total Existing)	1,526	sq. ft.
Building Footprint (Total Proposed)	2,823	sq. ft.
Building Floor Area (Total Existing)	2,872	sq. ft.
Building Floor Area (Total Proposed)	8,951	sq. ft.
ZONING		
Existing	R-6 Residential	
Proposed, if applicable		
LAND USE		
Existing	Residential	
Proposed	Residential	
RESIDENTIAL, IF APPLICABLE		
# of Residential Units (Total Existing)	2	
# of Residential Units (Total Proposed)	5	
# of Lots (Total Proposed)	1	
# of Affordable Housing Units (Total Proposed)	0	
PROPOSED BEDROOM MIX		
# of Efficiency Units (Total Proposed)	0	
# of One-Bedroom Units (Total Proposed)	0	
# of Two-Bedroom Units (Total Proposed)	4	
# of Three-Bedroom Units (Total Proposed)	1	
PARKING SPACES		
# of Parking Spaces (Total Existing)	2	
# of Parking Spaces (Total Proposed)	5	
# of Handicapped Spaces (Total Proposed)	1	
BICYCLE PARKING SPACES		
# of Bicycle Spaces (Total Existing)	0	
# of Bicycle Spaces (Total Proposed)	2	
ESTIMATED COST OF THE PROJECT	$2.4 million	

VI. APPLICANT SIGNATURE

By digitally signing the attached document(s), you are signifying your understanding this is a legal document and your electronic signature is considered a ***legal signature*** per Maine state law.

I hereby certify that I am the Owner of record of the named property, or that the owner of record authorizes the proposed work and that I have been authorized by the owner to make this application as his/her authorized agent. I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in this application is issued, I certify that the Planning Authority and Code Enforcement's authorized representative shall have the authority to enter all areas covered by this permit at any reasonable hour to enforce the provisions of the codes applicable to this permit.

This application is for a Level III Site Plan review. **It is not a permit to begin construction. An approved site plan, a** Performance Guarantee, Inspection Fee, **Building Permit, and associated fees will be required prior to construction.** Other Federal, State or local permits may be required prior to construction, which are the responsibility of the applicant to obtain.

Signature of Applicant:	Kelly Wilke
Date:	10-9-17

FINAL PLAN - Level III Site Plan			
Applicant Checklist	Planner Checklist	# of Copies	**GENERAL WRITTEN SUBMISSIONS CHECKLIST (* If applicant chooses to submit a Preliminary Plan, then the * items were submitted for that phase and only updates are required)**
X		1	* Completed Application form
X		1	* Application fees
X		1	* Written description of project
X		1	* Evidence of right, title and interest
N/A		1	* Evidence of state and/or federal permits
X		1	* Written assessment of proposed project's specific compliance with applicable Zoning requirements
X		1	* Summary of existing and/or proposed easements, covenants, public or private rights-of-way, or other burdens on the site
X		1	* Evidence of financial and technical capacity
X		1	Construction Management Plan
N/A		1	A traffic study and other applicable transportation plans in accordance with Section 1 of the technical Manual, where applicable.
N/A		1	Written summary of significant natural features located on the site (Section 14-526 (b) (a))
X		1	Stormwater management plan and stormwater calculations
X		1	Written summary of project's consistency with related city master plans
X		1	Evidence of utility capacity to serve
X		1	Written summary of solid waste generation and proposed management of solid waste
X		1	A code summary referencing NFPA 1 and all Fire Department technical standards
X		1	Where applicable, an assessment of the development's consistency with any applicable design standards contained in Section 14-526 and in City of Portland Design Manual
X		1	Manufacturer's verification that all proposed HVAC and manufacturing equipment meets applicable state and federal emissions requirements.

Applicant Checklist	Planner Checklist	# of Copies	**SITE PLAN SUBMISSIONS CHECKLIST** **(* If applicant chooses to submit a Preliminary Plan, then the * items were submitted for that phase and only updates are required)**
X		1	* Boundary Survey meeting the requirements of Section 13 of the City of Portland's Technical Manual
X		1	**Final Site Plans including the following:**
X		Existing and proposed structures, as applicable, and distance from property line (including location of proposed piers, docks or wharves if in Shoreland Zone);	
X		Existing and proposed structures on parcels abutting site;	
X		All streets and intersections adjacent to the site and any proposed geometric modifications to those streets or intersections;	
X		Location, dimensions and materials of all existing and proposed driveways, vehicle and pedestrian access ways, and bicycle access ways, with corresponding curb lines;	
X		Engineered construction specifications and cross-sectional drawings for all proposed driveways, paved areas, sidewalks;	
X		Location and dimensions of all proposed loading areas including turning templates for applicable design delivery vehicles;	
X		Existing and proposed public transit infrastructure with applicable dimensions and engineering specifications;	
X		Location of existing and proposed vehicle and bicycle parking spaces with applicable dimensional and engineering information;	
N/A		Location of all snow storage areas and/or a snow removal plan;	
N/A		A traffic control plan as detailed in Section 1 of the Technical Manual;	
N/A		Proposed buffers and preservation measures for significant natural features, where applicable, as defined in Section 14-526(b)(1);	
N/A		Location and proposed alteration to any watercourse;	
N/A		A delineation of wetlands boundaries prepared by a qualified professional as detailed in Section 8 of the Technical Manual;	
N/A		Proposed buffers and preservation measures for wetlands;	
X		Existing soil conditions and location of test pits and test borings;	
X		Existing vegetation to be preserved, proposed site landscaping, screening and proposed street trees, as applicable;	
X		A stormwater management and drainage plan, in accordance with Section 5 of the Technical Manual;	
X		Grading plan;	
X		Ground water protection measures;	
X		Existing and proposed sewer mains and connections;	

- Continued on next page -

X		Location of all existing and proposed fire hydrants and a life safety plan in accordance with Section 3 of the Technical Manual;
X		Location, sizing, and directional flows of all existing and proposed utilities within the project site and on all abutting streets;
X		Location and dimensions of off-premises public or publicly accessible infrastructure immediately adjacent to the site;
X		Location and size of all on site solid waste receptacles, including on site storage containers for recyclable materials for any commercial or industrial property;
X		Plans showing the location, ground floor area, floor plans and grade elevations for all buildings;
N/A		A shadow analysis as described in Section 11 of the Technical Manual, if applicable;
X		A note on the plan identifying the Historic Preservation designation and a copy of the Application for Certificate of Appropriateness, if applicable, as specified in Section Article IX, the Historic Preservation Ordinance;
X		Location and dimensions of all existing and proposed HVAC and mechanical equipment and all proposed screening, where applicable;
N/A		An exterior lighting plan in accordance with Section 12 of the Technical Manual;
N/A		A signage plan showing the location, dimensions, height and setback of all existing and proposed signs;
X		Location, dimensions and ownership of easements, public or private rights of way, both existing and proposed.

CITY OF PORTLAND WASTEWATER CAPACITY APPLICATION

Department of Public Services,
55 Portland Street,
Portland, Maine 04101-2991

Date: 10/10/2017

Bradley Roland, P.E.
Water Resources Division

1. Please, Submit Utility, Site, and Locus Plans.

Site Address: 24 St. Lawrence Street

Chart Block Lot Number: 16-J-006

Proposed Use: Residential
Previous Use: Residential
Existing Sanitary Flows: 630 GPD
Existing Process Flows: 0 GPD
Description and location of City sewer that is to receive the proposed building sewer lateral.
18" Brick combined sewer within St. Lawrence to be tapped into with 6" sanitary lateral and 8" storm drain as seen on C-20

Site Category:
- Commercial *(see part 4 below)* ☐
- Industrial *(complete part 5 below)* ☐
- Governmental ☐
- Residential ☑
- Other *(specify)* ☐

Clearly, indicate the proposed connections, on the submitted plans.

2. Please, Submit Contact Information.

City Planner's Name: TBD
Owner/Developer Name: HR Property Management
Owner/Developer Address: 192 State Street, Portland, ME 04101
Phone: (207) 671-1193 Fax: N/A E-mail: will@hrpmanagement.com
Engineering Consultant Name: Acorn Engineering, Inc
Engineering Consultant Address: P.O. Box 3372, Portland, ME 04104
Phone: (207) 775-2655 Fax: N/A E-mail: wsavage@acorn-engineering.com

Note: Consultants and Developers should allow +/- 15 days, for capacity status, prior to Planning Board Review.

3. Please, Submit Domestic Wastewater Design Flow Calculations.

Estimated Domestic Wastewater Flow Generated: 990 GPD
Peaking Factor/ Peak Times: Diurnal Flow pattern
Specify the source of design guidelines: *(i.e.__"Handbook of Subsurface Wastewater Disposal in Maine," __ "Plumbers and Pipe Fitters Calculation Manual," __ Portland Water District Records, Other (specify)* State of Maine Subsurface Wastewater Disposal Rules, Effective 8/13/15

Note: Please submit calculations showing the derivation of your design flows, either on the following page, in the space provided, or attached, as a separate sheet.

4. Please, Submit External Grease Interceptor Calculations.

Total Drainage Fixture Unit (DFU) Values: N/A

Size of External Grease Interceptor: _____

Retention Time: _____

Peaking Factor/ Peak Times: _____

Note: In determining your restaurant process water flows, and the size of your external grease interceptor, please use The Uniform Plumbing Code. Note: In determining the retention time, sixty (60) minutes is the minimum retention time. Note: Please submit detailed calculations showing the derivation of your restaurant process water design flows, and please submit detailed calculations showing the derivation of the size of your external grease interceptor, either in the space provided below, or attached, as a separate sheet.

5. Please, Submit Industrial Process Wastewater Flow Calculations

Estimated Industrial Process Wastewater Flows Generated: N/A GPD

Do you currently hold Federal or State discharge permits? Yes ____ No ____

Is the process wastewater termed categorical under CFR 40? Yes ____ No ____

OSHA Standard Industrial Code (SIC): *(http://www.osha.gov/oshstats/sicser.html)*

Peaking Factor/Peak Process Times: _____

Note: On the submitted plans, please show where the building's domestic sanitary sewer laterals, as well as the building's industrial-commercial process wastewater sewer laterals exits the facility. Also, show where these building sewer laterals enter the city's sewer. Finally, show the location of the wet wells, control manholes, or other access points; and, the locations of filters, strainers, or grease traps.

Note: Please submit detailed calculations showing the derivation of your design flows, either in the space provided, or attached, as a separate sheet.

Calculation of Wastewater Flowrate for 24 St. Lawrence Street Redevelopment

The proposed development will include 5 dwelling units. Based upon the Section 4 of the Maine Subsurface Wastewater Disposal Rules, the project anticipates the following daily flows:

Estimate of Anticipated Daily Flows				
Development	Unit Size	Number of Units	Gallons per Day per Unit	Total Gallons per Day
Existing Flow				
Residential Units	3-Bedroom	1	270	270
Residential Units	4-Bedroom	1	360	360
			Total Gallons per Day (Existing)	630
Proposed Flow				
Residential Units	2-Bedroom	4	180	720
Residential Units	3-Bedroom	1	270	270
			Total Gallons per Day (Proposed)	990
			Net Change	**+360**
*Values based on STATE OF MAINE: SUBSURFACE WASTEWTAER DISPOSAL RULES, most recent edition				

D. Right, Title, or Interest

The record owners of the parcels of interest are Walter S. Williams and Kelly A. Williams as seen in Book 25609, Page 269, Dated October 29, 2007. A copy of the Deed is included in this section.

QUITCLAIM DEED WITH COVENANT

WALTER S. WILLIAMS, of Portland, Maine, for consideration paid, **GRANTS** to **WALTER S. WILLIAMS AND KELLY A. WILLIAMS,** as joint tenants, both with a mailing address of 24 St. Lawrence Street, Portland, Maine 04101, **with Quitclaim Covenants,** a certain lot or parcel of land situated in the City of Portland, County of Cumberland and State of Maine, and more particularly described as follows:

SEE SCHEDULE A ATTACHED HERETO

Meaning and intending and hereby conveying the same premises described in a deed from Ronald E. Goodwin and Wendy Cole Goodwin to Walter S. Williams dated October 20, 2004 recorded in the Cumberland County Registry of Deeds in Book 21919, Page 227. This conveyance is subject to all existing mortgages of record.

IN WITNESS WHEREOF, the said WALTER S. WILLIAMS has signed this instrument on the 29 day of October, 2007.

Signed, Sealed and Delivered
in the presence of

Witness

Walter S. Williams

State of Maine
County of Cumberland

October 29, 2007

Then personally appeared the above named Walter S. Williams and acknowledged the foregoing instrument to be his free act and deed.

Before me,

~~Notary Public~~/Attorney at Law

GARY D. VOGEL

printed name of notary or attorney

SCHEDULE A

A certain lot or parcel of land, with the buildings thereon, situated on the southwesterly side of St. Lawrence Street, in the City of Portland, County of Cumberland and State of Maine, bounded and described as follows:

BEGINNING at a point on the southwesterly side of St. Lawrence Street distant ninety (90) feet northwesterly from the northerly corner of a lot of land formerly owned by John M. Molin, and said point being ten (10) feet southeasterly from the easterly corner of a lot of land conveyed by Julia Parsons to one Fitz E. Sargent by deed dated July 12, 1852 and recorded in the Cumberland County Registry of Deeds in Book 239, Page 252.

THENCE northwesterly by said southwesterly side of St. Lawrence Street seventy (70) feet, more or less, to the easterly corner of a lot of land which said Sargent conveyed to Susan J. Locke by deed dated January 8, 1897 recorded in the said Registry of Deeds in Book 727, Page 459;

THENCE southwesterly by the southeasterly side line of said lot so conveyed to said Locke seventy (70) feet, more or less, to the southerly corner of said lot so conveyed to said Locke;

THENCE southeasterly by the southwesterly line of a certain lot of land conveyed by Joseph Smith to said Fitz E. Sargent by deed dated January 18, 1849 recorded in the said Registry of Deeds in Book 214, Page 263 and by the southwesterly side line of said lot of land conveyed to said Sargent by said Julia Parsons, as aforesaid, fifty-eight (58) feet, more or less, to the southerly corner of said lot of land conveyed to said Fitz E. Sargent by said Julia Parsons.

THENCE southwesterly by the northerly line of a ten (10) foot strip of land conveyed to said Fitz E. Sargent by Moses Gould by deed dated May 22, 1855 recorded in the said Registry of Deeds in Book 264, Page 395 four (4) feet, more or less, to the westerly corner of said ten (10) feet to southerly corner of said ten (10) foot strip;

THENCE southeasterly and parallel with said St. Lawrence Street ten (10) feet to the southerly corner of said ten (10) foot strip;

THENCE northeasterly parallel with and ten (10) feet distant from the southeasterly side line of said lot so conveyed by said Parsons to Sargent seventy-three (73) feet, more or less, to said St. Lawrence Street to the point of beginning.

Received
Recorded Register of Deeds
Nov 09,2007 10:58:08A
Cumberland County
Pamela E. Lovley

Section E

Financial Capacity

Gorham
SAVINGS BANK

October 3, 2017

RE: Walter and Kelly Williams

RE: 24 St. Lawrence Street, Portland

To Whom It May Concern,

Walter and Kelly Williams have been commercial customers here at Gorham Savings Bank since 2005. All their loans have been handled as agreed.

Final approvals are subject to complete a complete application and underwriting of the construction budget, plans and specs. A commitment, subject to all approvals would be issued in writing.

If you have any further questions, I can be reached at 207-222-1495.

Sincerely,

Julie L. Viola
Vice President

10 Wentworth Drive, Gorham, ME 04038 • Tel. (207) 839-3342
Customer Service Center (207) 839-4796 • www.gorhamsavingsbank.com

F. Construction Management Plan

Project Address: 24 St. Lawrence Street

Project Description:

The proposed project includes the development of five condominium units on three floors with a ground level parking garage accessed from St. Lawrence Street. Six parking spaces will be accommodated within the garage.

Project Team Summary:

Owner:	Will and Kelly Williams
General Contractor:	TBD
Civil Engineer:	Acorn Engineering, Inc.
Architect:	Port City Architecture

The Owner/GC and all subcontractors will work with the City of Portland and adjacent landowners to minimize any project impacts.

The GC will remain responsible for enforcement of all compliance with 1) all contract plans and specifications in their scope of work and 2) all site working conditions and safety requirements, day and night, for both persons and property, in each case for the duration of their work. These include OSHA, NIOSH, U.S. EPA, local ordinance and any other applicable governmental regulations. Both the Owner/GC and any subcontractors will remain responsible for safeguarding the general public.

The GC shall review all permits and conditions associated with the project. Refer to the Civil/Site Plan Set, Sheet C-03 Construction Management Plan for visual representation of the measures to be taken during construction.

The following outline has been developed in accordance with the City of Portland Construction Management Plan General Template and shall be referenced by the GC during construction.

A. Construction Management Principles

The control of noise, vibrations, ground movement, truck traffic, and other construction related factors will be of utmost importance. Care shall be taken to minimize these effects in the best interest of neighbors and the general public. GC to ensure that work hours conform to the City of Portland's Ordinance.

B. Development Review of Construction Management Plan

Logistics and safety program shall be submitted at or prior to the preconstruction meeting by the GC with all pertinent information required by the Maine Department of Transportation's Traffic Control Plan Standard Specification 652.3.3.

C. Performance Guarantees, Inspection Fees, Preconstruction Meeting, and Permits

Guarantees and fees will be paid at the time of the respective application. Sections 14-530 and 13-532 will be complied with all necessary permits will be obtained prior to work.

1. Street Opening and Street Occupancy Permits:

   Required permits regarding street opening and occupancy will be obtained from the Department of Public Works. The requests shall conform to the approved Construction Management Plan.

2. Blasting:

   Although not anticipated, if blasting occurs, it shall conform to Article VIII. In Chapter 14 of the City Code and Section 3.7 in the City's Technical Manual.

3. Building Code:

   Employ the best practices, as applicable, of Chapter 33 Safeguards During Construction, from the 2009 International Building Code.

D. Construction Administration and Communication

The Contractor will work closely with adjacent abutters, businesses, and all parties informed, as far in advance as possible, of scheduled work, particularly work anticipated to cause significant noise, vibrations, or dust. Communication in order to comply with all agreements, ordinances, and special permits will be of the utmost importance. Contractor contact information shall be posted on a sign on the construction fence along the St. Lawrence Street frontage. Additional signage necessary for communication shall be provided, but will be temporary and removed upon completion of the project. The contract information for the project personnel (Owner) is:

Walter & Kelly Williams
(207) 671-1193

GC and Subcontractor information will be posted along the St. Lawrence Street frontage once contracted.

E. Construction Schedule

The GC shall submit a construction timeline at or prior to the preconstruction meeting. Construction may occur during the daytime hours as defined in Section 17-18. Construction Activities for Building permit and City Code Section 25-129, Noise, dust and debris. Between September 1 and May 31, the following year, no person shall engage in construction activities generating noise exceeding 50 decibels, between the hours of 7 pm and 7 am of the following day within 500 feet of any buildings. From June 1 to August 31, construction activity may continue until 8 pm. No construction activity shall begin before 8 am on a Saturday, Sunday, or legal holiday. Extended hours or night work may be requested for special circumstances and street utility work if needed. These requests will

be subject to approval by the Public Works Authority.

Due to the limited space within the project parcel, deliveries will need to be stored in an alternate location or deliveries must be small enough to fit within the property. Deliveries will be scheduled between 7 am and 5 pm.

The estimated timeframe of the proposed project is outlined below:

Project Start Date:	Spring 2018
Project End Date:	Fall 2019

F. Security

1. The Construction Management Plan, Sheet C-03, depicts all proposed fencing and other barriers, with the intent of separating pedestrian and vehicle circulation from the construction site. Construction entrances per detail shall be installed.

2. Structures undergoing construction, alteration, or demolition operations, including those in underground locations, shall comply with NFPA 1 Chapter 16. *Safeguarding Construction, Alteration, and Demolition Operations.*

3. Fire Safety Program: Prior to construction, an overall construction and demolition fire safety program shall be developed. Essential items to be emphasized include the following:
    - Good Housekeeping
    - On-site security
    - Installation of new fire protection systems as construction progresses
    - Preservation of existing systems during demolition
    - Organization and training of an on-site fire brigade
    - Development of a pre-fire plan with the local fire department
    - Rapid communication
    - Consideration of special hazards resulting from previous occupancies
    - Protection of existing structures and equipment from exposure fires resulting from construction, alteration, and demolition operations.

4. Blasting, if required, shall conform with all measures of Article VIII. Regulation of Explosives in the Land Use Code and Section 3.7 Standards for Blasting and Regulation of Explosives in Portland's Technical Manual.

5. Temporary security lighting shall be shown on the Construction Management Plan, and all fixtures shall be full cutoffs.

G. Construction Permitting and Traffic Control Plans

1. Construction Activity in Public Streets

    Construction activity in the public right-of-way shall be compliant with Chapter 25 Article VII of the City Code. At no time will it be permissible for construction activity including delivery vehicle to close or block streets or affect public safety access without prior notice an approval of the Department of Public Works.

2. Sewer and Stormwater

   Sewer and stormwater system connections are controlled by Chapters 24 and 32 of the City code of Ordinance. Required permits for new connections and/or abandonment of existing connections are available through the Street Opening Clerk at the Department of Public Works. Rules and Regulations for these utility systems are available through the City Engineer's office of the Department of Public Works and in Section II of the Technical Manual. This will apply to the new connection within St. Lawrence Street.

3. Traffic Control Plans

   Construction activity that impacts the existing public street system must be controlled to protect the safety of the construction workers and all modes of the traveling public. The contractor shall submit a satisfactory "Maintenance of Traffic" (MOT) plan prior to any street opening permit approval. This document shall contain all pertinent information from the Maine Department of Transportation's Traffic Control Plan Standard Specification 652.3.3.

   The MOT will address the work required for utility connections in St. Lawrence Street. Traffic will be channelized utilizing drums and cones. Proper signage will be installed prior to the through work zone. Alternating traffic will be controlled with flaggers. Trenches will be patched with pavement daily.

   The MOT plan shall provide for the safe passage of the public through or along the construction work zone. It may be permissible to close St. Lawrence Street during utility connections and/or detour a mode of traffic when absolutely necessary for safety. All requests shall be subject to City approval. MOT plans shall employ the appropriate techniques and devices as called for in the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD). In addition:

   - Construction speed signing may be used as needed to slow traffic.
   - Traffic Control signs shall not be placed where they would create any obstructions to bicycles or pedestrians.
   - Flaggers will be utilized when necessary.

   All existing modes of travel in the work zone area shall be accommodated if impacted by the activity. The safe passage of pedestrians, bicyclists, transit providers, and motorists are of equal importance when planning and laying out the work zone; no pre-existing travel mode may be eliminated without the express approval of the Department of Public Works. The MOT should also address on-street parking impacts, including deliveries and parking for adjoining businesses and property owners, analysis of roadway capacity or diversion capacity if street closure or change to roadway capacity is required, and coordination with other on-going or future construction or utility projects in the vicinity.

   - Traffic control bicycle and pedestrian facilities or routes through work zones shall be maintained until the bicycle and pedestrian facilities or routes are ready for safe operation. Traffic control will not be removed to allow auto travel at the expense of bicycle and pedestrians.

- Barrier systems utilized to separate the construction activity from the public street and /or sidewalk shall not inhibit sight distances, particularly for visibility of pedestrians and bicyclists.
- ADA compliance in all capacities shall be maintained.

Use of public parking spaces or the blockage of any portion of sidewalk for the purpose of construction activity shall require an occupancy permit and appropriate fee as assessed by the Department of Public Works.

H. Site Management and Controls

1. Regular trash and debris shall be managed appropriately and its removal shall comply with all local, state, and federal regulations.

2. Street cleaning and sweeping shall be followed as outlined in the erosion and sedimentation control notes and report. Damage to the street shall be avoided and shall be the responsibility of the contractor.

3. Dust shall be controlled and shall comply with Section 25-129 and the erosion and sedimentation control notes, plan, and details.

4. Noise shall be controlled and shall comply with Section 17-18 and Section 25-129.

5. Rodent Control shall be provided, if applicable, by a professional exterminator and shall be consistent with Chapter 22 of the City Code.

6. Snow and Ice Removal shall be provided. Pursuant to Section 25-173, the Contractor shall ensure a safe means of travel within the work zone by the following steps:

    a. Snow/ice removal or commence automatically from 1" or greater of snow or ice
    b. Remove snow as needed within the work zone, including parking spaces. Driveways and site lines shall not be blocked by piles of snow.
    c. Clear all walks and ramps within the work zone
    d. Sand or salt as needed
    e. Clear all basin or drainage to help snow melt
    f. The above steps shall be carried out Sunday-Saturday including holidays.

I. Erosion & Sedimentation Control

1. The Contractor shall install all erosion and sedimentation controls as depicted on the approved Construction Management Plan, C-03, and the approved erosion and sedimentation control report, prior to the pre-construction meeting for inspection by the City. The Contractor shall regularly inspect the control measures, no less than weekly and after storm events (0.5" or more in 24 hours). Additionally, temporary or permanent stormwater management systems shall be inspected and maintained to ensure working order. The Contractor shall document all inspection activities and corrective actions and be prepared to provide these documents for inspection by the City, Maine Department of Environmental Protection (MDEP) or the U.S. Environmental Protection Agency (EPA) upon request.

2. Due to the existing, sparse landscaping on site, no protection during construction will be necessary.

3. Stored materials shall be identified and avoid being located under/near trees.

J. Construction Staging Area

1. The Contractor shall submit a plan with locations depicted for the location of material staging areas, the location of on-site temporary construction trailers, the location of on-site truck delivery holding areas, the location of on-site truck washing stations, masonry mixing stations, the general location of the construction security fence and the general location of temporary construction dumpsters. This plan shall be submitted at or prior to the pre-construction meeting. Any open storage areas shall be shown on the plan.

2. Delivery Truck Holding Areas On-Site: The majority of materials delivered to the site will be scheduled such that they are able to be off-loaded immediately. On days when the construction activities require multiple truck deliveries, these deliveries will be carefully scheduled so that there is always adequate on-site area for the holding of trucks until they can be unloaded. Once at the site all vehicles will be brought within the fence line and will make every attempt to avoid queuing on public streets. If, for any reason, on-site holding of trucks is not feasible, an off-site location must be designated and shown on the submitted plan referenced above in J.1.

3. All deliveries for materials shall comply with the City's noise requirements.

K. Parking During Construction

1. Adequate parking for construction workers shall be provided along St. Lawrence Street, or arrangements for off-street parking at an off-site location shall be provided.

2. Truck Routes and Volumes: The following quantities are estimated as part of the reconstruction:

    - Common Fill – TBD upon final surface analysis. Earthwork contractor(s) pit to project site.
    - Loam – 20 CY – Earthwork contractor(s) pit to project site
    - Gravel & Stone – 100 CY – Earthwork contractor(s) pit to project site.
    - Hot Mix Asphalt – 5 tons – Paving contractor(s) pit to project site.

L. Special Measures as Necessary

No special measures are necessary for the proposed reconstruction.

ACORN
ENGINEERING, INC.

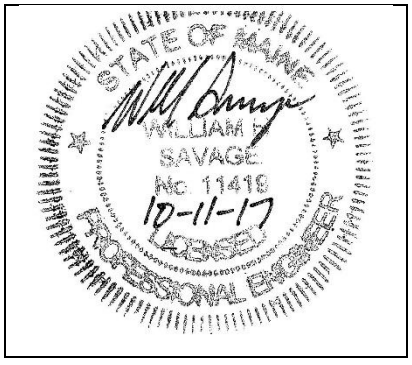
STORMWATER MANAGEMENT REPORT

Prepared For:

Walter & Kelly Williams
24 St. Lawrence Street
Portland, Maine 04101

Prepared By:

Acorn Engineering, Inc.
158 Danforth Street
Portland, Maine 04102



October 2017

ACORN ENGINEERING, INC.

INTRODUCTION

Acorn Engineering, Inc. has been retained by Walter & Kelly Willaism to provide civil engineering services for the proposed redevelopment of 24 St. Lawrence Street. The proposed project is to redevelop a two-unit townhouse building into a four-story, five-unit condominium. The first floor is proposed to be a six-car parking garage.

A stormwater analysis has been prepared to demonstrate that the project will meet the following requirements of the City of Portland (the City):

- City of Portland Land Use Ordinance Chapter 14, Article V. Site Plan Section 14-523. Required Approvals and Applicability (F) Level III Site Plan Review.
- City of Portland Technical Manual – Section 5 – Portland Stormwater Management Standards and Maine DEP Chapter 500 Stormwater Management.

EXISTING CONDITIONS

The proposed project site is located on St. Lawrence Street. A boundary plan has been prepared by Owen Haskell, Inc of Falmouth, Maine dated November 30, 2016.

All abutting uses are residential within the R-6 zone.

Over 60% of the property is covered by impervious surfaces including two structures, pavement, brick, pavers, and retaining walls. The remaining surface is vegetation in the form of grass and brush. The majority of the site slopes towards the south (towards Waterville Street), with the rear sloping over 10% in some areas. The northerly half of the dwelling's roof drains to St. Lawrence Street which then slopes towards Fore Street at an average of 9%.

The project team is not aware of the presence of any existing significant natural features located on the site. Given the urban setting and existing impervious surfaces, a field inventory of significant natural feature was not undertaken. The project is not located within a watershed classified as an Urban Impaired Stream.

PROPOSED DEVELOPMENT

The proposed project is a four-story building with five dwelling units and first floor parking garage. The parking garage will have six parking spaces. Pedestrian access to the site shall be provided off St. Lawrence Street. The development will be served by Portland Water District, Department of Public Works (sewer), Unitil (natural gas), CMP (electric), Charter (cable), and Fairpoint (telephone). All utilities will be routed underground.

The proposed project will increase the site's impervious area by approximately 540 square-feet. This

impact is below the 1,000 square-foot threshold and therefore, stormwater management features for quality and quantity control have not been designed due to the insignificant increase in impervious area.

Stormwater will enter roof drains before connecting to a storm drain outlet that is proposed to tap into the 18" combined sewer main within St. Lawrence. The foundation drain will also connect to this storm drain outlet. Lastly, a field inlet will collect stormwater within the green space at the northerly side of the building and will be wyed into the foundation drain, eventually making its way to the combined sewer within the street.

The stormwater flows to the street are expected to marginally increase while the flows to the existing 15-foot retaining wall and abutting properties are expected to significantly decrease.

SOILS

Onsite soil information includes the following:

- Soil Conservation Service Medium Intensity Soil Survey for Cumberland County
- United States Department of Agriculture Web Soil Survey

Given the soils information, listed above, no onsite wastewater is proposed; the applicant does not intend to perform a more intense hydric soil boundary delineation because the waiver requirements set forth in the City of Portland Technical Manual – Section 7 – Soil Survey, Rev. 6/17/11 are met.

The area within and surrounding the project includes soil types listed in the table below. The susceptibility of soils to erosion is indicated on a relative "K" scale of values over a range of 0.02 to 0.69. Higher "K" values indicate more erodible soils.

Table 1 - "K" Value

Soils Type	Subsurface	Substratum
Hinckley	0.17	0.17

The soil "K" values for the soils, listed above, show a low susceptibility to erosion. The site's susceptibility to erosion is from the Soil Conservation Service Medium Intensity Soil Survey for Cumberland County. Although soil "K" values for the soils show a low susceptibility to erosion, implementation of the proposed Erosion & Sedimentation Measures by the contractor will be of the utmost importance given the sustained slope throughout the site.

Conclusion

The proposed development was designed to meet the requirements implemented by the MDEP under the Stormwater Management Statute (38 M.R.S.A. § 420-D) as well as the City of Portland Technical Manual – Section 5 – Portland Stormwater Management Standards. The proposed project as designed is not anticipated to cause flooding or erosion problems within the subject site, abutters' sites, nor within the right-of-way.

Attachments

Attachment A: Soils Map
Attachment B: Pre-Construction Watershed Map
Attachment C: Post-Construction Watershed Map

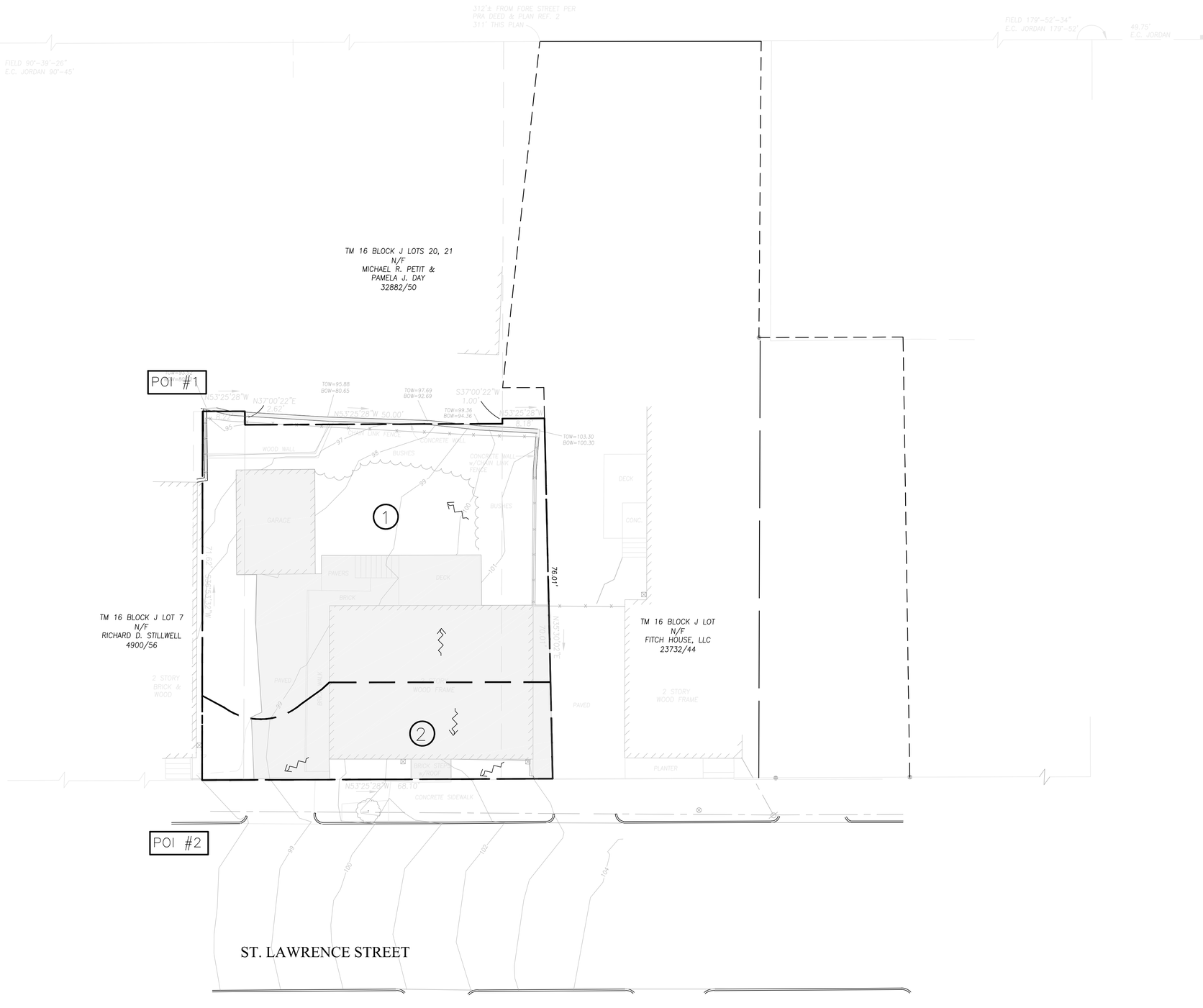
GENERAL NOTES:

1. REFER TO STORMWATER REPORT FOR MORE INFORMATION
2. GREY HATCH DENOTES IMPERVIOUS AREA

1 — SUBCATCHMENT NUMBER

SUBCATCHMENT EXTENTS

POI #1 — POINT OF INTEREST (POI)



PRELIMINARY
NOT ISSUED FOR CONSTRUCTION

ISSUED FOR	BY	DATE
CITY APP.	WHS	10/10/17

DRAWING NAME: **PRE-DEVELOPMENT PLAN**

PROJECT NAME: **24 ST. LAWRENCE REDEVELOPMENT**

CLIENT: HR PROPERTY MANAGEMENT
24 ST. LAWRENCE STREET, PORTLAND, ME 04101

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM ACORN ENGINEERING, INC. AND ALL REVISIONS MADE TO THIS PLAN BY ANYONE OTHER THAN ACORN ENGINEERING, INC. OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

ACORN ENGINEERING, INC.
158 DANFORTH STREET, PORTLAND, MAINE 04102
(207) 775-2655

FILE:	1088_CIVIL
JN:	1088
SCALE:	1"=10'
DESIGNED BY:	ADG
DRAWN BY:	ADG
CHECKED BY:	WHS

DRAWING NO.
PRE

GENERAL NOTES:

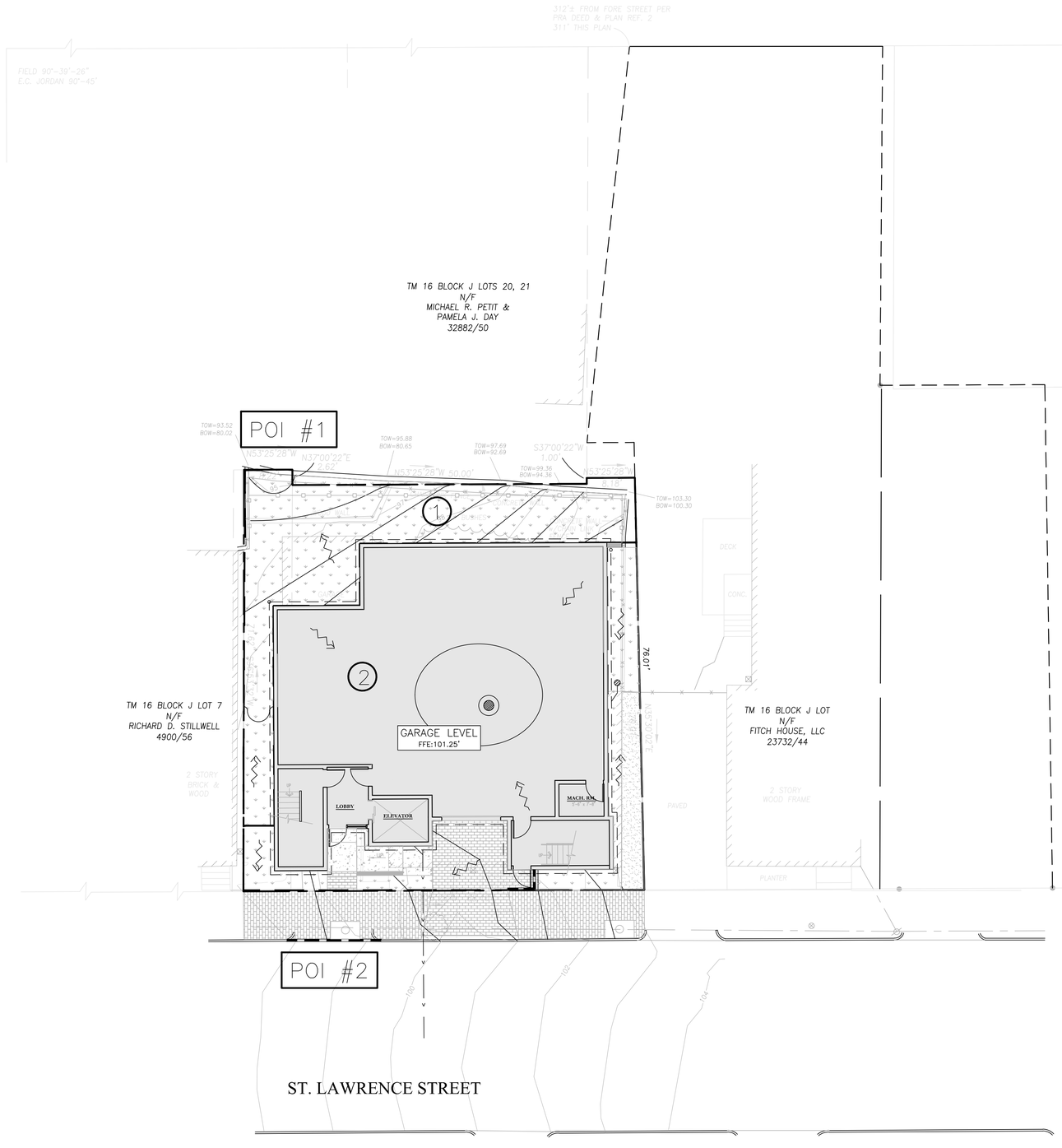
1. REFER TO STORMWATER REPORT FOR MORE INFORMATION

1 — SUBCATCHMENT NUMBER

SUBCATCHMENT EXTENTS

UNDERDRAIN

POI #1 — POINT OF INTEREST (POI)



PRELIMINARY
NOT ISSUED FOR
CONSTRUCTION

ISSUED FOR	BY	DATE
PRELIM. APP.	WHS	X/X/X

DRAWING NAME: **POST-DEVELOPMENT PLAN**

PROJECT NAME: **24 ST. LAWRENCE REDEVELOPMENT**

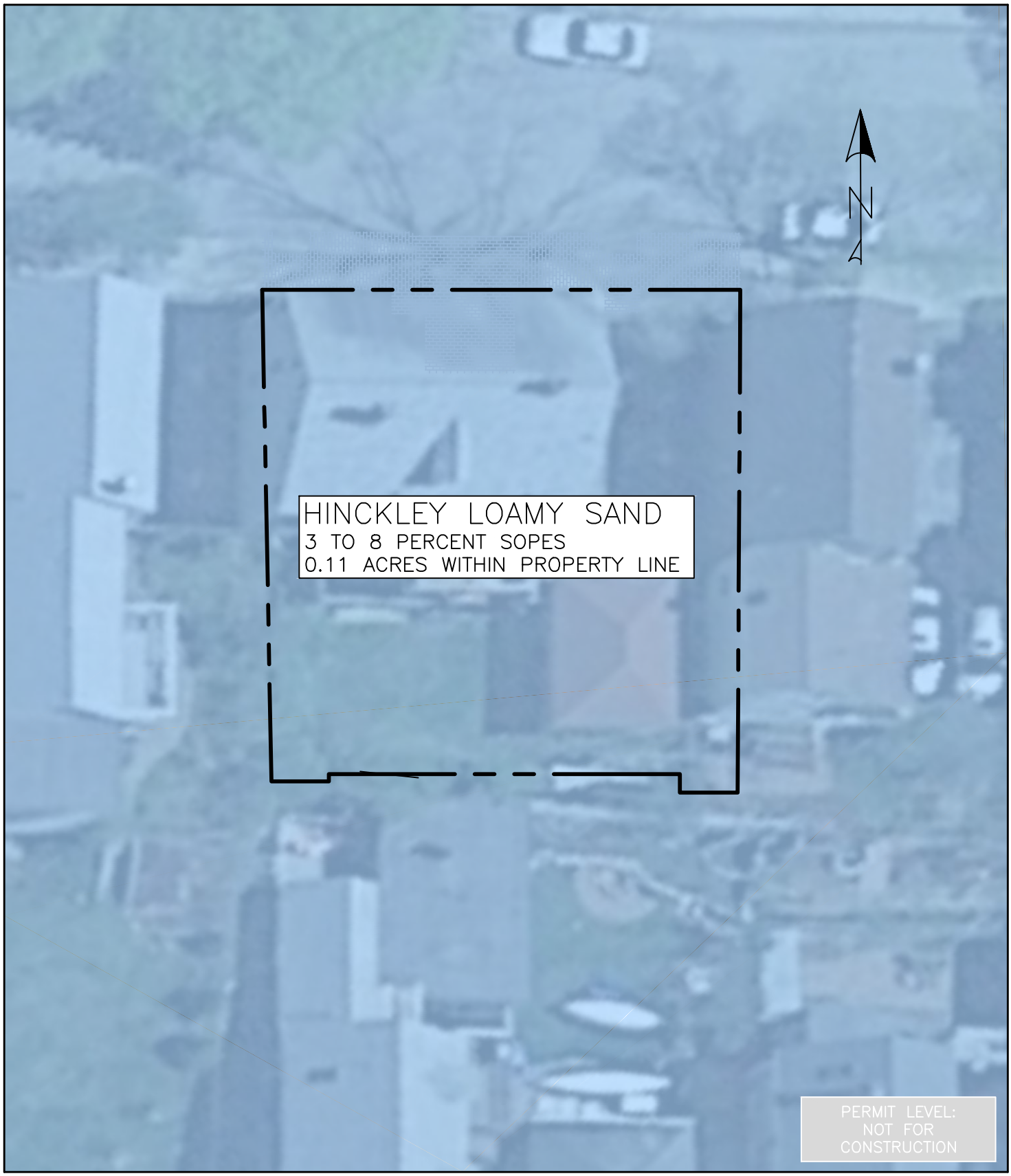
CLIENT: HR PROPERTY MANAGEMENT
24 ST. LAWRENCE STREET, PORTLAND, ME 04101

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM ACORN ENGINEERING, INC. ANY MODIFICATIONS MADE TO THIS PLAN WITHOUT WRITTEN PERMISSION OR OTHERWISE SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

ACORN ENGINEERING, INC.
158 DANFORTH STREET, PORTLAND, MAINE 04102
(207) 775-2655

FILE:	1088_CIVIL
JN:	1088
SCALE:	1"=10'
DESIGNED BY:	ADG
DRAWN BY:	ADG
CHECKED BY:	WHS

DRAWING NO.
POST



THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM ACORN ENGINEERING, INC. ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

DRAWING NO.
SOILS

FILE:	1088_CIVIL
DATE:	9/22/17
JN:	1088
SCALE:	NTS
DESIGN BY:	ADG
DRAWN BY:	ADG
CHECKED BY:	WHS

ACORN ENGINEERING, INC
ACORN ENGINEERING, INC. P.O. BOX 3372
PORTLAND, MAINE 04104 (207) 775-2655

DRAWING NAME:
SOILS MAP

PROJECT NAME:
24 ST. LAWRENCE STREET
REDEVELOPMENT

CLIENT:
HR PROPERTY MANAGEMENT

ISSUED FOR	BY	DATE
CITY APP.	WHS	10/10/17
REV.	DATE	

ACORN
ENGINEERING, INC.

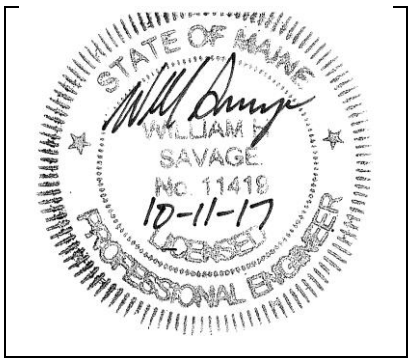
EROSION & SEDIMENTATION CONTROL REPORT

Prepared For:

Kelly & Walter Williams
24 St. Lawrence Street
Portland, Maine 04101

Prepared By:

Acorn Engineering, Inc.
158 Danforth Street
Portland, Maine 04102



October 2017

INTRODUCTION

Acorn Engineering, Inc. has been retained by Kelly & Walter Williams to provide civil engineering services for the proposed multifamily dwelling unit at 24 St. Lawrence Street. The proposed project includes replacing the existing two-family dwelling with a five-unit condominium and a six-space parking garage on a total of four floors.

The following Erosion and Sedimentation Control Report was developed in accordance with the City of Portland Technical Manual – Section 5 – Portland Stormwater Management Standards and the Maine DEP Chapter 500 Stormwater Management Appendix A and B (1), Amended August 12, 2015. This narrative also meets the standards required in the Maine DEP's Erosion & Sediment Control BMP's Manual, revised in 2016.

1.0 EXISTING CONDITIONS

The proposed project site is located on St. Lawrence Street. A boundary plan has been prepared by Owen Haskell, Inc of Falmouth, Maine dated November 30, 2016.

All abutting uses are residential within the R-6 zone.

A large portion of the site is occupied by the existing structures. The site is also comprised of a paved driveway and landscaping. The grades are relatively flat, with the exception of the southwest side of the parcel. The surface drops away from the house, towards the southwest, at a slope of approximately 10% to retaining walls.

1.1 Existing Soils

Onsite soil information includes the following:

- Soil Conservation Service Medium Intensity Soil Survey for Cumberland County
- United States Department of Agriculture Web Soil Survey

Given the soils information, listed above, no onsite wastewater is proposed; the applicant does not intend to perform a more intense hydric soil boundary delineation because of sthe waiver requirements set forth in the City of Portland Technical Manual – Section 7 – Soil Survey, Rev. 6/17/11 are met.

The area within and surrounding the project includes soil types listed in the table below. The susceptibility of soils to erosion is indicated on a relative "K" scale of values over a range of 0.02 to 0.69. Higher "K" values indicate more erodible soils.

Table 1 - "K" Value

Soils Type	Subsurface	Substratum
Hinckley	0.17	0.17

The soil "K" values for the soils, listed above, show a low susceptibility to erosion. The site's susceptibility to erosion is from the Soil Conservation Service Medium Intensity Soil Survey for Cumberland County. Although soil "K" values for the soils show a low susceptibility to erosion, implementation of the proposed Erosion & Sedimentation Measures by the contractor will be of the utmost importance given the sustained slope throughout the site.

1.2 Existing Erosion Problems

There are no signs of erosion.

1.3 Critical Areas

Critical areas that would require special attention during construction include, but are not limited to, the retaining walls, and slope stabilization located within the vicinity during earthwork and foundation construction.

1.4 Protected Natural Resource

The client is not aware of the presence of any existing significant natural features located on the site as listed in Section 14-526 (b) 1. of the Land Use Code. The project is not located within a watershed classified as an Urban Impaired Stream by the Maine DEP.

1.5 Previous Construction Activity (5 years)

Acorn Engineering, Inc. is not aware of any construction related activities within the project limits within the past 5 years.

1.6 Timber Harvesting

Acorn Engineering, Inc. is not aware of any timber harvesting within the past five years.

2.0 EROSION CONTROL MEASURES AND SITE STABILIZATION

As part of the site development, the following temporary and permanent erosion and sedimentation control devices shall be implemented. Devices shall be installed as described in this report or within the plan set. See the Maine Erosion and Sediment Control Handbook for Construction: Best Management Practices for further reference.

2.1 Temporary Erosion Control Measures

The following temporary erosion and sedimentation control measures are planned for the project's construction period:

2.1.1 Crushed stone stabilized construction entrances shall be placed at all access points to the project site where there are disturbed areas. The following specifications shall be followed at a minimum:

- Stone size shall be 2-3 inches, or reclaimed or recycled concrete equivalent.
- The thickness of the entrance stone layer shall be no less than 6 inches.
- The entrance shall not be less than 20 feet wide, however not less than the full width of points where ingress or egress occurs. The length shall not be less than 50 feet in length.
- Geotextile fabric (woven or non-woven) shall be placed over the entire entrance area.
- The entrance/exit shall be maintained to the extent that it will prevent the tracking of sediment onto public road ways.

2.1.2 Siltation fence or erosion control berm shall be installed down gradient of any disturbed areas to trap runoff borne sediments until permanent stabilization is achieved. The silt fence or erosion control berm shall be installed per the details provided in the plan set and inspected before and immediately after each rainfall and at least daily during prolonged rainfall. Repairs shall be made if there are any signs of erosion or sedimentation below the fence line or berm. If there are signs of undercutting at the center or the edges, or impounding of large volumes of water behind the fence or berm, the barrier shall be replaced with a stone check dam.

2.1.3 Hay mulch including hydro seeding is intended to provide cover for denuded or seeded areas until revegetation is established. Mulch placed between April 15th and November 1st on slopes of less than 15 percent shall be covered by fabric netting and anchored with staples in accordance with the manufacturer's recommendation. Mulch placed between November 1st and April 15th on slopes equal to or steeper than 8 percent and equal to or flatter than 2:1 shall use mats or fabric netting and anchored with staples in accordance with the manufacturer's recommendation.

2.1.4 At any time of the year, all slopes greater than 3:1 shall be stabilized with Double Net Erosion Control Blanket Bionet SC150BN by North American Green or Approved Equal, or Erosion Control Mix Slope Protection as detailed within the plans.

2.1.5 St. Lawrence Street shall be swept to control mud and dust from the construction site as necessary. Add additional stone to the stabilized construction entrance to minimize the tracking of material off the site and onto the surrounding roadways.

2.1.6 During demolition, clearing and grubbing operations, stone check dams shall be installed at any areas of concentrated flow. The maximum height of the check dam shall not exceed 2 feet. The center of the check dam shall be 6 inches below the outer edges of the dam. The contractor shall mulch the side slopes and install stone check dams for all newly excavated ditch lines within 24 hours of their creation.

2.1.7 Silt fence stake spacing shall not exceed 6 feet unless the fence is supported with 14-gauge wire in which case the maximum spacing shall not exceed 10 feet. The silt fence shall be "toed" into the ground.

2.1.8 Storm drain inlet protection shall be provided to storm drains using any of the following: hay bale drop inlet structures, silt fence drop inlet sediment filter, gravel and wire mesh drop inlet sediment filter, or curb inlet sediment filter. Barriers shall be inspected after every rainfall event and repaired as necessary. Sediments shall be removed when accumulation has reached ½ the design height.

2.1.9 Dust control shall be accomplished using any of the following: water, calcium chloride, stone, or an approved MDEP product. Dust control shall be applied as needed to accomplish dust control.

2.1.10 Temporary loam, seed, and mulching shall be used in areas where no other erosion control measure is used. Application rates for seeding are provided at the end of this report.

2.1.11 Stockpiles shall be stabilized within 7 days of formation unless a scheduled rain event occurs prior to the 7-day window, in which case the stockpile shall be stabilized prior to the rain event. Methods of stabilization shall be mulch, erosion control mix, or erosion control blankets/mats. Silt fence or a wood waste compost filter berm shall be placed downhill of any soil stockpile location.

2.1.12 For disturbance between November 1 and April 15, please refer to winter stabilization plan in this report and the Maine Erosion and Sediment Control BMP manual for further information.

2.1.13 It is of the utmost importance that stormwater runoff and potential sediment from the construction site be diverted around the proposed underdrains until the trench is backfilled.

2.2 Permanent Erosion Control Measures

The following permanent erosion control measures are intended for post disturbance areas of the project.

2.2.1 All disturbed areas during construction, not subject to other proposed conditions, shall receive a minimum 4" of loam, limed, and mulched. Erosion control blankets or mats shall be placed over the mulch in areas noted in paragraph 4.1 of this report.

2.2.2 All stormwater devices shall be installed and tributary areas stabilized prior receiving stormwater.

2.2.3 Refer to the Maine Erosion and Sediment Control BMP manual for additional information.

3.0 EROSION AND SEDIMENTATION CONTROL PLAN

3.1 The Erosion and Sedimentation Control Plan is included within the plan set.

4.0 DETAILS AND SPECIFICATIONS

4.1 Erosion Control Details and Specifications are included in the plan set.

5.0 STABILIZATION PLAN FOR WINTER CONSTRUCTION

Winter Construction consists of earthwork disturbance between the dates of November 1 and April 15. If a construction site is not stabilized with pavement, a road gravel base, 75% mature vegetation cover or riprap by November 15, then the site shall be protected with over-winter stabilization. Any area not stabilized with pavement, vegetation, mulching, erosion control mix, erosion control mats, riprap, or gravel base on a road shall be considered open.

The contractor shall limit the work area to areas that work will occur in during the subsequent 15 days and so that it can be mulched one day prior to a snow event. The contractor shall stabilize work areas prior to opening additional work areas to minimize areas without erosion control measures.

The following measures shall be implemented during winter construction periods:

5.1 Sediment Barriers

During frozen conditions, sediment barriers may consist of erosion control mix berms or any other recognized sediment barriers as frozen soil prevents the proper installation of hay bales or silt fences.

5.2 Mulching

All areas shall be considered to be denuded until seeded and mulched. Hay and straw mulch shall be applied at a rate of 150 lb. per 1,000 square feet or 3 tons/acre (twice the normal accepted rate of 75-lbs./1,000 s.f. or 1.5 tons/acre) and shall be properly anchored. Erosion control mix must be applied with a minimum 4-inch thickness. Mulch shall not be spread on top of snow. The snow shall be removed down to a one-inch depth or less prior to application. After each day of final grading, the area shall be properly stabilized with anchored hay or straw or erosion control matting. An area shall be considered to have been stabilized when exposed surfaces have been either mulched or adequately anchored so that ground surface is not visible through the mulch. Between the dates of November 1 and April 15, all mulch shall be anchored by either mulch netting, tracking or wood cellulose fiber. The cover will be considered sufficient when the ground surface is not visible through the mulch. After November 1st, mulch and anchoring of all exposed soil shall occur at the end of each final grading workday.

5.3 Soil Stockpiling

Stockpiles of soil or subsoil shall be mulched for over winter protection with hay or straw at twice the normal rate or with a four-inch layer of erosion control mix. This shall be done within 24 hours of stocking and re-established prior to any rainfall or snowfall.

5.4 Seeding

Between the dates of October 15th and April 1st, loam or seed shall not be required. During periods of above freezing temperatures finished areas shall be fine graded and either protected with mulch or temporarily seeded and mulched until the final treatment can be applied. If the date is after November 1st and if the exposed area has not been loamed, final grading with a uniform surface, then the area may be dormant seeded at a rate of 3 times higher than specified for permanent seed and then mulched.

Dormant seeding may be placed prior to the placement of mulch or erosion control blankets. If dormant seeding is used for the site, all disturbed areas shall receive 4" of loam and seed at an application rate of 5 lbs./1,000 s.f. All areas seeded during the winter shall be inspected in the spring for adequate catch. All areas insufficiently vegetated (less than 75% catch) shall be revegetated by replacing loam, seed and mulch. If dormant seeding is not used for the site, all disturbed areas shall be revegetated in the spring.

5.5 Over winter stabilization of disturbed soils

By September 15th, all disturbed soils on areas having a slope less than 15% shall be seeded and mulched. If the disturbed areas are not stabilized by this date, then one of the following actions shall be taken to stabilize the soil for late fall and winter:

- Stabilize the soil with temporary vegetation – By October 1st, seed the disturbed soil with winter rye at a seeding rate of 3lbs per 1,000 s.f., lightly mulch the seeded soil with hay or straw at 75 lbs per 1,000 s.f., and anchor the mulch with plastic netting. Monitor growth of the rye over the next 30 days. If the rye fails to grow at least three inches or fails to cover at least 75% of the disturbed soil before November 1st, then mulch the area for over-winter protection.

- Stabilize the soil with sod – Stabilize the disturbed soil with properly installed sod by October 1st. Proper installation includes pinning the sod onto the soil with wire pins, rolling the sod to guarantee contact between the sod and underlying soil, and watering the sod to promote root growth into the disturbed soil.

- Stabilize the soil with mulch – By November 15th, mulch the disturbed soil by spreading hay or straw at a rate of at least 150 lbs per 1,000 s.f. on the area so that no soil is visible through the mulch. Immediately after applying the mulch, anchor the mulch with plastic netting to prevent wind from moving the mulch off the disturbed soil.

5.6 Over winter stabilization of disturbed slopes

All stone-covered slopes shall be constructed and stabilized by November 15th. All slopes to be vegetated shall be seeded and mulched by September 1st. A slope is considered a grade greater than 15%. If a slope to be vegetated is not stabilized by September 1st, then one of the following action shall be taken to stabilize the slope for late fall and winter:

- Stabilize the soil with temporary vegetation and erosion control mats – By October 1st the disturbed slope shall be seeded with winter rye at a seeding rate of 3 lbs per 1,000 s.f. and then install erosion control mats or anchored mulch over the seeding. If the rye fails to grow at least three inches or fails to cover at least 75% of the slope by November 1st, then the contractor shall cover the slope with a layer of erosion control mix or with stone riprap.

- Stabilize the soil with sod – The disturbed slope shall be stabilized with properly installed sod by October 1st. Proper installation includes the contractor pinning the sod onto the slope with wire pins, rolling the sod to guarantee contact between the sod and underlying soil, and watering the sod to promote root growth into the disturbed soil. The contractor shall not use late-season sod installation to stabilize slopes having a grade greater than 3H:1V or having groundwater seeps on the slope face.

- Stabilize the soil with erosion control mix – Erosion control mix shall be properly installed by November 15th. The contractor shall not use erosion control mix to stabilize slopes having grades greater than 2H:1V or having groundwater seeps on the slope face.

- Stabilize the soil with stone riprap – Place a layer of stone riprap on the slope by November 15th. A registered professional engineer shall be hired to determine the stone size needed for stability on the slope and to design a filter layer for underneath the riprap.

6.0 INSPECTION AND MAINTENANCE

A person with knowledge of erosion and stormwater control, including the standards and conditions in the permit, shall conduct periodic visual inspections of installed erosion control measures. The frequency of inspection shall occur at least once every two weeks, as well as after a "storm event". A "storm event" shall consist 0.5 inches of rain within a 24-hour period. The following Erosion and Sediment Control - Best Management Practices (BMP's) shall inspected in the manner as described.

6.1 Sediment Barriers

Hay bale barriers, silt fences and filter berms shall be inspected and repaired for the following if there are any signs of erosion or sedimentation below them. If there are signs of undercutting at the center or the edges of the barrier, or impounding of large volumes of water behind them, sediment barriers shall be replaced with a temporary check dam. Should the fabric on a silt fence or filter barrier decompose or become

ineffective prior to the end of the expected usable life and the barrier is still necessary, the fabric shall be replaced promptly. Sediment deposits should be removed when deposits reach approximately one-half the height of the barrier. Filter berms should be reshaped as needed. Any sediment deposits remaining in place after the silt fence or filter barrier is no longer required should be dressed to conform to the existing grade, prepared and seeded.

6.2 Stabilized Stone Construction Entrances

The exit shall be maintained in a condition that will prevent tracking of sediment onto public rights-of-way. When the control pad becomes ineffective, the stone shall be removed along with the collected soil material and redistributed on site in a stable manner. The entrance should then be reconstructed. The contractor shall sweep or wash pavement at exits, which have experienced mud-tracking on to the pavement or traveled way. When washing is required, it shall be done on an area stabilized with aggregate, which drains into an approved sediment trapping device. All sediment shall be prevented from entering storm drains, ditches, or waterways.

6.3 Mulched Areas

All mulches must be inspected periodically, in particular after rainstorms, to check for rill erosion. If less than 90% of the soil surface is covered by mulch, additional mulch shall be immediately applied. Nets must be inspected after rain events for dislocation or failure. If washouts or breakage occur, re-install the nets as necessary after repairing damage to the slope. Where mulch is used in conjunction with ornamental plantings, inspect periodically throughout the year to determine if mulch is maintaining coverage of the soil surface. Repair as needed.

6.4 Dust Control

When temporary dust control measures are used, repetitive treatment shall be applied as needed to accomplish control.

6.5 Stormwater Appurtenances

All underdrains, storm drains, and catch basins need to be operating effectively and free of debris.

6.6 Erosion and Sedimentation Control Inspections:

Acorn Engineering has personnel qualified to conduct Erosion and Sedimentation Control Inspections. For further information, contact:

Contact: Will Savage, PE
Telephone: (207) 775-2655

Qualifications:

- Maine Professional Engineering License #11419
- Maine DEP - Certified in Maintenance & Inspection of Stormwater BMP's Cert #14
- Certified Erosion, Sediment and Storm Water Inspector (CESSWI) Cert #0293
- Certified Professional in Erosion and Sediment Control (CPESC) Cert. #4620

The Contractor has sole responsibility for complying with the Erosion and Sedimentation Report/Plan, including control of fugitive dust. The Contractor shall be responsible for any monetary penalties resulting from failure to comply with these standards.

7.0 IMPLEMENTATION SCHEDULE

The following implementation sequence is intended to maximize the effectiveness of the above described erosion control measures. Contractors should avoid overexposing disturbed areas and limit the amount of stabilization area.

1. Install a stabilized construction entrance in all locations where construction traffic will enter and exit the site.
2. Install perimeter silt fence or erosion control berm.
3. Commence installation of drainage infrastructure.
4. Install all other erosion control devices as necessary throughout the remainder of this schedule.
5. Commence earthwork operations, associated with the roadway construction.
6. Commence installation of utilities.
7. Continue earthwork and grading to subgrade as necessary for construction.
8. Complete installation of drainage infrastructure, as well as other utility work.
9. Complete remaining earthwork operations.
10. Install sub-base and base gravels in paved areas.
11. Install paving, curbing and brickwork.
12. Loam, lime, fertilize, seed and mulch disturbed areas and complete all landscaping.
13. Once the site is stabilized, 90% catch of grass has been obtained, or mulching of landscape areas is complete remove all temporary erosion control measures.
14. Touch up areas without a vigorous catch of grass with loam and seed.
15. Complete site signage and striping.
16. Execute proper maintenance of all temporary and permanent erosion control measures throughout the project.

The above implementation sequence should be generally followed by the site contractor. However, the contractor may construct several items simultaneously. The contractor shall submit to the owner a schedule of the completion of the work. If the contractor is to commence the construction of more than one item above, they shall limit the amount of exposed areas to those areas in which work is expected to be undertaken during the following 30 days.

The contractor shall re-vegetate disturbed areas as rapidly as possible. All areas shall be permanently stabilized within 7 days of final grading or before a storm event. The contractor shall incorporate planned inlets and drainage systems as early as possible into the construction phase.

8.0 CONCLUSION

The above erosion control narrative is intended to minimize the development impact by implementing temporary and permanent erosion control measures. The contractor shall also refer to the Maine Erosion and Sediment Control BMP manual for additional information.

9.0 ATTACHMENTS

- Temporary Seeding Plan
- Permanent Seeding Plan

TEMPORARY SEEDING PLAN

Site Preparation

The seeded areas shall be feasibly graded out to provide the use of equipment for seedbed preparation, seeding, mulch application, and mulch anchoring. If necessary, the site may require additional temporary erosion control measures outlined in the Erosion Control report.

Seedbed Preparation

Fertilizer shall be applied to the site at a rate of 13.8 pounds per 1,000 square feet. The composition of the fertilizer shall be 10-10-10 (N-P2O5-K2O) or equivalent.

Limestone shall be applied to the site at a rate of 138 pounds per 1,000 square feet.

Seeding

The composition and amount of temporary seed applied to a site shall be determined by the following table:

Seed	Pounds / 1,000 S.F.	Recommended Seeding Dates
Winter Rye	2.57	Aug-15 to Oct-1
Oats	1.84	Apr-1 to Jul-1 Aug-15 to Sep-15
Annual Ryegrass	0.92	Apr-1 to Jul-1
Sudangrass	0.92	May-15 to Aug-15
Perennial	0.92	Aug-15 to Sep-15

Mulching

Mulch shall be applied at a rate of 70 lbs – 90 lbs per 1,000 square feet. The mulch shall be installed at a minimum depth of 4 inches. The seeded area shall be mulched immediately after seed is applied. Mulching during the winter season shall be double the normal amount.

Conclusion

Please refer to the Maine Erosion and Sediment Control BMP manual for additional information pertaining to temporary seeding and mulching.

PERMANENT SEEDING PLAN

Site Preparation

The seeded areas shall be feasibly graded out to provide the use of equipment for seedbed preparation, seeding, mulch application, and mulch anchoring. If necessary, the site may require additional temporary erosion control measures outlined in the Erosion Control report.

Seedbed Preparation

Fertilizer shall be applied to the site at a rate of 13.8 pounds per 1,000 square feet. The composition of the fertilizer shall be 10-10-10 (N-P2O5-K2O) or equivalent.

Limestone shall be applied to the site at a rate of 138 pounds per 1,000 square feet.

Seeding

The composition and amount of permanent seed applied to a site shall be determined by the following table:

Seed	Pounds / 1,000 S.F.
Kentucky Bluegrass	0.46
Creeping Red Fescue	0.46
Perennial Ryegrass	0.11
Total	1.03

Mulching

Mulch shall be applied at a rate of 70 lbs – 90 lbs per 1,000 square feet. The mulch shall be installed at a minimum depth of 4 inches. The seeded area shall be mulched immediately after seed is applied. Mulching during the winter season shall be double the normal amount.

Recommendations

Permanent seeding is recommended to be completed in the spring. Later summer seeding is allowed if completed prior to September 1st. If seeding cannot be accomplished during the periods recommended for permanent seeding, then the contractor shall perform temporary seeding per the temporary seeding plan.

Conclusion

Please refer to the Maine Erosion and Sediment Control BMP manual for additional information pertaining to permanent seeding and mulching.

I. Utilities

The proposed project will include installation of new utility services to the building and individual units.

Water:

As identified in the Existing Conditions Plan, the site receives water from a 3/4-inch diameter copper domestic service line. This service line connects to the existing 8-inch water main within St. Lawrence Street. Prior to demolition, the existing service will be retired. A new 4 inch line is proposed to tap into the main with a parent child connection in the right-of-way. A 2 inch line will split off of the 4 inch line and serve as the domestic water line with the 4 inch line functioning as the fire sprinkler line.

Sewer:

An existing sewer service was located within St. Lawrence Street. Prior to demolition, the existing service will be disconnected from the main. A new 6" service is proposed to be tied into the existing main as seen on the Utility Plan.

Stormwater:

There is currently no drainage infrastructure on site. It is proposed to install a field inlet along the northerly side of the property to help drain runoff from the site and adjacent properties. This inlet will then tie into the foundation drain which will then wye into a storm drain along with the roof drain. The 8" storm drain will connect to the combined sewer. A separate storm drain has been designed so that if the sanitary sewer main is separated in the future along St. Lawrence Street, the storm/groundwater will be able to discharge to the separated storm main.

UGE/T/C:

The existing dwelling is currently served by overhead lines. All proposed service lines will be rerouted underground from the existing utility pole adjacent to the subject property.

Gas:

An existing service line runs from the gas main within St. Lawrence Street to the existing building. It is proposed to extend this line and route it to the proposed building.

Ability to serve letters have been sent out to the respective utility companies on September 21st, 2017 in accordance with the City of Portland Code of Ordinances Chapter 14 Land Use, Section 14-527(g)(7). Responses from the utility companies can be found attached to this section.

ACORN ENGINEERING, INC.

Portland Water District
Attn: MEANS Department
225 Douglass Street
Portland, Maine 04104

September 21, 2017

Subject: 24 St. Lawrence Street Redevelopment
Re: Ability to Serve

To Whom It May Concern:

On behalf of HR Property Management, we are pleased to submit the following request for Portland Water District's (PWD) ability to serve the proposed development. The proposed project is located at 24 St. Lawrence Street (Chart, Book, Lot 16, J, 006), within the R-6 Residential Zoning District in Portland, Maine. The lot is to be redeveloped into a four-story, 5-unit apartment building, in which the first floor is a 6-car parking garage. The parking garage will be accessed from St. Lawrence Street on the first level. The existing two-unit building and separate garage will be demolished to facilitate the redevelopment.

We believe that there is an existing water service, to the property, from the existing 8" water main as identified on the existing conditions survey (attached). It is proposed that the existing service be retired. A 4" sprinkler line and 2" domestic line are proposed to service the redevelopment. Based upon the Section 4 of the Maine Subsurface Wastewater Disposal Rules, and assuming that the units will be comprised of four 2-bedroom units and one 3-bedroom unit, the project anticipates the following design flows:

Estimate of Anticipated Daily Flows				
Development	Unit Size	Number of Units	Gallons per Day per Unit	Total Gallons per Day
Existing Flow				
Residential Units	3-Bedroom	1	270	270
Residential Units	4-Bedroom	1	360	360
Total Gallons per Day (Existing)				630
Proposed Flow				
Residential Units	2-Bedroom	4	180	720
Residential Units	3-Bedroom	1	270	270

Total Gallons per Day (Proposed)	990
Net Change	**+360 GPD**
*Values based on STATE OF MAINE: SUBSURFACE WASTEWTAER DISPOSAL RULES, most recent edition	

The proposed project is anticipated to increase the net flow by approximately 360 gallons per day (GPD). It should be noted that these values were developed using conservative estimates from the State of Maine Subsurface Wastewater Disposal Rules. Additionally, the number of bedrooms per unit may change later in the design process. We will provide any changes to the anticipated water demand.

On behalf of the client, we are requesting the following information:

1. Any additional information, such as utility mapping within St. Lawrence Street; more specifically, confirmation of the location and size of the services to the existing property and the size and material of the water main on St. Lawrence Street.
2. Alternative connection locations from the property to the existing system.
3. PWD's proposed infrastructure improvements within the project vicinity.
4. Flow data for adjacent hydrant.
5. PWD's ability to serve the project.

I have attached a fixture count, an existing conditions plan created by Owen Haskell, Inc as well as the proposed preliminary utility plan from our office to facilitate your review. Please do not hesitate to contact me or the office for any questions or clarifications.

Sincerely,



Alyssa Gartley, E.I.
Design Engineer / Construction Inspector
Acorn Engineering, Inc.

Portland Water District

FROM SEBAGO LAKE TO CASCO BAY

October 2, 2017

Alyssa Gartley
Acorn Engineering
158 Danforth Street
Portland, ME 04104

Re: 24 Saint Lawrence Street, PO
Ability to Serve with PWD Water

Dear Ms. Gartley:

The Portland Water District has received your request for an Ability to Serve Determination for the noted site submitted on September 21, 2017. Based on the information provided per plans dated September 21, 2017, we can confirm that the District will be able to serve the proposed project as further described in this letter. **Please note that this letter constitutes approval of the water system as currently designed. Any changes affecting the approved water system will require further review and approval by PWD.**

Conditions of Service

The following conditions of service apply:

- A new 2-inch domestic service and 4-inch fire service may be installed from the water main in Saint Lawrence Street. The service should enter through the properties frontage on Saint Lawrence Street at least 10-feet from any side property lines.

- The existing building is currently served with a ¾-inch domestic water service; the size of this service is undersized for the proposed use. This service must be terminated by shutting the corporation valve and cutting the pipe from the water main.

Prior to construction, the owner or contractor will need to make an appointment to complete a service application form and pay all necessary fees. The appointment shall be requested through MEANS@pwd.org or by calling 207-774-5961 ext. 3199. Please allow (3) business days to process the service application paperwork. PWD will guide the applicant through the new development process during the appointment.

Existing Site Service

According to District records, the project site does currently have existing water service. A 3/4-inch diameter copper domestic service line provides water service to the site. Please refer to the "Conditions of Service" section of this letter for requirements related to the use of this service.

Water System Characteristics

According to District records, there is an 8-inch diameter cast iron water main in Saint Lawrence Street and a public fire hydrant located approximately 30 feet from the site. The most recent static pressure reading was 64 psi on March 16, 2017.

Public Fire Protection

The installation of new public hydrants to be accepted into the District water system will most likely not be required. It is your responsibility to contact the Portland Fire Department to ensure that this project is adequately served by existing and/or proposed hydrants.

Domestic Water Needs

The data noted above indicates there should be adequate pressure and volume of water to serve the domestic water needs of your proposed project.

Private Fire Protection Water Needs

You have indicated that this project will require water service to provide private fire protection to the site. Please note that the District does not guarantee any quantity of water or pressure through a fire protection service. Please share these results with your sprinkler system designer so that they can design the fire protection system to best fit the noted conditions. If the data is out of date or insufficient for their needs, please contact MEANS to request a hydrant flow test and we will work with you to get more complete data.

Should you disagree with this determination, you may request a review by the District's Internal Review Team. Your request for review must be in writing and state the reason for your disagreement with the determination. The request must be sent to MEANS@PWD.org or mailed to 225 Douglass Street, Portland Maine, 04104 c/o MEANS. The Internal Review Team will undertake review as requested within 2 weeks of receipt of a request for review.

If the District can be of further assistance in this matter, please let us know.

Sincerely,
Portland Water District



Robert A. Bartels, P.E.
Senior Project Engineer

A C O R N
ENGINEERING, INC.

Central Maine Power Company
Attn: Mr. Jamie Cough
162 Canco Road
Portland, Maine 04103

September 21, 2017

Subject: 24 St. Lawrence Street Redevelopment
Re: Ability to Serve

Dear Mr. Cough:

On behalf of HR Property Management, we are pleased to submit the following request for Central Maine Power's (CMP) ability to serve the proposed development. The proposed project is located at 24 St. Lawrence Street (Chart, Book, Lot 16, J, 006), within the R-6 Residential Zoning District in Portland, Maine. The lot is to be redeveloped into a four-story, 5-unit apartment building, in which the first floor is a 6-car parking garage. The parking garage will be accessed from St. Lawrence Street on the first level. The existing two-unit building and separate garage will be demolished to facilitate the redevelopment.

It is proposed that the existing lines be rerouted underground to the new structure from the utility pole on St. Lawrence Street.

At this point in the design phase, single-phase power is anticipated. On behalf of the client, we are requesting the following information:

1. Any easements for overhead services currently crossing the proposed development.
2. Alternative connection locations from the development to the existing system.
3. CMP's proposed infrastructure improvements within the project vicinity.
4. CMP's ability to serve the project.
5. Access requirements to the CMP meters.

I have attached an existing conditions plan created by Owen Haskell, Inc as well as the proposed preliminary utility plan from our office to facilitate your review. Please do not hesitate to contact me or the office for any questions or clarifications.

Sincerely,

Alyssa Gartley, E.I.
Design Engineer / Construction Inspector

Acorn Engineering, Inc.

From:	Cough, Jamie
To:	Alyssa Gartley
Cc:	William Savage
Subject:	RE: 24 St. Lawrence Street Redevelopment - Ability to Serve
Date:	Friday, September 22, 2017 5:52:39 AM
Attachments:	image001.jpg

9/22/17

Alyssa Gartley
Acorn Engineering, Inc
PO Box 3372
Portland, ME 04104
Sent via email to: agartley@acorn-engineering.com
RE: CMP Ability to Serve Letter for 24 St. Lawrence Street, Portland

Project Description:

The project will consist of construction of a single phase service to 4 story 5 unit apartment building with 6 car parking garage.

Dear Ms. Gartley:

CMP has the ability to serve the proposed project in accordance with our CMP Handbook (web link below). We can provide you the desired pad or pole mounted transformers per your request and city approval, in accordance with our CMP Standards Handbook. If you have any questions on the process, or need help in completion of the documents, **please contact CMP at 800-565-3181.**

In answer to your specific questions:

1. Existing easements can be found at the Registrar's Office. I don't have access to those at this time.
2. Alternate locations from the development can be determined at your site visit with the field planner
3. CMP will not be able to determine what infrastructure is required without completion of the load sheets. However, there are service limitations to single phase (800a total service) so you may have to install three phase. This is usually driven by either elevator load and/or hvac loads.
4. CMP must preapprove meter locations. In general, preference is for outdoor meters. If inside, we need a separate outside door directly to the meter room. This will need to be discussed.

New Service Milestones

- Connect to http://www.cmpco.com/YourAccount/GetConnected/installationchecklists.html. This will show you which documents you need depending on your project.
- Contact CMP at 1-800-565-3181 and set up an SAP Notification to begin the process. At that time, the CMP Representative will discuss the relevant documentation and will be able to answer any questions relative to your project.

In general:

- Submit any electronic drawings (PDF (preferred) or DWG files) of the site layout and proposed electrical connections if you have them to your contact AFTER you have established your SAP Notification. You may also be asked to submit Load information. If so, please complete this CMP spreadsheet using load information. This may not be necessary for a single family development.
- Contact your local telephone company if you want telephone service. In some cases, they may be installing the poles.
- Submit the easement information worksheet. Please complete this CMP form and either email or fax back to us.
- Preliminary meetings with CMP to determine the details of job
- Field planner design appointment to cost out job and develop CMP Invoice.
- Submit invoice for payment.
- Easements signed and payment received.
- Applicable State or Local Permits for poles or underground locations
- Job scheduled for completion after the electrical inspection has been received.

This process can take several months, depending upon several factors including transformer delivery, potential substation upgrades, return of completed paperwork, and other jobs in the system that may be ahead of yours. In addition, contact with the other utilities, including telephone and cable, should be commenced as soon as practical. They may have additional work

or charges in addition to the CMP work required to bring your project on line.

For your convenience, here is a link to the CMP Website which contains our Handbook with details on most service requirements:

CMP Handbook of Standard Requirements
(http://www.cmpco.com/MediaLibrary/3/6/Content%20Management/YourAccount/PDFs%20and%20Docs/handbook.pdf)

Please be advised that if you plan to install solar/wind/hydro generation, you must complete an application under the MPUC mandated Chapter 324 Interconnection Standards. If you go to http://www.cmpco.com/YourAccount/puc324.html and follow the instructions for the Small Generator Interconnection Procedures, CMP can do this work in parallel to your service request that will be handled by me. If you project is under 660 KW You will be able to have a Customer Net Energy Billing contract. Information concerning Chapter 313 (Customer Net Energy Billing) can be accessed thru the Chapter 324 website or by clicking here: Net Energy Billing .

If you have any questions, please contact me.

Attachments:
Excel Load Sheet
Easement Worksheet and Sample Standard Easement

Regards,

Jamie

Jamie Cough
Energy Services Advisor
Central Maine Power Company
162 Canco Road
Portland, ME 04103
207-842-2367 office
207-458-0382 cell
207-626-4082 fax

From: Alyssa Gartley [mailto:agartley@acorn-engineering.com]
Sent: Thursday, September 21, 2017 4:34 PM
To: Cough, Jamie
Cc: William Savage
Subject: 24 St. Lawrence Street Redevelopment - Ability to Serve

Jamie,

Acorn is providing civil engineering services for our client's proposed residential redevelopment project at 24 St. Lawrence Street, Portland. On behalf of our client, HR Property Management, please find attached the formal ability to serve letter and the preliminary utility plan. Please do not hesitate to contact me if you have any questions.

Thanks,

Alyssa Gartley
Design Engineer | Construction Inspector

Licensed E.I. in Maine

Acorn Engineering, Inc
PO Box 3372
Portland, Maine 04104
www.acorn-engineering.com

ACORN ENGINEERING, INC.

Fairpoint Communications
5 Davis Farm Road
Portland, Maine 04103

September 21, 2017

Subject: 24 St. Lawrence Street Redevelopment
Re: Ability to Serve

To Whom It May Concern:

On behalf of HR Property Management, we are pleased to submit the following request for Fairpoint's ability to serve the proposed development. The proposed project is located at 24 St. Lawrence Street (Chart, Book, Lot 16, J, 006), within the R-6 Residential Zoning District in Portland, Maine. The lot is to be redeveloped into a four-story, 5-unit apartment building, in which the first floor is a 6-car parking garage. The parking garage will be accessed from St. Lawrence Street on the first level. The existing two-unit building and separate garage will be demolished to facilitate the redevelopment.

It is proposed that the existing lines be rerouted underground to the new structure from the utility pole on St. Lawrence Street.

On behalf of the client, we are requesting the following information:

1. Any additional information, such as utility mapping within St. Lawrence Street.
2. Any easements for overhead services currently crossing the proposed development.
3. Alternative connection locations from the property to the existing communication system.
4. Fairpoint's proposed infrastructure improvements within the project vicinity.
5. Fairpoint's ability to serve the project.

I have attached an existing conditions plan created by Owen Haskell, Inc as well as the proposed preliminary utility plan from our office to facilitate your review. Please do not hesitate to contact me or the office for any questions or clarifications.

Sincerely,

Alyssa Gartley, E.I.
Design Engineer / Construction Inspector
Acorn Engineering, Inc.

From:	Baumgardner, Earl
To:	Alyssa Gartley
Cc:	William Savage
Subject:	RE: 24 St. Lawrence Street Redevelopment - Ability to Serve
Date:	Monday, September 25, 2017 1:29:36 PM

Hi Alyssa,

I forwarded this to our engineering and outside plant teams. Thanks.

Earl

From: Alyssa Gartley [mailto:agartley@acorn-engineering.com]
Sent: Thursday, September 21, 2017 4:36 PM
To: Baumgardner, Earl
Cc: William Savage
Subject: 24 St. Lawrence Street Redevelopment - Ability to Serve

Earl,

Acorn is providing civil engineering services for our client's proposed residential redevelopment project at 24 St. Lawrence Street, Portland. On behalf of our client, HR Property Management, please find attached the formal ability to serve letter and the preliminary utility plan. Please do not hesitate to contact me if you have any questions.

Thanks,

Alyssa Gartley
Design Engineer | Construction Inspector

Licensed E.I. in Maine

Acorn Engineering, Inc
PO Box 3372
Portland, Maine 04104
www.acorn-engineering.com

B. 207.775.2655
C. 207.446.1837

This electronic communication, which includes any files or attachments thereto, contains proprietary or confidential information and may be privileged and otherwise protected under copyright or other applicable intellectual property laws. All information contained in this electronic communication is solely for the use of the individual(s) or entity to which it was addressed. If you are not the intended recipient(s), you are hereby notified that distributing, copying, or in any way disclosing any of the information in this e-mail is strictly prohibited. If you have received this e-mail in error, please notify the sender immediately, and destroy the communication and any files or attachments in their entirety, whether in electronic or hard copy format. Since data stored on electronic media can deteriorate, be translated or modified, Acorn Engineering, Inc., and/or affiliates will not be liable for the completeness, correctness or readability of the electronic data. The electronic data should be verified against the hard copy.

ACORN ENGINEERING, INC.

Charter Communications
Attn: Mr. Mark Pelletier
118 Johnson Road
Portland, Maine 04102

September 21, 2017

Subject: 24 St. Lawrence Street Redevelopment
Re: Ability to Serve

Dear Mr. Pelletier:

On behalf of HR Property Management, we are pleased to submit the following request for Charter's ability to serve the proposed development. The proposed project is located at 24 St. Lawrence Street (Chart, Book, Lot 16, J, 006), within the R-6 Residential Zoning District in Portland, Maine. The lot is to be redeveloped into a four-story, 5-unit apartment building, in which the first floor is a 6-car parking garage. The parking garage will be accessed from St. Lawrence Street on the first level. The existing two-unit building and separate garage will be demolished to facilitate the redevelopment.

It is proposed that the existing lines be rerouted underground to the new structure from the utility pole on St. Lawrence Street.

On behalf of the client, we are requesting the following information:

1. Any additional information, such as utility mapping within St. Lawrence Street.
2. Any easements for overhead services currently crossing the proposed development.
3. Alternative connection locations from the property to the existing communication system.
4. Charter's proposed infrastructure improvements within the project vicinity.
5. Charter's ability to serve the project.

I have attached an existing conditions plan created by Owen Haskell, Inc as well as the proposed preliminary utility plan from our office to facilitate your review. Please do not hesitate to contact me or the office for any questions or clarifications.

Sincerely,

Alyssa Gartley, E.I.
Design Engineer / Construction Inspector
Acorn Engineering, Inc.

From: Pelletier, Mark
To: Alyssa Gartley
Subject: RE: 24 St. Lawrence Street Redevelopment - Ability to Serve
Date: Tuesday, September 26, 2017 10:35:09 AM

Alyssa,

I will answer your questions 1-5 as you have them listed.

1) Utility Mapping.. we are on the existing pole line on Lawrence St. we have no ownership on poles, just pay a rental space on poles.
2) Easements are done by the pole ownership(s). We piggy back on those easements as we are a renter.
3) Alternative connections again depends on pole(s) moving, new poles etc, riser poles, and conduit placements are not done by us, We just follow route and pathway. Poles moved, new pole sets etc are done by pole owner, conduit runs provided for us by developer etc.
4) Infrastructure Improvements costs are done as needed. When request are done by bldg owner/developer. Usually no costs for them.
5) Charter can provide services to this project.

Hope this helps,

Mark

From: Alyssa Gartley [mailto:agartley@acorn-engineering.com]
Sent: Thursday, September 21, 2017 4:32 PM
To: Pelletier, Mark <Mark.Pelletier@charter.com>
Cc: William Savage <wsavage@acorn-engineering.com>
Subject: 24 St. Lawrence Street Redevelopment - Ability to Serve

Mark,

Acorn is providing civil engineering services for our client's proposed residential redevelopment project at 24 St. Lawrence Street, Portland. On behalf of our client, HR Property Management, please find attached the formal ability to serve letter and the preliminary utility plan. Please do not hesitate to contact me if you have any questions.

Thanks,

Alyssa Gartley
Design Engineer | Construction Inspector

Licensed E.I. in Maine

Acorn Engineering, Inc
PO Box 3372

ACORN ENGINEERING, INC.

Unitil Service Corp.
Attn: Bridget Harmon
376 Riverside Industrial Parkway
Portland, Maine 04103

September 21, 2017

Subject: 24 St. Lawrence Street Redevelopment
Re: Ability to Serve

Dear Mrs. Harmon:

On behalf of HR Property Management, we are pleased to submit the following request for Unitil's ability to serve the proposed development. The proposed project is located at 24 St. Lawrence Street (Chart, Book, Lot 16, J, 006), within the R-6 Residential Zoning District in Portland, Maine. The lot is to be redeveloped into a four-story, 5-unit apartment building, in which the first floor is a 6-car parking garage. The parking garage will be accessed from St. Lawrence Street on the first level. The existing two-unit building and separate garage will be demolished to facilitate the redevelopment.

We believe there is an existing gas line servicing the property. It is proposed to extend this line and route it to the new building, or replace it if necessary.

On behalf of the client, we are requesting the following information:

1. Any additional utility mapping such as gas lines on St. Lawrence Street.
2. A confirmation of an existing gas main on St. Lawrence Street, as well as the size of any gas lines and services.
3. Unitil's proposed infrastructure improvements within the project vicinity.
4. Unitil's ability to serve the project.

I have attached an existing conditions plan created by Owen Haskell, Inc as well as the proposed preliminary utility plan from our office to facilitate your review. Please do not hesitate to contact me or the office for any questions or clarifications.

Sincerely,

Alyssa Gartley, E.I.
Design Engineer / Construction Inspector
Acorn Engineering, Inc.

September 25, 2017

Acorn Engineering, Inc.
Alyssa Gartley, E.I.
PO Box 3372
Portland Maine 04104

Re: 24 St. Lawrence Street, Portland Maine

Dear Ms. Gartley:

Thank you for your interest in using natural gas for the above referenced project.

This is to confirm that natural gas can be made available from our distribution system to serve your proposed project. The existing service to this address will have to be disconnected from the main prior to demolition.

Any improvements to the existing distribution system necessary to provide this service, as well as the design of the gas system in the project itself will be established as the overall design and scope of your project progresses.

All work necessary to provide service will be performed in accordance with the Maine Public Utilities Commission requirements.

If you have any further questions or require additional information, please contact me directly at (207) 541-2536 or at harmon@unitil.com.

Sincerely,

ME GAS CUSTOMER ENERGY SOLUTIONS
376 Riverside Industrial Parkway
Portland, ME 04103

T 207-541-2508 www.unitil.com

Bridget Harmon
Business Development
Unitil Corporation
(o) 207-541-2536 (f) 207-541-2586

J. Solid Waste Disposal

The five condo owners, or their property management company, shall be responsible for locating the solid waste and recyclable material to the space allocated for solid waste storage as noted on the Site Plan (C-10).

The solid waste containers will be fully enclosed and screened from the public view.

ACORN ENGINEERING, INC.

Assistant Chief Keith Gautreau
City of Portland Fire Department
380 Congress St.
Portland, ME 04101

October 10, 2017

Subject: 24 St. Lawrence Street – Fire Department Checklist
Section K of Application

On behalf of Kelly & Walter Williams, the design team is pleased to respond to the Portland Fire Department Site Review Checklist.

1. Name, address, telephone number of applicant

   Kelly & Walter Williams
   24 St. Lawrence Street
   Portland, Maine 04101
   (207) 671-1193

2. Name address, telephone number of architect

   Port City Architecture
   62 Newbury Street
   Portland, Maine 04101
   (207) 761-9000

3. Proposed uses of any structures [NFPA and IBC classification]

   NFPA: Apartments

   IBC: R-2

4. Square footage of all structures, including decks [total and per story]

Garage Level	2,823	sf
1st Floor	2,160	sf
2nd Floor	2,160	sf
3rd Floor	1,808	sf
Total	8,951	**sf**

5. Elevation of all structures

   The proposed building height is just under 45 feet which meets the zoning ordinance. See the elevations provided by the Architect for additional information.

6. Proposed fire protection of all structures

   The building will have a sprinkler system with additional protection per code. Fire flows and requirements for system storage or booster pumping are subject to the fire professional design which will be performed prior the request for a building permit.

7. Hydrant locations

   An existing hydrant is located approximately 11 feet from the east corner of the proposed structure. Hydrant flow data from the Portland Water District once received may be made available to the Fire Department upon request.

8. Water main size and location

   The development will be serviced by the existing water main within St. Lawrence Street. A 4" fire service line will extend from the existing water main to the building fire suppression system. The building is expected to have internal sprinkler risers and a Fire Department pump connection on the street side of the building.

9. Access to all structures [min. 2 sides]

   Main access to the structure is provided on St. Lawrence Street. In the event of an emergency, additional access may be accessible to the west of the subject property via a paved driveway that abut the property line.

10. The Architect has provided a code summary (to be attached at a later date).

NFPA 1 – Chapter 18 Fire Department Access and Water Supply

18.2 Fire Department Access:

The project site is located in a densely developed area and is fronted by a public street. The following pavement street width is currently available:

- St. Lawrence Street: 50 feet

Per NFPA 1 – Chapter 18.2.3.3.1, there will be public street access within 50 feet of at least one exterior door. Per NFPA 1 – Chapter 18.2.3.2.2.1, all first story floors shall be located not more than 450 feet from a Fire Department access road.

City of Portland Technical Manual – Section 3 Public Safety
3.4.1 Every dead-end roadway more than one hundred fifty (150') feet in length shall provide a turnaround at the closed end. Turnarounds shall be designed to facilitate future street connectivity and shall always be designed to the right (refer to Figure I-5).

Response: Not applicable

3.4.2 Where possible, developments shall provide access for Fire Department vehicles to at least two sides of all structures. Access may be from streets, access roads, emergency access lanes, or parking areas.

Response: As depicted on the site plan, the proposed building layout provides a minimum of two paved access points to the structure: one from St. Lawrence Street directly as well as the northerly abutter's paved driveway.

3.4.3 Building setbacks, where required by zoning, shall be adequate to allow for emergency vehicle access and related emergency response activities and shall be evaluated based on the following factors:

- *Building Height.*
- *Building Occupancy.*
- *Construction Type.*
- *Impediments to the Structures.*
- *Safety Features Provided.*

Response: The proposed development layout has contemplated emergency access conditions and provides for safe and efficient access along the public street for emergency vehicles.

3.4.4. Fire Dept. access roads shall extend to within 50' of an exterior door providing access to the interior of the structure.

Response: The building will be provided with exterior doors that will be within 50' of a Fire Department access route, namely St. Lawrence Street.

3.4.5. Site access shall provide a minimum of nine (9) feet clearance height to accommodate ambulance access.

Response: Not applicable

3.4.6. Elevators shall be sized to accommodate an 80 x 24-inch stretcher.

Response: The elevators will be sized to accommodate an 80 x 24 stretcher, per the Architect's designs.

3.4.7. All structures are required to display the assigned street number. Numbers shall be clearly visible from the public right of way.

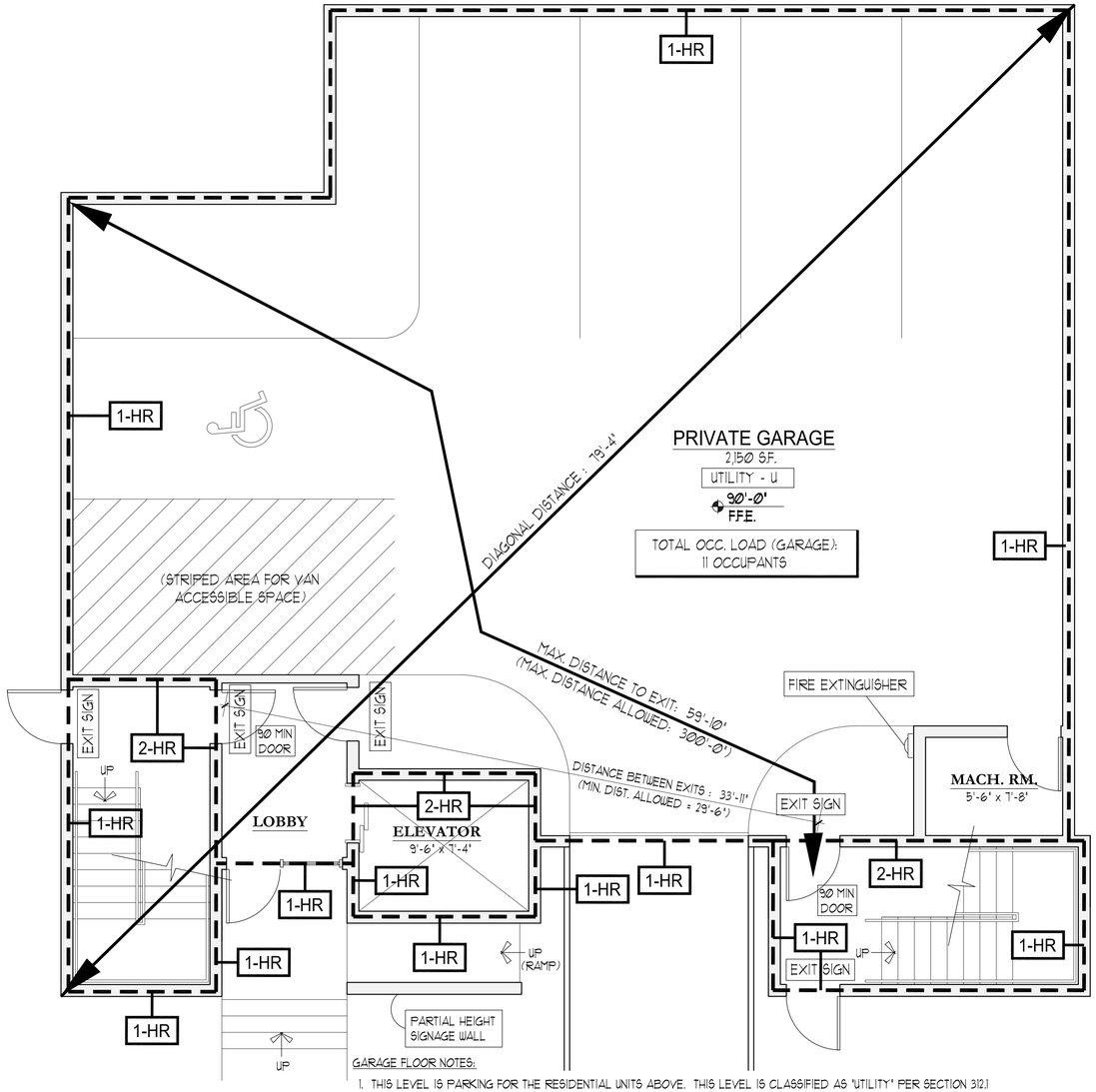
Response: The applicant will work with the City's Public Works Division to assign street addresses and numbering to meet City Standards.

Please let me know if you have any additional questions or comments.

Sincerely,



William H. Savage, P.E.
Principal
Acorn Engineering, Inc.

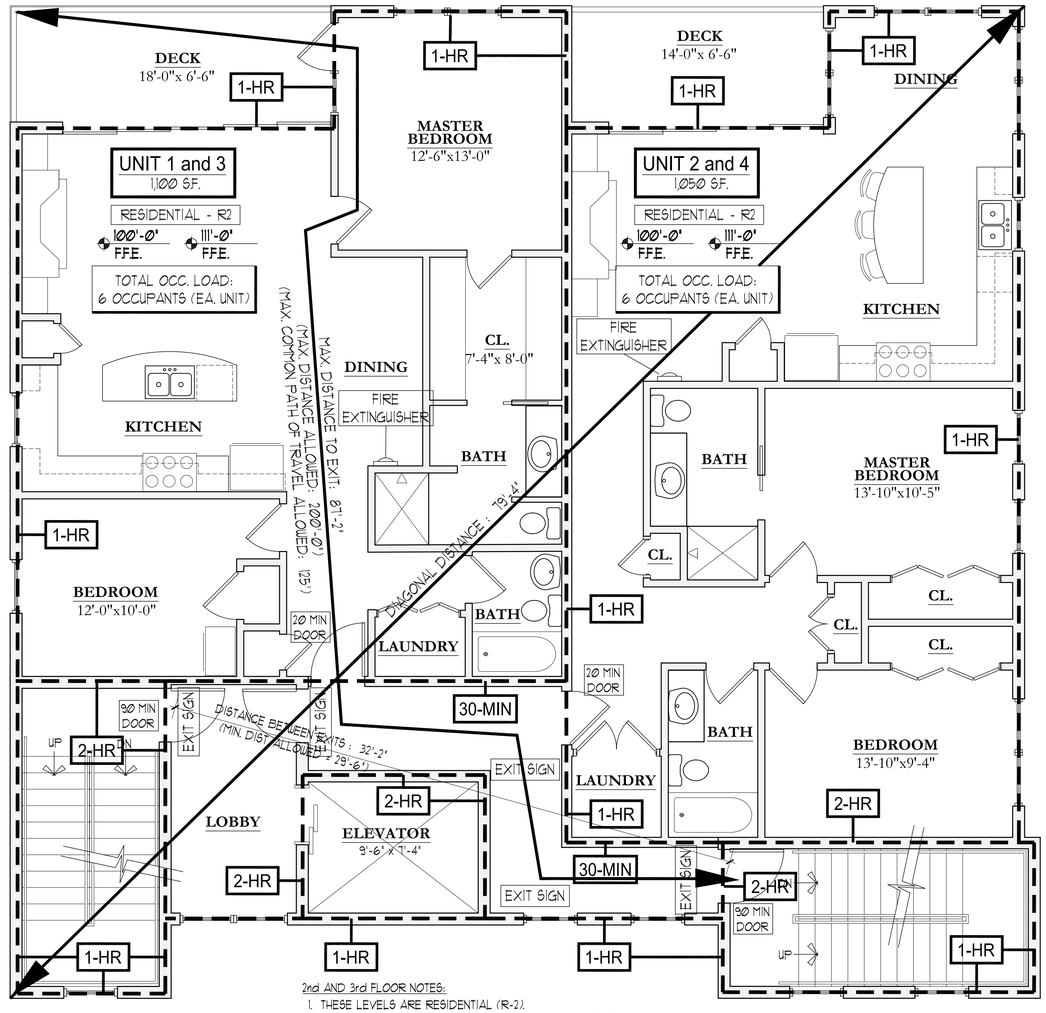


GARAGE FLOOR NOTES:

1. THIS LEVEL IS PARKING FOR THE RESIDENTIAL UNITS ABOVE. THIS LEVEL IS CLASSIFIED AS "UTILITY" PER SECTION 312.1 AND IS SEPARATED FROM THE RESIDENTIAL UNITS ABOVE PER 406.1.4.1. (1-HR PER IBC TABLE 601 - TYPE 5A)
2. THE BUILDING IS FULLY SPRINKLED WITH AN NFPA 13 SYSTEM.
3. THE EXTERIOR WALLS ARE REQUIRED TO BE 1-HR PER IBC TABLE 601 (CONSTRUCTION TYPE 5A).
4. TWO EXITS ARE REQUIRED AS THE BUILDING EXCEEDS THE VALUES IN IBC TABLE 1021.2. EXITS TO BE SPACED ⅓ OF THE DIAGONAL DUE TO THE SPRINKLER SYSTEM.
5. A 2-HR SEPARATION IS REQUIRED TO SEPARATE THE ELEVATOR AND STAIR SHAFTS FROM THE REMAINDER OF THE BUILDING AS THEY CONNECT 4 STORIES (IBC SECTION 708.4).

1 EGRESS / LIFE SAFETY PLAN - GARAGE

0 4'-0" SCALE: 1/4" = 1'-0"



2nd AND 3rd FLOOR NOTES:

1. THESE LEVELS ARE RESIDENTIAL (R-2).
2. THE BUILDING IS FULLY SPRINKLED WITH AN NFPA 13 SYSTEM.
3. THE EXTERIOR WALLS ARE REQUIRED TO BE 1-HR PER IBC TABLE 601 (CONSTRUCTION TYPE 5A).
4. TWO EXITS ARE REQUIRED AS THE BUILDING EXCEEDS THE VALUES IN IBC TABLE 1021.2. EXITS TO BE SPACED ⅓ OF THE DIAGONAL DUE TO THE SPRINKLER SYSTEM.
5. A 2-HR SEPARATION IS REQUIRED TO SEPARATE THE ELEVATOR AND STAIR SHAFTS FROM THE REMAINDER OF THE BUILDING AS THEY CONNECT 4 STORIES (IBC SECTION 708.4).
6. ONE EXIT IS REQUIRED OUT OF EACH UNIT (SPACE) PER 1015.1.
7. THE HORIZONTAL AND VERTICAL DWELLING UNIT SEPARATIONS ARE 1-HR RATED AS THEY ARE ALSO BEARING (CONSTRUCTION TYPE 5A).
8. THE CORRIDOR WALLS SHALL BE 30-MIN DUE TO THE SPRINKLER (PER 1018.1) - UNLESS THEY ARE BEARING WALLS (SEE NOTE 7).

2 EGRESS / LIFE SAFETY PLAN - 2nd & 3rd

0 4'-0" SCALE: 1/4" = 1'-0"

PORT ▪ CITY ARCHITECTURE
65 NEWBURY STREET
PORTLAND, ME 04101
207.761.9000

Consultants:

DESIGN DEVELOPMENT

WILLIAMS 5 UNIT RESIDENCE

24 St Lawrence Street
Portland, Maine

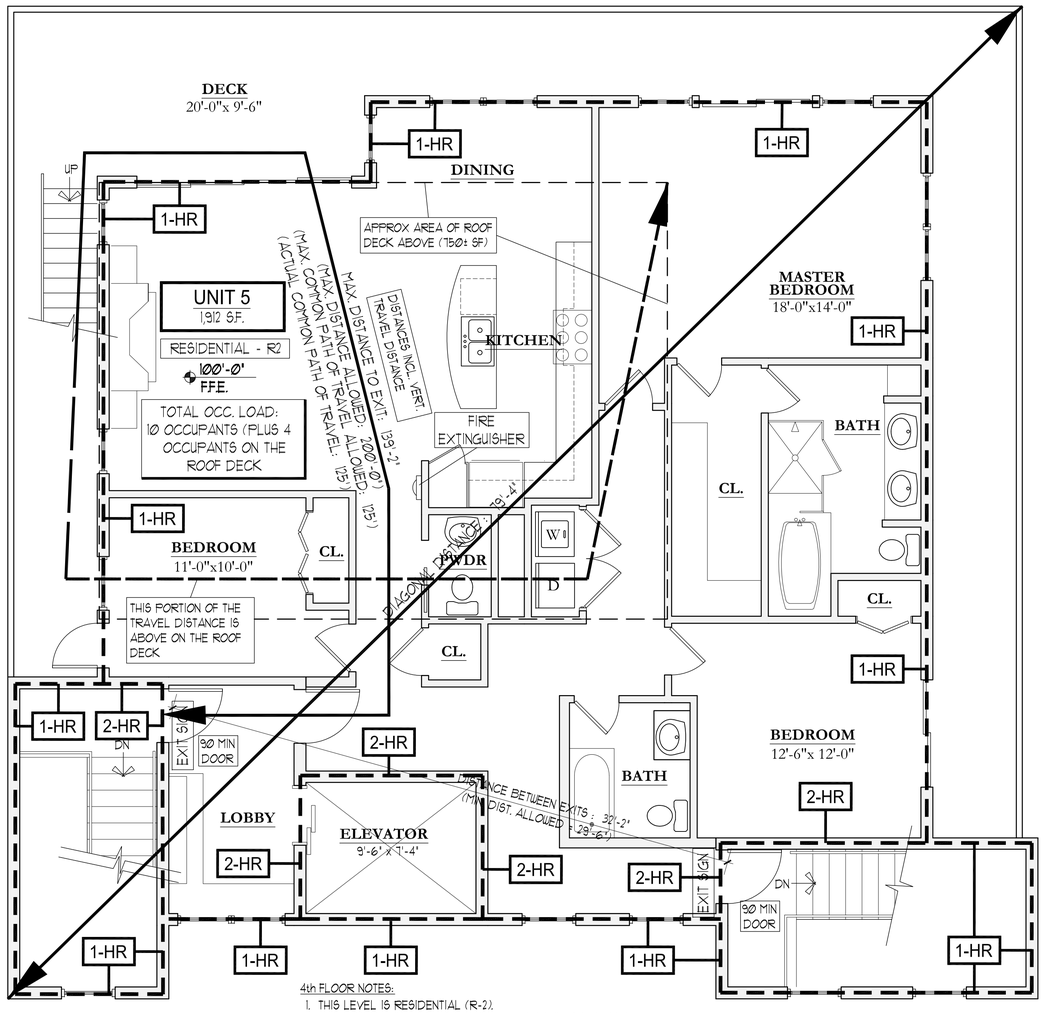
#	DATE	DESCRIPTION

Date Issued JUNE 6, 2017
Project Number 16015
Drawing Scale 1/8" = 1'-0"

LIFE SAFETY / EGRESS PLAN

Drawn By JAP, CG
Checked By MC

LS 1.0



4th FLOOR NOTES:

1. THIS LEVEL IS RESIDENTIAL (R-2).
2. THE BUILDING IS FULLY SPRINKLED WITH AN NFPA 13 SYSTEM.
3. THE EXTERIOR WALLS ARE REQUIRED TO BE 1-HR PER IBC TABLE 601 (CONSTRUCTION TYPE 5A).
4. TWO EXITS ARE REQUIRED AS THE BUILDING EXCEEDS THE VALUES IN IBC TABLE 1012. EXITS TO BE SPACED ⅓ OF THE DIAGONAL DUE TO THE SPRINKLER SYSTEM.
5. A 2-HR SEPARATION IS REQUIRED TO SEPARATE THE ELEVATOR AND STAIR SHAFTS FROM THE REMAINDER OF THE BUILDING AS THEY CONNECT 4 STORIES (IBC SECTION 708.4).
6. ONE EXIT IS REQUIRED OUT OF EACH UNIT (SPACE) PER 1015.1.
7. THE HORIZONTAL AND VERTICAL DWELLING UNIT SEPARATIONS ARE 1-HR RATED AS THEY ARE ALSO BEARING (CONSTRUCTION TYPE 5A).
8. ANY BEARING WALLS WITHIN THIS UNIT ARE REQUIRED TO BE 1-HOUR RATED.

1 EGRESS / LIFE SAFETY PLAN - 4th FLOOR

0 4'-0" SCALE: 1/4" = 1'-0"

Code Review - Title 5, Chapter 337: Maine Human Rights Act

Subchapter 4: Fair Housing (4582-C. Standards for Multifamily and Public Housing)

Section 1.C.(1) - This facility is a "Covered Multifamily Dwelling" as it contains four (5) units and an elevator.

Section 3.A.(1) - The public use and common use portions of the building are accessible.

Section 3.A.(2) - All doors are (or can be modified) to have 32" clear (in one unit, see Section 3.B.).

Section 3.A.(3) - In one of the units (see Section 3.B.), there is an accessible route, environmental controls under 48" maximum above the floor, blocking in the bathroom walls for future grab bars, and usable kitchens for persons in a wheelchair. The bathroom can be easily modified to provide ADA fixtures and the required maneuvering spaces (by removing the fixtures and installing an ADA shower and sink).

Section 3.B. - The above sections are applicable to a minimum of one (1) unit in this facility.

Code Review - NFPA 101 (Life Safety) 2009

Chapter 6 - Classification of Occupancy

Section 6.1.8 - The upper three stories of this building are classified as an "Apartment Building" per Section 6.1.8.1.5.

Section 6.1.13 - The lower story of this building (except for the exits) is classified as a "Storage" occupancy per Section 6.1.13.1.

Section 6.1.14.1 - This occupancy shall be classified as a "Multiple Occupancy" and further defined as a Separated Occupancy.

Section 6.1.14.4.1 - The requirements of a Separated Mixed-Use occupancy shall be utilized and the code requirements shall apply to each occupancy respectively.

Table 6.1.14.4.1(b) - The fire separation between Apartment Buildings and Storage Low and Ordinary Hazard is 2-HR, but is allowed to be reduced to 1-HR due to the sprinkler system (Section 6.1.14.4.3).

Section 6.2.2.3 - The contents of the garage area is defined as "Ordinary Hazard".

Chapter 7 - Means of Egress

Section 7.1.3.2.1(2) - The stair connects four (4) stories and shall have a 2-HR separation from the units. Note: The top flight of stairs to the roof deck is part of that unit, as the roof deck is accessible by that unit only.

Section 7.2.1.2.3.2(3) - Door openings in the means of egress are allowed to be 28" wide (34" minimum provided).

Section 7.2.1.4.2(1) - Doors are not required to swing in the direction of egress travel as they serve less than 50 occupants.

Section 7.2.1.4.3.1 - Doors in the means of egress shall not leave less than half of the required egress width clear during its swing.

Section 7.2.1.5.9.3 - The egress doors to the individual living units are allowed to have locking devices that comply with this section.

Table 7.2.2.2.1.1(a) - The egress stair width shall be 36" minimum (per 7.2.2.2.1.2) with 7" risers maximum and 11" treads minimum.

Section 7.2.2.3.1 - Stairs shall have landings at all door openings at least 36" along the path of egress travel.

Section 7.2.2.4.1.1 - Stairs shall have handrails on both sides of the stair.

Table 7.3.1.2 - Occupant Load: see Egress Plans.

Storage (Garage Bays): NA (defined as a Storage Occupancy per 6.1.13.1 and a Separated Mixed-Use)

Note: Use the occupant load for Parking Garages in the IBC code.

Residential: 1 person per 200 square feet

Section 7.5.1.3.3 - Exits shall be separated by a minimum of 1/3 the overall diagonal of each space due to the sprinkler system.

Section 7.5.4.1 - Accessible means of egress are not required as the dwelling units are not required to be accessible.

Table 7.6 - Residential Occupancy (Apartments / New / Sprinkled): Common Path Limit = 50'; Dead-End Limit = 50'; Travel Distance Limit = 325'. Storage Occupancy (Parking Structure, enclosed / Sprinkled): Common Path Limit = 50'; Dead-End Limit = 50'; Travel Distance Limit = 200'. Note: Common Path of Travel limits do not include travel within a unit per Section 30.2.5.3.2.

Section 7.10.2.1 - Exit signs shall be installed per this section as required by Chapters 30 and 42 (see Egress Plans).

Chapter 8 - Features of Fire Protection

Table 8.2.1.2 - Construction shall by Type V (111). Note: See the IBC code review other sections for the requires fire-ratings (stair, between uses, and between dwelling units, bearing walls).

Table 8.3.4.2 - For any 1-hour vertical shafts, the openings shall be 1-HR rated. For the 2-HR vertical shafts, the openings shall be 90-minute rated.

Section 8.6.5(1) - The shaft enclosure for the stairs are 2-HR as they connect 4 stories.

Note: Also see section 7.1.3.2.1(2)

Chapter 30 - Apartment Buildings

Section 30.1.2.3(1)(2) - Due to the sprinkler system, and the separation between the residential units and the storage (garage) area, the residential units are allowed to be located over the non-residential occupancy.

Section 30.2.1.2 - Only one means of escape from the dwelling units is required due to the sprinkler system (also see 24.2.2.1.2).

Section 30.2.2.1.2 - Due to the sprinkler system, the exit enclosures are permitted to be 1-HR. However, due to the requirements of IBC, the stairway connects 4 stories is required to be 2-HR.

Section 30.2.4.4 - A single exit is permitted by this section (requirements 1-8). Note: Two exits are provided due to the requirements of IBC.

Section 30.2.5.3.2 - The common path of travel shall not exceed 50' (and does not include the travel within the units).

Section 30.2.5.4.2 - Dead-end corridors shall not exceed 50'.

Section 30.2.6.2 - Travel distance within a unit shall not exceed 125'.

Section 30.2.6.3.2 - The travel distance from the entrance door to a unit, to the exit shall not exceed 200'.

Section 30.2.8 - The means of egress are required to be illuminated per Section 7.8

Section 30.2.9 - Emergency lighting shall be provided.

Section 30.3.4.1.2 - A fire alarm system is required.

Section 30.3.4.5 - Smoke alarms are required in every sleeping area, outside every sleeping area, and on every level.

Section 30.3.5.2 - An automatic sprinkler system is required and is allowed to be a 13R system.

Section 30.3.5.12 - Fire extinguishers are not required due to the sprinkler system. However, due to the requirements of IBC, fire extinguishers shall be provided (see Egress Plans for locations).

Section 30.3.7.2 - Dwelling units shall be separated from each other by 30-minute fire separation assemblies due to the sprinkler system. However, due to the requirements of IBC, 1-HR fire separations shall be provided.

Chapter 42 - Storage Occupancies

Section 42.2.4.1.(2) - A single means of egress is permitted provided the exit can be reached in 50' (per Table 42.2.5), however, due to section 42.8.2.4.1, two means of egress are required (parking structure).

Table 42.2.5 - Dead-end corridors: 100' / Common Path of Travel: 50' (parking structure, see 42.8.2.5.1).

Table 42.2.6 - Maximum travel distance to exit: 400'.

Section 42.2.8 - Means of egress shall be illuminated.

Section 42.2.9 - Emergency lighting shall be provided..

Section 42.2.10 - Exit signs shall be provided.

Section 42.3.4.1.2 - A fire alarm system is not required, but will be provided due to requirements elsewhere in this code.

Section 42.3.5 - There are no extinguishment requirements, however, the lower level will be sprinkled due to requirements elsewhere in this code and in the IBC code.

Section 42.8.1.2.2 - No repair facilities are located in this building.

Section 42.8.2.4.1 - Two means of egress out of the parking area are required.

Section 42.8.2.5.1 - Common path of travel = 50'.

Section 42.8.2.5.2 - Dead ends shall not exceed 50'.

Table 42.8.2.6.1 - Maximum travel distance to an exit = 200'.

Section 42.8.3.4.1.1 - A fire alarm system is not required per this section.

Code Review - IBC 2012

Chapter 3 - Use and Occupancy Classification

Section 310.1 - The majority (2nd, 3rd, and 4th floors) of this building is classified as Use Group R-2 (Residential).

Section 312.1 - The first level parking area is classified as Use Group U (Utility - Private Garage).

Note: Due to the intermingling of the uses, this will be a Mixed-Use, Separated building. See Section 508.4.

Chapter 4 - Special Detailed Requirements Based on Use and Occupancy

Section 406.1.2 - The parking level is allowed to be Use Group U as it is under 3,000 square feet.

Section 406.1.4 - The separation between the parking level and the dwelling units is allowed to be ⅝" Type X, with solid core wood or honeycomb steel doors. However, it will be 1-HR due to the requirements of the Type 5A Construction Type.

Chapter 5 - General Building Heights and Areas

Table 503 - This building is classified under Type V (A) construction type. For the R-2 classification this building is limited to three (3) stories and 50' above the grade plane, and 12,000 square feet per floor. For the U classification, two (2) stories above the grade plane is allowed and 9,000 square feet per story. Since this is a separated mixed-use, the requirements of this Table shall apply to the respective areas of this building.

Note: The height of the R-2 area will be increased due to a NFPA 13R sprinkler system (Garage is also sprinkled as building is required to be fully sprinkled).

Section 504.2 - The building height for the R-2 portion of the building shall be increased by 20' and 1 additional story above the grade plane due to the NFPA 13R sprinkler system (4 stories and 70' in height are allowed, also see Section 903.3.1.2).

Section 506.3 - The building area is allowed to be increased due to the sprinkler system, but increases are not necessary.

Section 508.4.1 - The requirements of this section to be utilized for this building to allow each occupancy to be individually classified.

Table 508.4 - The separation between the R-2 and the U occupancies is not required to be fire-rated, but will meet the requirements for 1-HR due to the 5A Construction Type.

Note: Footnote C references Section 406.1.4 that allows ⅝" Type X between the two occupancies with solid core wood or honeycomb steel 1⅜" steel doors.

Chapter 6 - Types of Construction

Table 601 - The construction type shall be Type V (A).

Table 602 - The requirements of the Construction Type satisfy this section as the exterior walls are rated 1-HR.

Chapter 7 - Fire and Smoke Protection Features

Table 705.8 - The fire separation distances vary on this buiding from 5' to over 20'. The amount of unprotected openings (sprinkled) are as follows:

5' to 10' (unprotected, sprinkled) = 25%

10' to 15' (unprotected, sprinkled) = 45%

15' to 20' (unprotected, sprinkled) = 75%

over 20' = no limit

Note: See the elevations for the individual elevation opening calculations.

Section 708.4 - The stair connects 4 stories and is required to be 2-hr. The elevator also connects 4 stories and is required to be 2-hr rated.

Section 708.6 - The exterior walls that are part of the stair enclosures are required to be 1-HR due to the requirements for the construction type.

Section 708.14.1(4) - An enclosed elevator lobby is not required due to the sprinkler system.

Section 709.3 - 30 minute fire partitions are required between dwelling units (per Exception 2). However, due to the Type 5A construction type, the separations are also bearing walls and will be 1-HR rated.

Section 713 - At this time the extent and amount of penetrations through the horizontal and vertical fire-separation assemblies is unknown. The HVAC, plumbing, and electrical will be design-build. The rated penetration assemblies will be submitted at that time.

Table 715.4 - Doors in the 2-HR shaft/exit enclosures shall be 90-min. rated. Doors in the 1-HR exterior walls are not required to be 45-min rated per this Table, as the openings are allowed to be unprotected per Table 705.8.2 (also see Elevations for calculations of unprotected openings).

Section 717.2 - Fireblocking shall be installed per this section.

Section 717.3.2 - Draftstopping within the floor/ceiling assembly is not needed as the 1-HR separation between Units 1 and 2, and 3 and 4, extends to the floor deck, and Units 5 comprises the entire floor.

Section 717.4.2 - Draftstopping in the attic is not required as the entire 4th floor contains one unit and the area of the attic is less than 3,000 square feet (also see Section 717.4.3).

Chapter 9 - Fire Protection Systems

Figure 903.2 - A sprinkler system is required in all Residential occupancies. A sprinkler system is also required in the parking level for the building to be considered "fully sprinkled".

Section 903.3.1.2 - A 13R sprinkler system can be used in the residential areas of the building per this section.

Section 906.1 - Portable fire extinguishers are required (see Egress plan for locations).

Table 906.3(1) - Extinguishers shall be rated 2-A with a maximum floor area of 3,000 square feet and a maximum travel distance to an extinguisher of 75'.

Secton 907.2.9.1 - A manual fire alarm system is required (R-2) as there is a dwelling unit located 3 stories above the lowest level of exit discharge.

Section 907.2.9.2 - Smoke alarms are required.

Section 907.2.11.2 - Smoke detectors shall be installed in each sleeping room, outside of each sleeping room, and at least one on each floor of each dwelling unit.

Section 907.5.2.3.4 - All dwelling units and sleeping rooms shall be provided with the capability to support visible alarm notification appliances.

Chapter 10 - Means of Egress

Table 1004.1.1 - Occupant Load = 1 person per 200 square feet, see Egress plans.

Section 1005.2 - Doors in the egress stairs shall not reduce the egress width to less than half of the required width when open.

Section 1006.1 - The means of egress stairs and exit discharge shall be illuminated as they are not within the dwelling units.

Section 1006.3 - The illumination of the egress per 1006.1, shall have emergency power.

Section 1007.1 - An accessible means of egress is not required as none of the dwelling units are required to be accessible (usually this references Sections 1107.6.2.1.1 and 1107.6.2.1.2, however Maine has deleted Chapter 11 and defers to the Maine Human Rights Act).

Section 1008.1.1 - Doors serving in the means of egress shall have 32" clear width (minimum).

Section 1008.1.4.4 - The entrance doors and entrance doors to the units are allowed to have locking hardware that complies with this section.

Section 1009.1(1) - The exit stairways shall have a clear width of 36".

Section 109.4.2 - Riser height shall be 7" maximum and tread depths shall be 11" minimum.

Section 1011.1 - Exit signs will be provided within the egress stairs (not in the individual units per Exception 3). See Egress Plans for locations.

Section 1014.3 - Maine has deleted this section in lieu of NFPA Table A.7.6.

Section 1015.1 - All units are required to have two exits per the number of stories. The parking level is required to have two exits as the common path of travel (50' per NFPA A7.6) is exceeded. Also see 1021.1 for exits from "stories".

Section 1015.2.1(2) - The exits shall be placed a minimum of 1/3 of the diagonal of each space due to the sprinkler system.

Table 1016.1 - The maximum exit travel distance (per this section) shall be 200' for the Residential areas, and 300' for the Parking (Utility) Areas. Note: The increase in distance for a sprinkler is only for a full 13 system. This building will have a 13R system, so the unsprinkled numbers must be used.

Section 1021.1 - The parking level is permitted to have one exit per Table 1021.2, however it is required to have two exits per 1015.1, and the requirements of NFPA. The residential units on the second, third and fourth levels are required to have two exits.

Section 1022.1 - The stair connects 4 stories and is required to be 2-HR rated.

Section 1029.1(1) - Emergency escape and rescue openings are not required due to the automatic sprinkler system (Exception 1).

Chapter 11 - Accessibility

Note: Maine has deleted this chapter in lieu of the Maine Human Rights Act.

PORT ▪ CITY ARCHITECTURE
65 NEWBURY STREET
PORTLAND, ME 04101
207.761.9000

Consultants:

DESIGN DEVELOPMENT

WILLIAMS 5 UNIT RESIDENCE

24 St Lawrence Street
Portland, Maine

#	DATE	DESCRIPTION

Date Issued JUNE 6, 2017

Project Number 16015

Drawing Scale 1/8" = 1'-0"

LIFE SAFETY / EGRESS PLAN

Drawn By JAP, CG

Checked By MC

LS1.1

L. Conformity with Land Use Ordinance

The following statement is made in accordance with the City of Portland Code of Ordinances, Chapter 14 Land Use, Article V Section 14-526.

OVERVIEW

This project conforms with all applicable design standards of Section 14-526 as demonstrated in the following narrative.

(a) Transportation Standards

1. Impact on Surrounding Street Systems:

   The site is located on 24 St. Lawrence Street which is a local street. Currently, the street sees minimal traffic. It is predicted that the proposed project will not produce a significant increase in traffic volume as the available parking will increase from two to six.

2. Access and Circulation:

   a. Site Access and Circulation.

      The project proposes the removal of the existing driveway and replacing with a 12.75-foot driveway. The proposed entrance will lead into the proposed 10-foot wide parking garage entrance. One curb cut is proposed at this entrance, with the existing curb cut being closed. Furthermore, the proposed driveway/curb cut maintains over 20 feet of face to face separation from the abutting driveways.

      (i) The development will provide safe access and internal circulation for both pedestrians and vehicles.

      (ii) It is expected that the proposed ground-level parking garage will serve at full capacity, six vehicles. The parking garage is designed in such a way that limits traffic, entering and exiting the property, to one car. This will be acceptable based on the low turnover of six vehicles. Furthermore, based on a vehicle-circulation model, AutoTurn, vehicles exiting the property will not have to back out onto St. Lawrence Street.

      (iii) The site does not feature drive up services as mentioned in this requirement.

   b. Loading and Servicing:

      (i) Not required. There will be adequate area along adjacent streets and within the proposed drive aisle for infrequent periods of tenants moving in/out of the building.

c. Sidewalks:

(i) The existing sidewalk along St. Lawrence Street is comprised of concrete and will be reconstructed with brick and granite curb per City Standards along the property frontage.

(ii) All sidewalk along the project frontage is in substandard condition and will be replaced.

(iii) Not applicable.

3. Public Transit Access:

a. The development does not exceed twenty (20) or more residential dwelling units.

b. A new transit stop is not proposed as part of the project.

c. A new transit stop is not proposed as part of the project.

4. Parking:

a. Location and Required Number of Vehicle Parking Spaces:

(i) With the proposed five units, six proposed parking spaces surpasses the minimum requirement. The six spaces allow for one space per unit with the flexibility of one ADA accessible space.

(ii) A parking study is not required.

(iii) The amount of parking exceeds the minimum requirement by more than 10%. The justification for this proposal is outlined in Section Q.

(iv) The parking space dimensions are in conformance with City standards and the drive aisles exceed the standards.

(v) The internal parking lot will be constructed with a permanent and durable concrete surface that will drain to an internal oil-water separator. There is no proposed external parking lot.

b. Location and Required Number of Bicycle Parking Spaces:

(i) Wall-mounted bicycle storage will be provided internally within the parking garage for a minimum of 2 bicycle mounts will be provided.

c. Motorcycles and Scooter Parking:

(i) The project does not provide designated motorcycle/scooter parking; however, there is ample space within St. Lawrence Street for parking.

d. Snow Storage:

(i) Snow removal will only be necessary for the parking garage entrance and walkways Removal will be minimal and accommodated on site.

(ii) Not applicable.

5. Transportation Demand Management (TDM):

a. A TDM plan is not required for this project.
b. A TDM plan is not required for this project.
c. A TDM plan is not required for this project.

(b) Environmental Quality Standards

1. Preservation of Significant Natural Features:

a. The existing site contains no prominent significant natural features therefore no issue related to the preservation of these features applies.

b. Not applicable.

2. Landscaping and Landscaping Preservation:

a. Landscape Preservation:

(i) There is one existing, mature tree within the right of way as identified in the Existing Conditions Plan; it is proposed that this tree be removed to facilitate the new driveway entrance. Landscaping in the form of trees, shrubs, perennials, and grasses around the building will replace this tree as well as the two proposed Ash trees within the right-of-way.

(ii) No trees ten inches DBH or greater were identified on the site.

(iii) Due to the sparse landscaping on site, no protection during construction will be necessary.

(iv) Not applicable

(v) Not applicable.

b. Site Landscaping:

(i) Landscaped Buffers:

(a) The solid waste storage located within the garage level will be enclosed and not visible from the public sidewalks, street, or adjacent properties.

(b) The project has 68 linear feet of frontage along St. Lawrence Street; per requirement, it is proposed that a minimum of six shrubs or shrub alternatives

per 45 feet of frontage are planted within this setback as noted in greater detail in the Landscape Plan. This ratio equates to nine shrubs.

(c) Not applicable.

(d) Any existing evergreen vegetated buffers will be preserved where possible

(ii) Parking Lot Landscaping:

a) Not applicable.

b) Not applicable.

c) Not applicable.

d) Not applicable.

e) Not applicable.

f) Not applicable.

(iii) Street Trees:

(a) Per Section 4.6 of the Portland Maine Technical Manual, a minimum of five street trees are required (one per unit). Based on the property's frontage, two shade trees are proposed to be planted within the new sidewalk. Additionally, four evergreen trees are proposed in between the proposed building and the new sidewalk.

(b) It is anticipated to exceed the street tree requirement by one tree as noted above.

3. Water Quality, Stormwater Management and Erosion Control:

a. Stormwater:

(i) The site is proposed to be graded in a similar manner as the existing condition. The grades will tie into the existing grades at the property line and retaining walls, maintaining a similar drainage pattern as the existing condition. There is no anticipated ponding or flooding on adjacent lots using this design. As discussed in the stormwater management report, the flows to the combined sewer are expected to slightly increase while the flows to the abutting properties are expected to significantly decrease.

(ii) The design of water quality treatment is not warranted due to the marginal increase in impervious area.

(iii) The project is not expected to significantly increase the stormwater flows directly within St. Lawrence Street.

(iv) The City's combined system is anticipated to be able to accommodate a marginal increase of stormwater flow.

b. A site specific Stormwater Management Plan has been developed for the project to show compliance with Section 5 of the Technical Manual, including the basic standard of MEDEP Chapter 500. Please refer to the Stormwater Management Plan for more information.

c. The project is not located in a watershed of an urban impaired stream as listed by the MDEP.

d. Not applicable.

e. The development is not anticipated to pose a contamination risk to groundwater during or after construction. The project is serviced by a public wastewater system.

f. The development will provide for adequate and sanitary disposal of sewage in accordance with Section 2 of the Technical Manual.

(c) Public Infrastructure and Community Safety Standards.

1. Consistency with City Master Plans:

   a. The development has been designed to be consistent with the City's Master Plan, adopted June 2017.

   b. Not applicable.

2. Public Safety and Fire Prevention:

   a. The site has been designed to promote safe and inviting public and residential access.

   b. No changes to emergency access conditions within the surrounding streets are proposed.

   c. The proposal has been designed to be consistent with the City public safety standards. A fire hydrant is located approximately 11 feet from the east corner of the proposed structure.

3. Availability and Adequate Capacity of Public Utilities:

   a. Public utilities in the vicinity of the site have the capacity to serve the proposed project. More information on utilities is included within the ability to serve letters to the respective utility companies in Section I.

   b. All electrical service lines will be underground.

   c. All new utility infrastructures will meet the provisions of the Technical Manual.

   d. The project will be served by the proposed connection to the public sewer system within St. Lawrence Street.

e. The sanitary sewer collection system meets all applicable sections of the Technical Manual. The stormwater management system is designed to meet the standards of Chapter 500.

f. The proposed building includes provisions for on-site storage of trash and recyclables temporarily until waste is removed from the site via a private hauler.

(d) Site Design Standards.

1. Massing, Ventilation and Wind Impact:

   a. The bulk, location and height of the proposed building does not result in adverse impacts to abutting properties. Refer to the Architect's renderings for more information.

   b. The proposed building has been designed to minimize bulk and is positioned as such to affect abutting buildings as little as possible while conforming to the maximum height requirement.

   c. The proposed HVAC is designed to direct exhaust away from public spaces and adjacent residential properties.

2. Shadows:

   a. Not applicable.

3. Snow and Ice Loading:

   a. The proposed building features a flat roof. Should a standing seam metal roof be utilized, snow bars will be installed on each rooftop to prevent snow and ice accumulation and prevent it from falling onto adjacent properties or public ways.

4. View Corridors:

   a. The project site is located outside the Downtown Vision View Corridor Protection Plan.

5. Historic Resources:

   a. The development is not located in a historic district, historic landscape district or City designated landmark.

   b. The development is not located adjacent to designated landmarks, historic district, or historic landscape district.

   c. There are no known archaeological resources on the site.

6. Exterior Lighting:

   a. Site Lighting.

      (i) Exterior lighting will be designed to meet the requirements of Section 12 of the

Technical Manual. Cut sheets may be provided for the lighting typical of residential lights. Please let us know if a photometric plan is required for a project of this scale.

(ii) All proposed exterior lighting will employ house-side shielding per requirement.

b. Architectural and Specialty Lighting.

(i) No architectural or specialty lighting is proposed.

(ii) No up-lighting is proposed.

c. Street Lighting.

(i) No new street lights are proposed.

7. Noise and Vibration:

All HVAC and Mechanical equipment shall be in accordance with the applicable zoning requirements.

8. Signage and Wayfinding:

a. All street and wayfinding signage shall meet the requirements of the Manual on Uniform Traffic Devices (MUTCD) and Division 22 of the City Code.

(i) The project is not located in a historic district or subject to Article IX.

(ii) Not applicable.

(iii)All street and wayfinding signage shall meet the requirements of the Manual on Uniform Traffic Devices (MUTCD) and Division 22 of the City Code.

9. Zoning Related Design Standards:

a. The project has been designed to meet the design standards within the R-6 Zone.

M. Written Request for Waivers

There are no known project related waivers.

N. Summary of Written Easements

- **Existing Easements** – No existing easements were located by Owen Haskell, Inc on the Existing Conditions Plan.

- **Proposed Easements** – There are no proposed easements at this time.

Section O

Architectural Design Narrative

PORT ▪ CITY
ARCHITECTURE
65 Newbury Street, Portland, ME 04101-4218 • Voice 207.761.9000 • www.portcityarch.com

24 St. Lawrence Street

Architectural Narrative

Project Summary:
The project is located at 24 St. Lawrence Street, Portland, Maine, in the R-6 zone. The existing two-unit building will be demolished to allow a new 5-unit building to be constructed. The Lower Level will consist of a private (tenant only) parking garage with 5 parking spaces and 1 ADA accessible parking space. The 2nd and 3rd floors will have two condominium units on each floor and the 4th floor will have one larger condominium unit. The building will have two fire-rated stair tower exits and an elevator to service all floors. A rooftop deck will be above the 4th floor and will be available only for the 4th floor unit.

The building will be a 3B Construction Type (IBC) and will be fully sprinkled.

HVAC units will be placed towards the center of the roof as to minimize visual and noise impacts.

Materials:
The exterior materials will mostly consist of dipped cedar shakes or fiber cement shake panels. There are also areas of fiber cement clapboard siding and fiber cement panel trim. The base level will have a dimensional stone veneer for an increase in durability of the lower level (see elevations). See renderings for preliminary color selections

Zoning Analysis and R-6 Design Standards

Zoning Analysis:

City of Portland Zoning Codes: (See bold type for project specific information)
The project will meet all city of Portland zoning codes (listed below) as well NFPA and IBC.
Minimum lot size: 2,000 sf **Actual 4,661 SF**
Minimum lot area/dwelling unit: 725 sf **6 Units Possible, 5 units proposed**
Minimum front yard setback (principal structure): 5 ft
Neighboring properties are closer than 5'. Per the average of the two neighboring properties, the front setback is reduced to 3'-6" (see civil drawings).
Minimum rear yard setback (principal structure) : 10 ft **See attached civil drawings.**
Minimum side yard setback (principal structure): 5 ft **See attached civil drawings.**
Structure Step backs: Portions of a structure above 35ft shall be no closer than 10ft from the side property line and no closer than 15 ft from the rear property line when such property line abuts a residential zone.
See Elevations and plans, This requirement does not apply to Circulation elements (Stairs, Elevators, Lobbies).
Maximum lot coverage: **60% 2,797 SF allowed Proposed 2,795 SF**

Maximum height: (Principal and attached accessory structure): 45ft **Proposed 44'-11 3/8" (see elevations for average grade and height calculations).**

Landscape open space: 20% not include parking areas or other impervious surfaces. **Approximate landscape open space: 1,508 sf (32.3%).**
Maximum garage opening: (front facades) not to exceed the greater of 9 ft or 40% of the front façade, not to exceed 20' (max). **Front façade is 57'-6" (40% = 23'), actual garage door opening is 10'.**

ADA/Pedestrian Access

Current proposed plan and design will meet all ADA requirements as per HUD Fair Housing and Maine Human Rights Act. See civil drawings for ADA ramp to main entry.

City of Portland R-6 Design Standards

Principle A - Overall Context

Scale and Form: The proposed project meets the current City of Portland R-6 height Limit of 45' from average grade. Existing buildings in the surrounding area are mostly between 3-4 stories (see photos at the end of this report). The proposed project is a total of 4 stories including the garage level.

Composition of Principal Facades: Existing buildings in the Area consist of a mixture of typical Portland Regional Architecture, and modern contemporary buildings. There is a very similar project (designed by this office) at 31 Fore Street (corner of Fore and Waterville, see photo). The proposed building incorporates regional design and materials with a contemporary design standard. Large, modern windows/doors, as well as the decks on the rear façade, will take advantage of Casco Bay views and are similar to buildings neighboring the proposed site.

Relationship to street: The proposed project respects the rhythm, spacing and orientation of existing buildings in the neighborhood. The garage entrance and main entrance are on the street façade. Signage and a covered entry assist in main entrance hierarchy. The windows sizes address the street frontage, while still affording the privacy required.

Principle B - Massing

Massing: The buildings massing of the proposed building meets the massing of existing buildings in the area (Rectalinear shapes**)**

Roof Forms: Roof Forms within a 2-block radius include Gables Pitched roofs as well as flat roofs. The proposed building will have a flat roof.

Main Roofs and Subsidiary Roofs: The proposed building has a clear roof form (flat) that is accentuated by the simple cornice band. There is a small subsidiary roof over the main entrance that is also flat with a smaller simple cornice.

Roof Pitch: Not Applicable

Façade Articulation: A recessed main entry, covered by a flat roof is on the street façade. The garage entry is also recessed on the front façade. Covered porches and balconies are incorporated in the proposed design on the rear façade. These porches take advantage of the views of Casco Bay and are visible from Waterville Street.

Garages: The garage entrance is located on the street frontage façade (St. Lawrence) of the property. It has been recessed slightly from the main frontage.

Principle C - Orientation to the Street

Entrances: Main Entrance is clearly articulated to the front façade of the building on St. Lawrence street. A recessed and covered entry, along with a main stair (and ramp), and a building signage wall will assist in defining the main entry. Downlighting at the main entrance and sign lighting will help to define the entry at night.

Visual Privacy: Visual privacy is met on main living spaces with the building being raised a story above public pedestrian paths. Privacy is also achieved by placing the stair towers, elevator, and lobbies on the street, with the units towards the rear of the property.

Transition Spaces: Landscape features create transitions from Public to private. The main entry is also recessed and situated up several steps (or ramp) above the sidewalk. This helps to separate the entrance from the sidewalk and provide the necessary transitional space.

Principle D - Proportion and Scale

Windows: Windows are rectangular and vertically proportioned. Accent windows are square or also vertically proportioned.

Fenestration: Doors, Windows and other openings are scaled appropriately per the buildings massing and exceed 12% of the total façade area (see elevations for actual percentages of openings).

Porches: Not applicable, no porches proposed on front façade.

Principle E - Balance

Window and Door Height: The window and door heights remain consistent (or are centered) within each floor. Also, the floors remain consistent and similar.

Window and Door Alignment: The floors are fairly consistent which lends itself to vertical stacking of elements. Where floors are not consistent, they are similar to adhere to the alignment principle.

Symmetricality: While the overall building is not symmetrical, the windows, doors, and balconies are grouped together to provide several axis lines, rather than only one overall axis line. This reflects the general façade treatments in the neighborhood.

Principle F - Articulation

Articulation: Building trim will be kept simple to reflect the contemporary nature of the structure. However, use of the building trim will be at the traditional locations: at windows/doors, at balconies/decks, at the cornice, and above the first level (to separate materials and to provide a vertical break of the facades).

Window Types: There are two window sizes on the front façade, but they are also grouped together in different configurations to provide visual interest and discourage repetitivity. The windows on the rear elevation reflect the additional fenestration surrounding the doors for the rear decks. There is a third window size on one of the side elevations due to the expected placement of the interior millwork.

Visual Cohesion: There are three materials on the facades of the building. The heavier material of dimensional stone is on the base level, while the shake shingles and clapboard siding are on the other levels above.

Delineation between Floors: The delineation between floors is achieved through the use of materials (lower level to upper levels), the use of a cornice line (lower level to upper levels), vertical separation of windows (upper levels), and porch/balcony roofs and trim (upper levels).

Porches ect…: The front entry is integrated into the design by the use of massing and the windows above that provide vertical alignment. The multi-level balconies/decks on the rear of the building are stacked as to provide the same vertical alignment and massing. The rail/baluster systems will adhere to all codes, while providing a thin profile (cable rail balusters) to keep the focus on the building.

Main Entries: The main entry is recessed, raised above the sidewalk, is covered, lighted and has adjacent signage. It is also emphasized vertically with the massing and windows above. In addition, the only other door on the front façade (for the adjacent stair) has been de-emphasized.

Articulation: Eaves are greater than 6”. Window trim is greater than 4”. The massing offsets in the front façade are approximately 48”, while the offsets for the rear decks are in excess of 6’. There are

two pronounced cornices on the building. The main cornice at the top of the building is reflected in a smaller cornice at the first level.

Principle G - Materials

Materials: The proposed materials mainly consist of Dipped Cedar Shakes, clapboard siding, dimensional stone veneer (lower level only) and Hardie Board or AZEK Trim. Existing buildings in the area materials consist of wood cladding, vinyl siding, cedar shakes, Hardie Board and brick masonry.

Material and Façade Design: The materials are consistent with façade design. The heavy stone veneer is on the lower level, while the clapboard siding and cedar shakes are on the upper levels. There are no small stone areas. Instead, the stone covers the entire lower level to give the structure a visual "base".

Chimneys: Not applicable as none are proposed.

Window Types: Windows are consistent in style and kept to a few sizes between facades.

Patios and Plazas: The only patio that is proposed is the main walkway at the front entrance. The front sidewalk will be constructed of brick pavers, and the entrance walkway, steps, ramp and entrance patio is expected to be concrete.

PORT ▪ CITY
ARCHITECTURE
65 Newbury Street, Portland, ME 04101-4218 • Voice 207.761.9000 • www.portcityarch.com



St. Lawrence Street



St. Lawrence Street

PORT ▪ CITY
ARCHITECTURE
65 Newbury Street, Portland, ME 04101-4218 • Voice 207.761.9000 • www.portcityarch.com



St. Lawrence Street



Monument Street

PORT ▪ CITY
ARCHITECTURE
65 Newbury Street, Portland, ME 04101-4218 • Voice 207.761.9000 • www.portcityarch.com



Waterville Street



Waterville Street

PORT ▪ CITY
ARCHITECTURE
65 Newbury Street, Portland, ME 04101-4218 • Voice 207.761.9000 • www.portcityarch.com



Fore Street (at Waterville)



Munjoy Street

P. Lighting

Please refer to the attached photometric plan and cut sheets for information regarding the proposed lighting models. These lights will not inflict significant light trespass within abutter's properties or the City right-of-way.

CHARRON
BRIGHTER.

Charron, Inc.
P.603-624-4827
C.207-907-9786

#	Date	Comments

Revisions

Drawn By: MKC
Checked By: MKC
Date:10/13/2017

Scale: 1" = 5'

24 St. Lawrence Street
Site Lightign Plan
Portland, Maine

Housing: One piece die-cast aluminum supplied with universal mounting bracket for direct attachment to 3½" or 4" octagonal wiring box. Die castings are marine grade, copper free (≤ 0.3% copper content) A360.0 aluminum alloy.

Enclosure: Molded clear glass diffuser ¼" thick with diffused stippled interior surface retained by one piece die-cast aluminum guard, secured by four (4) captive socket head, stainless steel screws threaded into stainless steel inserts. Interior of lamp compartment painted gloss white. Fully gasketed for weather tight operation in any mounting orientation using a molded silicone rubber 'U' channel gasket.

Electrical: 4.3W LED luminaire, 6 total system watts, -30°C start temperature. Integral 120V through 277V electronic LED driver, 0-10V dimming. LED module(s) are available from factory for easy replacement. Standard LED color temperature is 3000K with an 85 CRI. Available in 4000K (85 CRI); add suffix K4 to order.

Note: LEDs supplied with luminaire. Due to the dynamic nature of LED technology, LED luminaire data on this sheet is subject to change at the discretion of BEGA-US. For the most current technical data, please refer to www.bega-us.com.

Finish: All BEGA standard finishes are polyester powder coat with minimum 3 mil thickness. Available in four standard BEGA colors: Black (BLK); White (WHT); Bronze (BRZ); Silver (SLV). To specify, add appropriate suffix to catalog number. Custom colors supplied on special order

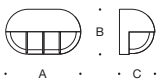
CSA certified to U.S. and Canadian standards, suitable for wet locations. Protection class IP65

Weight: 3.1 lbs.

Luminaire Lumens: 103

Type:
BEGA Product:
Project:
Voltage:
Color:
Options:
Modified:





		Lamp	A	B	C
33 428	ADA	4.3W LED	8¾	5⅛	4

BEGA-US 1000 BEGA Way, Carpinteria, CA 93013 (805) 684-0533 FAX (805) 566-9474 www.bega-us.com
©copyright BEGA-US 2016 Updated 02/16

Wall luminaires for light in two directions

Type:
BEGA Product:
Project:
Voltage:
Color:
Options:
Modified:

Housing: One piece die-cast aluminum supplied with universal mounting bracket for direct attachment to 3½" or 4" octagonal wiring box. Die castings are marine grade, copper free (≤ 0.3% copper content) A360.0 aluminum alloy.

Enclosure: One piece die-cast aluminum cover frame, secured by captive socket head, stainless steel screws threaded into stainless steel inserts. Interior of lamp compartment painted gloss white. One piece, handblown clear glass with internal fluted structure and translucent white-painted coating. Glass has a transmittance of 81%.

Electrical: 6.3W LED luminaire, 8.6 total system watts, -30°C start temperature. Integral 120V through 277V electronic LED driver, 0-10V dimming. LED module(s) are available from factory for easy replacement. Standard LED color temperature is 3000K with an 85 CRI. Available in 4000K (85 CRI); add suffix K4 to order.
Note: LEDs supplied with luminaire. Due to the dynamic nature of LED technology, LED luminaire data on this sheet is subject to change at the discretion of BEGA-US. For the most current technical data, please refer to www.bega-us.com.

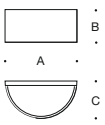
Finish: All BEGA standard finishes are polyester powder coat with minimum 3 mil thickness. Available in four standard BEGA colors: Black (BLK); White (WHT); Bronze (BRZ); Silver (SLV). To specify, add appropriate suffix to catalog number. Custom colors supplied on special order.

CSA certified to U.S. and Canadian standards, suitable for wet locations. Protection class IP65

Weight: 4.9 lbs

Luminaire Lumens: 260





	Lamp	A	B	C
33334	6.3W LED	9⅞	4⅝	5⅜

BEGA-US 1000 BEGA Way, Carpinteria, CA 93013 (805) 684-0533 FAX (805) 566-9474 www.bega-us.com
©copyright BEGA-US 2016 Updated 03/16

Impact resistant wall luminaires

Housing: One piece die-cast aluminum with mounting holes for direct attachment to the wall over a 3 1/2“ or 4“ octagonal wiring box. Die castings are marine grade, copper free (≤ 0.3% copper content) A360.0 aluminum alloy.

Enclosure: Molded clear glass diffuser with diffused stippled interior surface, fully gasketed for weather tight operation using a molded silicone rubber O-ring gasket. One piece die-cast aluminum half lid and guard, secured by three (3) captive socket head, stainless steel screws threaded into stainless steel inserts. Interior painted white.

Electrical: 4.3W LED luminaire, 6 total system watts, -30°C start temperature. Integral 120V through 277V electronic LED driver, 0-10V dimming. LED module(s) are available from factory for easy replacement. Standard LED color temperature is 3000K with an 85 CRI. Available in 4000K (85 CRI); add suffix K4 to order.

Note: LEDs supplied with luminaire. Due to the dynamic nature of LED technology, LED luminaire data on this sheet is subject to change at the discretion of BEGA-US. For the most current technical data, please refer to www.bega-us.com.

Finish: All BEGA standard finishes are polyester powder coat with minimum 3 mil thickness. Available in four standard BEGA colors: Black (BLK); White (WHT); Bronze (BRZ); Silver (SLV). To specify, add appropriate suffix to catalog number. Custom colors supplied on special order.

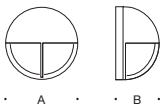
CSA certified to U.S. and Canadian standards, suitable for wet locations. Protection class IP65

Weight: 3.5 lbs.

Luminaire Lumens: 180
Tested in accordance with LM-79-08

Type:
BEGA Product:
Project:
Voltage:
Color:
Options:
Modified:





	Lamps	A	B
33 528	4.2W LED	8 1/2	4 7/8

BEGA-US 1000 BEGA Way, Carpinteria, CA 93013 (805) 684-0533 FAX (805) 566-9474 www.bega-us.com
©copyright BEGA-US 2016 Updated 02/16

Lumière

DESCRIPTION

Cambria 922 is a small dimmable LED or MR16 low voltage sign lighting luminaire. It attaches to a wall mounted straight arm and delivers full vertical adjustment for easy aiming. Optional 14", 18", 24", 30" or 36" straight arms are available. Various lenses, louvers and color or dichroic filters can be combined - up to three at once - to create multiple lighting effects. Lumiere's exclusive Siphon Protection System (S.P.S.) prevents water from siphoning into the fixture through its own lead wires.

Catalog #		**Type**
Project		
Comments		**Date**
Prepared by		

SPECIFICATION FEATURES

Material
Housing, hood, straight arm and wall mounting plate are precision-machined from corrosion-resistant billet stock 6061-T6 aluminum. Premium metals such as C360 brass, C932 bronze, C110 copper or 303/304 stainless steel are available on request.

Finish
Fixtures constructed from 6061-T6 aluminum are double protected by a chemical film undercoating and polyester powdercoat paint finish, surpassing the rigorous demands of the outdoor environment. A variety of standard colors are available.

Hood
Hood is removable for easy relamping and accepts up to three internal accessories at once (lenses, louvers, filters) to achieve multiple lighting effects. Weep holes prevent water and mineral stains from collecting on the lens, even in the straight-up position.

Gasket
Housing and hood are sealed with a high temperature silicone o-ring gasket to prevent water intrusion.

Lens
Tempered glass lens, factory sealed with high temperature adhesive to prevent water intrusion and breakage due to thermal shock.

Adjustable Mounting Arm
Straight arm with adjustable side swivel provides 340° of vertical adjustment for easy aiming. Optional 14", 18", 24", 30" or 36" straight arms are available (specify option -SA14, -SA18, -SA24, -SA30 or -SA36). Stainless steel aim-locking mechanisms are standard. 4-1/4" diameter wall mounting plate attaches directly to standard J-box with provided screws. Lumiere's exclusive Siphon Protection System (S.P.S. prevents water from siphoning into the fixture through its own lead wires.

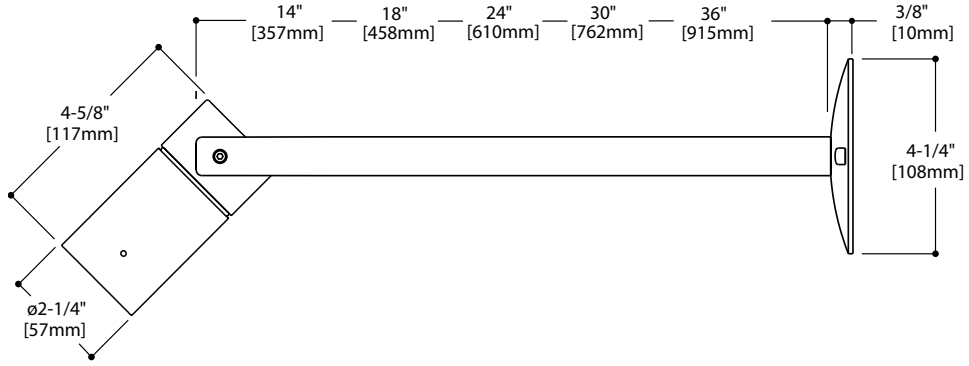
Hardware
Stainless steel hardware is standard to provide maximum corrosion resistance.

Socket
Ceramic socket with 250° CTeflon® coated lead wires and GU5.3 bi-pin base.

Electrical
Remote 12V transformer required (not included). Available from Lumière as an accessory - see the Accessories &Technical Data section of the catalog for details. NOTE: initial power draw on LED equipped fixtures is 15 watts. When sizing transformer use 15 watts per LED fixture. Nominal power draw after start up is 6 watts or 10 watts accordingly.

Lamp
Halogen lamp not included. Soraa lamp compatible (6W Max). LED modules are included and are available in four color temperatures (2700, 3000, 4000, and 5700) and three distributions (spot, narrow, and flood). Both color temperature and distribution must be specified when ordering.

Warranty
Lumière warrants its fixtures against defects in materials & workmanship for three (3) years. Auxiliary equipment such as transformers, ballasts and lamps carry the original manufacturer's warranty.





922
CAMBRIA

LED
HALOGEN

APPLICATIONS:
SIGN LIGHT

WORKS WITH SORAA

CERTIFICATION DATA
UL and cUL Wet Location Listed
LM79 / LM80 Compliant
ROHS Compliant
IP65 Ingressed Protection Rated

TECHNICAL DATA
Low Voltage:
50W Max Halogen MR16
6W LED, L70/60,000 hours at 25°C
10W LED, L70/60,000 hoursat 25°C

ORDERING INFORMATION

Sample Number: 922-10LED2712-12-BK-SA14

Series	Source (for LED, select from each column and combine)			Voltage	Finish	Stem Length
922=LED or MR16 Cambria Sign Light,, Straight Arm, Side Stem, Single Head	**50MR16**=50W max. Halogen MR16 (lamp not included)			**12**=12V	**Painted** **BK**=Black **BZ**=Bronze **CS**=City Silver **VE**=Verde **WT**=White	**SA14**= 14" Length **SA18** = 18" Length **SA24**= 24" Length **SA30**= 30" Length **SA36**= 36" Length
	6LED=6W LED **10LED**=10W LED	**27**=2700K **30**=3000K **40**=4000K **57**=5700K	**12**=12° Spot **21**=21° Narrow **41**=41° Wide			

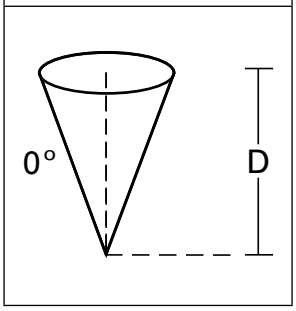
NOTES: 1 Unless noted otherwise, lamps not included. **2** See Accessories &Technical Data section of Lumiere catalog for Mounting Accessories. **3** Consult your customer service representative for additional options and finishes.

OPTICAL ACCESSORIES - ORDER SEPARATELY

Filters (2.00" Diameter)	Optical Lenses (2.00" Diameter)	Optical Louvers (2.00" Diameter)
F71 = Peach Dichroic **F72** = Amber Dichroic **F73** = Green Dichroic **F74** = Medium Blue **F75** =Yellow Dichroic **F76** = Red Dichroic **F77** = Dark Blue Dichroic **F78** = Light Blue Dichroic **F79** = Neutral Density Dichroic **F80** = Magenta Dichroic **F22** = Red Color **F33** = Blue Color **F44** = Green Color **F55** =Yellow Color **F66** = Mercury Vapor	**LSL**=Linear Spread Lens (elongates standard beam spread) **DIF**=Diffused Lens (provides even illumination) **OSL**=Overall Spread Lens (increases standard beam spread)	**LVR**=45° Hex Cell Louver (reduces glare)

CAMBRIA 922 MR16 HALOGEN PHOTOMETRY DATA

CONE OF LIGHT



Horizontal Illuminance on Surface - Cambria 922 Standard Recessed Hood - 50W MR16

Filename	**922-50MR16-12-BK-NSP.ies**	
Lamp	**50W MR16 NSP**	
CBCP	**11,000**	
D	FC	Beam Diameter
2'	2550	1'6"
4'	638	1'0"
6'	283	1'6"
8'	159	2'0"
10'	102	3'0"
15'	45	4'0"

Filename	**922-50MR16-12-BK-NFL.ies**	
Lamp	**50W MR16 NFL**	
CBCP	**3,200**	
D	FC	Beam Diameter
2'	725	1'0"
4'	181	2'6"
6'	81	4'0"
8'	45	5'0"
10'	29	6'6"
15'	13	10'0"

CCT MULTIPLIER TABLE

LAMP WATTAGE	MULTIPLIER
20W	0.32
35W	0.57

Filename	**922-50MR16-12-BK-FL.ies**	
Lamp	**50W MR16 FL**	
CBCP	**2,000**	
D	FC	Beam Diameter
2'	431	1'6"
4'	106	3'0"
6'	48	5'0"
8'	27	6'6"
10'	17	8'0"
15'	7	12'0"

Filename	**922-50MR16-12-BK-WFL.ies**	
Lamp	**50W MR16 WFL**	
CBCP	**1,200**	
D	FC	Beam Diameter
2'	269	2'0"
4'	67	4'6"
6'	30	7'6"
8'	17	9'0"
10'	11	11'6"
15'	5	17'0"

NOTES AND FORMULAS

- Beam diameter is to 50% of maximum footcandles, rounded to the nearest half-foot.
- Footcandle values are initial. Apply appropriate light loss factors where necessary.
- Bare lamp data shown. Consult lamp manufacturers to obtain detailed specifications for their lamps.

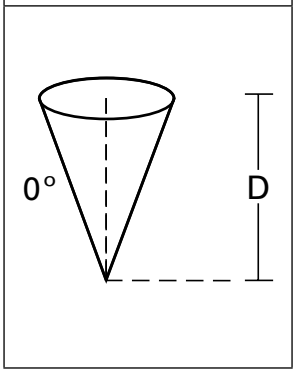
CAMBRIA 922 LED PHOTOMETRY DATA

LED Lumen and CBCP Table - 4000K

OPTIC TYPE (beam spread)	BASE + ACCESSORY OPTIONS	4000K CCT - Standard Hood					
		10W			6W		
		CBCP	LUMENS	LPW	CBCP	LUMENS	LPW
12′	BASE	7931	419	45	5948	314	53
	+ DIF (DIFFUSE)	1178	289	31	884	217	37
	+ OSL (OVERALL SPREAD LENS)	820	350	38	615	263	45
	+ LSL (LINEAR SPREAD LENS)	NA	343	36	NA	257	44
	+ LVR (HEXCELL LOUVER)	7165	339	36	5374	254	43
21′	BASE	2194	344	37	1646	258	44
	+ DIF (DIFFUSE)	683	241	26	512	181	31
	+ OSL (OVERALL SPREAD LENS)	595	290	32	446	218	37
	+ LSL (LINEAR SPREAD LENS)	NA	282	31	NA	212	36
	+ LVR (HEXCELL LOUVER)	2030	249	27	1523	187	32
41′	BASE	1173	304	33	880	228	39
	+ DIF (DIFFUSE)	418	205	22	314	154	26
	+ OSL (OVERALL SPREAD LENS)	595	250	27	446	188	32
	+ LSL (LINEAR SPREAD LENS)	NA	245	27	NA	184	31
	+ LVR (HEXCELL LOUVER)	1078	195	21	809	146	25

Horizontal Illuminance on Surface - Cambria 922 Standard Recessed Hood -4000K

CONE OF LIGHT



Filename: 922-10LED4012-12-BK.ies
Test No.: P184457

D	FC	Beam Diameter
2'	1912.8	0.4
4'	478.2	0.8
6'	212.5	1.2
8'	119.5	1.6
10'	76.5	2.0
15'	34.0	3.2
20'	19.1	4.2
30'	8.5	6.4
40'	4.8	8.4

Filename: 922-10LED4021-12-BK.ies
Test No.: P185207

D	FC	Beam Diameter
2'	548.5	0.6
4'	137.1	1.3
6'	60.9	2.1
8'	34.3	2.8
10'	21.9	3.6
15'	9.8	5.3
20'	5.5	7.2
30'	2.4	10.6
40'	1.4	13.9

Filename: 922-10LED4041-12-BK.ies
Test No.: P185957

D	FC	Beam Diameter
2'	290.7	0.8
4'	72.7	1.6
6'	32.3	2.5
8'	18.2	3.3
10'	11.6	4.2
15'	5.2	6.4
20'	2.9	8.5
30'	1.3	12.6
40'	0.7	16.2

CCT MULTIPLIER TABLE

CCT(K) / COLOR	MULTIPLIER
2700K	0.79
3000K	0.86
4000K	1.00
5700K	1.05
AMBER	0.57

TECHNICAL INFORMATION

1. Dimming is dependant on remote transformer compatibility with LED module. Please see compatibility matrix for dimmer switch and transformer selection.
2. When using a magnetic dimmer switch there are two recommended LED compatible 120V magnetic dimming switches:
   Lutron Ariadni AVLV-600P and Lutron Diva DVLV-600P
3. IMPORTANT: when sizing the transformer use 9 watts for 6LED or 15 watts for 10LED option fixture. Nominal power draw after start up is 6 watts or 10 watts accordingly. The LED module is designed to operate between 10 and 13 volts. Any less or more voltage can cause premature failures.

LED wall luminaires with directed light

Housing: One piece die-cast aluminum provided with a bracket for attachment to a BEGA 19538 small opening wiring box. Die castings are marine grade, copper free (≤ 0.3% copper content) A360.0 aluminum alloy.

Enclosure: One piece die-cast aluminum cover frame secured by two (2) captive, stainless steel set screws threaded into stainless steel inserts. Matte safety glass. Fully gasketed for weather tight operation using a molded 'U' channel silicone rubber gasket.

Electrical: 2.1W LED luminaire, 3.4 total system watts, -30°C start temperature. Integral 120V through 277V electronic LED driver. LED module(s) are available from factory for easy replacement. Standard LED color temperature is 3000K with an >90 CRI. Available in 4000K (>90 CRI); add suffix K4 to order.

Note: LEDs supplied with luminaire. Due to the dynamic nature of LED technology, LED luminaire data on this sheet is subject to change at the discretion of BEGA-US. For the most current technical data, please refer to www.bega-us.com.

Finish: All BEGA standard finishes are polyester powder coat with minimum 3 mil thickness. Available in four standard BEGA colors: Black (BLK); White (WHT); Bronze (BRZ); Silver (SLV). To specify, add appropriate suffix to catalog number. Custom colors supplied on special order

CSA certified to U.S. and Canadian standards, suitable for wet locations. Protection class IP64

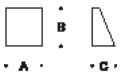
Weight: 0.9 lbs.

Luminaire Lumens: 173

Tested in accordance with LM-79-08

Type:
BEGA Product:
Project:
Voltage:
Color:
Options:
Modified:





		Lamp	A	B	C	Wiring box*
22215*	ADA	2.1W LED	3½	3¾	2⅜	**19538**

* Small opening wiring box included.

BEGA 1000 BEGA Way, Carpinteria, CA 93013 (805) 684-0533 FAX (805) 566-9474 www.bega-us.com
©copyright BEGA 2017 Updated 02/17

ACORN
ENGINEERING, INC.

Q. Parking Analysis

The proposed redevelopment at 24 St. Lawrence Street anticipates five units with one parking space for each unit which exceeds the requirement by more than 10%.

The proposed five spaces would allow each unit to have one designated off-street parking space while alleviating the demand for on-street parking within St. Lawrence Street. Furthermore, the units will likely be inhabited by more than one person per unit. This further increases the need for at least one designated parking space, especially in the winter during parking bans. It is our professional opinion that the five spaces fit the intended use and will alleviate the demand on City resources.

Given the anticipated unit owners and proposed bedroom counts, the applicant respectively requests that the Planning Board allow the applicant to exceed the minimum parking standard by more than 10%.

Please let me know if you have any additional questions or comments.

Sincerely,



William H. Savage, P.E.
Principal - Project Manager
Acorn Engineering, Inc.

ACORN ENGINEERING, INC.

Shukria Wiar – City Planner
Planning Division, City of Portland
389 Congress Street
Portland, ME 04101

March 9, 2018

Subject: Comment Response Letter
24 St. Lawrence Street Redevelopment – Portland, Maine

On behalf of Kelly & Walter Williams and the rest of the project team, we are pleased to respond to the comments provided by multiple reviewers.

To facilitate the review, comments are provided below in italics followed by each team's responder in a designated color:

Acorn, *Engineer*
Port City, *Architect*
Mary Costigan, *Attorney*

Shukria Wiar, Site Plan Review

Comment – *Provide wastewater capacity letter.*

Response – Please refer to Document C. in the previously submitted application materials. It is our understanding that the wastewater capacity and calculations are under review by Public Works.

Comment – *Submit Condo Docs for review.*

Response – Condo docs are typically provided after approval. Please clarify that this standard practice will be used for this project also.

Comment – *Provide cut sheets and photometric plan for all proposed exterior lights.*

Response – Please refer to Document P. in the previously submitted application materials.

Comment – *Show location of HVAC and mechanical equipment. Manufacturer's verification HVAC and manufacturing equipment meets applicable state and federal emissions*

Response – We will show the proposed location of the HVAC and mechanical equipment. A manufacturer's verification cannot be obtained at this time, as the equipment has not been purchased. This can be provided after approval.

Comment – *Is the applicant requesting any waivers?*

Response – No.

Comment – *Neighbor's driveway encroaching on the proposed site – an easement may be required.*

Response – The neighbor's driveway is not encroaching. Although the pavement currently goes up to the existing building, the area on the 24 St. Lawrence property is not driveway. With the new development, the building will be placed further away from that side property line and the landscaping and curbing for 24 St. Lawrence will extend to the property line.

Comment – *There is a new curb cut being introduced. This will cause the loss of on-street parking. Is there a way this can be mitigated?*

Response – The new curb cut will be replacing the existing curb cut for the current driveway, but in a new location.

Comment – *Please submit the following calculations:*
Maximum Lot Coverage
Height calculation based on average grade

Response –

Lot Coverage Calculations:

Total Lot Area: 4,670.7 s.f.
Maximum Lot Coverage Allowed: 4,670.7 s.f. x 60% = 2,802.42 s.f.
Building Area of Ground Floor (to foundation wall): 2,738.2 s.f.
Building Area of Enclosed Living Space Above: 33.4 s.f. + 28.7 s.f. = 62.1 s.f.
Total Building Coverage: 2,738.2 s.f. + 62.1 s.f. = 2,800.3 s.f.

The portion of the decks at the SE corner of the building that do not have living space or a roof above have not been included as lot coverage. This is based upon precedent and the team's interpretation of the definitions. It is our understanding that the Architect has emailed Ann Machado for confirmation on this interpretation.

Average Grade Calculations:

Grade at NW Corner of Building: 104.05
Grade at NE Corner of Building: 98.40'
Grade at SW Corner of Building: 102.30'
Grade at SE Corner of Building: 97.40'
Average Grade: 104.05+ 98.40' + 102.30' + 97.40' = 402.15' / 4 = 100.54'
Maximum Building Elevation Allowed: 100.54' + 45.0' = 145.54'
Actual Maximum Building Elevation: 144.84'
Building Height From Average Grade: 144.84' – 100.54' = **44.30'**

Please see Sheet C-30 and the building elevations for more information.

Robert Thompson, Fire Department Review

Comment – *The building will be required to be sprinkled.*

Response – Understood and will comply.

Comment – *Street address shall be marked on the street side of the structure and shall be as approved by the City E911 Addressing Officer.*

Response – Understood and will comply.

Comment – *Fire Department access to the proposed building is sufficient.*

Comment – *There are adequate fire hydrants in the area.*

Comment – *The new building shall not affect the egress or required fire department access for the neighboring building. After looking at the site plan I just want to verify the new building will have 10 feet between the new building and the existing building to the left; the plan is showing 6'.*

Response – At the closet point, the proposed structure will be located 7.94 feet from the existing building on the neighboring property due to the close proximity of that neighboring building to the property line (in fact, the building was built on top of the deeded property line). The side of the building facing 24 St. Lawrence does not contain any egress windows. The building is accessible from the other three sides of the building. We therefore do not believe that 10 feet is necessary between buildings since that side of the neighbor's building will not be used for egress in an emergency. We would be happy to discuss this issue directly with Robert Thompson.

Tom Errico, Traffic Engineering

Comment – *I have reviewed the application materials and I find the project to be acceptable from a traffic engineering perspective. I would note that the driveway width, apron detail and separation to the nearest driveway to the north meet City Technical Standards. On-site parking and circulation is also acceptable.*

Response – Thank you for your review – we are in agreement.

Jeff Tarling, Landscaping

Comment – *The two street-trees should be changed from Green Ash shown as FP on the plan, (Ash trees no longer recommended due to Emerald Ash Borer threats), would recommend substitution - 'Accolade' Cherry due to overhead utilities. Also the plant sizes for the proposed (JV) Eastern Juniper should be upgraded from 5 gallon sizes to 5-6' size, the 'Emerald Sentinel' is a recommended cultivar and the (JC) Juniper should be upgraded from 3 gallon to 5 gallon size.*

Response – Thank you for your review. All comments have been incorporated into the Landscape Plan.

Woodard & Curran, Civil Engineering

Comment – *In accordance with Section 5 of the City of Portland Technical Manual, a Level III development project is required to submit a stormwater management plan pursuant to the regulations of MaineDEP Chapter 500 Stormwater Management Rules, including conformance with the Basic, General, and Flooding Standards. We offer the following comments:*

> *a) Basic Standards: Plans, notes, and details have been provided to address erosion and sediment control requirements, inspection and maintenance requirements, and good housekeeping practices in accordance with Appendix A, B, & C of MaineDEP Chapter 500.*
>
> *b) General Standards: The project will result in a de minimis increase in impervious area of approximately 543 square feet. As such, the project is not required to include any specific stormwater management features for stormwater quality control. We encourage the Applicant to review the City's Stormwater Service Charge Credit Manual (available online) to evaluate whether they may want to incorporate stormwater quality treatment measures that qualify for a future Stormwater Service Charge credit.*
>
> *c) Flooding Standards: The project will result in a de minimis increase in impervious area of* approximately 543 square feet. As such, the project is not required to include any specific stormwater management features to control the rate or quantity of stormwater runoff from the site.

Response – Thank you for the review. We have made the Applicant aware of the Stormwater Service Charge Credit benefits.

Comment – *A backflow preventer should be provided on the foundation drain connection to the sewer.*

Response – We have added a backflow preventer to this connection.

Comment – *Per Chapter 2 of the City's Technical Manual, when services 8 inches or greater in size are connected to the main, they should be connected via a manhole structure.*

Response – The storm drain has been downsized to a 6" pipe.

Comment – *The Applicant has received an Ability to Serve approval letter from the Portland Water District. The Applicant should ensure that any changes to the utility plan are reviewed again by PWD as necessary. It's noted that the layout and location of gate valves and tapping sleeves does not appear to be in accordance with the PWD standards.*

Response – Per PWD's request, we will be providing two gate valves for the 4" sprinkler line due to the age of the water main. The final design will be sent to PWD for final review and acceptance.

Comments Submitted by: Caitlin Cameron/Design Review on 2/12/2018

The memo provided on 2/12 did not contain any comments from Caitlin. If you do have any comments from Caitlin, please send them to us.

On behalf of the project team, thank you for the review. Please do not hesitate to contact me with any questions or further comments. We look forward to the planning board workshop tentatively scheduled for March 27, 2018.

Sincerely,



William H. Savage, P.E.
Principal - Project Manager
Acorn Engineering, Inc.

ACORN ENGINEERING, INC.

Planning Division
City of Portland, Maine
389 Congress Street, 4th Floor
Portland, ME 04101

November 10, 2017

Subject: 24 Saint Lawrence Street Neighborhood Meeting

I, Will Savage, hereby certify that a neighborhood meeting was held on November 2, 2017 at the East End Community School at 6 pm.

I also certify that on October 23, invitations were mailed to the following:

1. All addresses on the mailing list provided by the Planning Division which includes property owners within 500 feet of the proposed development.

2. Residents on the "interested parties" list.

3. A digital copy of the notice was also provided to the Planning Division (jmy@portlandmaine.gov and ldobson@portlandmaine.gov) and the assigned planner to be forwarded to those on the interested citizen list who receive e-mail notices.

Sincerely,

Date: 11/10/17

William H. Savage, P.E.
Principal - Project Manager
Acorn Engineering, Inc.

Included with this certification are:

1. Copy of the invitation sent
2. Sign-in sheet
3. Meeting minutes

ACORN ENGINEERING, INC.

October 23, 2017

Dear Neighbor:

On behalf of Kelly & Walter Williams, we are pleased to invite you to a neighborhood meeting to discuss our plans for the proposed project at 24 St. Lawrence Street within the R-6 Zone in Portland. The urban infill project includes the redevelopment of an existing two-family dwelling into a 4-story building with 5 units. The first floor will provide 6 parking spaces to serve the residents. Furthermore, the entire sidewalk along the project frontage will be rebuilt as part of the project.

Meeting Location: East End Community School – 195 North Street, Portland, ME 04101

Meeting Date: Thursday, November 2, 2017

Meeting Time: 6:00 p.m.

The City code requires that property owners within 500 feet of the proposed development and residents on an "interested parties list" be invited to participate in a neighborhood meeting. A sign-in sheet will be circulated and minutes of the meeting will be taken. Both the sign-in sheet and minutes will be submitted to the Planning Board.

If you have any questions regarding the neighborhood meeting, please don't hesitate to call me or the office at 775 – 2655. We look forward to seeing you at the meeting.

Sincerely,



William H. Savage, P.E.
Principal - Project Manager
Acorn Engineering, Inc.

24 St. Lawrence Street Neighborhood Meeting Sign-In Sheet

1. PETER BASS
2. JANICE ISAACSON
3. Carol Stillwell
4. Richard Stillwell
5. Pam Macumber
6. Will Williams
7. Kelly williams
8. IAN JACOB
9. Maggy Wolf
10. Monica Sawer
11. Jayne Hurley
12. ROB WHITTEN ROB@WHITTENARCHITECTS.COM
13. TED Arnold
14. TICA Douglas
15. Pamela Day
16. Michael Petit
17. Andrew Hyland
18. Mark Chalupecky
19. Julie Harry
20. Karen Snyder
21. Deb Murray
22. CHRISTOPH GEFLAND
23. Barry Manter
24. Paul Murray
25. Beth Snyder
26. Morgan McCormack
27. Jo Ann Dowe
28. SAM LEBER
29. Will Savage
30.
31.
32.
33.
34.
35.
36.
37.
38.
39.
40.
41.
42.
43.
44.
45.
46.
47.
48.
49.
50.
51.
52.
53.
54.

ACORN ENGINEERING, INC.

24 Saint Lawrence Street Redevelopment
Level III Site Plan and Subdivision Application

Neighborhood Meeting Minutes

November 2, 2017 6:00pm
East End Community School

Design Team Attendees:

Kelly & Will Williams	Developer/Presenter
Will Savage	Civil Engineer/Presenter (Acorn Engineering)
Sam Lebel	Civil Engineer/Note Taker (Acorn Engineering)
Mark Chaloupecky	Architect/Presenter (Port City Architecture)
Andy Hyland	Architect (Port City Architecture)

Meeting started at approximately 6:05 pm.

Presentation:

Kelly Williams:

- Introduced the project and gave a history about her family such as living at 24 St. Lawrence for 14 years, attending schools in Portland that are now gone, and raising her daughters in the City.

Will Savage:

- Meeting minutes being taken which will be submitted to the City.
- Sign-In sheet going around to be submitted to the City.
- Existing conditions:
    - Existing two-family building in R-6 zone. Nonconforming with side setbacks. Existing garage and driveway is right on the property line. The existing building is within 3 feet of the property line on the other (uphill) side.
    - Retaining wall at the rear of the property ranging from a few feet to fourteen feet in height. Wall is owned by multiple landowners.
    - 4,671 SF lot, no easement.

  - Drainage patterns, some of the stormwater goes to the street with the majority draining to the rear towards the wall.

- Proposed conditions:
  - Dwelling Units: 6 allowed per ordinance, 5 proposed
  - Vehicle parking: 6 proposed spaces; 1 ADA space and one regular space for each unit with a 10-foot garage door access. Parking was analyzed in AutoTurn, a computer simulation, to ensure functional circulation within the parking garage.
  - The plan proposed to vegetate the side yard adjacent to Stillwell and increasing setback with Fitch House, LLC.
  - Pedestrian access will be provided primarily via an entrance at the southeasterly side of the building, adjacent to the driveway. There will also be another means near the northerly corner of the building along St. Lawrence Street.
  - The neighbor's (28 St. Lawrence Street) portion of the driveway that currently encroaches in the Applicant's property will be repaved after the construction of the building.
  - Two Green Ash street trees are proposed along the project frontage.
  - A new brick sidewalk will replace the concrete sidewalk that currently exists.
  - Proposed cedar fence to the rear with eastern junipers.
  - Required 20% open green space, proposed 28% with a variety of plantings.
  - Utilities designed in accordance with each utility company's requirements.
  - All utilities will be underground including the electric/telephone/cable that is currently an aerial service.
  - Building will be sprinkled with a 4" line.
  - Hydrant located in front of property in sidewalk.
  - The footings/foundation for the building has been designed as such to ensure that the existing retaining wall will not be subject to additional forces from the building's load upon the soils.
  - Within the parking garage, there will be a catch basin with an oil water separator before discharging to the combined sewer.
  - Roof will drain to the combined sewer with the catch basin.
- Level III Site/Subdivision permit from the City, this is the first public meeting. Planning board meeting date is to be determined.

Mark Chaloupecky:

- Introduced himself and Port City.
- General building design – similar to 31 Fore in scaling, mass, and unit tabulation.
- Parking layout on the base level was the first part of the design. Overview of the base level layout.
- Overview of levels 2,3, and 4. Levels 2 & 3 will have two units a piece and the top floor will have one unit.
- 2 stairwells and 1 elevator shaft, requirements of fire code and ADA, respectively. These building elements are not required to comply with the stepbacks at a height of 35' because it's not feasible to step back an elevator shaft or stairwell.

- Overview of the renderings. Front entrance has been reworked a bit with an ADA ramp and reorientation of the small wall.
- The materials will be typical siding including cedar shingles.
- The first story will have a more durable surface, most likely dimensional stone.
- Overview of street landscape with renderings of the new building using Google Street View.

Comments, Questions & Answers:

Please note that the following questions and answers were not recorded verbatim and aim to represent and summarize the actual questions, answers, and discussion that took place at the meeting.

C: I have worked many professions and you are not welcome here. I have a website and will be working on a Conservation District if anyone is interested.

C: I live at 20 St. Lawrence Street and I have written a letter (*letter attached to this document*).

C: I talked with Will Williams about this project a while ago. Plans and renderings went forward. I got the invitation card for the meeting on the 20th. They've had six months and then I get a note that this project is a go. This is not due diligence on the City's part. We need to slow down. 6 parking spaces proposed, but they will need more. These owners will have more than 1 car, which will push another five cars to park on the street. I know one neighbor who moved because of the parking situation. The demolition process will require a lot of equipment parking on the street. The new building makes my house look small. The building does not fit in the neighborhood. I have one neighbor who made an orchard with his property and people take pictures of it when they go by. People will not take pictures of this project. Chapter 14 says the building must fit into the neighborhood.

Q: What caused the zoning to change? It used to be two and three-story buildings and now they're four story buildings.

A (Will S.): The best way to know for sure would be to talk to the Planning Director. It changed two to three years ago in which the number of allowable units was reduced to 1 per 725 SF of lot area. I believe the goal of the City was to increase the core of housing and density.

Q: I thought the goal of that was to increase affordable housing? What will be the price of these units?

A (Kelly): We don't know the pricing yet.

C: Last night the developers provided the pricing.

Q: Do you need five units?

A (Will S.): Construction and land costs are very high right now and to make the numbers work, sometimes you have to increase the number of units.

C: I think we should retain the existing 2-unit for affordability.

Q: What is the square footage?

A (Mark): Each unit is about 1,000 SF except for the top floor which will be one unit a little under 2,000 SF.

Q: Does this project require a zone change?

A (Mark): No.

C: You can sense people are unhappy. We have to live with this building and you speak as if it's a done deal. If you'd gone around and asked the people what they wanted, maybe you'd find out that we don't want five units crammed in. Give them an opportunity to see how they feel.

C: I've lived here since 1975 and I've watched the street become more alive. I'm concerned about the sustainability. I have never heard about this project.

A (Will W.): That's not true, I told you about it in front of your house.

C: Thank you for clarifying, but I have not heard about it since. I am an architect focusing on single-family homes and do little work in Portland, but I understand the fabric and scale of a neighborhood. What faces the street in the rendering has no personality. I'm concerned about the new neighbors. Long-term, it will not be sustainable. This is not a neighborhood home.

A (Will W.): I want to live here for the rest of my life.

C: I think you need to bring some of the energy from the back to the front. Planning staff will not accept this under design review. Can we walk through the building from the street?

A (Mark): You would enter through the main entrance off St. Lawrence Street in either of the two doors and walk to the first stairwell or the lobby where there is another stairwell and an elevator.

Q: I'm curious about the City code and how the building fits in?

A (Mark): Based on the City regulations such as massing, scale, height, and setbacks, it meets the code.

Q: Do you think it fits in?

A (Mark.): Yes.

C: Just because 118 Congress is in our neighborhood, doesn't make it a good building. These are ugly buildings.

C/Q: I would caution you with contextualizing with new buildings. Can you please show the rendering? I would like to echo Rob and Peter. You've created a dead façade. No activity, no holiday lights, no eyes on street. It's a deadened ground floor. Is that a half wall in front of the building?

A (Mark): It's been reworked so the wall will now be parallel with the building and ADA ramp.

C: Egress door has a canopy over it. The hierarchy of doors is odd. You can build it to code, but the opportunity is missed. Too bad about the tree. Windows have no context. Building doesn't say anything. I wanted to say something constructive, but you need to go back to the drawing board. There was a building on the west end that had tension and animosity around it. I would not present this. Nothing positive to say.

C: I live in the building to the north. Need more of a setback. Elevator and stairs on street look too big. Can you change it? Elevator shaft on 31 Fore is wrong because it's placed at the center of the building. You've ignored the ten foot setback, the rest of it should be further back.

A (Will S.): The stepback at 35 feet only applies to the side and rear property lines.

Q: Building is offensive. Siding is asbestos. This land used to be contiguous with mine, that's why the buildings are so close. My windows will be ten feet from the demolition, dust, and asbestos. What do you do to mitigate the effects from the demolition and debris?

A (Mark): There will be materials testing and based on those results, the state regulates the methods for demolition.

C: You won't need to be concerned about dust and debris if we don't let them build it.

Q: I walked around the neighborhood. Is there a building there now? Why would you want to tear it down?

A (Will W.): It was built as a single-family home and converted to a two-family. It doesn't work to have two families living there. It would take hundreds of thousands of dollars to renovate it. Steep stairs, no heat or insulation in the attic. I don't want a big mortgage for the rest of my life.

Q: How long have you lived there?

A (Kelly): 14 years. In addition to the heating issue, it would also be nice to have the bathroom on the same level.

Q: Why $2.4 million as listed on the application? Why not rehab with dormers and extend the building back if you have to?

A (Will W.): We really looked into it, but I don't want a big mortgage for the rest of my life.

Q: How can you say this looks nice?

A (Will W.): I don't think it's a bad looking building and it's not that much bigger.

C: It's 8,900 SF vs 2,900 SF.

A (Will W.): That doesn't include the existing garage. It's 8,900 SF (with parking garage) vs 2,900 SF (without detached garage).
Q: There is a huge wall separating the properties and it's fragile. What will you do specifically to protect it from collapsing? Our rental unit almost touches the wall and we don't want people hurt.

A (Mark): We've hired structural engineers. The foundation will be deep which lowers the angle of influence. This is a 45 degree angle that starts at the bottom of the foundation. This design paired with safe construction methods will prevent additional forces on the wall.

Q: What happens if something goes wrong?

A (Mark): I'm not certain of that answer.

Q: Have the soils been tested? We own some of the wall. What happens if there's a problem?

A (Mark): A requirement will be to have a geotechnical engineer test the soils before construction.

C: I have to leave, but I hope you take the sentiment.

C/Q: I have been watching boxy construction on the Hill. I've live here long and I'm concerned with the aesthetics. You've done your job. The responsibility is with the City who let's this happen. It feels institutional. It's cheesy and is just to increase profit. It bothers me. I have more land space than this and I want to historically preserve it because I owe it to the neighborhood. It's the City who allows this happen. I understand you wanting to make a living here, but can you change the design?

C: It should be known that this is the first step in the process and it's hard for a developer to put this up on a screen.

C: We don't like blocky buildings. 118 Congress is dead. There's nobody going in or out. It's up to us to change the R-6 or have a conservation district. You guys are the real NIMBYers.

C: City sees an old building, not up to code and they want it up to fire code and ADA for wealthy people. It's a win-win for the City.

C: Is there anywhere to bring back zoning? Has anybody pointed it out to the planning board? You're in the cross heirs because you've tapped into frustrated people. The developers last night did a better job for the Monument Street project. Massive, but not maxed out and they had a front porch. It dwarfed the buildings, but it was more aesthetically pleasing. Chapter 14 says it has to fit in with the neighborhood. I apologize you're on the hot seat, you're not the ones to be mad at.

Q: What is the timeline for the project?

A (Mark & Will S.): Break ground in the Spring of 2018 and finish the following Spring. It would be about a year build.

Q: If this goes through, how do we rent or get compensated for rental losses?

C: I have no plans of moving or selling. This is a personal insult, I will be in the house during construction next to jack hammers. This will take one and a half years and there will be no rentals. I have a tenant. How easily can I sell my house now?

C: Why does it have to be so big? So you can make more money and not be part of the neighborhood. This is not the neighborhood.

C: Will has been a good neighbor. When we spoke, I asked does it have to be five feet away. He's been a good neighbor up until this. When I moved here, I could buy 25 houses for a million dollars. I built a wall and equity on my property. You can't do this in a year. I was a painter so I've seen construction and they would bring me on at the end and I would get the complaints for when the project would be done.

Q: I just moved to the neighborhood and have an empty lot next to mine. The owner has had several condos with neighbors. What is the motivation for five units? Why not three? I don't want a mortgage either, but's it's part of living in a beautiful city. What was the decision making?

A (Kelly & Will W.): We need five units to not have a mortgage. We're not living in the top floor penthouse.

C: You have a nice house.

A (Will W.): You haven't lived here for fourteen years, so it's unfair to make that judgement.

A (Will S.): The city wants to see more units with greater diversity. There are fees when you reduce units on a property.

C: We want a smaller building.

C: This construction and loss of Portland's special streets will have a domino effect.

C: You will have opposition. Think of the other projects that won't get built because we opposed them.

Meeting concluded at approximately 7:40 pm.

The abovementioned material was as interpreted and recorded from handwritten notes. Please note and relay any discrepancies or disputed information in the recorded minutes to the below address so that they can be reviewed, revised, and resubmitted as necessary.

Recorded by,

Sam Lebel

Sam Lebel, E.I.
Design Engineer
Acorn Engineering, Inc.
slebel@acorn-engineering.com

Nov 2, 2017

My name is Carol Stillwell.
My husband, Richard Stillwell and I live at 20 St. Lawrence St., next door to the proposed 24 St. Lawrence St. site.

The impact of this proposed plan looms over us, as does the size and scale of the project. The proximaty of the building is 5 feet from our property lines. As close as allowed. That close to our 1890-built brick house And to our's And our neighbor's old construction retaining walls on steep embankments.

We are very concerned about the demolition process and the construction activity And the dangerous And detrimental effects that may be caused ~~on~~ to our property. It is our hope that a fair balance of time will be allowed us in this reviewing process for us to align And protect And gather our resources And that the developer And property owners of 24 St. Lawrence will be forth-coming And show due diligence to ensure that our concerns are addressed.

Thank you

Carol Stillwell

24 ST. LAWRENCE STREET REDEVELOPMENT

HR PROPERTY MANAGEMENT
PORTLAND, MAINE

LEGEND

EXISTING		PROPOSED
REFER TO THE EXISTING CONDITIONS PLAN FOR ADDITIONAL INFORMATION	UNDERDRAIN	
	GREEN SPACE	
	UTILITY PAVEMENT CUTS	
	STRIPING	
	SEDIMENTATION BARRIER	
	EDGE OF EX. PAVEMENT	
	CURB	
	UTILITY POLE	
	WATER VALVE	
	FIRE HYDRANT	
	SEWER MANHOLE	
	DRAINAGE STRUCTURE	
W — W	UNDERGROUND WATER LINE	1"W — 1"W
64	MINOR CONTOURS (1 FT)	64
65	MAJOR CONTOURS (5 FT)	65
G — G	GAS LINE	GAS — GAS
SS — SS	SEWER LINE	S — S
	EXISTING/PROPOSED BUILDING	
	UNDERGROUND ELECTRICAL/TELEPHONE/CABLE	UGE/T/C
OHE/T/C	OVERHEAD ELECTRICAL/TELEPHONE/CABLE	
	PROPERTY LINE	
	SETBACKS	

INDEX

C-01 COVER SHEET & LEGEND
C-02 GENERAL NOTES
EX EXISTING CONDITIONS PLAN – BY OWEN HASKELL
C-03 DEMOLITION & CONSTRUCTION MANAGEMENT PLAN
C-10 SITE PLAN
L-1 LANDSCAPE PLAN
C-20 UTILITY PLAN
C-30 GRADING & DRAINAGE PLAN
C-40 SITE DETAILS – 1
C-41 SITE DETAILS – 2
C-42 UTILITY DETAILS – 1
C-43 UTILITY DETAILS – 2
C-44 DRAINAGE DETAILS
C-45 EROSION & SEDIMENTATION CONTROL DETAILS

UTILITIES

SEWER:

DEPARTMENT OF PUBLIC WORKS (DPW)
55 PORTLAND STREET
PORTLAND, MAINE 04101
CONTACT: KEITH GRAY, P.E.
(207) 874-8834

WATER:

PORTLAND WATER DISTRICT (PWD)
225 DOUGLASS STREET
PO BOX 3553
PORTLAND, MAINE 04104
ATTN: MEANS DIVISION
(207) 774-5961

ELECTRIC:

CENTRAL MAINE POWER COMPANY (CMP)
162 CANCO ROAD
PORTLAND, MAINE 04103
CONTACT: PAUL DUPERRE
(207) 828-2882

TELEPHONE:

FAIRPOINT COMMUNICATIONS
45 FOREST AVENUE
PORTLAND, MAINE 04101
(207) 712-1063

CABLE:

SPECTRUM/CHARTER COMMUNICATIONS
(FORMERLY TIME WARNER CABLE)
118 JOHNSON ROAD
PORTLAND, MAINE 04102
CONTACT: MARK PELLETIER
(877) 546-0962

NATURAL GAS:

UNITIL SERVICE CORP.
1075 FOREST AVENUE
PORTLAND, ME 04103
CONTACT: BRIDGET HARMON
(207) 541-2536

PROJECT TEAM

DEVELOPER:

HR PROPERTY MANAGEMENT
PORTLAND, MAINE
CONTACT: WILL WILLIAMS
(207) 671-1193

ARCHITECT:

PORT CITY ARCHITECTURE
PORTLAND, MAINE
CONTACT: MARK CHALOUPECKY
(207) 761-9000

SURVEYOR:

OWEN HASKELL, INC
FALMOUTH, MAINE
CONTACT: JOHN C. SCHWANDA, P.L.S.
(207) 774-0424

STRUCTURAL ENGINEER:

STRUCTURAL INTEGRITY CONSULTING ENGINEERS, INC.
PORTLAND, MAINE
CONTACT: AARON JONES, P.E.
(207) 774-4614

ABBREVIATIONS

PARTIAL LIST OF ABBREVIATIONS AND THEIR CORRESPONDING MEANING. PLEASE CONTACT THE ENGINEER FOR ANY CLARIFICATION

APPROX.	APPROXIMATE
BC	BOTTOM OF CURB
BMP	BEST MANAGEMENT PRACTICE
BOT.	BOTTOM
CB	CATCH BASIN
CF	CUBIC FOOT
CIP	CAST IN PLACE
CM	CONSTRUCTION MANAGER
CMP	CENTRAL MAINE POWER
CONC.	CONCRETE
CY	CUBIC YARD
DIP	DUCTILE IRON PIPE
DIA.	DIAMETER
DIM.	DIMENSION
EA.	EACH
ELEC.	ELECTRICAL
ELEV.	ELEVATION
EQUIV.	EQUIVALENT
EST.	ESTIMATE
EX.	EXISTING
FFE	FINISH FLOOR ELEVATION
FT.	FEET
GAL.	GALVANIZED
ID	INNER DIAMETER
IN.	INCH
INV.	INVERT
L	LENGTH
MAX.	MAXIMUM
MDOT	MAINE DEPARTMENT OF TRANSPORTATION
MFG.	MANUFACTURED
MH	MANHOLE
MIN.	MINIMUM
O.C.	ON CENTER
OD	OUTSIDE DIAMETER
OHE/T/C	OVERHEAD ELECTRIC/TELEPHONE/CABLE
PC	PRECAST
PE	PROFESSIONAL ENGINEER
PL	PROPERTY LINE
PLS	PROFESSIONAL LAND SURVEYOR
PROP.	PROPOSED
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE
R	RADIUS
RD	ROOF DRAIN
RET.	RETAINING
ROW	RIGHT OF WAY
S	SLOPE
SD	STORM DRAIN
SDR	STANDARD DIMENSION RATIO
SF	SQUARE FEET
SMH	SEWER MANHOLE
SPEC.	SPECIFICATION
TC	TOP OF CURB
TW	TOP OF WALL
TWC	TIME WARNER CABLE/CHARTER COMM.
TYP.	TYPICAL
UD	UNDERDRAIN
UGE	UNDERGROUND ELECTRIC

CALL BEFORE YOU DIG
1-888-DIG-SAFE
1-888-344-7233

PERMIT LEVEL
NOT ISSUED FOR CONSTRUCTION

ISSUED FOR	BY	DATE
CITY APP.	WHS	10/6/17

DRAWING NAME: COVER SHEET & LEGEND
PROJECT NAME: 24 ST. LAWRENCE STREET REDEVELOPMENT
CLIENT: HR PROPERTY MANAGEMENT
24 ST. LAWRENCE STREET, PORTLAND, ME 04101

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM ACORN ENGINEERING, INC. AND ALL REUSE OF THIS PLAN WITHOUT SUCH PERMISSION OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

ACORN ENGINEERING, INC.
158 DANFORTH STREET, PORTLAND, MAINE 04102
(207) 775-2855

FILE: 1088_CIVIL
JN: 1088
SCALE: NTS
DESIGNED BY: WHS
DRAWN BY: ADG
CHECKED BY: WHS

STATE OF MAINE
WILLIAM H. SAVAGE
No. 11416
10-11-17
REGISTERED PROFESSIONAL ENGINEER

DRAWING NO.
C-01

GENERAL NOTES:

1. THE CONTRACTOR SHALL CALL THE APPROPRIATE UTILITY COMPANIES AND DIG SAFE AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION FOR UTILITIES. OTHERWISE IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE LOCATION OF UNDERGROUND UTILITIES AND LOCATE ANY POTENTIAL CONFLICTS WITH THE APPROVED PLANS PRIOR TO CONSTRUCTION.
2. THE CONTRACTOR IS RESPONSIBLE FOR MAINTENANCE OF ALL EROSION CONTROL MEASURES SHOWN ON THE PLAN. IF DEEMED NECESSARY BY THE OWNER OR OWNER'S REPRESENTATIVE, ADDITIONAL EROSION CONTROL MEASURES SHALL BE INSTALLED AT NO ADDITIONAL COST TO THE OWNER.
3. THE CONTRACTOR SHALL PREPARE THEIR OWN MATERIAL SCHEDULE BASED ON THE PLANS AND FIELD VERIFICATION BY THE CONTRACTOR. ALL MATERIAL SCHEDULES SHOWN WITHIN THE PLAN SET ARE FOR GENERAL INFORMATION ONLY.
4. ALL CONSTRUCTION METHODS, TESTING AND MATERIALS SHALL CONFORM TO THE MAINE DEPARTMENT OF TRANSPORTATION SPECIFICATIONS, THE CITY OF PORTLAND AND SERVICING UTILITY REQUIREMENTS, IF ANY. IN CASES WHERE THESE CONFLICT THE MOST STRINGENT SPECIFICATION SHALL APPLY AT NO ADDITIONAL COST TO THE OWNER.
5. THE SITE CONTRACTOR SHALL MAINTAIN A SET OF PAPER AND CAD DRAWINGS WHICH SHALL RECORD THE ACTUAL LOCATION, DIMENSIONS, ELEVATIONS, MATERIALS OF THEIR WORK, INDICATING THEREON ALL VARIATIONS FROM THE CONTRACT DRAWINGS. THE CONTRACTOR SHALL PROVIDE THE OWNER WITH ONE COMPLETE SET OF REPRODUCIBLE RECORD DRAWINGS, IN AUTOCAD FORMAT AND PAPER, STAMPED "AS-BUILT". IF AUTOCAD NOT AVAILABLE EXCLUDE FROM BID IN WRITING.
6. THE CONTRACTOR WILL REMAIN SOLELY AND COMPLETELY RESPONSIBLE FOR ENFORCEMENT OF AND COMPLIANCE WITH 1) ALL CONTRACT PLANS AND SPECIFICATIONS, 2) APPLICABLE INTERNATIONAL BUILDING CODE REQUIREMENTS, AND 3) ALL SITE WORKING CONDITIONS AND SAFETY REQUIREMENTS, DAY AND NIGHT, FOR BOTH PERSONS AND PROPERTY, IN EACH CASE BOTH BY THE CONTRACTOR AND ITS SUBCONTRACTORS. THESE INCLUDE ALL OSHA, NIOSH, U.S. EPA AND ANY OTHER APPLICABLE GOVERNMENTAL REGULATIONS.
7. EXISTING CONDITIONS, BOUNDARY SURVEY, AND TOPOGRAPHY FROM THE PLAN TITLED EXISTING CONDITIONS SURVEY BY OWEN HASKELL, INC FOR WALTER S. & KELLY A. WILLIAMS, DATED NOVEMBER 30, 2016.
8. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ACCESS TO THE SITE AND ALL ADJACENT PROPERTIES AT ALL TIMES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY MARKINGS, SIGNAGE AND INCIDENTALS TO MAINTAIN A SAFE VEHICLE AND PEDESTRIAN ACCESS THOUGH THE LIFE OF THE PROJECT. THE CONTRACTOR SHALL NOTIFY THE PORTLAND PUBLIC SAFETY DIVISION ROUTINELY REGARDING TEMPORARY IMPACTS OR CHANGES TO SITE ACCESS CONDITIONS.
9. THE CONTRACTOR SHALL REVIEW ACORN'S CONSTRUCTION MANAGEMENT PLAN. CONTRACTOR SHALL REMAIN RESPONSIBLE FOR ANTICIPATED PROJECT SCHEDULE AND CLOSURES. CONSTRUCTION MANAGEMENT, MEANS AND METHODS, TRAFFIC CONTROL, ETC. SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
10. CONTRACTOR TO DETERMINE SOIL CLASSIFICATION INDEPENDENTLY FOR TRENCH, SHORING, AND OTHER SIMILAR CONSTRUCTION MEANS AND METHODS APPLICATIONS.
11. THE CONTRACTOR SHALL SURVEY ROCK SURFACE PRIOR TO EXCAVATION AND DEVELOP VOLUME CALCULATIONS TO SHARE WITH ACORN, IF ANY.
12. THE CONTRACTOR SHALL CONDUCT A PRE-CONSTRUCTION SURVEY OF ADJACENT PROPERTIES INTERIOR SUBGRADE AND ABOVE GRADE ACCESSIBLE WALLS, CEILINGS, FLOORS, ROOF AND VISIBLE EXTERIOR AS VIEWED FROM THE GRADE LEVEL. DOCUMENT WITH PICTURES AT A MINIMUM.

CIVIL SITE NOTES:

1. THE CONTRACTOR SHALL SUBMIT IN WRITING ANY REQUESTS TO MODIFY THE CONTRACT DOCUMENTS.
2. ALL SHOP AND ERECTION DRAWINGS SHALL BE CHECKED AND STAMPED BY THE GENERAL CONTRACTOR PRIOR TO SUBMISSION FOR ENGINEER'S REVIEW. ANY UNCHECKED OR NON-STAMPED SUBMITTALS WILL BE RETURNED WITHOUT REVIEW.
3. CONTRACTOR SHALL THOROUGHLY INSPECT AND SURVEY EXISTING STRUCTURES AND SITE TO VERIFY CONDITIONS THAT AFFECT THE WORK SHOWN ON THE DRAWINGS. CONTRACTOR TO NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO PROCEEDING.
4. DETAILS SHOWN APPLY TO ALL SIMILAR CONDITIONS UNLESS OTHERWISE INDICATED.
5. ALTHOUGH ALL DUE DILIGENCE HAS BEEN APPLIED TO MAKE THE DRAWINGS AS COMPLETE AS POSSIBLE, NOT ALL DETAILS ARE ILLUSTRATED, NOR IS EVERY EXCEPTION CONDITION ADDRESSED WITHIN THE CONTRACT DOCUMENTS.
6. ALL PROPRIETARY CONNECTIONS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
7. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OF ALL WORK, INCLUDING DIMENSION AND LAYOUT VERIFICATION, MATERIALS COORDINATION, SHOP DRAWING REVIEW, AND THE WORK OF ANY SUBCONTRACTORS.
8. UNLESS OTHERWISE SPECIFICALLY INDICATED, THE DRAWINGS DO NOT DESCRIBE OR DIRECT MEANS OR METHODS OF CONSTRUCTION.
9. THE CONTRACTOR, IN THE PROPER SEQUENCE, SHALL PERFORM OR SUPERVISE ALL WORK NECESSARY TO ACHIEVE THE FINAL COMPLETED STRUCTURE, AND TO PROTECT THE STRUCTURE, WORKMEN, AND OTHERS DURING THE CONSTRUCTION. SUCH WORK SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, SHORING FOR CONSTRUCTION EQUIPMENT, SHORING FOR EXCAVATION, FORMWORK, SCAFFOLDING, SAFETY DEVICES AND PROGRAMS OF ALL KINDS, SUPPORT AND BRACING FOR CRANES AND OTHER ERECTION EQUIPMENT.
10. DO NOT BACKFILL AGAINST RETAINING WALLS UNTIL SUPPORTING SLABS AND FLOOR FRAMING ARE IN PLACE AND SECURELY ANCHORED, UNLESS ADEQUATE BRACING IS PROVIDED.
11. TEMPORARY BRACING SHALL REMAIN IN PLACE UNTIL ALL FLOORS, WALLS, ROOFS AND OTHER SUPPORTING ELEMENTS ARE IN PLACE.
12. THE CONTRACTOR SHALL CONDUCT A PRE-CONSTRUCTION SURVEY OF ADJACENT PROPERTIES INTERIOR SUBGRADE AND ABOVE GRADE ACCESSIBILE WALLS, CEILINGS, FLOORS, ROOF AND VISIBLE EXTERIOR AS VIEWED FROM THE GRADE LEVEL.
13. THE ENGINEER BEARS NO RESPONSIBILITY FOR THE ABOVE ITEMS, AND OBSERVATION VISITS TO THE SITE DO NOT IN ANY WAY INCLUDE INSPECTION OF THEM.

SPECIAL INSPECTION NOTES:

1. ALL SITE SOILS-RELATED WORK AND FOOTING EXCAVATIONS PRIOR TO PLACING FORMS, AS WELL AS SITE DRAINAGE, SHALL BE REVIEWED BY THE PROJECT GEOTECHNICAL ENGINEER.
2. NORMAL REVIEWS BY LOCAL BUILDING DEPARTMENT.
3. NOTIFY 48 HOURS PRIOR TO REQUIRED REVIEW.
4. REQUIRED SPECIAL INSPECTIONS PER I.B.C. SECTION 1705.6 BY AN APPROVED SPECIAL INSPECTOR RETAINED BY OWNER. CONTRACTOR TO COORDINATE SPECIAL INSPECTIONS.
5. SPECIAL INSPECTOR SHALL BE A QUALIFIED PERSON WHO SHALL DEMONSTRATE COMPETENCE, TO THE SATISFACTION OF THE BUILDING OFFICIAL, FOR INSPECTION OF THE PARTICULAR TYPE OF CONSTRUCTION OR OPERATION REQUIRING SPECIAL INSPECTION.
6. DUTIES AND RESPONSIBILITIES OF THE SPECIAL INSPECTOR SHALL BE TO OBSERVE AND/OR TEST THE WORK ASSIGNED AND OUTLINE ABOVE FOR CONFORMANCE WITH THE CONTRACT DOCUMENTS, ALL DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION.
7. THE SPECIAL INSPECTOR SHALL FURNISH REGULAR REPORTS TO THE BUILDING OFFICIAL, THE ARCHITECT AND ENGINEER OF RECORD, AND OTHER DESIGNATED PERSONS. PROGRESS REPORTS FOR CONTINUOUS INSPECTION SHALL BE FURNISHED WEEKLY. INDIVIDUAL REPORTS OF PERIODIC INSPECTIONS SHALL BE FURNISHED WITHIN ONE WEEK OF INSPECTION DATES. THE REPORTS SHALL NOTE UNCORRECTED DEFICIENCIES, AND NET CHANGES TO THE APPROVED CONSTRUCTION DOCUMENTS AUTHORIZED BY THE ENGINEER OF RECORD.
8. THE SPECIAL INSPECTOR SHALL SUBMIT A FINAL SIGNED REPORT WITHIN TEN DAYS OF THE FINAL INSPECTION STATING WHETHER THE WORK REQUIRING A SPECIAL INSPECTION WAS, TO THE BEST OF THE INSPECTOR'S KNOWLEDGE AND BELIEF, IN CONFORMANCE WITH THE APPROVED CONSTRUCTION DOCUMENTS AND THE APPLICABLE WORKMANSHIP PROVISIONS OF THE INTERNATIONAL BUILDING CODE. WORK NOT IN COMPLIANCE SHALL BE NOTED IN THE REPORT.
9. SPECIAL INSPECTION FIRM SHALL BE EMPLOYED BY HR PROPERTY MANAGEMENT AND COORDINATED BY THE CONTRACTOR.

LAYOUT NOTES:

1. MONUMENTS DELINEATING PROPERTY LINES OR RIGHT OF WAYS SHALL NOT BE DISTURBED DURING CONSTRUCTION OPERATIONS. IN THE CASE A MONUMENT IS DISTURBED, AT THE CONTRACTOR'S EXPENSE, THE MONUMENT SHALL BE RESET TO ITS ORIGINAL LOCATION AND ELEVATION BY A REGISTERED LAND SURVEYOR.
2. ALL DIMENSIONS ON THE FOLLOWING SHEETS TAKE PRECEDENT OVER SCALED DIMENSIONS. EACH DRAWING WITH A BAR SCALE MEANS THAT THE DRAWING/DETAIL HAS BEEN SCALED AS ACCURATELY AS POSSIBLE, AND THE BAR SCALE IS FOR GENERAL REFERENCE ONLY. IF NO BAR SCALE IS PRESENT, THEN THERE IS NO SCALE TO THAT DRAWING/DETAIL. AT NO TIME SHOULD DRAWINGS BE SCALED FROM. ANY DISCREPANCIES BETWEEN DRAWINGS, DETAILS, SPECIFICATIONS AND THE FIELD CONDITION SHALL BE IMMEDIATELY REPORTED TO THE CIVIL ENGINEER FOR FURTHER DIRECTIONS BEFORE ANY ADDITIONAL WORK PROCEEDS.
3. SIGNAGE, STRIPING AND PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
4. ALL TRAFFIC CONTROL SIGNS INDICATED ON THE SITE LAYOUT PLAN ARE TO MEET ALL REQUIREMENTS & CONDITIONS OF THE CITY OF PORTLAND, MAINE DEPARTMENT OF TRANSPORTATION AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION.
5. THE CONTRACTOR SHALL OBTAIN THE SERVICES OF A LICENSED PROFESSIONAL LAND SURVEYOR TO PROVIDE A MINIMUM OF TWO TEMPORARY BENCHMARKS WITHIN THE SITE AND TO LOCATE PROPOSED FOUNDATION CORNERS.
6. CONTRACTOR TO ENSURE THAT DRIVEWAYS AND MAILBOXES ADJACENT TO THE PROJECT REMAIN FUNCTIONAL AND IN USE AT ALL TIMES.

PERMITTING NOTES

1. THIS PROJECT IS SUBJECT TO THE TERMS AND CONDITIONS OF SITE PLAN – LEVEL III AND SUBDIVISION PERMIT FROM THE CITY OF PORTLAND.
2. THE CONTRACTOR SHALL REVIEW THE ABOVE REFERENCED PERMITS PRIOR TO SUBMITTING A BID FOR THIS PROJECT, AND INCLUDE COSTS AS NECESSARY TO COMPLY WITH THE CONDITIONS OF THESE PERMITS.

GRADING AND DRAINAGE NOTES:

1. TOPSOIL STRIPPED FROM THE SITE THAT IS SUITABLE FOR REUSE AS LOAM SHALL BE STOCKPILED WITHIN THE PROPOSED LIMIT OF WORK AREA. THE CONTRACTOR SHALL NOT ASSUME THAT ANY LOAM WILL BE ACCEPTABLE FOR REUSE WITH THEIR ESTIMATE.
2. THE CONTRACTOR SHALL ANTICIPATE THAT GROUNDWATER WILL BE ENCOUNTERED DURING CONSTRUCTION AND SHALL INCLUDE SUFFICIENT COSTS WITHIN THEIR BID TO PROVIDE DEWATERING AS NECESSARY; NO SEPARATE PAYMENT SHALL BE MADE TO THE CONTRACTOR FOR DEWATERING. SEE BORING LOGS FOR ADDITIONAL INFORMATION.
3. THE OWNER SHALL BE RESPONSIBLE FOR OBTAINING ANY EASEMENT OR TEMPORARY CONSTRUCTION RIGHTS AS NECESSARY BY PRIVATE ADJACENT LAND OWNERS. THE CONTRACTOR SHALL NOT DISTURB ANY SOIL BEYOND THE PROPERTY LINE WITHOUT NOTIFYING AND OBTAINING SUCH EASEMENT OR TEMPORARY CONSTRUCTION RIGHT FROM THE OWNER. PRIOR TO THE CONTRACTOR PRICING THE WORK THE CONTRACTOR SHALL REQUEST PROOF OF SUCH EASEMENT OR TEMPORARY RIGHTS. SHOULD EASEMENTS OR TEMPORARY RIGHTS NOT BE AVAILABLE THE CONTRACTOR SHALL INCLUDE COST FOR BRACING AND SHORING AS NECESSARY.
4. THE CONTRACTOR SHALL PROVIDE A FINISH PAVEMENT SURFACE FREE OF LOW SPOTS AND PONDING AREAS. THE MINIMUM SLOPE SHALL MEET OR EXCEED 0.5% IN ALL CASES. ALL SLOPES SHALL BE AWAY FROM BUILDINGS AND TOP OF PAVEMENT SHALL BE AT OR BELOW FINISH FLOOR ELEVATIONS.
5. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST GEOTECHNICAL REPORT PREPARED BY THE PROJECT GEOTECHNICAL ENGINEER.
6. NO ADDITIONAL PAYMENT FOR UNSUITABLE MATERIALS.
7. ALL STORM DRAIN PIPE SHALL BE SMOOTH BORE INTERIOR PROVIDING A MANNINGS ROUGHNESS COEFFICIENT OF N=0.012 OR LESS.
8. ADJUST ALL MANHOLES, CATCH BASINS, CURB BOXES, ETC. WITHIN LIMITS OF WORK TO FINISH GRADE.
9. NATIVE SOILS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LIMIT THE DISTURBANCE TO SUBGRADE SOILS. SHOULD THE SUBGRADE BECOME YIELDING OR DIFFICULT TO WORK, DISTURBED AREAS SHALL BE EXCAVATED AND BACKFILLED WITH COMPACTED SELECT FILL OR CRUSHED STONE AT NO ADDITIONAL EXPENSE TO THE OWNER. ALL SUBGRADE PREPARATION IS SUBJECT TO THE RECOMMENDATIONS OF THE PROJECT GEOTECHNICAL ENGINEER.

EROSION CONTROL NOTES:

1. ALL ROUTINE MAINTENANCE ACTIVITIES SHALL BE CONDUCTED IN SUCH A WAY TO LIMIT THE AMOUNT OF DISTURBED AREA AT ONE TIME TO THE EXTENT PRACTICABLE.
2. PRIOR TO THE START OF ANY CLEARING/LAND DISTURBING ACTIVITIES, THE CONTRACTOR SHALL INSTALL APPLICABLE EROSION CONTROL DEVICES SUCH AS PERIMETER SILT FENCE, AND OTHER APPLICABLE MEASURES. IN THE EVENT THE CONTRACTOR IS NOT SURE A EROSION CONTROL MEASURE SHOULD BE IMPLEMENTED, THE CONTRACTOR SHALL CONTACT THE ENGINEER OF RECORD TO CONFIRM IMPLEMENTATION OF ANY EROSION CONTROL DEVICES.
3. ALL GROUND AREAS GRADED FOR CONSTRUCTION SHALL BE GRADED, LOAMED, SEEDED AND MULCH SHALL BE APPLIED AS SOON AS POSSIBLE WITHIN 7 DAYS FOLLOWING THE COMPLETION OF ANY SOIL DISTURBANCE, AND PRIOR TO ANY STORM EVENT.
4. EROSION AND SEDIMENTATION CONTROL MEASURES SHALL SHALL BE INSTALLED TO THE SATISFACTION OF THE CITY. THE CONTRACTOR SHALL REFERENCE THE APPROVED EROSION AND SEDIMENTATION CONTROL REPORT FOR TEMPORARY AND PERMANENT EROSION AND SEDIMENTATION CONTROL DEVICES IN ADDITION TO THE PLAN SET. THE CONTRACTOR SHALL ALSO REFER TO THE MAINE D.E.P.'S PERMIT CONDITIONS, FINDINGS OF FACT AND ORDER (IF ANY), AND THE CURRENT MAINE EROSION AND SEDIMENT CONTROL BMP MANUAL FOR ADDITIONAL INFORMATION.
5. PRIOR TO PAVING, THE CONTRACTOR SHALL REMOVE ALL SEDIMENT FROM STORM DRAINS, CATCH BASINS, AND APPURTENANCES.
6. REFER TO THE EROSION CONTROL DETAILS & NOTES FOR ADDITIONAL INFORMATION.

UTILITY NOTES:

1. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND ELEVATION OF THE EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED UPON RECORDS OF VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THIS INFORMATION IS NOT TO BE RELIED UPON AS BEING EXACT OR COMPLETE. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO TEST PIT TO DETERMINE THE EXACT LOCATION AND ELEVATION OF UTILITIES TO COORDINATE WITH THE PROPOSED CONNECTIONS OR CROSSING. ANY DISCREPANCIES SHALL BE IMMEDIATELY REPORTED TO THE CIVIL ENGINEER FOR FURTHER DIRECTIONS BEFORE ANY ADDITIONAL WORK PROCEEDS.
2. CONTRACTOR SHALL, AT NO ADDITIONAL COST TO THE OWNER, CONDUCT EXPLORATORY EXCAVATIONS AT LOCATIONS WHERE PROPOSED EXCAVATION WILL INTERSECT WITH EXISTING UTILITIES.
3. CONTRACTOR TO PROVIDE 5' OF COVER FROM TOP OF PIPE TO FINISH GRADE FOR WATER MAINS.
4. THRUST BLOCKS SHALL BE USED FOR THRUST RESTRAIN ON WATER MAINS. DETAIL AND LIMITS FOR THRUST BLOCKS ARE SHOWN ON SHEET C-42.
5. WATER INFRASTRUCTURE SHALL BE TESTED IN ACCORDANCE WITH THE PORTLAND WATER DISTRICT DOCUMENT "WATER AND SEWER CONSTRUCTION SPECIFICATIONS AND PROCEDURES", MOST RECENT REVISION.
6. ALL REQUIRED FITTINGS FOR THE WATER MAIN ARE NOT SHOWN ON DRAWINGS. CONTRACTOR SHALL FURNISH AND INSTALL ALL NECESSARY FITTINGS REQUIRED TO CONSTRUCT THE WATER MAIN IN ACCORDANCE WITH CITY OF PORTLAND, STATE OF MAINE, AND AMERICAN WATER WORKS ASSOCIATION STANDARDS AND REGULATIONS.
7. CONTRACTOR SHALL COORDINATE WORK REGARDING ANY WATER MAIN CONNECTION AND WATER MAIN SHUTDOWN WITH THE PORTLAND WATER DISTRICT AT LEAST SEVEN (7) DAYS PRIOR TO CONSTRUCTION.
8. ALL WATER PIPE INSTALLATION SHALL CONFORM WITH THE PORTLAND WATER DISTRICT SPECIFICATIONS AND PROCEDURES, MOST RECENT EDITION.
9. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
10. SEWER, GAS, TELEPHONE, ELECTRICITY, CABLE, WATER AND ANY OTHER UTILITY CONNECTIONS SHALL BE REVIEWED BY PLUMBING, ELECTRICAL, AND MECHANICAL DESIGNER FOR CONSISTENCY WITH THEIR PLANS PRIOR TO CONSTRUCTION.
11. COORDINATE EXIT POINT FOR SECONDARY SERVICE WITH THE ARCHITECT/ELECTRICAL ENGINEER. SECONDARY LINE LOCATIONS NOT PROVIDED BY ACORN ENGINEERING WITHIN THE UTILITY PLAN.
12. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN ALL THE NECESSARY PERMITS FOR THE INSTALLATION OF THE UTILITIES AND STORMDRAINS WITHIN THE PUBLIC RIGHT OF WAY. THE CONTRACTOR SHALL SUBMIT A MAINTENANCE OF TRAFFIC PLAN TO THE CITY IN ACCORDANCE WITH THE CITY OF PORTLAND TECHNICAL MANUAL PRIOR TO ANY WORK.
13. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL BOXES, FITTINGS, CONNECTORS, COVER PLATES AND OTHER MISCELLANEOUS ITEMS NOT NECESSARILY DETAILED ON THE DRAWINGS TO RENDER INSTALLATION OF UTILITIES COMPLETE AND OPERATIONAL AT NO EXTRA EXPENSE TO THE OWNER.

DEMOLITION NOTES:

1. THE FOLLOWING ITEMS ARE TYPICAL OF MATERIAL WHICH MAY STILL REMAIN AFTER THE SITE DEMOLITION OCCURRED. THE CONTRACTOR IS ADVISED TO VISIT THE SITE TO CONFIRM DEMOLITION ITEMS SINCE THE LIST IS NOT INCLUSIVE OF THE SITE CONDITIONS WHICH MAY BE ENCOUNTERED:

   ROCK AND CONCRETE FOUNDATIONS

   CONCRETE SLABS

   BITUMINOUS ASPHALT PAVEMENT

   CONCRETE PADS AND BLOCKS

   FENCE POST AND FENCING

   UNDERGROUND UTILITY LINES

   ABOVE AND OR BELOW FUEL OIL AND PROPANE GAS TANKS

   STORM DRAIN PIPES AND APPURTENANCE STRUCTURES

   OTHER TRASH & MISCELLANEOUS SOLID WASTES

2. ALL DISPOSAL OF DEMOLITION DEBRIS OR WASTE SHALL BE IN ACCORDANCE WITH ALL LOCAL, STATE, & FEDERAL REGULATIONS. CONTRACTORS SHALL PROVIDE OWNER WITH APPROPRIATE "BILLS OF LADING" DEMONSTRATING PROPER DISPOSAL OF ALL MATERIALS.
3. THE CLIENT HAS NOT REQUESTED NOR HAS ACORN COMPLETED A PHASE I – ENVIRONMENTAL SITE ASSESSMENT FOR THE PROPERTY.

PERMIT LEVEL
NOT ISSUED FOR
CONSTRUCTION

ISSUED FOR	BY	DATE
CITY APP.	WHS	10/6/17

DRAWING NAME: GENERAL NOTES

PROJECT NAME: 24 ST. LAWRENCE STREET REDEVELOPMENT

CLIENT: HR PROPERTY MANAGEMENT
23 ST. LAWRENCE STREET, PORTLAND, ME 04101

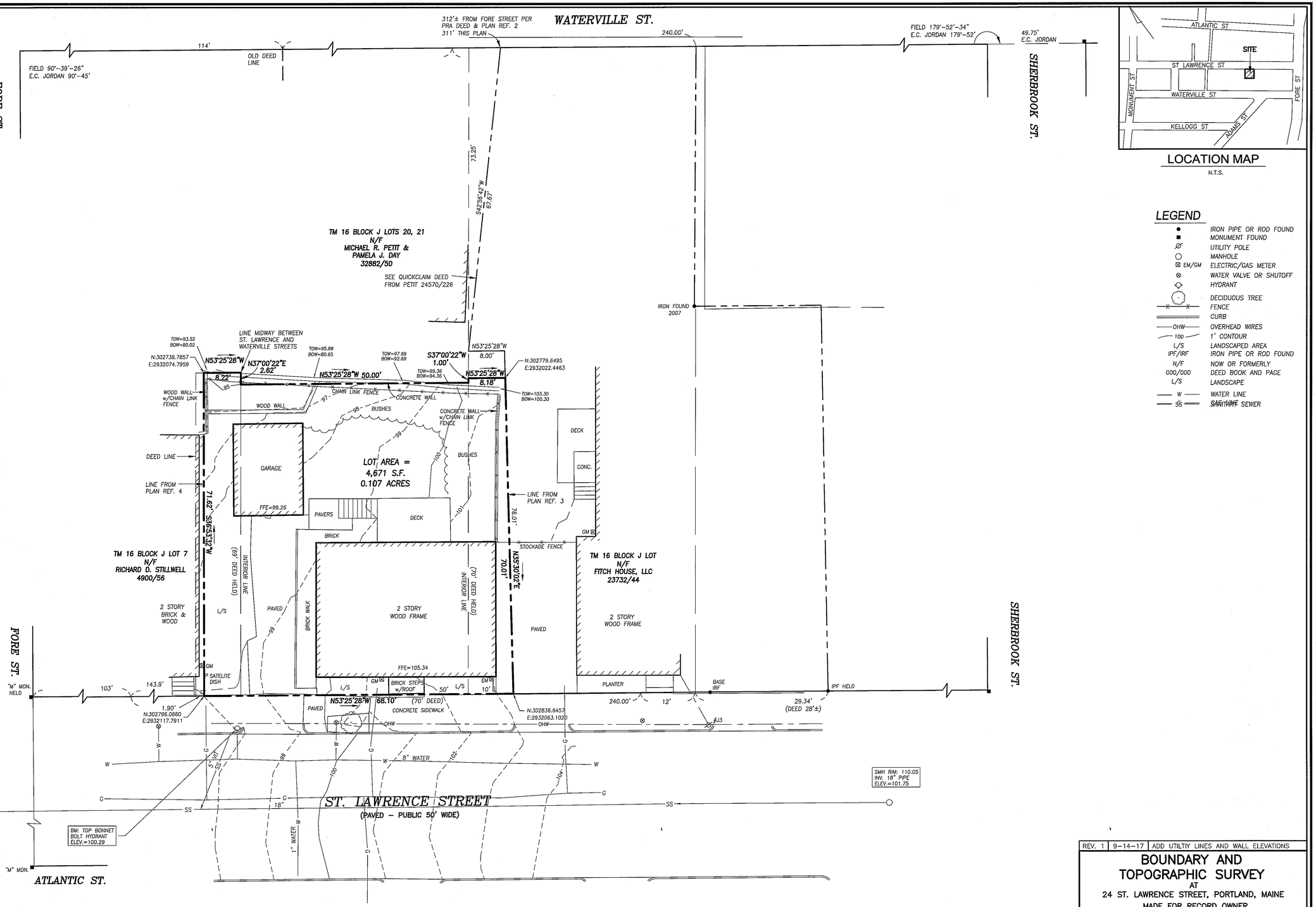
ACORN ENGINEERING, INC.
ENGINEERING, INC.
158 DANFORTH STREET PORTLAND, MAINE 04102
(207) 775-2655

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

FILE:	1088_CIVIL
JN:	1088
SCALE:	NTS
DESIGNED BY:	WHS
DRAWN BY:	ADG
CHECKED BY:	WHS

STATE OF MAINE
WILLIAM H. SAVAGE
No. 11416
10-11-17
REGISTERED PROFESSIONAL ENGINEER

DRAWING NO.
C-02



LOCATION MAP

N.T.S.

LEGEND

●	IRON PIPE OR ROD FOUND
■	MONUMENT FOUND
⌀	UTILITY POLE
○	MANHOLE
⊠ EM/GM	ELECTRIC/GAS METER
⊗	WATER VALVE OR SHUTOFF
	HYDRANT
	DECIDUOUS TREE
X X	FENCE
	CURB
OHW	OVERHEAD WIRES
100	1' CONTOUR
L/S	LANDSCAPED AREA
IPF/IRF	IRON PIPE OR ROD FOUND
N/F	NOW OR FORMERLY
000/000	DEED BOOK AND PAGE
L/S	LANDSCAPE
W	WATER LINE
SS	SANITARY SEWER

GENERAL NOTES

1. OWNER OF RECORD: WALTER S. AND KELLY A. WILLIAMS
TAX MAP 16 BLOCK J LOT 6
C.C.R.D. BOOK 25609 PAGE 269

2. BEARINGS ARE BASED ON MAINE STATE PLANE COORDINATE SYSTEM MAINE WEST NAD83. CITY POINTS T111–38–146 (N:303177.39 E:2932043.79) & T113–78–203 (N:302835.35 E:2932458.96) USED.

3. BENCH MARK: CITY BENCHMARK HIGHEST POINT ON "M" MONUMENT AT NORTHWESTERLY CORNER OF ST. LAWRENCE AND FORE STREET, ELEVATION=69.35 NGVD 1929.

4. THE LINE ALONG FITCH HOUSE, LLC IS THE SAME AS THAT LINE ON PLAN REFERENCE 3, ALTHOUGH THE BEARING SYSTEM IS DIFFERENT. DUE STO VAGUE DEEDS, A BOUNDARY AGREEMENT WAS RECOMMENDED ALONG THIS LINE IN 2006, AT THE TIME OF THAT SURVEY.

5. THE DEED LINE APPEARS TO GO THROUGH THE BUILDING OF STILLWELL. THE LINE SHOWN ON THIS PLAN IS TAKEN FROM PLAN REFERENCE 4. A BOUNDARY AGREEMENT IS RECOMMENDED WITH STILLWELL.

6. THE LINE ALONG PETIT IS TAKEN FROM THE OLD DEEDS THAT MAKE UP THE SUBJECT PROPERTY, NAMELY BOOK 239, PAGE 252, BOOK 264, PAGE 394, BOOK 199, PAGE 423, AND BOOK 214, PAGE 263. THESE DEEDS HAVE THE DIMENSIONS AS SHOWN ON THIS PLAN. THESE DEEDS THAT ABUTT PETIT PREDATE THE DEED INTO THE CHAIN OF PETIT, NAMELY BOOK 218, PAGE 78. THAT DEED CALLS FOR THE REAR LINE TO BE 75 FEET FROM WATERVILLE STREET AND PARALLEL THERETO. THE CURRENT PETIT DEED DEFINES THE LINES AS GOING FROM WATERVILLE STREET "ABOUT SEVENTY–FIVE (75) FEET TO A STONE WALL; THENCE NORTHWESTERLY PARALLEL WITH SAID WATERVILLE STREET AND ON THE LINE OF SAID STONE WALL." A BOUNDARY AGREEMENT IS RECOMMENDED WITH PETIT.

7. AN ATTORNEY SHOULD BE CONSULTED ABOUT THE RECOMMENDED AGREEMENTS. CORNER MARKERS WILL NOT BE SET UNTIL AFTER SUCH AGREEMENTS OR CONSULTATION.

PLAN REFERENCES

1. "STANDARD BOUNDARY SURVEY ON WATERVILLE STREET, PORTLAND, MAINE MADE FOR LARRY DAVIS SEPT. 12, 2000 OWEN HASKELL, INC. JOB NO. 2000–126P."

2) "PLAN OF PROPERTY IN PORTLAND, MAINE MADE FOR MUNJOY SOUTH PROJECT ME–R–2 DISPOSITION PARCEL NO. 16–E 11–18–71 H.I. & E.C. JORDAN–SURVEYORS."

3. "BOUNDARY SURVEY AT 28 ST. LAWRENCE STREET, PORTLAND, MAINE MADE FOR FITCH HOUSE, LLC" JULY 6, 2006 OWEN HASKELL, INC. JOB NO. 2006–056P" REVISED 9–03–08.

4. "PLAN OF LAND OWNED BY ANNA D. BIASE, ST. LAWRENCE STREET, PORTLAND, MAINE, CHANDLER H. BARRON, C.E. DEC. 1945"

5. "BOUNDARY & TOPOGRAPHIC SURVEY ON FORE ST. AND WATERVILLE ST., PORTLAND, MAINE MADE FOR OWNER OF RECORD PENINSULA PROPERTY DEVELOPMENT LLC FEBRUARY 16, 2016 OWEN HASKELL, INC. JOB NO. 2015–189P."

GRAPHIC SCALE

0 5' 10' 20' 40'

CERTIFICATE

OWEN HASKELL, INC. HEREBY CERTIFIES THAT THIS PLAN IS BASED ON, AND THE RESULT OF, AN ON THE GROUND FIELD SURVEY AND THAT TO THE BEST OF OUR KNOWLEDGE, INFORMATION AND BELIEF, IT CONFORMS TO THE BOARD OF LICENSURE FOR PROFESSIONAL LAND SURVEYORS CURRENT STANDARDS OF PRACTICE.

9-15-2017
DATE

JOHN C. SCHWANDA, PLS NO. 1252

STATE OF MAINE JOHN C. SCHWANDA 1252 REGISTERED LAND SURVEYOR

REV.	DATE	DESCRIPTION
1	9–14–17	ADD UTILTIY LINES AND WALL ELEVATIONS

BOUNDARY AND TOPOGRAPHIC SURVEY

AT

24 ST. LAWRENCE STREET, PORTLAND, MAINE

MADE FOR RECORD OWNER

WALTER S. & KELLY A. WILLIAMS

24 ST. LAWRENCE STREET, PORTLAND, MAINE

OWEN HASKELL, INC.
PROFESSIONAL LAND SURVEYORS
390 U.S. ROUTE ONE, FALMOUTH, ME 04105 (207)774–0424

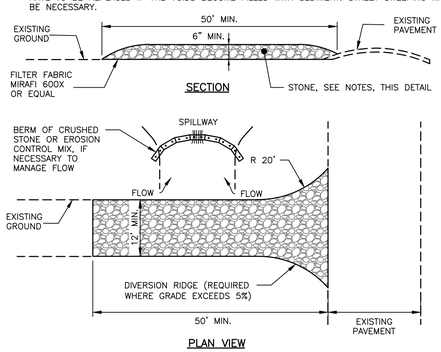
Drawn By RS	Date NOVEMBER 30, 2016	Job No. 2016–321P
Trace By JLW		
Check By JCS	Scale 1" = 10'	Drwg. No. 1
Book No. FILE		

GENERAL NOTES:

1. CONTRACTOR TO COORDINATE WITH PORTLAND WATER DISTRICT TO ABANDON EXISTING WATER SERVICE LINE.
2. EXISTING ASPHALT TO BE REMOVED SHALL BE STRIPPED AND PROPERLY DISPOSED OF OFFSITE. CURB TO BE REMOVED, STOCKPILED AND RESET IN ACCORDANCE WITH DETAIL. BROKEN CURB SHALL BE PROPERLY DISPOSED OF AND SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
3. ALL DISPOSAL OF DEMOLITION DEBRIS OR WASTE SHALL BE IN ACCORDANCE WITH ALL LOCAL, STATE, & FEDERAL REGULATIONS. CONTRACTOR SHALL PROVIDE OWNER WITH APPROPRIATE "BILLS OF LADING" TO DEMONSTRATE PROPER DISPOSAL OF ALL MATERIALS.
4. SITE DEMOLITION SHALL NOT OCCUR UNTIL PROPER ABATEMENT PROCEDURES HAVE OCCURRED. ABATEMENT, IF NECESSARY, SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
5. THE CONTRACTOR SHALL CALL THE APPROPRIATE UTILITY COMPANIES AND DIG SAFE AT LEAST 72 HOURS PRIOR TO EXCAVATION TO REQUEST EXACT FIELD LOCATION FOR UTILITIES. OTHERWISE IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE LOCATION OF UNDERGROUND UTILITIES AND LOCATE POTENTIAL CONFLICT WITH THE APPROVED PLANS PRIOR TO CONSTRUCTION.
6. CONTRACTOR TO COORDINATE SITE DEMOLITION WITH OWNER
7. NOTE THAT ALL CONSTRUCTION SIGNAGE IS TEMPORARY AND WILL BE REMOVED AT PROJECT COMPLETION.
8. SEDIMENT BARRIERS TO BE PLACED DOWN GRADIENT OF THE PROPOSED PROJECT WORK PER DETAIL; SEDIMENT BARRIER AND CONSTRUCTION FENCE ARE OFFSET OF THE PROPERTY LINES AS SHOWN ON THE PLAN FOR CLARITY PURPOSES AND DO NOT NECESSARILY REPRESENT THE SPECIFIC LOCATION OF PHYSICAL LOCATION.
9. CONTRACTOR SHALL INSTALL CONSTRUCTION ENTRANCE AT ALL LOCATIONS OF INGRESS AND EGRESS DURING CONSTRUCTION TO THE SITE. SEE DETAIL.
10. DEMOLITION PLAN IS NOT INCLUSIVE OF ALL EXISTING ITEMS TO BE REMOVED AS PART OF SITE CONSTRUCTION INCLUDING BUT NOT LIMITED TO LANDSCAPING, UTILITIES, WORK WITHIN THE ROW, ETC. ALL DEMOLITION WORK SHALL BE IN ACCORDANCE WITH THE CITY OF PORTLAND REGULATIONS.

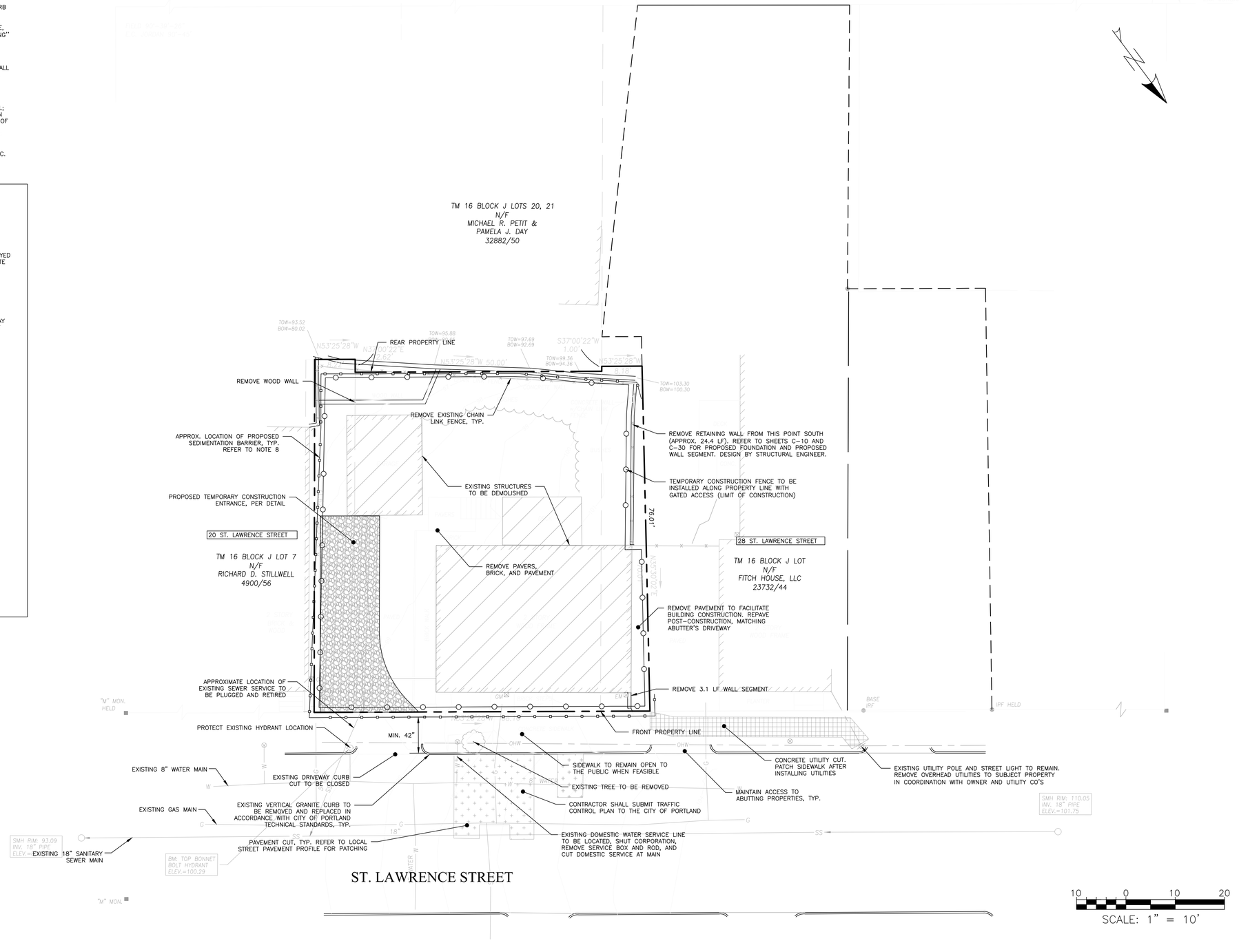
NOTES:

1. CONTRACTOR SHALL ADD STONE TO ENTRANCE AS MUD/SILT MATERIAL ACCUMULATES
2. STONE SHALL BE 2"–3" COARSE AGGREGATE
3. BERMS MAY BE NECESSARY TO DIVERT WATER AROUND ANY EXPOSED SOIL, AND RUNOFF SHOULD BE DIRECTED TO A SEDIMENT TRAP.
4. CONSTRUCTION ENTRANCE SHALL BE GRADED TO NOT ALLOW ANY STORMWATER TO BE CONVEYED OFF SITE. IN SITUATIONS WHERE THIS IS NOT POSSIBLE, ANY STORMWATER CONVEYED OFFSITE SHALL BE TREATED OR RETAINED IN A MANNER APPROVED BY ENGINEER.
5. THE WHEELS OF CONSTRUCTION EQUIPMENT MAY BE WASHED PRIOR TO EXITING THE SITE. WASHING SHOULD BE PERFORMED IN AN AREA THAT DRAINS TO A SEDIMENT TRAP OR BASIN
6. CONSTRUCTION ENTRANCE SHALL BE GRADED IN A MANNER THAT PREVENTS TRACKING OF SEDIMENTS ONTO PUBLIC RIGHT–OF–WAY
7. THE PAD SHOULD BE INSPECTED WEEKLY, AND BORE AND AFTER EACH STORM. THE PAD MAY HAVE TO BE REPLACED IF THE VOIDS BECOME FILLED WITH SEDIMENT. STREET SWEEPING MAY BE NECESSARY.



STABILIZED CONSTRUCTION ENTRANCE

NOT TO SCALE



PERMIT LEVEL
NOT ISSUED FOR CONSTRUCTION

ISSUED FOR	BY DATE
CITY APP.	WHS 10/6/17

DRAWING NAME: **DEMOLITION & CONSTRUCTION MANAGEMENT PLAN**

PROJECT NAME: **24 ST. LAWRENCE STREET REDEVELOPMENT**

CLIENT: HR PROPERTY MANAGEMENT
24 ST. LAWRENCE STREET, PORTLAND, ME 04101

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM ACORN ENGINEERING, INC. AND ANY MODIFICATIONS MADE, OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

ACORN ENGINEERING, INC.
158 DANFORTH STREET, PORTLAND, MAINE 04102
(207) 775–2655

FILE:	1088_CIVIL
JN:	1088
SCALE:	1"=10'
DESIGNED BY:	ADG
DRAWN BY:	ADG
CHECKED BY:	WHS

STATE OF MAINE
WILLIAM
SAVAGE
No. 14456
10-11-17
REGISTERED
PROFESSIONAL ENGINEER

DRAWING NO.
C-03

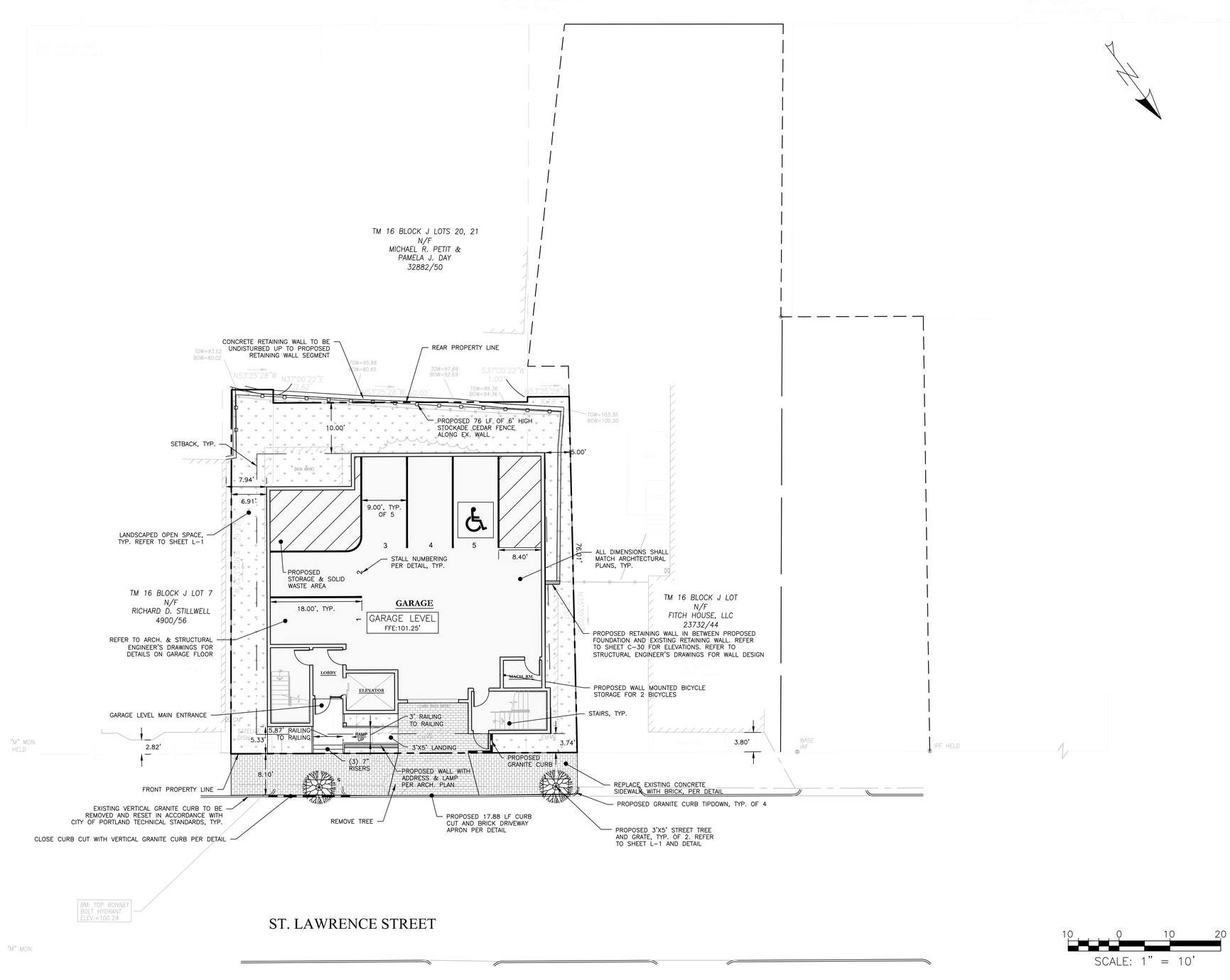
GENERAL NOTES:

1. ALL CONCRETE SIDEWALK ALONG PROPERTY FRONTAGE TO BE REPLACED WITH BRICK PER CITY STANDARD.
2. STRIPING AS INDICATED ON SITE PLAN SHALL BE 4" WIDE. STRIPING SHALL BE YELLOW UNLESS OTHERWISE NOTED.
3. CURB TO BE REMOVED, STOCKPILED AND RESET IN ACCORDANCE WITH DETAIL. BROKEN CURB SHALL BE PROPERLY DISPOSED OF AND SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

SPACE AND BULK STANDARDS			
ZONE: R6	REQUIRED	EXISTING	PROPOSED
MINIMUM LOT SIZE	2,000 SF	4,671 SF	4,671 SF
MINIMUM STREET FRONTAGE	20'	68'	68'
MINIMUM FRONT YARD SETBACK	5' – ORDINANCE 3.3' – ABUTTER AVG.	3.8'	3.7'
MINIMUM SIDE YARD SETBACK	5'	3'	5'
MINIMUM REAR YARD SETBACK	10'	8.7'	10'
STRUCTURE STEPBACKS (SIDE YARD ABOVE 35')	10'	N/A	10'
STRUCTURE STEPBACKS (REAR YARD ABOVE 35')	15'	N/A	15'
MAXIMUM LOT COVERAGE	60%	35%	60%
MINIMUM LOT WIDTH	20'	67'	67'
MAXIMUM BUILDING HEIGHT	45'	24'	44.96'
MINIMUM LANDSCAPED OPEN AREA	20%	45%	32%
MAXIMUM NUMBER OF DWELLING UNITS	725 SF/UNIT = 6	2	5
RESIDENTIAL PARKING	1 SPACE PER UNIT AFTER 3 UNITS = 2 SPACES	2	5
MINIMUM INTERNAL RESIDENT BICYCLE STORAGE SPACES	2 SPACES/5 D.U. = 2	0	2
MAXIMUM GARAGE OPENING	20'	N/A	10'

LEGEND	
HATCH STYLE	ASSOCIATED AREAS
	BRICK SIDEWALK
	GREEN SPACE

GARAGE LEVEL PARKING SUMMARY	
PARKING DIMENSION	# PARKING SPACES
STANDARD (9'X18')	5



SCALE: 1" = 10'

PERMIT LEVEL
NOT ISSUED FOR CONSTRUCTION

ISSUED FOR	BY DATE
CITY APP.	WHS 10/6/17
BLDG REV.	WHS 3/1/18

DRAWING NAME: SITE PLAN

PROJECT NAME: 24 ST. LAWRENCE STREET REDEVELOPMENT

CLIENT: WALTER & KELLY WILLIAMS
24 ST. LAWRENCE STREET, PORTLAND, ME 04101

ACORN ENGINEERING, INC.
ENGINEERING, INC.
158 DANFORTH STREET, PORTLAND, MAINE 04102
(207) 775-2655

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM ACORN ENGINEERING, INC. AND SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

FILE:	1088_CIVIL
JN:	1088
SCALE:	1"=10'
DESIGNED BY:	ADG
DRAWN BY:	ADG
CHECKED BY:	WHS

DRAWING NO.
C-10

GENERAL NOTES:

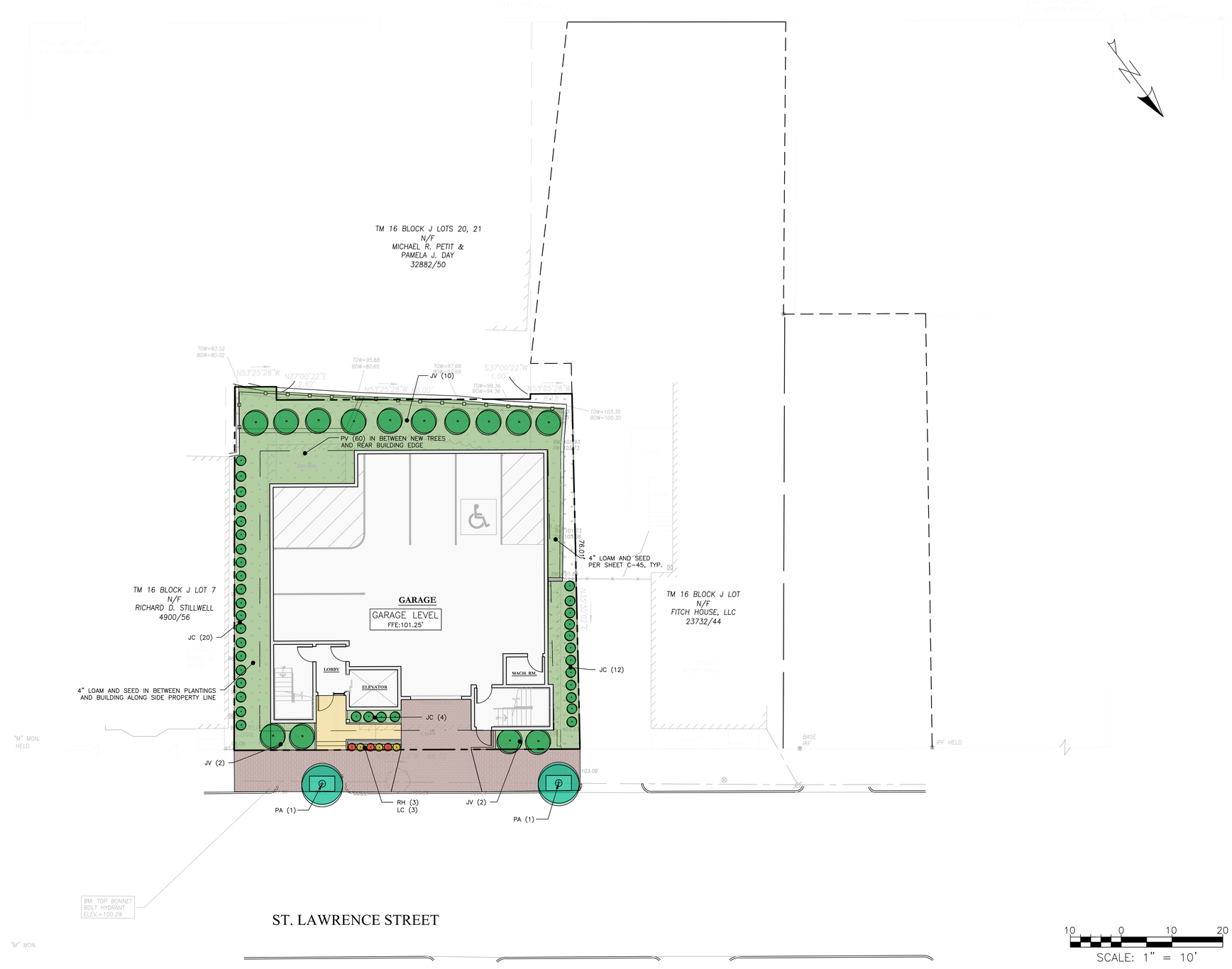
1. ALL PROPOSED GREEN SPACES AND ASSOCIATED PLANT SPECIES ARE TO COMPLY WITH THE CITY OF PORTLAND TECHNICAL STANDARDS. ANY SUBSTITUTIONS SHALL BE REVIEWED FOR APPROVAL BY THE CITY ARBORIST.
2. CONTRACTOR TO BE HELD RESPONSIBLE FOR THE WATERING AND MAINTENANCE OF ALL PLANT MATERIAL AND LANDSCAPING IMPROVEMENTS FOR AT LEAST 30 DAYS FOLLOWING INSTALLATION. FOLLOWING THIS PERIOD, THE CONDO ASSOCIATION OR PROPERTY MANAGEMENT COMPANY SHALL BE RESPONSIBLE FOR CONTINUED WATERING AND MAINTENANCE.
3. CONTRACTOR TO MAINTAIN A ONE YEAR WARRANTY ON ALL PLANTINGS FOLLOWING INSTALLATION.
4. NO PLANTING WILL BE INSTALLED UNTIL ALL GRADING AND CONSTRUCTION HAS BEEN COMPLETED IN THE IMMEDIATE AREA.
5. CONTRACTOR TO VERIFY ALL UTILITIES ON PROPERTY AND TO PROTECT ALL UTILITIES DURING EXCAVATION FOR PLANTS.
6. ALL CONTAINER MATERIAL TO BE GROWN IN CONTAINER MINIMUM OF 6 MONTHS.
7. ALL MATERIAL SHALL COMPLY WITH THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK, AMERICAN ASSOCIATION OF NURSERYMAN.
8. CONTRACTOR SHALL REPAIR ALL DAMAGE TO PROPERTY FROM PLANTING OPERATIONS AT NO COST TO OWNER.
9. THE ENGINEER MAY TAG ALL PLANTS AT THE NURSERY AND INSPECT THEM AFTER DELIVERY TO THE SITE; ALL PLANT MATERIALS SHALL BE INSPECTED BY THE ENGINEER ON SITE PRIOR TO INSTALLATION.
10. THE MAJORITY OF SPECIES ARE SPECIFIED WITHIN THE MAINE DEP BUFFER ZONE PLANT LIST AND ARE NATIVE AND SALT & DROUGHT RESISTANT.
11. SEE PERMANENT SEEDING TABLE ON SHEET C-45 FOR GRASSY LAWN AREAS.

PLANT SCHEDULE

ID	BOTANICAL NAME	COMMON NAME	QTY	SIZE
GRASSES				
PV	PANICUM VIRGATUM	SWITCH GRASS	60	3 QT.
PERENNIALS				
RH	RUDBECKIA HIRTA	BLACK EYED SUSAN	3	1 GAL.
LC	LOBELIA CARDINALIS	CARDINAL FLOWER	3	1 GAL.
TREES				
PA	PRUNUS 'ACCOLADE'	ACCOLADE CHERRY	2	2" CA.
JV	JUNIPERUS VIRGINIANA 'EMERALD SENTINEL'	EASTERN JUNIPER	10	5-6'
JC	JUNIPERUS COMMONIS 'PENCIL POINT'	PENCIL POINT JUNIPER	36	5 GAL.

LEGEND

STYLE	ASSOCIATED AREAS
	LANDSCAPED AREA
	BRICK SIDEWALK
	BUILDING FOOTPRINT



10 0 10 20

SCALE: 1" = 10'

PERMIT LEVEL
NOT ISSUED FOR
CONSTRUCTION

ISSUED FOR	BY	DATE
CITY APP.	WHS	10/6/17

DRAWING NAME: LANDSCAPE PLAN

PROJECT NAME: 24 ST. LAWRENCE STREET REDEVELOPMENT

CLIENT: WALTER & KELLY WILLIAMS
24 ST. LAWRENCE STREET, PORTLAND, ME 04101

ACORN ENGINEERING, INC.
ENGINEERING
158 DANFORTH STREET, PORTLAND, MAINE 04102
(207) 775-2655

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM ACORN ENGINEERING, INC. ANY MODIFICATIONS MADE TO THIS PLAN WITHOUT SUCH PERMISSION SHALL BE AT THE USER'S SOLE RISK AND OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

FILE:	1088_CIVIL
JN:	1088
SCALE:	1"=10'
DESIGNED BY:	ADG
DRAWN BY:	ADG
CHECKED BY:	WHS

STATE OF MAINE
WILLIAM
SAVAGE
No. 11416
10-11-17
REGISTERED
PROFESSIONAL ENGINEER

DRAWING NO.
L-1

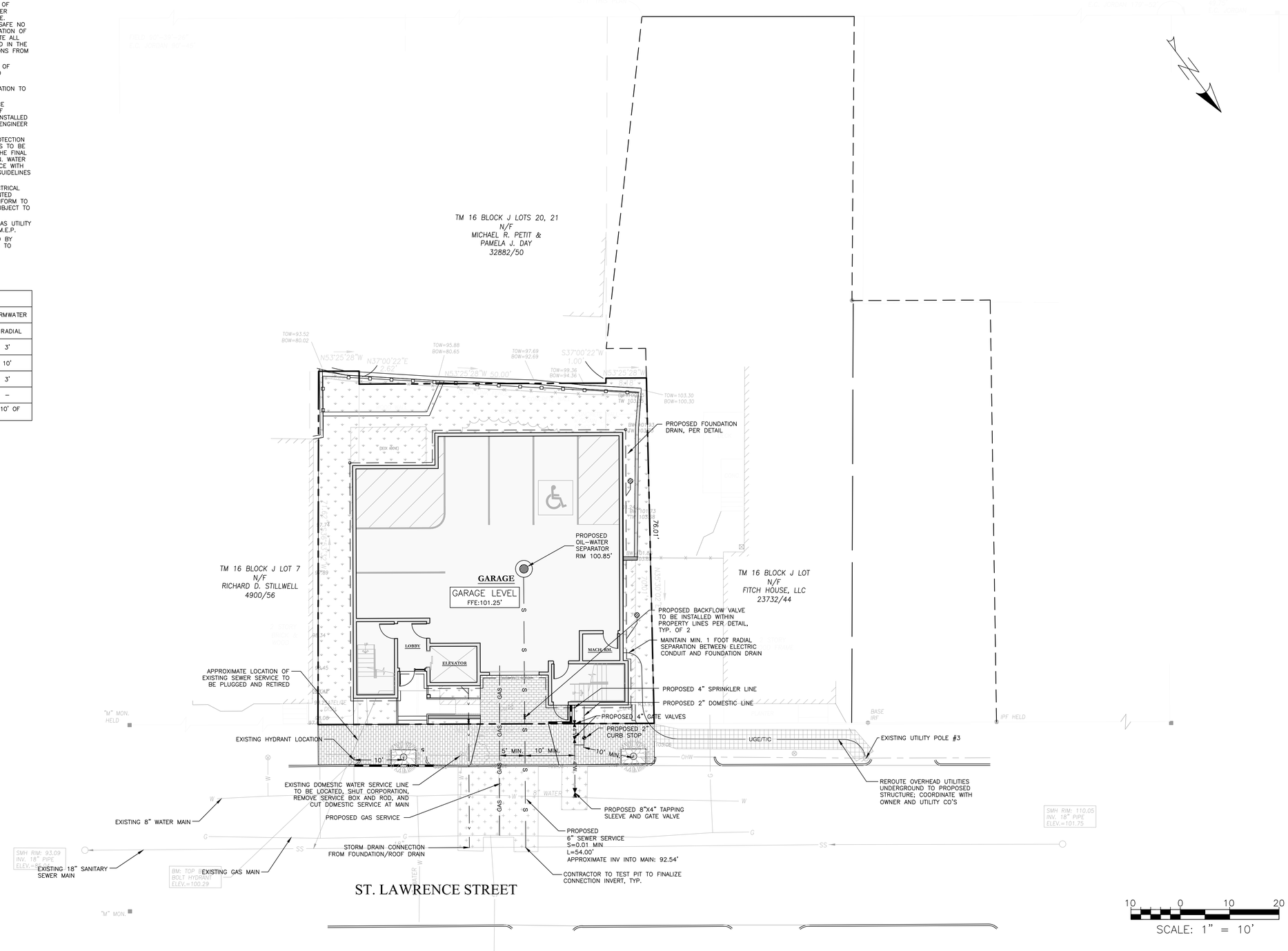
GENERAL NOTES:

1. LOCATION OF PROPOSED CONNECTIONS ARE APPROXIMATE. CONTRACTOR TO CONTACT ENGINEER IF FIELD INFORMATION VARIES FROM INFORMATION ON PLANS.
2. CONTRACTOR IS TO BE CAUTIONED THAT CERTAIN LOCATIONS AND/OR ELEVATIONS OF EXISTING UTILITIES HAVE BEEN PROVIDED THROUGH UTILITY COORDINATION OR OTHER OBSERVATIONS. INFORMATION IS NOT TO BE RELIED UPON AS EXACT OR COMPLETE. CONTRACTOR TO FIELD VERIFY AND COORDINATE WITH UTILITY COMPANY AND DIG SAFE NO LESS THAN 72 HOURS PRIOR TO ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF ALL UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS INDICATED IN THE CONTRACT DOCUMENTS. CONTRACTOR TO NOTIFY ENGINEER OF ANY DIFFERENTIATIONS FROM EXISTING CONDITIONS, INCLUDING UTILITY SURVEY, PRIOR TO ANY CHANGES.
3. FOR ALL UTILITIES, ACORN ENGINEERING DESIGN LIMITS EXTEND TO OUTSIDE WALL OF BUILDING. METERING OF UTILITIES TO BE COMPLETED BY M.E.P. UNLESS SPECIFIED OTHERWISE.
4. CONTRACTOR TO COORDINATE WITH ARCHITECT ON FINAL UTILITY CONNECTION LOCATION TO EACH RESIDENTIAL UNIT.
5. SEWER UTILITIES: CONTRACTOR TO COORDINATE WITH ARCHITECT FOR FINAL SERVICE CONNECTION. SEWER UTILITIES TO BE CONSTRUCTED IN ACCORDANCE WITH CITY OF PORTLAND TECHNICAL STANDARDS. VALVE FOR BACKFLOW PREVENTION SHALL BE INSTALLED WITHIN THE THE PROPERTY LINES FOR EACH CITY SEWER CONNECTION. CONTACT ENGINEER IF FIELD CONDITIONS FROM INVERT VARY FROM DESIGN.
6. WATER UTILITIES: FINAL PIPE SIZING PROVIDED BY M.E.P. ENGINEER AND FIRE PROTECTION DESIGNER. INTERNAL METERING, BACKFLOW PREVENTION, AND PRESSURE REDUCERS TO BE COMPLETED BY M.E.P. ENGINEER. DOMESTIC WATER PIPE SIZES WILL DETERMINE THE FINAL WATER METERING OPTIONS. METER MAY BE SMALLER THAN PROPOSED WATER MAIN. WATER METERING, PRESSURE REDUCER AND BACKFLOW PREVENTION TO BE IN ACCORDANCE WITH THE PORTLAND WATER DISTRICT STANDARDS. CONTRACTOR TO FOLLOW METERING GUIDELINES OF THE PORTLAND WATER DISTRICT AND CITY OF PORTLAND.
7. ELECTRIC UTILITIES: ELECTRIC DESIGN TO BE FINALIZED BY M.E.P. ENGINEER. ELECTRICAL LOAD TO BE DETERMINED BY M.E.P. ENGINEER. METER LOCATION AND POLE-MOUNTED TRANSFORMER SIZES DEFINED BY M.E.P. ALL ELECTRIC CONSTRUCTION SHALL CONFORM TO CMP GUIDEBOOK OF STANDARD REQUIREMENTS, MOST RECENT EDITION. DESIGN SUBJECT TO FINAL APPROVAL FROM CMP.
8. GAS UTILITIES: EXISTING STUB LOCATION APPROXIMATE. PROJECT GAS LOAD AND GAS UTILITY DESIGN TO BE FINALIZED BY M.E.P. ENGINEER. GAS METERS TO BE LOCATED BY M.E.P.
9. CABLE AND TELEPHONE PULLBOXES AND PEDESTAL LOCATIONS TO BE DETERMINED BY CHARTER COMMUNICATIONS AND FAIRPOINT PRIOR TO CONSTRUCTION. CONTRACTOR TO COORDINATE.

MINIMUM HORIZONTAL UTILITY SEPARATION					
UTILITY	UGE/T/C	WATER	SEWER	GAS	STORMWATER
UGE/T/C	–	6'	5'	4'	1' RADIAL
WATER	6'	–	5'*	6'	3'
SEWER	5'	5'*	–	5'	10'
GAS	4'	6'	5'	–	3'
STORMWATER	1' RADIAL	3'	10'	3'	–

*PERMISSIBLE ONLY IF SEWER IS LAID MIN. 18" BELOW WATER SERVICE; OTHERWISE, 10' OF HORIZONTAL SEPARATION MUST BE MAINTAINED.

LEGEND	
HATCH STYLE	ASSOCIATED AREAS
	UTILITY CUT



PERMIT LEVEL
NOT ISSUED FOR CONSTRUCTION

ISSUED FOR	BY	DATE
ABILITY LETTERS	WHS	9/21/17
CITY APP.	WHS	10/6/17

DRAWING NAME: UTILITY PLAN

PROJECT NAME: 24 ST. LAWRENCE STREET REDEVELOPMENT

CLIENT: WALTER & KELLY WILLIAMS
24 ST. LAWRENCE STREET, PORTLAND, ME 04101

ACORN ENGINEERING, INC.
THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM ACORN ENGINEERING, INC. AND ANY UNAUTHORIZED MODIFICATIONS OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

ACORN ENGINEERING, INC.
158 DANFORTH STREET PORTLAND MAINE 04102
(207) 775-2855

FILE:	1088_CIVIL
JN:	1088
SCALE:	1"=10'
DESIGNED BY:	ADG
DRAWN BY:	ADG
CHECKED BY:	WHS

STATE OF MAINE
WILLIAM H. SAVAGE
No. 11415
10-11-17
LICENSED PROFESSIONAL ENGINEER

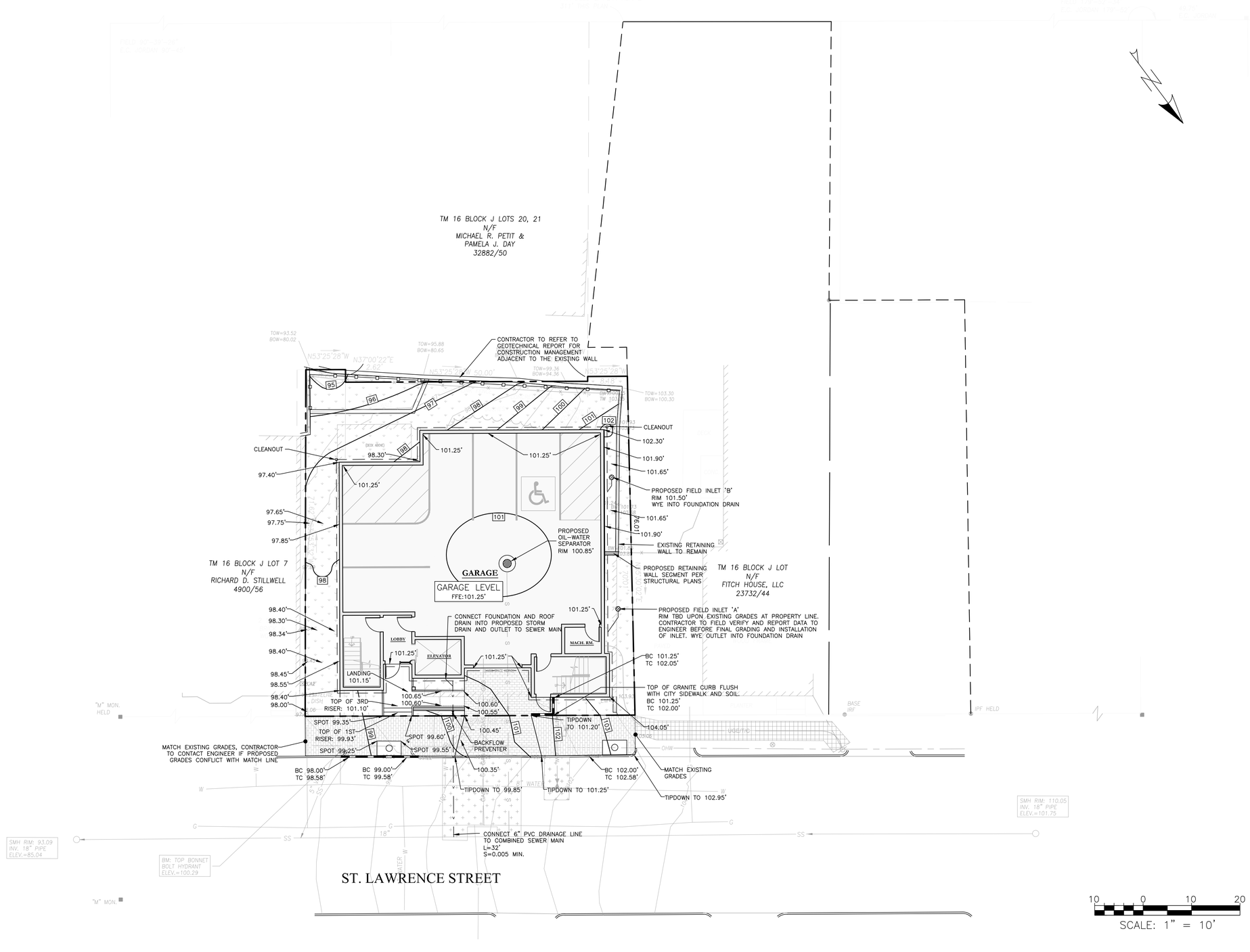
DRAWING NO.
C-20

GENERAL NOTES:

1. ALL WORK WITHIN THE CITY STREET RIGHT OF WAY SHALL MEET CITY OF PORTLAND TECHNICAL MANUAL STANDARDS.
2. REFER TO STRUCTURAL PLANS FOR FOUNDATION REQUIREMENTS. DESIGN OF ADDITIONAL TEMPORARY SOIL RESTRAINT MEASURES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR IF NECESSARY FOR CONSTRUCTION.
3. CONTRACTOR SHALL ENSURE THAT FOUNDATION DRAINS AND UNDERDRAINS ARE CONSTRUCTED WITH POSITIVE OUTLET TO PROPOSED CONNECTIONS.

AVERAGE GRADE CALCULATIONS:

NORTHERLY CORNER:	104.05'
EASTERLY CORNER:	98.40'
SOUTHERLY CORNER:	97.40'
WESTERLY CORNER:	102.30'
AVERAGE GRADE:	100.54'
ROOF GRADE:	145.25'
BUILDING HEIGHT:	44.71'



PERMIT LEVEL
NOT ISSUED FOR CONSTRUCTION

ISSUED FOR	BY / DATE
CITY APP.	WHS 10/6/17
BLDG REV.	WHS 3/1/18

DRAWING NAME: GRADING & DRAINAGE PLAN

PROJECT NAME: 24 ST. LAWRENCE STREET REDEVELOPMENT

CLIENT: WALTER & KELLY WILLIAMS
24 ST. LAWRENCE STREET, PORTLAND, ME 04101

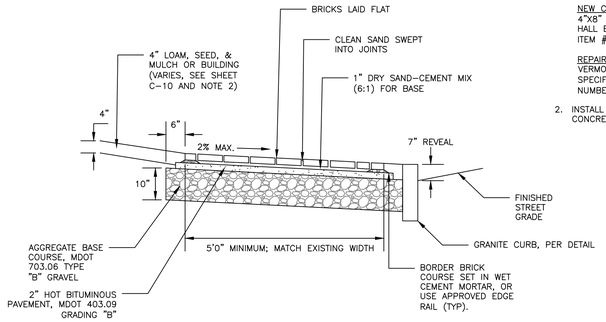
ACORN ENGINEERING, INC.

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM ACORN ENGINEERING, INC. ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

ACORN ENGINEERING, INC.
158 DANFORTH ST, PORTLAND MAINE 04102
(207) 775-2655

FILE:	1088_CIVIL
JN:	1088
SCALE:	1"=10'
DESIGNED BY:	ADG
DRAWN BY:	ADG
CHECKED BY:	WHS

DRAWING NO.
C-30



NOTES:

1. BRICKS TO BE USED:

   NEW CONSTRUCTION:
   4"X8" PINE HALL PATHWAY PAVER BRICK; MFG. BY PINE HALL BRICK CO., MADISON, NORTH CAROLINA. LACHANCE ITEM #193623;. PINE HALL PATHWAY PAVER BRICK.

   REPAIR/MAINTENANCE TO EXISTING BRICK SIDEWALKS:
   VERMONT BACKER SUPPLIED BY GAGNE AND SONS SPECIFICATION NUMBER: "VERMONT PAVER BRICK", ITEM NUMBER #VBBB

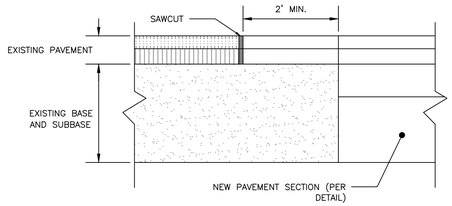
2. INSTALL BRICK FLUSH UP TO BUILDING, PAVEMENT, STAIRS, CONCRETE SURFACES, CURB OR LANDSCAPED AREAS.

BRICK SIDEWALK WITH BITUMINOUS BASE DETAIL

NOT TO SCALE

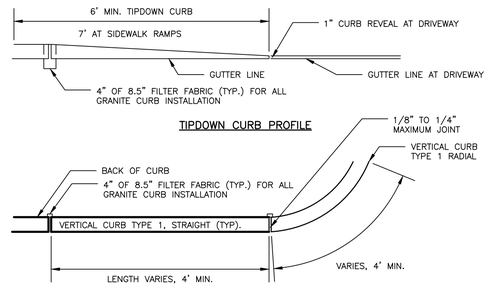
NOTES:

1. SAWCUT EXISTING PAVEMENT AND REMOVE 2' STRIP OF EXISTING PAVEMENT. APPLY BITUMINOUS TACK COAT PRIOR TO PLACEMENT OF NEW BITUMINOUS PAVEMENT.
2. THE NEW PAVEMENT SECTION SHALL MEET THE CITY OF PORTLAND ARTERIAL BITUMINOUS PAVEMENT SECTION DETAIL AT A MINIMUM OR THE THE EXISTING PAVEMENT AND AGGREGATE BASE AND SUBBASE DEPTH WHICHEVER IS GREATER.

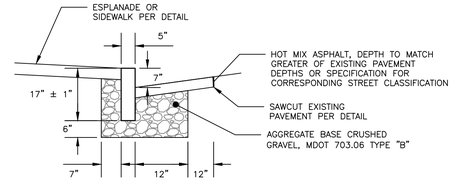


PAVEMENT SAWCUT DETAIL

NOT TO SCALE



VERTICAL GRANITE CURB PLAN VIEW



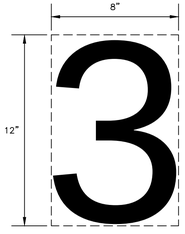
VERTICAL GRANITE CURB CROSS SECTION

NOTES:

1. CURB SHALL BE RESET IN ACCORDANCE WITH MDOT 609.08 WITH THE EXCEPTION OF CURB SPACING TO BE INSTALLED PER DETAIL.

VERTICAL GRANITE CURB AND TIPDOWN INSTALLATION IN EXISTING STREETS DETAIL

NOT TO SCALE



NOTES:

1. NUMBERS TO BE PAINTED AS THE SAME COLOR AS THE CORRESPONDING PARKING SPACE.
2. BOTTOM OF NUMBER TO BE FLUSH WITH THE FRONT OF THE PARKING SPACE.

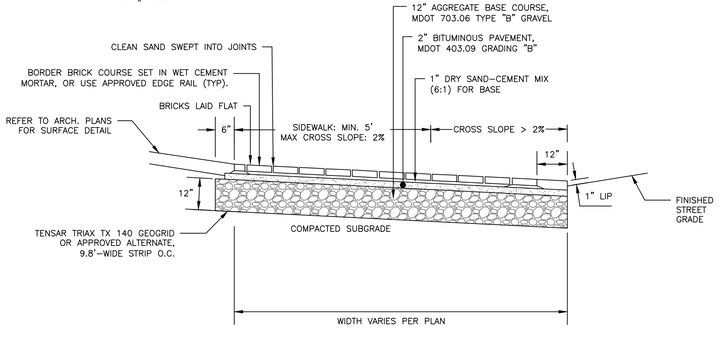
PARKING STALL NUMBER DETAIL

NOT TO SCALE

BRICKS TO BE USED:

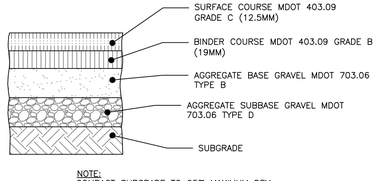
NEW CONSTRUCTION:
4"X8" PINE HALL PATHWAY PAVER BRICK; MFG. BY PINE HALL BRICK CO., MADISON, NORTH CAROLINA. LACHANCE ITEM #193623;. PINE HALL PATHWAY PAVER BRICK.

REPAIR/MAINTENANCE TO EXISTING BRICK SIDEWALKS:
VERMONT PAVER; SUPPLIED BY GAGNE AND SONS. SPECIFICATION NUMBER: "VERMONT BACKER BRICK", ITEM NUMBER # VBBB



BRICK DRIVEWAY APRON WITH BITUMINOUS BASE DETAIL

NOT TO SCALE



NOTE:
COMPACT SUBGRADE TO 95% MAXIMUM DRY DENSITY IN ACCORDANCE WITH ASTM D-1557

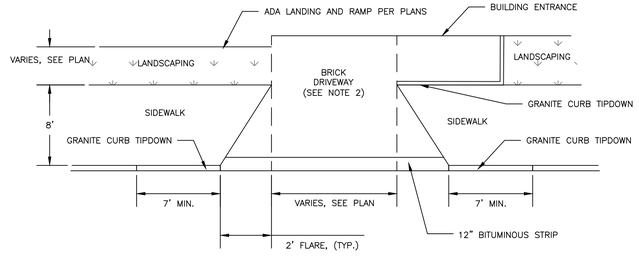
	THICKNESS OF LAYERS
STANDARD	LAYERS
1-1/2"	SURFACE COURSE MDOT 403.09 GRADE C (12.5mm)
2"	BINDER COURSE MDOT 403.09 GRADE B (19mm)
3"	AGGREGATE BASE GRAVEL MDOT 703.06 TYPE B
15"	AGGREGATE SUBBASE GRAVEL MDOT 703.06 TYPE D

BITUMINOUS PAVEMENT PROFILE: ST. LAWRENCE STREET

NOT TO SCALE

NOTES:

1. REFER TO GRADING & DRAINAGE PLAN FOR SITE GRADING
2. REFER TO BRICK DRIVEWAY APRON WITH BITUMINOUS BASE DETAIL FOR APRON CROSS-SECTION
3. MATERIALS/DETAILS OF DRIVEWAY APRON TO BE APPROVED BY CITY (DPW AND PLANNING) PRIOR TO IMPLEMENTATION



DRIVEWAY APRON LAYOUT DETAIL

NOT TO SCALE

PERMIT LEVEL
NOT ISSUED FOR CONSTRUCTION

ISSUED FOR	BY DATE
CITY APP.	WHS 10/6/17

DRAWING NAME: SITE DETAILS - 1

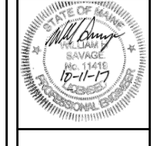
PROJECT NAME: 24 ST. LAWRENCE STREET REDEVELOPMENT

CLIENT: HR PROPERTY MANAGEMENT
24 ST. LAWRENCE STREET, PORTLAND, ME 04101

ACORN ENGINEERING, INC.
ENGINEERING, INC.
158 DANFORTH STREET, PORTLAND, MAINE 04102
(207) 775-2655

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION OF ACORN ENGINEERING, INC. ANY MODIFICATIONS MADE TO THIS PLAN WITHOUT SUCH PERMISSION OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

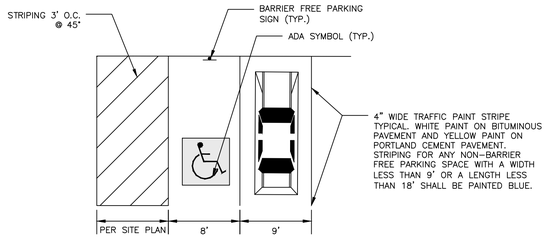
FILE:	1088_CIVIL
JN:	1088
SCALE:	NTS
DESIGNED BY:	WHS
DRAWN BY:	ADG
CHECKED BY:	WHS



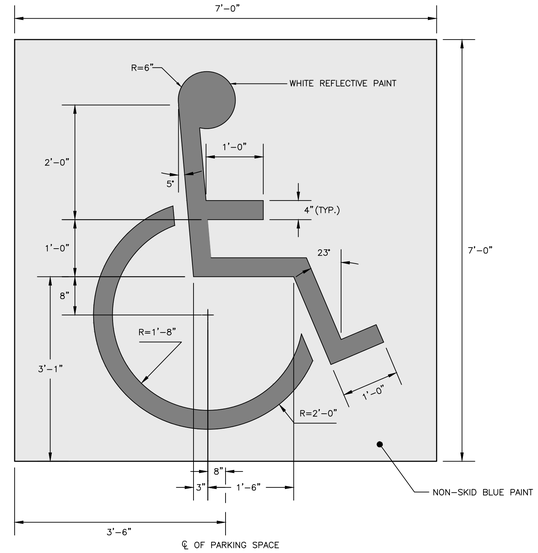
DRAWING NO.
C-40

PLANTING NOTES:

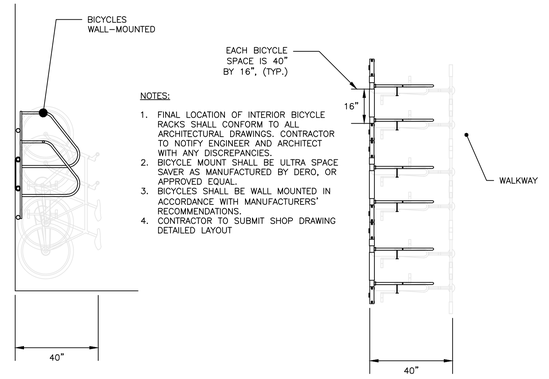
1. ALL PLANT SELECTION AND INSTALLATION WILL BE IN COMPLIANCE WILL THE CITY OF PORTLAND TECHNICAL MANUAL (SECTION 4).
2. CONTRACTOR TO VERIFY ALL UTILITIES ON PROPERTY AND TO PROTECT ALL UTILITIES DURING EXCAVATION FOR PLANTS.
3. IF THERE IS A DISCREPANCY BETWEEN THE NUMBER OF PLANTS SHOWN ON THE PLAN AND THE NUMBER OF PLANTS SHOWN IN PLANT LIST (IF ANY), THE NUMBER OF PLANTS SHOWN ON PLAN WILL TAKE PRECEDENCE.
4. ALL MATERIAL SHALL COMPLY WITH THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK, AMERICAN ASSOCIATION OF NURSERYMAN.
5. ALL DISTURBED AREAS NOT TO BE PAVED OR PLANTED SHALL BE LOAMED AND SEEDED AS SHOWN. THE SEED MIX SPECIFICATIONS ARE AS FOLLOWS: LESCO FINE FESCUE LINKS BLEND OF 35% HARD FESCUE, 35% CREEPING RED FESCUE, 20% CHEWINGS FESCUE AND 10% SHEEP FESCUE. ADD 5% LITTLE BLUESTEM AND 5% NORTHEAST WILDFLOWER SEED MIXTURE BY WEIGHT TO THE LINKS BLEND.
6. FOR PRICING PURPOSES, PROVIDE A PER TREE UNIT COST FOR STAKING AND GUYING. IF STAKING AND GUYING IS REQUIRED, REMOVE TREE WRAP, STAKES, AND GUY WIRES AT END OF FIRST GROWING SEASON.
7. FOR TREE PLANTING IN LAWN AREAS, ANY DISTURBED LAWN SHALL BE LOAMED AND SEEDED AS NECESSARY.
8. NEW TREES TO BE INSTALLED WITH A SLOW RELEASE WATERING BAG.
9. CONTRACTOR TO BE HELD RESPONSIBLE FOR THE WATERING AND MAINTENANCE OF ALL PLANT MATERIAL AND LANDSCAPING IMPROVEMENTS FOR AT LEAST 30 DAYS FOLLOWING INSTALLATION. FOLLOWING THIS PERIOD, THE LANDOWNER OR PROPERTY MANAGEMENT SHALL BE RESPONSIBLE FOR CONTINUED WATERING AND MAINTENANCE. CONTRACTOR TO MAINTAIN A ONE YEAR WARRANTY ON ALL PLANTINGS FOLLOWING FINAL INSTALLATION.
10. ALL PROPOSED PLANTS SHALL BE LOCATED AS SHOWN ON THE PLANS. CONTRACTOR TO NOTIFY ENGINEER WHEN PLANTINGS HAVE BEEN MOBILIZED ON SITE. ENGINEER TO INSPECT AND ACCEPT OR REJECT ANY SPECIMENS ON THE BASIS OF APPARENT HEALTH, HARDINESS, AND CONFORMANCE WITH THE PLANTING SCHEDULE. REJECTED SPECIMENS ARE TO BE REPLACED BY THE CONTRACTOR AT NO ADDED COST TO THE OWNER. ACCEPTANCE DOES NOT WAIVE THE REQUIRED ONE YEAR PLANTING WARRANTY.



TYPICAL PARKING SPACE DIMENSIONS
NOT TO SCALE



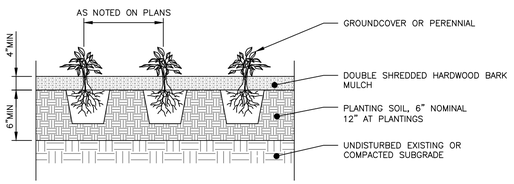
INTERNATIONAL BARRIER FREE SYMBOL
NOT TO SCALE



INTERIOR BICYCLE SPACE LAYOUT
NOT TO SCALE

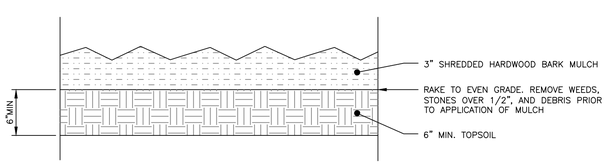
SHRUB PLANTING DETAIL
NOT TO SCALE

TREE PLANTING DETAIL
NOT TO SCALE

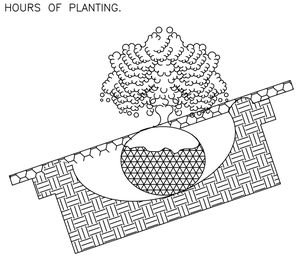


PERENNIAL PLANTING DETAIL
NOT TO SCALE

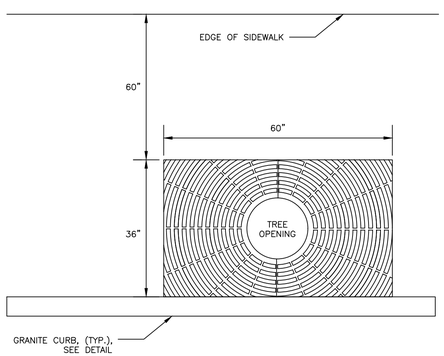
1. DIG HOLE AT LEAST 2 TIMES THE DIAMETER OF THE ROOT BALL AND AS DEEP AS THE ROOT BALL (NO DEEPER). SET ROOT BALL CENTERED, WITH THE TOP AT DOWNHILL EDGE OF THE HOLE.
2. TOPSOIL BACKFILL SHALL BE NATURAL FRIABLE, FERTILE, FINE LOAMY SOIL POSSESSING THE CHARACTERISTICS OF TOPSOIL IN THE VICINITY WHICH PRODUCE A HEAVY GROWTH. TOPSOIL SHALL CONTAIN NOT LESS THAN 6% NOR MORE THAN 20% ORGANIC MATTER. TOP SOIL SHALL HAVE A pH VALUE OF NOT LESS THAN 5.5 NOR MORE THAN 7.0.
3. CONTAINER GROWN STOCK – REMOVE CONTAINER PROTECTING THE ROOT BALL. GENTLY COMB OUT THE ROOTS. PRUNE DAMAGED ROOTS.
4. BACKFILL THE HOLE WITH TOPSOIL TO A DEPTH NOT TO EXCEED 8" THEN WATER SUFFICIENTLY TO SETTLE TOPSOIL. REPEAT SOIL BACKFILL, WATER, DRAIN. TOPSOIL SHALL BE TAMPED UNDER EDGES OF THE BALLED PLANTS. BACKFILL TO FINISH GRADE AND CREATE AN EARTHEN SAUCER. SOAK PLANTS TWICE WITHIN THE FIRST TWENTY-FOUR HOURS OF PLANTING.



BARK MULCH DETAIL
NOT TO SCALE



TYPICAL PLANTING
NOT TO SCALE



NOTES:
1. 16" EXPANDABLE TREE OPENING; .25" SLOT OPENINGS.
2. SIDEWALK MATERIAL PER PLAN.
3. WHEN INSTALLED IN A BRICK SIDEWALK, GRATE REQUIRES A FRAME TO BE INSTALLED TO HOLD GRATE IN PLACE. CONTRACTOR TO INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION PROCEDURE FOR PAVERS. CONTRACTOR TO SUBMIT INSTALLATION PROCEDURES FOR REVIEW FROM ENGINEER PRIOR TO CONSTRUCTION.

PLAN VIEW

EXPANDABLE TREE GRATE
NEENAH MODEL R-8810
NOT TO SCALE

PERMIT LEVEL
NOT ISSUED FOR CONSTRUCTION

ISSUED FOR	BY DATE
CITY APP.	WHS 10/6/17

DRAWING NAME: SITE DETAILS – 2
PROJECT NAME: 24 ST. LAWRENCE STREET REDEVELOPMENT
CLIENT: HR PROPERTY MANAGEMENT
24 ST. LAWRENCE STREET, PORTLAND, ME 04101

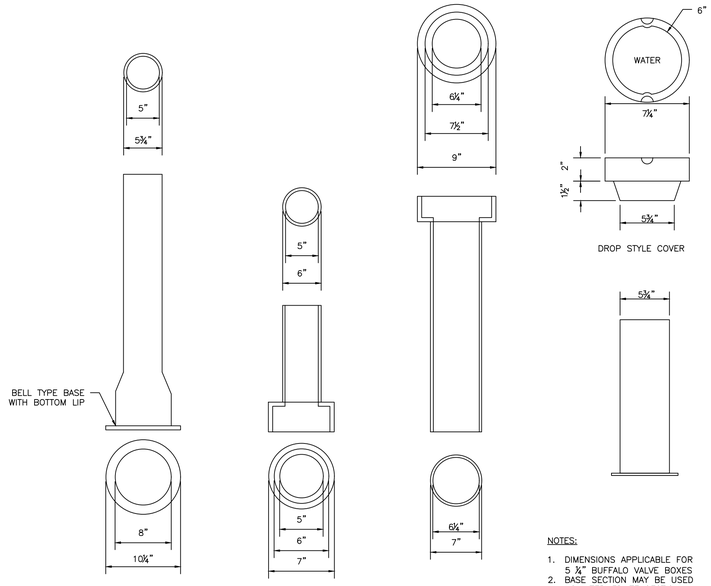
THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM ACORN ENGINEERING, INC. ANY MODIFICATIONS MADE TO THIS PLAN BY ANYONE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

ACORN ENGINEERING, INC.
158 DANFORTH STREET, PORTLAND, MAINE 04102
(207) 775-2655

FILE:	1088_CIVIL
JN:	1088
SCALE:	NTS
DESIGNED BY:	WHS
DRAWN BY:	ADG
CHECKED BY:	WHS

STATE OF MAINE
WILLIAM H. SAVAGE
No. 11416
10-11-17
LICENSED PROFESSIONAL ENGINEER

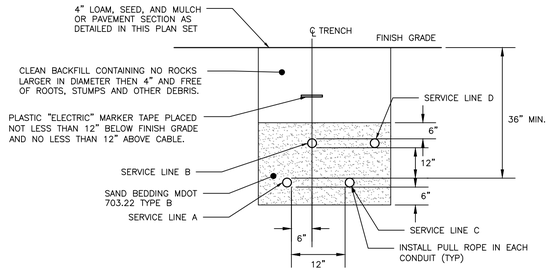
DRAWING NO.
C-41



NOTES:

1. DIMENSIONS APPLICABLE FOR 5 ¼" BUFFALO VALVE BOXES
2. BASE SECTION MAY BE USED AS INTERMEDIATE SECTION

VALVE BOX & COVER
NOT TO SCALE



CONDUIT TYPE				
SERVICE	CONDUIT SIZE	GRASS AND PAVED AREAS	UTILITY	REMARKS
A	2–5"	SCHEDULE 40 PVC ELECTRICAL GRADE	PRIMARY POWER	SEE NOTE 1
B	2–4"	SCHEDULE 40 PVC	COMMUNICATION	–
C	2–4"	SCHEDULE 40 PVC ELECTRICAL GRADE	SPARE	IF REQUIRED
D	2–4"	SCHEDULE 40 PVC	CABLE	–

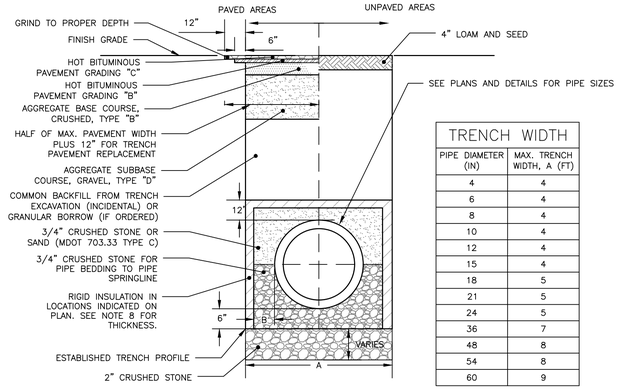
NOTES:

1. ONE CONDUIT CAPPED FOR SPARE, PROVIDE GALVANIZED STEEL LONG SWEEP AT RISER POLE AND EXTEND GALVANIZED CONDUIT TO 10" ABOVE GRADE AT POLE WITH STAND–OFF BRACKETS.
2. MINIMUM SEPARATION OF 24 INCHES BETWEEN PRIMARY CABLE/CONDUIT AND GAS LINES SHALL BE MAINTAINED.

UTILITY TRENCH:
PRIMARY AND SECONDARY POWER, TELEPHONE, AND CABLE
NOT TO SCALE

DESIGN NOTES:

1. ANY ALTERNATE TRENCHING METHODS SHALL BE APPROVED IN ADVANCE BY THE CITY.
2. ALL CONSTRUCTION METHODS SHALL CONFORM TO THE CITY OF PORTLAND TECHNICAL STANDARDS FIGURE II–2.
3. BRACING & SHEETING OR OTHER TRENCH PROTECTION TO BE PROVIDED TO MEET APPLICABLE STATE AND O.S.H.A SAFETY STANDARDS. ALL SUCH TRENCH PROTECTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
4. WHERE APPLICABLE, PERFORATIONS IN STORM DRAIN (PERF. SD) SHALL BE ORIENTED UP.
5. ALL STORM DRAINS SHALL BE PVC SDR 35 MIN PS–46 RATING OR OR IN ACCORDANCE WITH CITY OF PORTLAND TECHNICAL MANUAL , SECTION 2 – SANITARY SEWER AND STORM DRAIN – PART 2.5.2
6. IN PAVED AREAS, DEPTHS OF GRAVEL AND HOT MIX ASPHALT PAVEMENT SHALL MATCH THE GREATER OF EXISTING CONDITIONS OR THE REQUIREMENTS FOR THE CORRESPONDING STREET CLASSIFICATION.
7. THIS DETAIL SHALL BE APPLIED ONLY TO PIPE TRENCHES WITHIN OF THE CITY OF PORTLAND R.O.W.
8. STORM DRAIN COVER BETWEEN 2' AND 3' SHALL INCLUDE 4" OF RIGID INSULATION. COVER BETWEEN 3' AND 4' SHALL INCLUDE 2" RIGID INSULATION. OTHER UTILITIES: ADD 2" OF RIGID INSULATION FOR EACH FOOT ABOVE MINIMUM DEPTH.
9. DEPTH OF BITUMINOUS PAVEMENT AND AGGREGATE COURSES SHALL BE DETERMINED BY STREET CLASSIFICATION.
10. DIMENSION B SHALL BE SUFFICIENT TO ALLOW CRUSHED STONE BEDDING TO BE PLACED AND COMPACTED UNDER THE HAUNCHES OF THE PIPE; BUT IN ALL CASES DIMENSION B SHALL BE AT LEAST 9".
11. DIMENSION A IS THE MAXIMUM WIDTH ALLOWED FOR CALCULATING PAY QUANTITIES UNDER GRANULAR BORROW, CRUSHED STONE, STRUCTURAL EARTH EXCAVATION, AND STRUCTURAL ROCK EXCAVATION. DIMENSION A SHALL BE BASED ON PIPE DIAMETER D, AS SET FORTH IN THE TABLE BELOW.

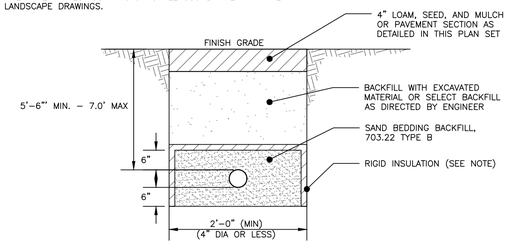


TRENCH WIDTH	
PIPE DIAMETER (IN)	MAX. TRENCH WIDTH, A (FT)
4	4
6	4
8	4
10	4
12	4
15	4
18	5
21	5
24	5
36	7
48	8
54	8
60	9

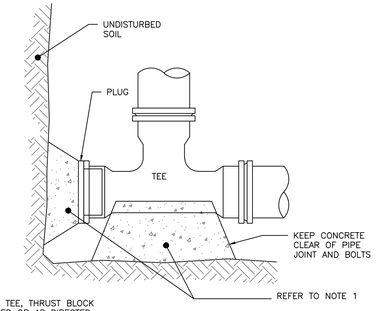
CITY OF PORTLAND TYPICAL PIPE TRENCH DETAIL WITHIN RIGHT–OF–WAY
NOT TO SCALE

NOTES:

1. THE WATER TRENCH SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE PORTLAND WATER DISTRICT STANDARD DETAILS & SPECIFICATIONS.
2. IF LESS THAN 5'–6" OF COVER IS POSSIBLE ADD 1 INCH OF "BLUE DOW" RIGID INSULATION FOR EVERY 12" LESS COVER.
3. ALL PROPOSED TREES PLANTED LESS THAN 10 FEET FROM THE WATER PIPE SHALL BE PLANTED AT A DEPTH NO GREATER THAN 3' DEEP. PERMEABLE LANDSCAPE FABRIC SHALL CREATE A ROOT BARRIER AROUND THE WATER PIPES. CONTRACTOR SHALL COORDINATE WITH THE LANDSCAPE DRAWINGS.

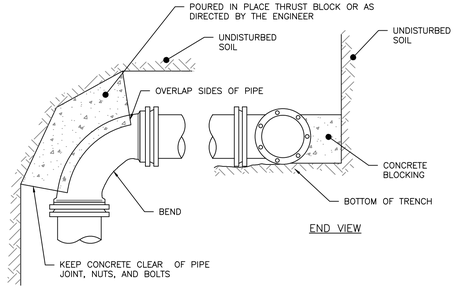


WATER SERVICE TRENCH SECTION DETAIL
NOT TO SCALE



NOTES:
1. IF DEAD END WITH TEE, THRUST BLOCK WOULD BE REQUIRED OR AS DIRECTED BY THE ENGINEER
2. SEE THRUST/RETAINER GLAND SCHEDULE FOR TYPE OF BLOCKING TO BE USED ON BENDS

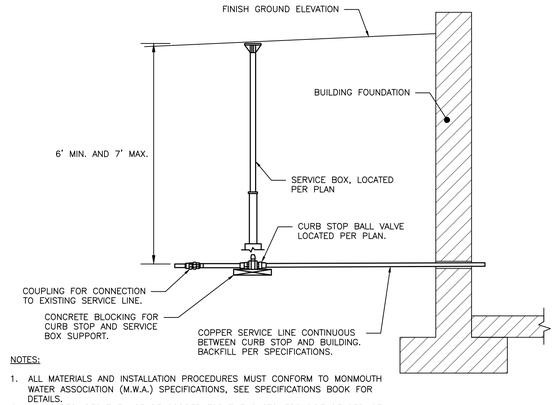
END SECTION



END VIEW

TOP VIEW

THRUST BLOCKING: REGULAR BEND
NOT TO SCALE



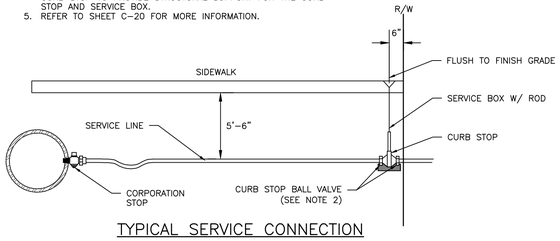
NOTES:

1. ALL MATERIALS AND INSTALLATION PROCEDURES MUST CONFORM TO MONMOUTH WATER ASSOCIATION (M.W.A.) SPECIFICATIONS, SEE SPECIFICATIONS BOOK FOR DETAILS.
2. M.W.A. REQUIRES THE USE OF COPPER FOR THE CUSTOMERS SIDE OF SERVICE.
3. CUSTOMERS PORTION OF SERVICE LINE IS THAT PORTION FROM THE PROPERTY LINE INTO THE BUILDING, IN THIS INSTANCE THE CUSTOMER IS ALSO RESPONSIBLE FOR THE INSTALLATION OF THE CURB STOP BALL VALVE.
4. FOR THE INTERIOR BUILDING PLUMBING REFER TO THE PLUMPING PLAN BY MECHANICAL SYSTEMS ENGINEERS.

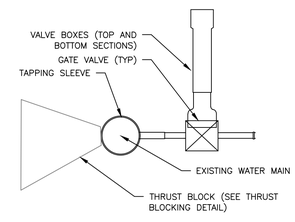
SERVICE INSTALLATION DETAIL
NOT TO SCALE

NOTES:

1. ALL MATERIALS AND INSTALLATION PROCEDURES MUST COMPLY WITH THE CITY OF PORTLAND WATER DISTRICT (PWD) SPECIFICATIONS.
2. CURB STOP BALL VALVE TO BE MADE OF COPPER OR BRASS UNLESS OTHERWISE NOTED BY THE PORTLAND WATER DISTRICT.
3. SERVICE LINE TO BE MADE OF TYPE K COPPER.
4. CONCRETE BLOCKING SHALL BE ADDED TO THE BASE OF THE CURB STOP TO PROVIDE STRUCTURAL SUPPORT FOR THE CURB STOP AND SERVICE BOX.
5. REFER TO SHEET C–20 FOR MORE INFORMATION.

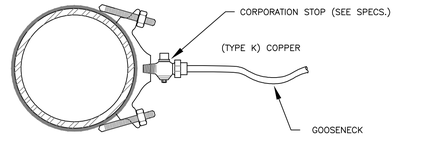


TYPICAL SERVICE CONNECTION
NOT TO SCALE



SIDE VIEW

TAPPING SLEEVE AND VALVE
NOT TO SCALE



SERVICE SADDLE: 1–1/2" AND 2" C.C. THREAD
NOT TO SCALE

PERMIT LEVEL
NOT ISSUED FOR CONSTRUCTION

ISSUED FOR	BY	DATE
CITY APP.	WHS	10/6/17

DRAWING NAME: UTILITY DETAILS – 1

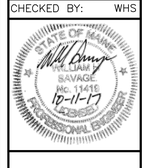
PROJECT NAME: 24 ST. LAWRENCE STREET REDEVELOPMENT

CLIENT: HR PROPERTY MANAGEMENT
24 ST. LAWRENCE STREET, PORTLAND, ME 04101

ACORN ENGINEERING, INC.
THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION OF ACORN ENGINEERING, INC. AND ANY MODIFICATIONS MADE WITHOUT SUCH PERMISSION SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

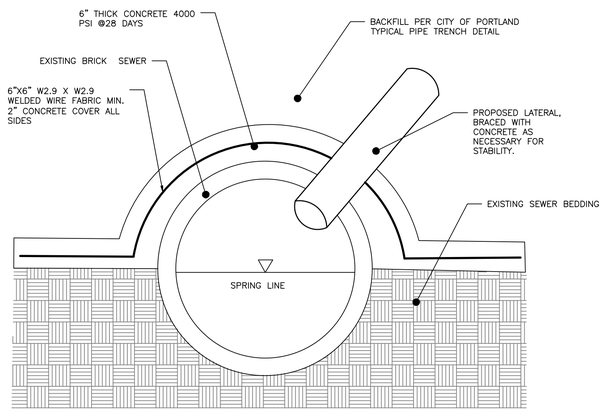
ACORN ENGINEERING, INC.
158 DANFORTH ST. PORTLAND, MAINE 04102
(207) 775–2655

FILE:	1088_CIVIL
JN:	1088
SCALE:	NTS
DESIGNED BY:	WHS
DRAWN BY:	ADG
CHECKED BY:	WHS

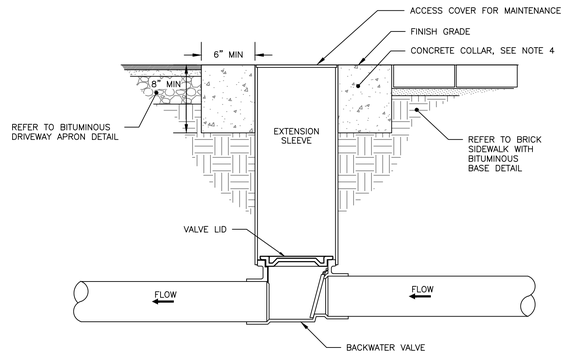


DRAWING NO.
C-42

NOTES:
1. CONCRETE CASING AROUND PIPE SHALL CONTINUE LENGTHWISE FOR AT LEAST 4' OF PIPE, OR LENGTH OF PIPE DAMAGED DURING CONSTRUCTION, WHICHEVER IS GREATER.
2. INSTALL ALL ITEMS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
3. ENGINEER SHALL BE CONTACTED DURING CONNECTION TO BRICK SEWER. IF SEWER IS FOUND TO BE IN VERY GOOD CONDITION BY ENGINEER, THEN ONLY CONCRETE CASING AROUND PROPOSED LATERAL AND STUB SHALL BE REQUIRED.

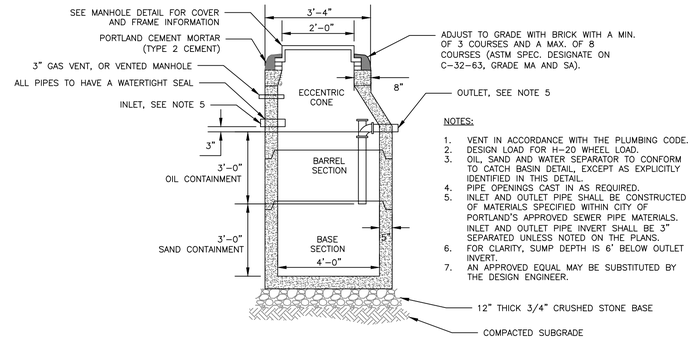


CONNECTION TO BRICK SEWER
NOT TO SCALE



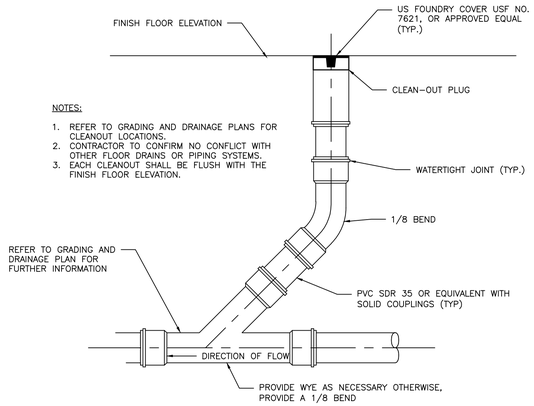
NOTES:
1. BACKFLOW VALVE TO BE PROVIDED BY AGRI DRAIN CORPORATION OR AN APPROVED EQUAL.
2. VALVE TO BE INSTALLED TO MANUFACTURER'S SPECIFICATIONS AND COMPLY WITH RULES AND REGULATIONS AS OUTLINED IN SECTION 2 OF THE CITY OF PORTLAND TECHNICAL MANUAL.
3. VALVE SHALL BE INSTALLED WITH A VALVE BOX AND COVER TO PROVIDE EASY ACCESS AND MAINTENANCE; VALVE COVER SHALL STATE 'SEWER' ON LID FLUSH TO SURFACE. REFER TO VALVE & BOX COVER DETAIL FOR ADDITIONAL INFORMATION.
4. CONCRETE COLLAR AT A MINIMUM 24-HOUR COMPRESSIVE STRENGTH OF 3,000 PSI.

BACKFLOW VALVE ASSEMBLY
NOT TO SCALE



NOTES:
1. VENT IN ACCORDANCE WITH THE PLUMBING CODE.
2. DESIGN LOAD FOR H-20 WHEEL LOAD.
3. OIL, SAND AND WATER SEPARATOR TO CONFORM TO CATCH BASIN DETAIL, EXCEPT AS EXPLICITLY IDENTIFIED IN THIS DETAIL.
4. PIPE OPENINGS CAST IN AS REQUIRED.
5. INLET AND OUTLET PIPE SHALL BE CONSTRUCTED OF MATERIALS SPECIFIED WITHIN CITY OF PORTLAND'S APPROVED SEWER PIPE MATERIALS. INLET AND OUTLET PIPE INVERT SHALL BE 3" SEPARATED UNLESS NOTED ON THE PLANS.
6. FOR CLARITY, SUMP DEPTH IS 6' BELOW OUTLET INVERT.
7. AN APPROVED EQUAL MAY BE SUBSTITUTED BY THE DESIGN ENGINEER.

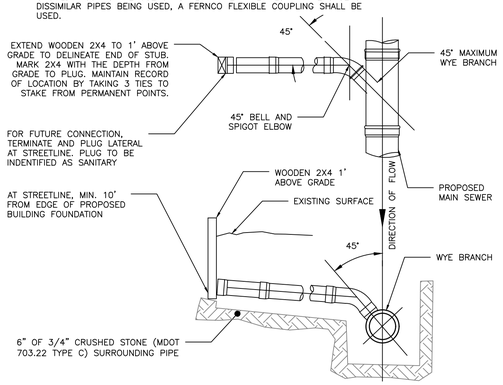
4'-0" DIAMETER PRECAST OIL AND WATER SEPARATOR
NOT TO SCALE



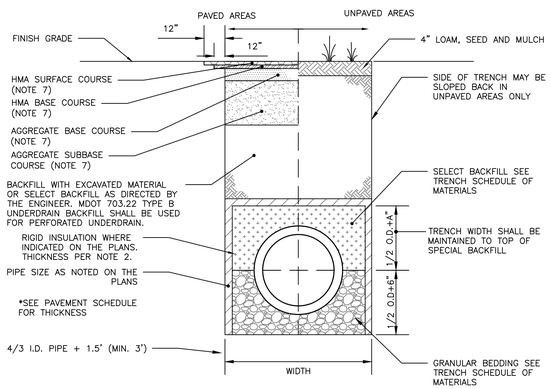
NOTES:
1. REFER TO GRADING AND DRAINAGE PLANS FOR CLEANOUT LOCATIONS.
2. CONTRACTOR TO CONFIRM NO CONFLICT WITH OTHER FLOOR DRAINS OR PIPING SYSTEMS.
3. EACH CLEANOUT SHALL BE FLUSH WITH THE FINISH FLOOR ELEVATION.

CLEANOUT DETAIL
NOT TO SCALE

NOTES:
1. LOCATION WITH WARNING TAPE SHALL BE INSTALLED OVER CENTERLINE OF PIPE AT A MAXIMUM OF 24 INCHES BELOW FINISH GRADE.
2. SITE CONTRACTOR TO COORDINATE CONNECTION OF SEWER LATERAL TO HOUSEHOLD PLUMBING WITH ARCHITECTURAL CONTRACTOR.
3. CONNECTION OF PROPOSED SEWER LATERAL TO HOUSEHOLD PLUMBING SHOULD INCORPORATE USE OF SIMILAR PIPE MATERIALS. IN THE CASE OF DISSIMILAR PIPES BEING USED, A FERNCO FLEXIBLE COUPLING SHALL BE USED.



SEWER TEE/WYE CONNECTION DETAIL
NOT TO SCALE

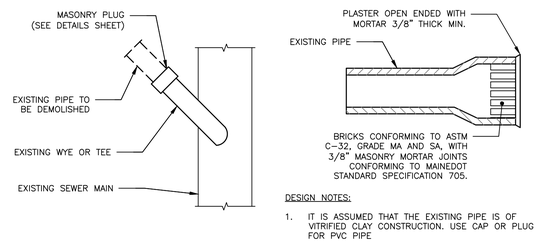


ALLOWABLE PIPE MATERIALS:
- REINFORCED CONCRETE PIPE (RCP) MIN. STRENGTH OF CLASS III
- PVC RING TYPE SEWER (SDR 35) OR EQUIVALENT, MIN PS-46 RATING
- PVC RING TYPE SEWER PIPE MEETING ASTM F 789
- DUCTILE IRON PIPE (DIP)
- ADS N-12 HP TRIPLE-WALL MIN PS-46 RATING
- ADS SANITITE HP MIN. PS-46

SCHEDULE OF MATERIALS		
TYPE OF PIPE	GRANULAR BEDDING	SELECT BACKFILL
CMP DUCTILE IRON RCP	MDOT 703.22 TYPE B UD BACKFILL	MDOT 703.22 TYPE B UD BACKFILL
PVC/HDPE	MDOT 703.22 TYPE C 3/4" CRUSHED STONE	MDOT 703.22 TYPE B UD BACKFILL
CMP	MDOT 703.22 TYPE C 3/4" CRUSHED STONE	MDOT 703.22 TYPE C 3/4" CRUSHED STONE

NOTES:
1. BRACING AND SHEETING OR OTHER TRENCH PROTECTION TO BE PROVIDED TO MEET APPLICABLE STATE AND O.S.H.A. SAFETY STANDARDS. ALL SUCH TRENCH PROTECTION TO BE THE RESPONSIBILITY OF THE CONTRACTOR.
2. STORM DRAIN COVER BETWEEN 2' AND 3' SHALL INCLUDE 4" OF RIGID INSULATION. COVER BETWEEN 3' AND 4' SHALL INCLUDE 2' RIGID INSULATION. OTHER UTILITIES: ADD 2" OF RIGID INSULATION FOR EACH FOOT ABOVE MINIMUM DEPTH.
3. INSTALL WARNING TAPE DIRECTLY ABOVE UTILITIES AT THE TOP OF SUBGRADE.
4. MINIMUM COVER
   4.1. 2'-0" - STORM DRAIN
   4.2. 5'-0" - SEWER
5. NO TREES SHALL BE PLANTED WITHIN 5' OF A SEWER PIPE OR SERVICE
6. THIS DETAIL SHALL BE APPLIED ONLY TO DRAINAGE PIPE TRENCHES OUTSIDE OF THE CITY OF PORTLAND ROW.
7. THICKNESS AS NOTED BY SURFACE DETAILS
8. ALL PROPOSED TREES PLANTED WITHIN 10' OF A STORM OR SEWER PIPE SHALL BE PLANTED AT A DEPTH NO GREATER THAN 3' DEEP. PERMEABLE LANDSCAPE FABRIC SHALL CREATE A ROOT BARRIER AROUND THE PIPES. CONTRACTOR SHALL COORDINATE WITH THE LANDSCAPE DRAWINGS.

STORM DRAIN AND SEWER TYPICAL TRENCH SECTION WITHIN PROPERTY
NOT TO SCALE



DESIGN NOTES:
1. IT IS ASSUMED THAT THE EXISTING PIPE IS OF VITRIFIED CLAY CONSTRUCTION. USE CAP OR PLUG FOR PVC PIPE

MASONRY PLUG DETAIL
NOT TO SCALE

PERMIT LEVEL
NOT ISSUED FOR CONSTRUCTION

ISSUED FOR	BY	DATE
CITY APP.	WHS	10/6/17

DRAWING NAME: UTILITY DETAILS - 2
PROJECT NAME: 24 ST. LAWRENCE STREET REDEVELOPMENT
CLIENT: HR PROPERTY MANAGEMENT
24 ST. LAWRENCE STREET, PORTLAND, ME 04101

ACORN ENGINEERING, INC.
158 DANFORTH STREET, PORTLAND, MAINE 04102
(207) 775-2855

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM ACORN ENGINEERING, INC. ANY MODIFICATIONS MADE BY ANY AND OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

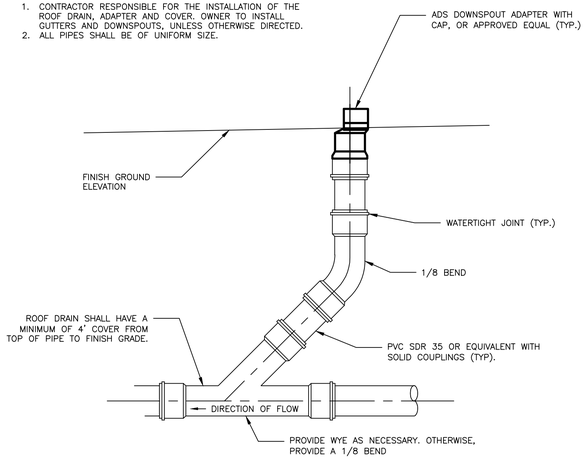
FILE:	1088_CIVIL
JN:	1088
SCALE:	NTS
DESIGNED BY:	WHS
DRAWN BY:	ADG
CHECKED BY:	WHS

STATE OF MAINE
WILLIAM H. SAVAGE
NO. 11416
10-11-17
LICENSED PROFESSIONAL ENGINEER

DRAWING NO.
C-43

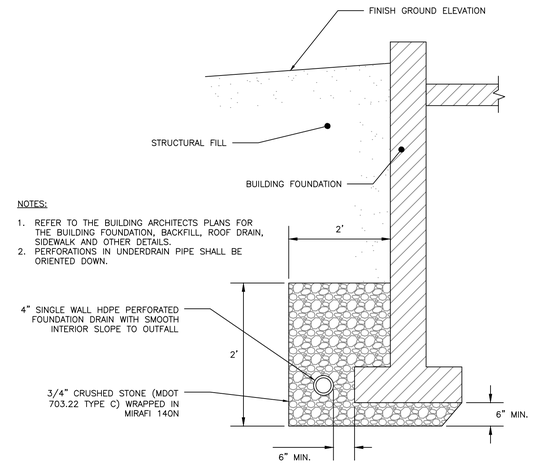
NOTES:

1. CONTRACTOR RESPONSIBLE FOR THE INSTALLATION OF THE ROOF DRAIN, ADAPTER AND COVER. OWNER TO INSTALL GUTTERS AND DOWNSPOUTS, UNLESS OTHERWISE DIRECTED.
2. ALL PIPES SHALL BE OF UNIFORM SIZE.



ROOF DRAIN DETAIL

NOT TO SCALE



NOTES:

1. REFER TO THE BUILDING ARCHITECTS PLANS FOR THE BUILDING FOUNDATION, BACKFILL, ROOF DRAIN, SIDEWALK AND OTHER DETAILS.
2. PERFORATIONS IN UNDERDRAIN PIPE SHALL BE ORIENTED DOWN.

FOUNDATION DRAIN DETAIL

NOT TO SCALE

PERMIT LEVEL
NOT ISSUED FOR CONSTRUCTION

ISSUED FOR	BY	DATE
CITY APP.	WHS	10/6/17

DRAWING NAME: **DRAINAGE DETAILS**

PROJECT NAME: **24 ST. LAWRENCE STREET REDEVELOPMENT**

CLIENT: HR PROPERTY MANAGEMENT
24 ST. LAWRENCE STREET, PORTLAND, ME 04101

ACORN ENGINEERING, INC.
ENGINEERING, INC.
158 DANFORTH STREET, PORTLAND, MAINE 04102
(207) 775-2655

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM ACORN ENGINEERING, INC. AND ANY MODIFICATIONS MADE BY OTHERS OR, OTHERWISE SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

FILE:	1088_CIVIL
JN:	1088
SCALE:	NTS
DESIGNED BY:	WHS
DRAWN BY:	ADG
CHECKED BY:	WHS

STATE OF MAINE
WILLIAM SAVAGE
No. 11416
10-11-17
REGISTERED PROFESSIONAL ENGINEER

DRAWING NO.
C-44

1.0 EROSION CONTROL MEASURES AND SITE STABILIZATION

AS PART OF THE SITE DEVELOPMENT, THE FOLLOWING TEMPORARY AND PERMANENT EROSION AND SEDIMENTATION CONTROL DEVICES SHALL BE IMPLEMENTED. DEVICES SHALL BE INSTALLED AS DESCRIBED IN THIS REPORT OR WITHIN THE PLAN SET. SEE THE MAINE EROSION AND SEDIMENT CONTROL HANDBOOK FOR CONSTRUCTION: BEST MANAGEMENT PRACTICES FOR FURTHER REFERENCE.

1.1 TEMPORARY EROSION CONTROL MEASURES

THE FOLLOWING TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES ARE PLANNED FOR THE PROJECT'S CONSTRUCTION PERIOD:

1.1.1 CRUSHED STONE STABILIZED CONSTRUCTION ENTRANCES SHALL BE PLACED AT ALL ACCESS POINTS TO THE PROJECT SITE WHERE THERE ARE DISTURBED AREAS. THE FOLLOWING SPECIFICATIONS SHALL BE FOLLOWED AT A MINIMUM:
- STONE SIZE SHALL BE 2–3 INCHES, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
- THE THICKNESS OF THE ENTRANCE STONE LAYER SHALL BE NO LESS THAN 6 INCHES.
- THE ENTRANCE SHALL NOT BE LESS THAN 20 FEET WIDE, HOWEVER NOT LESS THAN THE FULL WIDTH OF POINTS WHERE INGRESS OR EGRESS OCCURS. THE LENGTH SHALL NOT BE LESS THAN 50 FEET IN LENGTH.
- GEOTEXTILE FABRIC (WOVEN OR NON–WOVEN) SHALL BE PLACED OVER THE ENTIRE ENTRANCE AREA.
- THE ENTRANCE/EXIT SHALL BE MAINTAINED TO THE EXTENT THAT IT WILL PREVENT THE TRACKING OF SEDIMENT ONTO PUBLIC ROAD WAYS.

1.1.2 SILTATION FENCE OR EROSION CONTROL BERM SHALL BE INSTALLED DOWN GRADIENT OF ANY DISTURBED AREAS TO TRAP RUNOFF BORNE SEDIMENTS UNTIL PERMANENT STABILIZATION IS ACHIEVED. THE SILT FENCE OR EROSION CONTROL BERM SHALL BE INSTALLED PER THE DETAILS PROVIDED IN THE PLAN SET AND INSPECTED BEFORE AND IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. REPAIRS SHALL BE MADE IF THERE ARE ANY SIGNS OF EROSION OR SEDIMENTATION BELOW THE FENCE LINE OR BERM. IF THERE ARE SIGNS OF UNDERCUTTING AT THE CENTER OR THE EDGES, OR IMPOUNDING OF LARGE VOLUMES OF WATER BEHIND THE FENCE OR BERM, THE BARRIER SHALL BE REPLACED WITH A STONE CHECK DAM.

1.1.3 HAY MULCH INCLUDING HYDRO SEEDING IS INTENDED TO PROVIDE COVER FOR DENUDED OR SEEDED AREAS UNTIL REVEGETATION IS ESTABLISHED. MULCH PLACED BETWEEN APRIL 15TH AND NOVEMBER 1ST ON SLOPES OF LESS THAN 15 PERCENT SHALL BE COVERED BY FABRIC NETTING AND ANCHORED WITH STAPLES IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION. MULCH PLACED BETWEEN NOVEMBER 1ST AND APRIL 15TH ON SLOPES EQUAL TO OR STEEPER THAN 8 PERCENT AND EQUAL TO OR FLATTER THAN 2:1 SHALL USE MATS OR FABRIC NETTING AND ANCHORED WITH STAPLES IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION.

1.1.4 AT ANY TIME OF THE YEAR, ALL SLOPES GREATER THAN 3:1 SHALL BE STABILIZED WITH DOUBLE NET EROSION CONTROL BLANKET BIONET SC150BN BY NORTH AMERICAN GREEN OR APPROVED EQUAL. OR EROSION CONTROL MIX SLOPE PROTECTION AS DETAILED WITHIN THE PLANS.

1.1.5 YORK STREET AND GUILFORD COURT SHALL BE SWEPT TO CONTROL MUD AND DUST FROM THE CONSTRUCTION SITE AS NECESSARY. ADD ADDITIONAL STONE TO THE STABILIZED CONSTRUCTION ENTRANCE TO MINIMIZE THE TRACKING OF MATERIAL OFF THE SITE AND ONTO THE SURROUNDING ROADWAYS.

1.1.6 DURING DEMOLITION, CLEARING AND GRUBBING OPERATIONS, STONE CHECK DAMS SHALL BE INSTALLED AT ANY AREAS OF CONCENTRATED FLOW. THE MAXIMUM HEIGHT OF THE CHECK DAM SHALL NOT EXCEED 2 FEET. THE CENTER OF THE CHECK DAM SHALL BE 6 INCHES BELOW THE OUTER EDGES OF THE DAM. THE CONTRACTOR SHALL MULCH THE SIDE SLOPES AND INSTALL STONE CHECK DAMS FOR ALL NEWLY EXCAVATED DITCH LINES WITHIN 24 HOURS OF THEIR CREATION.

1.1.7 SILT FENCE STAKE SPACING SHALL NOT EXCEED 6 FEET UNLESS THE FENCE IS SUPPORTED WITH 14 GAUGE WIRE IN WHICH CASE THE MAXIMUM SPACING SHALL NOT EXCEED 10 FEET. THE SILT FENCE SHALL BE "TOED" INTO THE GROUND.

1.1.8 STORMDRAIN INLET PROTECTION SHALL BE PROVIDED TO STORMDRAINS THROUGH THE USE OF ANY OF THE FOLLOWING: HAY BALE DROP INLET STRUCTURES, SILT FENCE DROP INLET SEDIMENT FILTER, GRAVEL AND WIRE MESH DROP INLET SEDIMENT FILTER, OR CURB INLET SEDIMENT FILTER. BARRIERS SHALL BE INSPECTED AFTER EVERY RAINFALL EVENT AND REPAIRED AS NECESSARY. SEDIMENTS SHALL BE REMOVED WHEN ACCUMULATION HAS REACHED ½ THE DESIGN HEIGHT.

1.1.9 DUST CONTROL SHALL BE ACCOMPLISHED BY THE USE OF ANY OF THE FOLLOWING: WATER, CALCIUM CHLORIDE, STONE, OR AN APPROVED MDEP PRODUCT. DUST CONTROL SHALL BE APPLIED AS NEEDED TO ACCOMPLISH DUST CONTROL.

1.1.10 TEMPORARY LOAM, SEED, AND MULCHING SHALL BE USED IN AREAS WHERE NO OTHER EROSION CONTROL MEASURE IS USED. APPLICATION RATES FOR SEEDING ARE PROVIDED AT THE END OF THIS REPORT.

1.1.11 STOCKPILES SHALL BE STABILIZED WITHIN 7 DAYS OF FORMATION UNLESS A SCHEDULED RAIN EVENT OCCURS PRIOR TO THE 7 DAY WINDOW, IN WHICH CASE THE STOCKPILE SHALL BE STABILIZED PRIOR TO THE RAIN EVENT. METHODS OF STABILIZATION SHALL BE MULCH, EROSION CONTROL MIX, OR EROSION CONTROL BLANKETS/MATS. SILT FENCE OR A WOOD WASTE COMPOST FILTER BERM SHALL BE PLACED DOWNHILL OF ANY SOIL STOCKPILE LOCATION.

1.1.12 FOR DISTURBANCE BETWEEN NOVEMBER 1 AND APRIL 15, PLEASE REFER TO WINTER STABILIZATION PLAN IN THIS REPORT AND THE MAINE EROSION AND SEDIMENT CONTROL BMP MANUAL FOR FURTHER INFORMATION.

1.1.13 IT IS OF THE UTMOST IMPORTANCE THAT STORMWATER RUNOFF AND POTENTIAL SEDIMENT FROM THE CONSTRUCTION SITE BE DIVERTED AROUND THE PROPOSED UNDERDRAINS UNTIL THE TRENCH IS BACKFILLED.

1.2 PERMANENT EROSION CONTROL MEASURES

THE FOLLOWING PERMANENT EROSION CONTROL MEASURES ARE INTENDED FOR POST DISTURBANCE AREAS OF THE PROJECT.

1.2.1 ALL DISTURBED AREAS DURING CONSTRUCTION, NOT SUBJECT TO OTHER PROPOSED CONDITIONS, SHALL RECEIVE A MINIMUM 4" OF LOAM, LIMED, AND MULCHED. EROSION CONTROL BLANKETS OR MATS SHALL BE PLACED OVER THE MULCH IN AREAS NOTED IN PARAGRAPH 4.1 OF THIS REPORT.

1.2.2 ALL STORMWATER DEVICES SHALL BE INSTALLED AND TRIBUTARY AREAS STABILIZED PRIOR RECEIVING STORMWATER.

1.2.3 REFER TO THE MAINE EROSION AND SEDIMENT CONTROL BMP MANUAL FOR ADDITIONAL INFORMATION.

2.0 EROSION AND SEDIMENTATION CONTROL PLAN

2.1 THE EROSION AND SEDIMENTATION CONTROL PLAN IS INCLUDED WITHIN THE PLAN SET.

3.0 DETAILS AND SPECIFICATIONS

3.1 EROSION CONTROL DETAILS AND SPECIFICATIONS ARE INCLUDED IN THE PLAN SET.

4.0 STABILIZATION PLAN FOR WINTER CONSTRUCTION

WINTER CONSTRUCTION CONSISTS OF EARTHWORK DISTURBANCE BETWEEN THE DATES OF NOVEMBER 1 AND APRIL 15. IF A CONSTRUCTION SITE IS NOT STABILIZED WITH PAVEMENT, A ROAD GRAVEL BASE, 75% MATURE VEGETATION COVER OR RIPRAP BY NOVEMBER 15, THEN THE SITE SHALL BE PROTECTED WITH OVER–WINTER STABILIZATION. ANY AREA NOT STABILIZED WITH PAVEMENT, VEGETATION, MULCHING, EROSION CONTROL MIX, EROSION CONTROL MATS, RIPRAP, OR GRAVEL BASE ON A ROAD SHALL BE CONSIDERED OPEN.

THE CONTRACTOR SHALL LIMIT THE WORK AREA TO AREAS THAT WORK WILL OCCUR IN DURING THE SUBSEQUENT 15 DAYS AND SO THAT IT CAN BE MULCHED ONE DAY PRIOR TO A SNOW EVENT. THE CONTRACTOR SHALL STABILIZE WORK AREAS PRIOR TO OPENING ADDITIONAL WORK AREAS TO MINIMIZE AREAS WITHOUT EROSION CONTROL MEASURES.

THE FOLLOWING MEASURES SHALL BE IMPLEMENTED DURING WINTER CONSTRUCTION PERIODS:

4.1 SEDIMENT BARRIERS

DURING FROZEN CONDITIONS, SEDIMENT BARRIERS MAY CONSIST OF EROSION CONTROL MIX BERMS OR ANY OTHER RECOGNIZED SEDIMENT BARRIERS AS FROZEN SOIL PREVENTS THE PROPER INSTALLATION OF HAY BALES OR SILT FENCES.

4.2 MULCHING

ALL AREAS SHALL BE CONSIDERED TO BE DENUDED UNTIL SEEDED AND MULCHED. HAY AND STRAW MULCH SHALL BE APPLIED AT A RATE OF 150 LB. PER 1,000 SQUARE FEET OR 3 TONS/ACRE (TWICE THE NORMAL ACCEPTED RATE OF 75–LBS./1,000 S.F. OR 1.5 TONS/ACRE) AND SHALL BE PROPERLY ANCHORED. EROSION CONTROL MIX MUST BE APPLIED WITH A MINIMUM 4 INCH THICKNESS. MULCH SHALL NOT BE SPREAD ON TOP OF SNOW. THE SNOW SHALL BE REMOVED DOWN TO A ONE–INCH DEPTH OR LESS PRIOR TO APPLICATION. AFTER EACH DAY OF FINAL GRADING, THE AREA SHALL BE PROPERLY STABILIZED WITH ANCHORED HAY OR STRAW OR EROSION CONTROL MATTING. AN AREA SHALL BE CONSIDERED TO HAVE BEEN STABILIZED WHEN EXPOSED SURFACES HAVE BEEN EITHER MULCHED OR ADEQUATELY ANCHORED SO THAT GROUND SURFACE IS NOT VISIBLE THROUGH THE MULCH. BETWEEN THE DATES OF NOVEMBER 1 AND APRIL 15, ALL MULCH SHALL BE ANCHORED BY EITHER MULCH NETTING, TRACKING OR WOOD CELLULOSE FIBER. THE COVER WILL BE CONSIDERED SUFFICIENT WHEN THE GROUND SURFACE IS NOT VISIBLE THROUGH THE MULCH. AFTER NOVEMBER 1ST, MULCH AND ANCHORING OF ALL EXPOSED SOIL SHALL OCCUR AT THE END OF EACH FINAL GRADING WORKDAY.

4.3 SOIL STOCKPILING

STOCKPILES OF SOIL OR SUBSOIL SHALL BE MULCHED FOR OVER WINTER PROTECTION WITH HAY OR STRAW AT TWICE THE NORMAL RATE OR WITH A FOUR–INCH LAYER OF EROSION CONTROL MIX. THIS SHALL BE DONE WITHIN 24 HOURS OF STOCKING AND RE–ESTABLISHED PRIOR TO ANY RAINFALL OR SNOWFALL.

4.4 SEEDING

BETWEEN THE DATES OF OCTOBER 15TH AND APRIL 1ST, LOAM OR SEED SHALL NOT BE REQUIRED. DURING PERIODS OF ABOVE FREEZING TEMPERATURES FINISHED AREAS SHALL BE FINE GRADED AND EITHER PROTECTED WITH MULCH OR TEMPORARILY SEEDED AND MULCHED UNTIL SUCH TIME AS THE FINAL TREATMENT CAN BE APPLIED. IF THE DATE IS AFTER NOVEMBER 1ST AND IF THE EXPOSED AREA HAS NOT BEEN LOAMED, FINAL GRADING WITH A UNIFORM SURFACE, THEN THE AREA MAY BE DORMANT SEEDED AT A RATE OF 3 TIMES HIGHER THAN SPECIFIED FOR PERMANENT SEED AND THEN MULCHED.

DORMANT SEEDING MAY BE PLACED PRIOR TO THE PLACEMENT OF MULCH OR EROSION CONTROL BLANKETS. IF DORMANT SEEDING IS USED FOR THE SITE, ALL DISTURBED AREAS SHALL RECEIVE 4" OF LOAM AND SEED AT AN APPLICATION RATE OF 5 LBS/1,000 S.F. ALL AREAS SEEDED DURING THE WINTER SHALL BE INSPECTED IN THE SPRING FOR ADEQUATE CATCH. ALL AREAS INSUFFICIENTLY VEGETATED (LESS THAN 75% CATCH) SHALL BE REVEGETATED BY REPLACING LOAM, SEED AND MULCH. IF DORMANT SEEDING IS NOT USED FOR THE SITE, ALL DISTURBED AREAS SHALL BE REVEGETATED IN THE SPRING.

4.5 OVER WINTER STABILIZATION OF DISTURBED SOILS

BY SEPTEMBER 15TH, ALL DISTURBED SOILS ON AREAS HAVING A SLOPE LESS THAN 15% SHALL BE SEEDED AND MULCHED. IF THE DISTURBED AREAS ARE NOT STABILIZED BY THIS DATE, THEN ONE OF THE FOLLOWING ACTIONS SHALL BE TAKEN TO STABILIZE THE SOIL FOR LATE FALL AND WINTER:

- STABILIZE THE SOIL WITH TEMPORARY VEGETATION – BY OCTOBER 1ST, SEED THE DISTURBED SOIL WITH WINTER RYE AT A SEEDING RATE OF 3LBS PER 1,000 S.F., LIGHTLY MULCH THE SEEDED SOIL WITH HAY OR STRAW AT 75 LBS PER 1,000 S.F., AND ANCHOR THE MULCH WITH PLASTIC NETTING. MONITOR GROWTH OF THE RYE OVER THE NEXT 30 DAYS. IF THE RYE FAILS TO GROW AT LEAST THREE INCHES OR FAILS TO COVER AT LEAST 75% OF THE DISTURBED SOIL BEFORE NOVEMBER 1ST, THEN MULCH THE AREA FOR OVER–WINTER PROTECTION.
- STABILIZE THE SOIL WITH SOD – STABILIZE THE DISTURBED SOIL WITH PROPERLY INSTALLED SOD BY OCTOBER 1ST. PROPER INSTALLATION INCLUDES PINNING THE SOD ONTO THE SOIL WITH WIRE PINS, ROLLING THE SOD TO GUARANTEE CONTACT BETWEEN THE SOD AND UNDERLYING SOIL, AND WATERING THE SOD TO PROMOTE ROOT GROWTH INTO THE DISTURBED SOIL.
- STABILIZE THE SOIL WITH MULCH – BY NOVEMBER 15TH, MULCH THE DISTURBED SOIL BY SPREADING HAY OR STRAW AT A RATE OF AT LEAST 150 LBS PER 1,000 S.F. ON THE AREA SO THAT NO SOIL IS VISIBLE THROUGH THE MULCH. IMMEDIATELY AFTER APPLYING THE MULCH, ANCHOR THE MULCH WITH PLASTIC NETTING TO PREVENT WIND FROM MOVING THE MULCH OFF THE DISTURBED SOIL.

4.6 OVER WINTER STABILIZATION OF DISTURBED SLOPES

ALL STONE–COVERED SLOPES SHALL BE CONSTRUCTED AND STABILIZED BY NOVEMBER 15TH. ALL SLOPES TO BE VEGETATED SHALL BE SEEDED AND MULCHED BY SEPTEMBER 1ST. A SLOPE IS CONSIDERED A GRADE GREATER THAN 15%. IF A SLOPE TO BE VEGETATED IS NOT STABILIZED BY SEPTEMBER 1ST, THEN ONE OF THE FOLLOWING ACTION SHALL BE TAKEN TO STABILIZE THE SLOPE FOR LATE FALL AND WINTER:

- STABILIZE THE SOIL WITH TEMPORARY VEGETATION AND EROSION CONTROL MATS – BY OCTOBER 1ST THE DISTURBED SLOPE SHALL BE SEEDED WITH WINTER RYE AT A SEEDING RATE OF 3 LBS PER 1,000 S.F. AND THEN INSTALL EROSION CONTROL MATS OR ANCHORED MULCH OVER THE SEEDING. IF THE RYE FAILS TO GROW AT LEAST THREE INCHES OR FAILS TO COVER AT LEAST 75% F THE SLOPE BY NOVEMBER 1ST, THEN THE CONTRACTOR SHALL COVER THE SLOPE WITH A LAYER OF EROSION CONTROL MIX OR WITH STONE RIPRAP.
- STABILIZE THE SOIL WITH SOD – THE DISTURBED SLOPE SHALL BE STABILIZED WITH PROPERLY INSTALLED SOD BY OCTOBER 1ST. PROPER INSTALLATION INCLUDES THE CONTRACTOR PINNING THE SOD ONTO THE SLOPE WITH WIRE PINS, ROLLING THE SOD TO GUARANTEE CONTACT BETWEEN THE SOD AND UNDERLYING SOIL, AND WATERING THE SOD TO PROMOTE ROOT GROWTH INTO THE DISTURBED SOIL. THE CONTRACTOR SHALL NOT USE LATE–SEASON SOD INSTALLATION TO STABILIZE SLOPES HAVING A GRADE GREATER THAN 3H:1V OR HAVING GROUNDWATER SEEPS ON THE SLOPE FACE.
- STABILIZE THE SOIL WITH EROSION CONTROL MIX – EROSION CONTROL MIX SHALL BE PROPERLY INSTALLED BY NOVEMBER 15TH. THE CONTRACTOR SHALL NOT USE EROSION CONTROL MIX TO STABILIZE SLOPES HAVING GRADES GREATER THAN 2H:1V OR HAVING GROUNDWATER SEEPS ON THE SLOPE FACE.
- STABILIZE THE SOIL WITH STONE RIPRAP – PLACE A LAYER OF STONE RIPRAP ON THE SLOPE BY NOVEMBER 15TH. A REGISTERED PROFESSIONAL ENGINEER SHALL BE HIRED TO DETERMINE THE STONE SIZE NEEDED FOR STABILITY ON THE SLOPE AND TO DESIGN A FILTER LAYER FOR UNDERNEATH THE RIPRAP.

5.0 INSPECTION AND MAINTENANCE

A PERSON WITH KNOWLEDGE OF EROSION AND STORMWATER CONTROL, INCLUDING THE STANDARDS AND CONDITIONS IN THE PERMIT, SHALL CONDUCT PERIODIC VISUAL INSPECTIONS OF INSTALLED EROSION CONTROL MEASURES. THE FREQUENCY OF INSPECTION SHALL OCCUR AT LEAST ONCE EVERY TWO WEEKS, AS WELL AS AFTER A "STORM EVENT". A "STORM EVENT" SHALL CONSIST 0.5 INCHES OF RAIN WITHIN A 24 HOUR PERIOD. THE FOLLOWING EROSION AND SEDIMENT CONTROL – BEST MANAGEMENT PRACTICES (BMP'S) SHALL INSPECTED IN THE MANNER AS DESCRIBED.

5.1 SEDIMENT BARRIERS

HAY BALE BARRIERS, SILT FENCES AND FILTER BERMS SHALL BE INSPECTED AND REPAIRED FOR THE FOLLOWING IF THERE ARE ANY SIGNS OF EROSION OR SEDIMENTATION BELOW THEM. IF THERE ARE SIGNS OF UNDERCUTTING AT THE CENTER OR THE EDGES OF THE BARRIER, OR IMPOUNDING OF LARGE VOLUMES OF WATER BEHIND THEM, SEDIMENT BARRIERS SHALL BE REPLACED WITH A TEMPORARY CHECK DAM. SHOULD THE FABRIC ON A SILT FENCE OR FILTER BARRIER DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER IS STILL NECESSARY, THE FABRIC SHALL BE REPLACED PROMPTLY. SEDIMENT DEPOSITS SHOULD BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE–HALF THE HEIGHT OF THE BARRIER. FILTER BERMS SHOULD BE RESHAPED AS NEEDED. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE OR FILTER BARRIER IS NO LONGER REQUIRED SHOULD BE DRESSED TO CONFORM TO THE EXISTING GRADE, PREPARED AND SEEDED.

5.2 STABILIZED STONE CONSTRUCTION ENTRANCES

THE EXIT SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OF SEDIMENT ONTO PUBLIC RIGHTS–OF–WAY. WHEN THE CONTROL PAD BECOMES INEFFECTIVE, THE STONE SHALL BE REMOVED ALONG WITH THE COLLECTED SOIL MATERIAL AND REDISTRIBUTED ON SITE IN A STABLE MANNER. THE ENTRANCE SHOULD THEN BE RECONSTRUCTED. THE CONTRACTOR SHALL SWEEP OR WASH PAVEMENT AT EXITS, WHICH HAVE EXPERIENCED MUD–TRACKING ON TO THE PAVEMENT OR TRAVELED WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH AGGREGATE, WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING STORM DRAINS, DITCHES, OR WATERWAYS.

5.3 MULCHED AREAS

ALL MULCHES MUST BE INSPECTED PERIODICALLY, IN PARTICULAR AFTER RAINSTORMS, TO CHECK FOR RILL EROSION. IF LESS THAN 90% OF THE SOIL SURFACE IS COVERED BY MULCH, ADDITIONAL MULCH SHALL BE IMMEDIATELY APPLIED. NETS MUST BE INSPECTED AFTER RAIN EVENTS FOR DISLOCATION OR FAILURE. IF WASHOUTS OR BREAKAGE OCCUR, RE–INSTALL THE NETS AS NECESSARY AFTER REPAIRING DAMAGE TO THE SLOPE. WHERE MULCH IS USED IN CONJUNCTION WITH ORNAMENTAL PLANTINGS, INSPECT PERIODICALLY THROUGHOUT THE YEAR TO DETERMINE IF MULCH IS MAINTAINING COVERAGE OF THE SOIL SURFACE. REPAIR AS NEEDED.

5.4 DUST CONTROL

WHEN TEMPORARY DUST CONTROL MEASURES ARE USED, REPETITIVE TREATMENT SHALL BE APPLIED AS NEEDED TO ACCOMPLISH CONTROL.

5.5 STORMWATER APPURTENANCES

ALL UNDERDRAINS, STORM DRAINS, AND CATCH BASINS NEED TO BE OPERATING EFFECTIVELY AND FREE OF DEBRIS.

5.6 EROSION AND SEDIMENTATION CONTROL INSPECTIONS:

ACORN ENGINEERING HAS PERSONNEL QUALIFIED TO CONDUCT EROSION AND SEDIMENTATION CONTROL INSPECTIONS. FOR FURTHER INFORMATION CONTACT:

CONTACT: WILL SAVAGE, PE
TELEPHONE: (207) 775–2655

QUALIFICATIONS:

- MAINE PROFESSIONAL ENGINEERING LICENSE #11419
- MAINE DEP – CERTIFIED IN MAINTENANCE & INSPECTION OF STORMWATER BMP'S CERT #14
- CERTIFIED EROSION, SEDIMENT AND STORM WATER INSPECTOR (CESSW) CERT #0293
- CERTIFIED PROFESSIONAL IN EROSION AND SEDIMENT CONTROL (CPESC) CERT. #4620

THE CONTRACTOR HAS SOLE RESPONSIBILITY FOR COMPLYING WITH THE EROSION AND SEDIMENTATION REPORT/PLAN, INCLUDING CONTROL OF FUGITIVE DUST. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY MONETARY PENALTIES RESULTING FROM FAILURE TO COMPLY WITH THESE STANDARDS.

6.0 IMPLEMENTATION SCHEDULE

THE FOLLOWING IMPLEMENTATION SEQUENCE IS INTENDED TO MAXIMIZE THE EFFECTIVENESS OF THE ABOVE DESCRIBED EROSION CONTROL MEASURES. CONTRACTORS SHOULD AVOID OVEREXPOSING DISTURBED AREAS AND LIMIT THE AMOUNT OF STABILIZATION AREA.

1. INSTALL A STABILIZED CONSTRUCTION ENTRANCE IN ALL LOCATIONS WHERE CONSTRUCTION TRAFFIC WILL ENTER AND EXIT THE SITE.
2. INSTALL PERIMETER SILT FENCE OR EROSION CONTROL BERM.
3. INSTALL ALL OTHER EROSION CONTROL DEVICES AS NECESSARY THROUGHOUT THE REMAINDER OF THIS SCHEDULE.
4. COMMENCE INSTALLATION OF DRAINAGE INFRASTRUCTURE.
5. PRIORITIZE THE DOWNHILL RETAINING AND FOUNDATION WALLS TO CONTAIN RUNOFF WITHIN THE SITE WHILE PROVIDING AN ENGINEERED OUTLET WITH SILTATION BARRIER TO THE MUNICIPAL STORMWATER SYSTEM WITHIN ST. LAWRENCE STREET.
6. COMMENCE EARTHWORK OPERATIONS, WALL AND FOUNDATION INSTALLATION.
7. COMMENCE INSTALLATION OF UTILITIES.
8. CONTINUE EARTHWORK AND GRADING TO SUBGRADE AS NECESSARY FOR CONSTRUCTION.
9. COMPLETE INSTALLATION OF DRAINAGE INFRASTRUCTURE, AS WELL AS OTHER UTILITY WORK.
10. COMPLETE REMAINING EARTHWORK OPERATIONS.
11. INSTALL SUB–BASE AND BASE GRAVELS IN PAVED AREAS.
12. INSTALL PAVING, CURBING AND BRICKWORK.
13. LOAM, LIME, FERTILIZE, SEED AND MULCH DISTURBED AREAS AND COMPLETE ALL LANDSCAPING.
14. ONCE THE SITE IS STABILIZED, 90% CATCH OF GRASS HAS BEEN OBTAINED, OR MULCHING OF LANDSCAPE AREAS IS COMPLETE REMOVE ALL TEMPORARY EROSION CONTROL MEASURES.
15. TOUCH UP AREAS WITHOUT A VIGOROUS CATCH OF GRASS WITH LOAM AND SEED.
16. COMPLETE SITE SIGNAGE AND STRIPING.
17. EXECUTE PROPER MAINTENANCE OF ALL TEMPORARY AND PERMANENT EROSION CONTROL MEASURES THROUGHOUT THE PROJECT.

THE ABOVE IMPLEMENTATION SEQUENCE SHOULD BE GENERALLY FOLLOWED BY THE SITE CONTRACTOR. HOWEVER, THE CONTRACTOR MAY CONSTRUCT SEVERAL ITEMS SIMULTANEOUSLY. THE CONTRACTOR SHALL SUBMIT TO THE OWNER A SCHEDULE OF THE COMPLETION OF THE WORK. IF THE CONTRACTOR IS TO COMMENCE THE CONSTRUCTION OF MORE THAN ONE ITEM ABOVE, THEY SHALL LIMIT THE AMOUNT OF EXPOSED AREAS TO THOSE AREAS IN WHICH WORK IS EXPECTED TO BE UNDERTAKEN DURING THE FOLLOWING 30 DAYS.

THE CONTRACTOR SHALL RE–VEGETATE DISTURBED AREAS AS RAPIDLY AS POSSIBLE. ALL AREAS SHALL BE PERMANENTLY STABILIZED WITHIN 7 DAYS OF FINAL GRADING OR BEFORE A STORM EVENT. THE CONTRACTOR SHALL INCORPORATE PLANNED INLETS AND DRAINAGE SYSTEMS AS EARLY AS POSSIBLE INTO THE CONSTRUCTION PHASE.

7.0 CONCLUSION

THE ABOVE EROSION CONTROL NARRATIVE IS INTENDED TO MINIMIZE THE DEVELOPMENT IMPACT BY IMPLEMENTING TEMPORARY AND PERMANENT EROSION CONTROL MEASURES. THE CONTRACTOR SHALL ALSO REFER TO THE MAINE EROSION AND SEDIMENT CONTROL BMP MANUAL FOR ADDITIONAL INFORMATION.

SEEDING PLAN

SITE PREPARATION

THE SEEDED AREAS SHALL BE FEASIBLY GRADED OUT TO PROVIDE THE USE OF EQUIPMENT FOR SEEDBED PREPARATION, SEEDING, MULCH APPLICATION, AND MULCH ANCHORING. IF NECESSARY, THE SITE MAY REQUIRE ADDITIONAL TEMPORARY EROSION CONTROL MEASURES OUTLINED IN THE EROSION CONTROL REPORT.

SEEDBED PREPARATION

FERTILIZER SHALL BE APPLIED TO THE SITE AT A RATE OF 13.8 POUNDS PER 1,000 SQUARE FEET. THE COMPOSITION OF THE FERTILIZER SHALL BE 10–10–10 (N–P205–K20) OR EQUIVALENT.

LIMESTONE SHALL BE APPLIED TO THE SITE AT A RATE OF 138 POUNDS PER 1,000 SQUARE FEET.

SEEDING

THE COMPOSITION AND AMOUNT OF TEMPORARY SEED APPLIED TO A SITE SHALL BE DETERMINED BY THE FOLLOWING TABLE:

TEMPORARY SEED APPLICATION RATES

SEED	LBS / ACRE	RECOMMENDED SEEDING DATES
WINTER RYE	2.57	8/15 TO 10/1
OATS	1.84	4/1 TO 7/1 8/15 TO 9/15
ANNUAL RYGRASS	0.92	4/1 TO 7/1
SUDANGRASS	0.92	5/15 TO 8/15
PERENNIAL	0.92	8/15 TO 9/15
TOTAL	7.17 LBS/ACRE	

PERMANENT SEED APPLICATION RATES

SEED	LBS / ACRE
KENTUCKY BLUEGRASS	20.00
CREEPING RED FESCUE	20.00
PERENNIAL RYEGRASS	4.80
TOTAL	44.8 LBS/ACRE

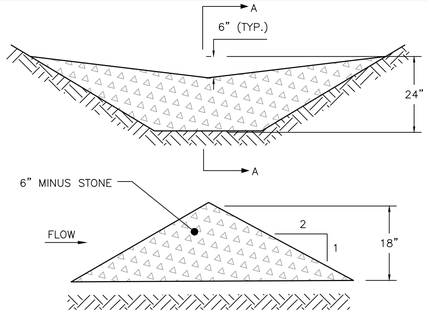
MULCHING

MULCH SHALL BE APPLIED AT A RATE OF .70 LBS – 90 LBS PER 1,000 SQUARE FEET. THE MULCH SHALL BE INSTALLED AT A MINIMUM DEPTH OF 4 INCHES. THE SEEDED AREA SHALL BE MULCHED IMMEDIATELY AFTER SEED IS APPLIED. MULCHING DURING THE WINTER SEASON SHALL BE DOUBLE THE NORMAL AMOUNT.

CONCLUSION

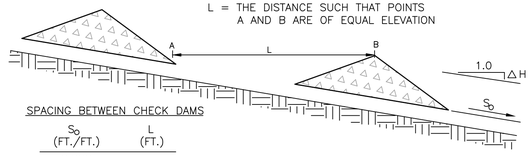
PLEASE REFER TO THE MAINE EROSION AND SEDIMENT CONTROL BMP MANUAL FOR ADDITIONAL INFORMATION PERTAINING TO TEMPORARY SEEDING AND MULCHING.

PERMIT LEVEL
NOT ISSUED FOR
CONSTRUCTION



SECTION A–A

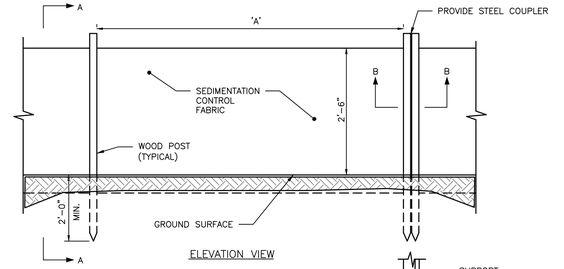
L = THE DISTANCE SUCH THAT POINTS A AND B ARE OF EQUAL ELEVATION



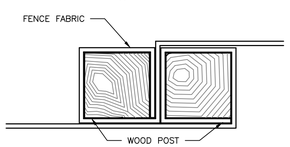
SPACING BETWEEN CHECK DAMS

SD (FT./FT.)	L (FT.)
0.020	75
0.030	50
0.040	40
0.050	30
0.080	20
0.100	10

STONE CHECK DAM
NOT TO SCALE

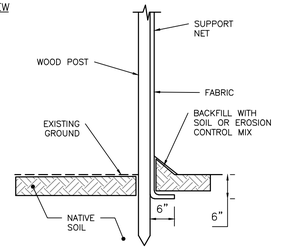


ELEVATION VIEW



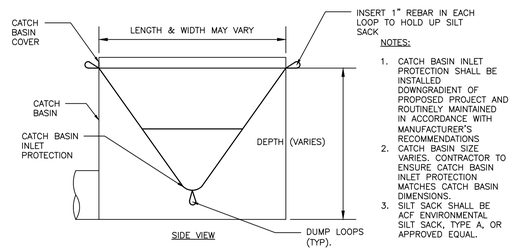
SECTION B–B

SILT FENCE REINFORCEMENT	MAX. SPACING "A"
NONE	6'
WIRE REINFORCEMENT 14 GAUGE, 6" MESH	10'



SECTION A–A

SILTATION FENCE DETAIL
NOT TO SCALE



NOTES:
1. CATCH BASIN INLET PROTECTION SHALL BE INSTALLED DOWNGRADIENT OF PROPOSED PROJECT AND ROUTINELY MAINTAINED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS
2. CATCH BASIN SIZE VARIES. CONTRACTOR TO ENSURE CATCH BASIN INLET PROTECTION MATCHES CATCH BASIN DIMENSIONS.
3. SILT SACK SHALL BE ACF ENVIRONMENTAL SILT SACK, TYPE A, OR APPROVED EQUAL.

CATCH BASIN INLET PROTECTION
NOT TO SCALE

ISSUED FOR

CITY APP.	BY DATE
	WHS 10/6/17

DRAWING NAME: EROSION & SEDIMENTATION CONTROL DETAILS

PROJECT NAME: 24 ST. LAWRENCE STREET REDEVELOPMENT

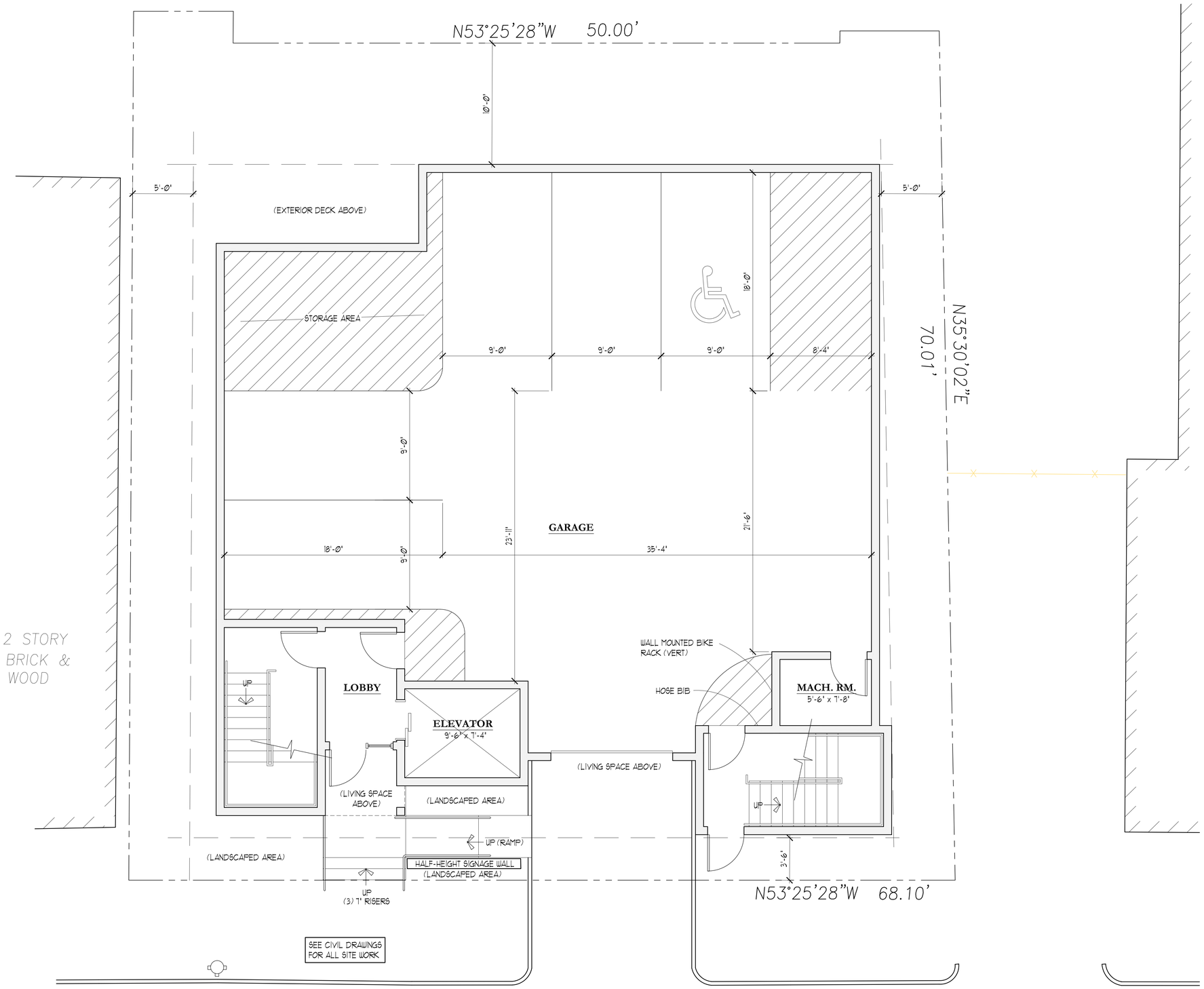
CLIENT: HR PROPERTY MANAGEMENT
24 ST. LAWRENCE STREET, PORTLAND, ME 04101

ACORN ENGINEERING, INC.
158 DANFORTH STREET, PORTLAND, MAINE 04102
(207) 775–2655

ACORN ENGINEERING, INC. — THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION OF ACORN ENGINEERING, INC. ANY MODIFICATIONS MADE TO THIS PLAN WITHOUT THE WRITTEN PERMISSION OF ACORN ENGINEERING, INC. SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

STATE OF MAINE — WILLIAM SAVAGE — No. 11419 — 10-11-17 — REGISTERED PROFESSIONAL ENGINEER

FILE:	1088_CIVIL
JN:	1088
SCALE:	NTS
DESIGNED BY:	WHS
DRAWN BY:



1 FLOOR PLAN - GARAGE

Ø 4'-Ø" SCALE: 1/4" = 1'-Ø"

PORT ■ CITY
ARCHITECTURE

65 NEWBURY STREET
PORTLAND, ME 04101
207.761.9000

Consultants:

DESIGN DEVELOPMENT

WILLIAMS 5 UNIT RESIDENCE

24 St Lawrence Street
Portland, Maine

#	DATE	DESCRIPTION

Date Issued March 9, 2018

Project Number 1601S

Drawing Scale

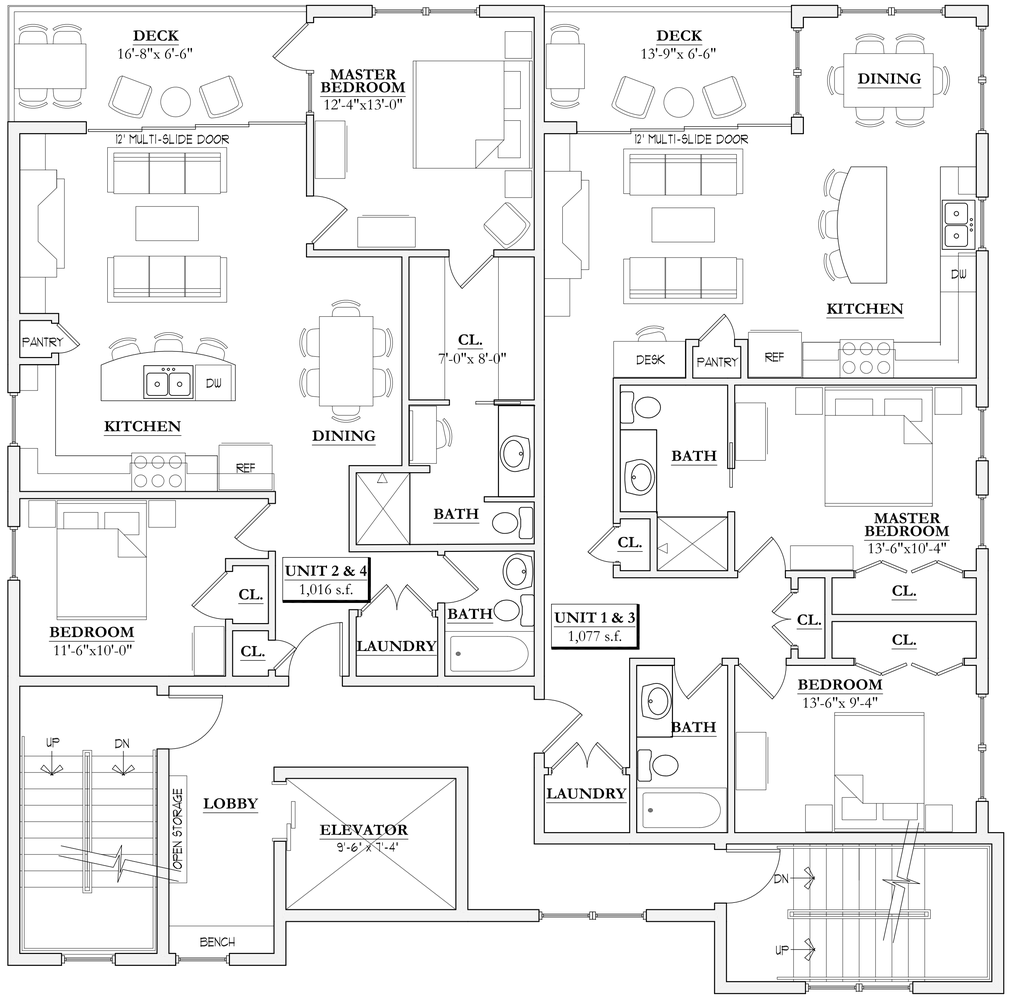
SITE / FLOOR PLAN

Drawn By JAP, CG

Checked By MC

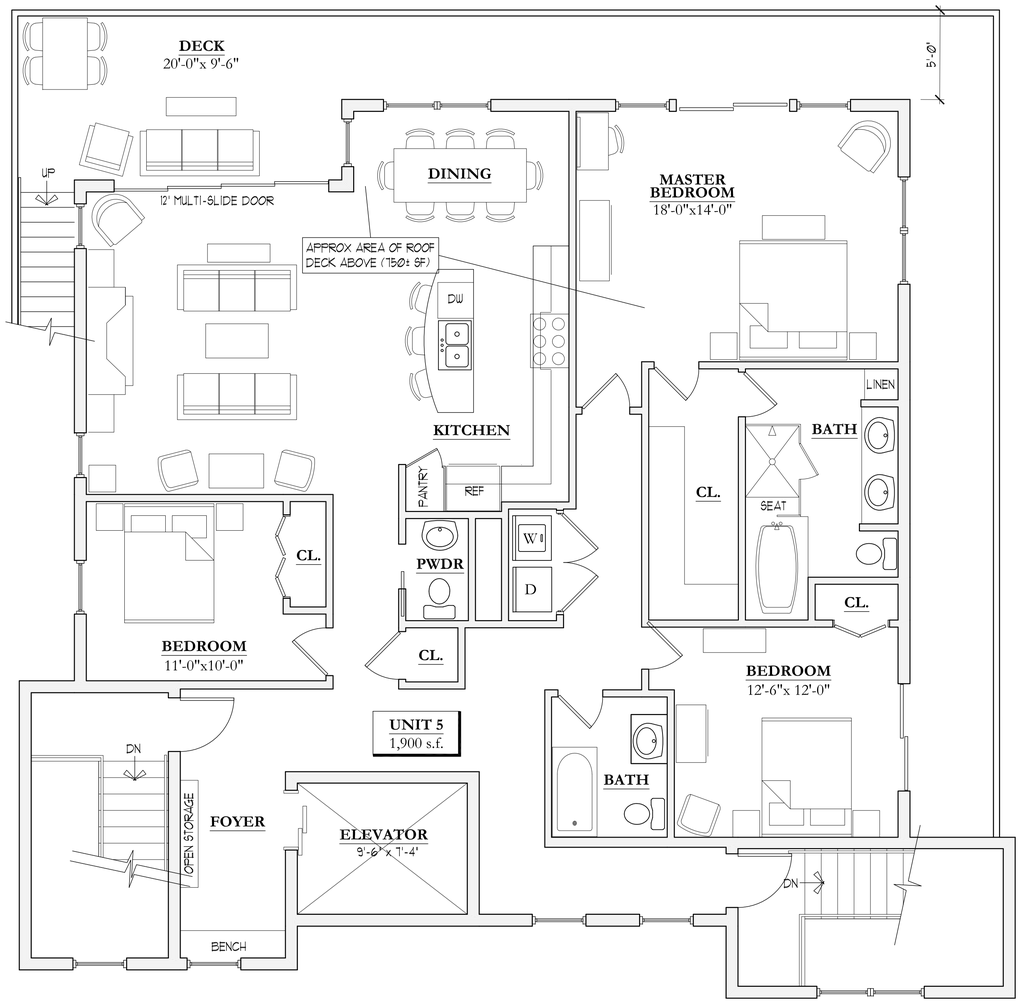
A 1.0

NOTE: MULTI-SLIDE DOORS NOT ON SECOND FLOOR



1 FLOOR PLAN - 2nd/3rd FLOOR

0 4'-0" SCALE: 1/4" = 1'-0"



2 FLOOR PLAN - 4th FLOOR

0 4'-0" SCALE: 1/4" = 1'-0"

PORT ▪ CITY ARCHITECTURE
65 NEWBURY STREET
PORTLAND, ME 04101
207.761.9000

Consultants:

DESIGN DEVELOPMENT

WILLIAMS 5 UNIT RESIDENCE

24 St Lawrence Street
Portland, Maine

#	DATE	DESCRIPTION

Date Issued March 9, 2018
Project Number 16015
Drawing Scale

FLOOR PLANS

Drawn By JAP, CG
Checked By MC

A 1.1



1 ELEVATION - FRONT (Northeast)

Ø 5'-4" SCALE: 3/16" = 1'-Ø"



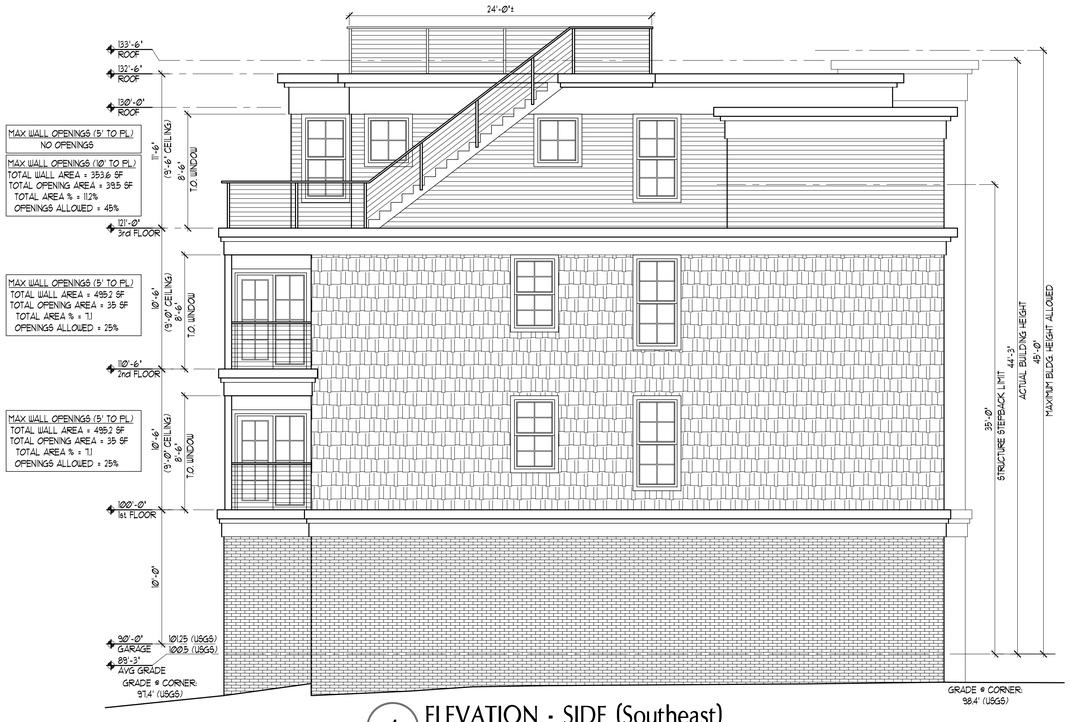
2 ELEVATION - SIDE (Northwest)

Ø 5'-4" SCALE: 3/16" = 1'-Ø"



3 ELEVATION - REAR (Southwest)

Ø 5'-4" SCALE: 3/16" = 1'-Ø"



4 ELEVATION - SIDE (Southeast)

Ø 5'-4" SCALE: 3/16" = 1'-Ø"

PORT ▪ CITY ARCHITECTURE
65 NEWBURY STREET
PORTLAND, ME 04101
207.761.9000

Consultants:

DESIGN DEVELOPMENT

WILLIAMS 5 UNIT RESIDENCE

24 St Lawrence Street
Portland, Maine

#	DATE	DESCRIPTION

Date Issued March 9, 2018

Project Number 1601.5

Drawing Scale

ELEVATIONS

Drawn By JAP, CG

Checked By MC

A 2.0


PORT CITY
ARCHITECTURE


PORT CITY
ARCHITECTURE


PORT CITY
ARCHITECTURE


PORT CITY
ARCHITECTURE


PORT CITY
ARCHITECTURE


PORT CITY
ARCHITECTURE


LAWRENCE ST


LAWRENCE ST


24 ST. LAWRENCE ST
PRIUS


24 ST. LAWRENCE ST
PRIUS

GENERAL NOTES:

1. FOR INFORMATION REGARDING THE GARAGE LEVEL/SITE PLAN, REFER TO SITE PLAN, C-10, MOST RECENT VERSION.
2. FOR INFORMATION REGARDING PROPOSED UTILITY CHANGES, REFER TO UTILITY PLAN, SHEET C-20, MOST RECENT VERSION.
3. FOR INFORMATION REGARDING PROPOSED GRADING CHANGES, REFER TO GRADING & DRAINAGE PLAN, SHEET C-30, MOST RECENT VERSION.
4. UNIT TABULATION PROVIDED BY PORT CITY ARCHITECTURE; REFER TO ARCHITECTURAL PLANS FOR FLOOR PLANS AND BUILDING HEIGHTS.
5. TOTAL SITE AREA INCLUDES 0.107 ACRES (4,671 S.F.). R.O.W. WIDTH FOR SAINT LAWRENCE STREET IS 50 FEET PER EXISTING CONDITIONS PLAN. REFER TO EXISTING CONDITIONS PLAN COMPLETED BY OWEN HASKELL, INC. DATED 11/30/16.
6. SITE BOUNDARIES PER EXISTING CONDITIONS PLAN AND PROPERTY PINS TO BE SET BY OWEN HASKELL, INC.
7. AS OF 10/17/2017, SITE IS BOUNDED BY THE R-6 ZONE ON ALL ABUTTING SIDES PER CITY OF PORTLAND GIS WEBSITE.
8. LOCUS PARCEL IS SHOWN ON THE CITY OF PORTLAND ASSESSOR'S MAP 16, BLOCK J, LOT 006.
9. LOCUS PARCEL DOES NOT SCALE IN A SPECIAL FLOOD HAZARD AREA PER FEMA FLOOD INSURANCE RATE MAP COMMUNITY-PANEL NUMBER 2300510014B, INDEX DATED 7/17/1986.
10. ALL BUILDING CORNER OFFSETS TO BOUNDARY LINES ARE FROM CORNERBOARDS AND NOT BUILDING FOUNDATION, UNLESS OTHERWISE NOTED.
11. THIS SHEET IS THE SUBDIVISION PLAT FOR THE CREATION OF UP TO FIVE (5) DWELLING UNITS ON THE EXISTING SUBJECT PROPERTY. APPROVAL OF THIS PLAT DOES NOT CREATE ANY SUBDIVISION OF THE LAND ON THE SUBJECT PROPERTY.
12. THE CONDOMINIUM DOCUMENTS ARE TO OUTLINE THE MAINTENANCE AND MANAGEMENT OF DRIVEWAYS, SIDEWALKS, RETAINING WALLS, STORMWATER DEVICES, SITE LIGHTING, TRASH REMOVAL, AND SNOW REMOVAL AS THE RESPONSIBILITY OF THE OWNER.
13. THE OWNER SHALL BE RESPONSIBLE FOR THE MAINTENANCE AND MANAGEMENT OF DRIVEWAYS, SIDEWALKS, STORMWATER DEVICES, SITE LIGHTING, TRASH REMOVAL, RETAINING WALLS, AND SNOW REMOVAL.
14. THE CONDOMINIUM ASSOCIATION MUST COMPLY TO THE FOLLOWING AS APPROVED BY THE CITY:

14.1. CONDOMINIUM DOCUMENTS: BOOK _____ PAGE _____

WAIVERS & CONDITIONS OF APPROVAL:

TBD

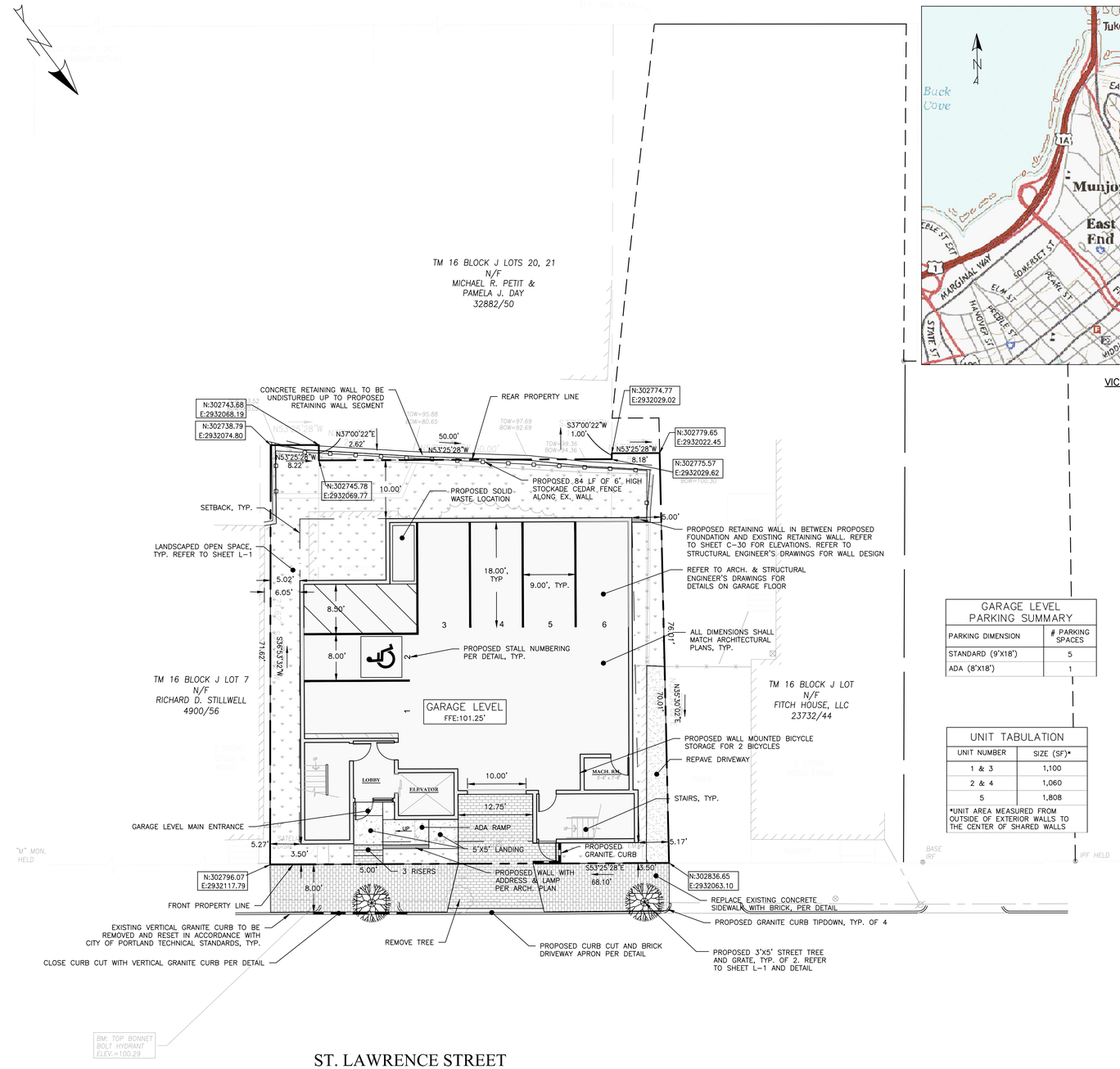
EASEMENTS:

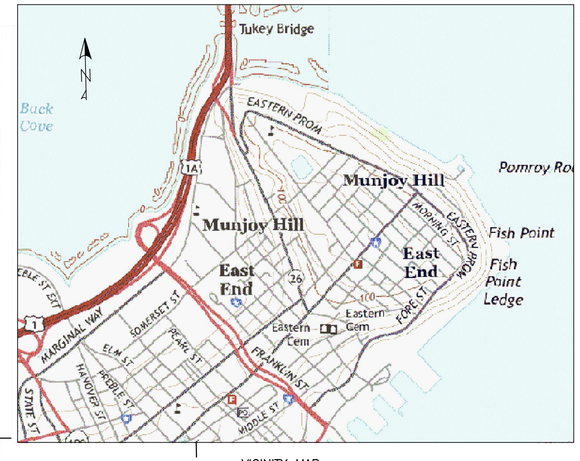
ALL PROPOSED EASEMENTS TO BE REVIEWED BY OWEN HASKELL, INC. AND RECORDED IN CCRD. ALL EXISTING EASEMENTS WILL BE RELEASED PRIOR TO PROJECT START. THERE ARE NO EXISTING OR PROPOSED EASEMENTS.

SURVEY NOTES:

1. OWNER OF RECORD: WALTER S. AND KELLY A. WILLIAMS
   TAX MAP 16 BLOCK J LOT 6
   CCRD BOOK 25609 PAGE 269
2. BEARINGS ARE BASED ON MAINE STATE PLANE COORDINATE SYSTEM MAINE WEST NAD83. CITY POINTS T111-38-146 (N:303177.39 E:2932043.79) & T113-78-203 (N:302835.35 E:2932458.96) USED.
3. BENCH MARK: CITY BENCHMARK HIGHEST POINT ON "M" MONUMENT AT NORTHWESTERLY CORNER OF ST. LAWRENCE AND FORE STREET, ELEVATION=69.35 NGVD 1929.
4. THE LINE ALONG FITCH HOUSE, LLC IS THE SAME AS THAT LINE ON PLAN REFERENCE 3, ALTHOUGH THE BEARING SYSTEM IS DIFFERENT. DUE TO VAGUE DEEDS, A BOUNDARY AGREEMENT WAS RECOMMENDED ALONG THIS LINE IN 2006, AT THE TIME OF THAT SURVEY.
5. THE DEED LINE APPEARS TO GO THROUGH THE BUILDING OF STILLWELL. THE LINE SHOWN ON THIS PLAN IS TAKEN FROM PLAN REFERENCE 4. A BOUNDARY AGREEMENT IS RECOMMENDED WITH STILLWELL.
6. THE LINE ALONG PETIT IS TAKEN FROM THE OLD DEEDS THAT MAKE UP THE SUBJECT PROPERTY, NAMELY BOOK 239, PAGE 252, BOOK 264, PAGE 394, BOOK 199, PAGE 423, AND BOOK 214, PAGE 263. THESE DEEDS HAVE THE DIMENSIONS AS SHOWN ON THIS PLAN. THESE DEEDS THAT ABUT PETIT PREDATE THE DEED INTO THE CHAIN OF PETIT, NAMELY BOOK 218, PAGE 78. THAT DEED CALLS FOR THE REAR LINE TO BE 75 FEET FROM WATERVILLE STREET AND PARALLEL THERETO. THE CURRENT PETIT DEED DEFINES THE LINES AS GOING FROM WATERVILLE STREET "ABOUT SEVENTY-FIVE (75) FEET TO A STONE WALL; THENCE NORTHWESTERLY PARALLEL WITH SAID WATERVILLE STREET AND ON THE LINE OF SAID STONE WALL." A BOUNDARY AGREEMENT IS RECOMMENDED WITH PETIT.
7. AN ATTORNEY SHOULD BE CONSULTED ABOUT THE RECOMMENDED AGREEMENTS. CORNER MARKERS WILL NOT BE SET UNTIL AFTER SUCH AGREEMENTS OR CONSULTATION.

SPACE AND BULK STANDARDS			
ZONE: R6	REQUIRED	EXISTING	PROPOSED
MINIMUM LOT SIZE	2,000 SF	4,671 SF	4,671 SF
MINIMUM STREET FRONTAGE	20'	68'	68'
MINIMUM FRONT YARD SETBACK	5' - ORDINANCE 3.7' - ABUTTER AVG.	3.8'	7'*
MINIMUM SIDE YARD SETBACK	5'	3'	5'
MINIMUM REAR YARD SETBACK	10'	8.7'	10'
STRUCTURE STEPBACKS (SIDE YARD ABOVE 35')	10'	N/A	10'
STRUCTURE STEPBACKS (REAR YARD ABOVE 35')	15'	N/A	15'
MAXIMUM LOT COVERAGE	60%	35%	60%
MINIMUM LOT WIDTH	20'	67'	67'
MAXIMUM BUILDING HEIGHT	45'	24'	44.96'
MINIMUM LANDSCAPED OPEN AREA	20%	45%	28%
MAXIMUM NUMBER OF DWELLING UNITS	725 SF/UNIT = 6	2	5
RESIDENTIAL PARKING	1 SPACE PER UNIT AFTER 3 UNITS = 2 SPACES	2	6
MINIMUM INTERNAL RESIDENT BICYCLE STORAGE SPACES	2 SPACES/5 D.U. = 2	0	2
MAXIMUM GARAGE OPENING	20'	N/A	10'
*VALUE BASED ON THE WEIGHTED AVERAGE SETBACK OF THE 5 FRONT WALL SEGMENTS			





VICINITY MAP
NTS

LEGEND:

- INTERNAL BRICK SIDEWALK
- CITY BRICK SIDEWALK
- LANDSCAPED AREAS
- CONCRETE
- GRANITE CURB
- PROPOSED BUILDING
- PROPERTY LINE
- STRIPING
- CEDAR FENCE

GARAGE LEVEL PARKING SUMMARY	
PARKING DIMENSION	# PARKING SPACES
STANDARD (9'X18')	5
ADA (8'X18')	1

UNIT TABULATION	
UNIT NUMBER	SIZE (SF)*
1 & 3	1,100
2 & 4	1,060
5	1,808
*UNIT AREA MEASURED FROM OUTSIDE OF EXTERIOR WALLS TO THE CENTER OF SHARED WALLS	

APPROVED: PORTLAND PLANNING BOARD

CHAIRPERSON: DATE:

RECORDING INFORMATION
STATE OF MAINE, CUMBERLAND
COUNTY REGISTRY OF DEEDS

RECEIVED: _____

RECORDED IN _____

ATTEST: _____
REGISTRAR

OWNER/SUBDIVIDER:

KELLY & WALTER WILLIAMS
PORTLAND, MAINE

CIVIL/SITE ENGINEER:

ACORN ENGINEERING, INC.
PORTLAND, MAINE
CONTACT: WILL SAVAGE, P.E.

SURVEYOR:

OWEN HASKELL, INC.
FALMOUTH, MAINE
CONTACT: JOHN SCHWANDA, P.L.S.

JOHN SCHWANDA, MAINE P.L.S. #1252

OWEN HASKELL, INC. DATE:

"M" MON.

10 0 10 20
SCALE: 1" = 10'

PERMIT LEVEL
NOT ISSUED FOR CONSTRUCTION

ISSUED FOR	BY	DATE
CITY APP.	WHS	10/18/17

SUBDIVISION PLAT

DRAWING NAME:

PROJECT NAME: 24 ST. LAWRENCE STREET REDEVELOPMENT

CLIENT: HR PROPERTY MANAGEMENT
24 ST. LAWRENCE STREET, PORTLAND, ME 04101

ACORN ENGINEERING, INC.

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION OF ACORN ENGINEERING, INC. AND IF MODIFIED WITHOUT PERMISSION OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

ACORN ENGINEERING, INC.
158 DANFORTH STREET PORTLAND, MAINE 04102
(207) 775-2655

FILE:	1088_CIVIL
JN:	1088
SCALE:	1"=10'
DESIGNED BY:	SJL
DRAWN BY:	SJL
CHECKED BY:	WHS

STATE OF MAINE
WILLIAM
SAVAGE
PE 13415
10-11-17
LICENSED
PROFESSIONAL ENGINEER

DRAWING NO.
PLAT

Google Groups

Fwd: 24 St. Lawrence Street

Shukria Wiar <shukriaw@portlandmaine.gov> Jan 9, 2018 9:09 AM
Posted in group: **Planning Board**

---------- Forwarded message ----------
From: **Rob Whitten** <rob@whittenarchitects.com>
Date: Mon, Jan 8, 2018 at 7:49 PM
Subject: Re: 24 St. Lawrence Street
To: Caitlin Cameron <CCameron@portlandmaine.gov>, "Wiar, Shukria" <shukriaw@portlandmaine.gov>
Cc: "Levine, Jeff" <jlevine@portlandmaine.gov>

To Shukria Wiar, Caitlin Cameron, the Portland Planning Department, and members of the Portland Planning Board,

My wife, Robin F. Whitten, and I are are long term residents, property owners, business owners, and Portland neighbors at 23 St. Lawrence Street. I am a trained, qualified, Maine registered architect who specializes in residential design.

We are strongly opposed and are writing in opposition to the proposed 24 St. Lawrence Street Redevelopment submitted by HR Property Management.

The proposed Redevelopment of 24 St. Lawrence Street does not comply with the City of Portland Design Manual, the design requirements for small residential lot development proposed in the R6 Zone, and Appendix 7 including !V. Alternate Design Review. I did attend the Neighborhood Meeting about 24 St. Lawrence on November 2 at the East End School and expressed my concerns at that meeting; and we have expressed our concerns to the Williams, the owners of 24 St. Lawrence Street.

With respect to the first three Principals of Appendix 7 and the proposed 24 St. Lawrence Street Redevelopment:

Principal A; Overall Context: "To a large degree, the scale, mass, orientation, and articulation of an infill building should be compatible with the buildings that surround it.

1. Scale and Form:
Existing: the existing structure at 24 St. Lawrence and the surrounding homes are 2 story brick and frame structures with pitched roofs of less than 3000 square feet of space.
Proposed: the Redevelopment is a 4 story structure, with a flat roof and a total building area of 8951 square feet of space **-185% increase of footprint, 311% increase of scale and mass, no defining architectural features of the neighborhood.**
2. Composition of Principal Facades:
Existing: the existing structure at 24 St. Lawrence and the surrounding homes have 2 story facades w/ distinct trim, eaves, and rakes; they have 2:1 proportion windows approximately 2.5' wide to 5’ high; a centrally located, protected entries, facades of brick, shingle, clapboard with contrasting trim.
Proposed: the Redevelopment windows are 1:1 or 4:1 proportions, the cornice and first floor band are 2 to 4 times wider than surrounding homes. **- 4 story facade, with no windows at street level.**
3. Relationship to the street:
Existing: the existing structure at 24 St. Lawrence and the surrounding homes have equal and evenly spaced yards between neighboring structures, the principal facades face the street with windows and occupied living areas on the street.
Proposed: the Redevelopment street level is a parking garage entry, an elevator core, two stairwells and egress corridors - **no living spaces on the street, no defining architectural features of the neighborhood.**

Principal B; Massing: “ The massing of the building reflects and reinforces the traditional building character of the neighborhood through a well composed form, shape and volume.”

B-1 Massing:

Existing: the existing structure at 24 St. Lawrence and the surrounding homes are 2 story brick and frame structures with pitched roofs of less than 3000 square feet of space.
Proposed: the Redevelopment is a 4 story structure, a total building area of 8951 square feet of space **-185% increase of footprint, 311% increase of bulk, size, physical volume, scale, and flat form.**
B-2 Roof Forms:
Existing: the existing structure at 24 St. Lawrence and the surrounding homes are 2 story brick and frame structures with pitched roofs that contribute and are compatible with the predominate character-defining architectural features of the neighborhood.
Proposed: The Redevelopment has a flat roof on the street side, flat roofs on the side yards visible from the street - **no pitch roof compatible with the predominate character-defining architectural features of the neighborhood.**
B-3 Main Roofs and Subsidiary Roofs:
Existing: the existing structure at 24 St. Lawrence and the surrounding homes are 2 story brick and frame structures with pitched Main roofs, subsidiary pitched ell roofs, and subsidiary pitched dormers.
Proposed: The Redevelopment has a flat roof on the street side, flat roofs on the side yard visible from the street - **no clear main roof form.**
B-4 Roof Pitch:
Existing: the existing structure at 24 St. Lawrence and the surrounding homes are 2 story brick and frame structures with pitched roofs that vary from 7:12 to 12:12; the slope of the roof is either parallel or perpendicular to the street.
Proposed: The Redevelopment has a flat roof on the street side, flat roofs on the side yard visible from the street - **all flat roofs with no pitch.**
B-5 Facade Articulation:
Existing: the existing structure at 24 St. Lawrence and the surrounding homes have gables and dormers, recessed entries, covered porches, covered entries, covered stoops, bay windows.
Proposed: The Redevelopment has a recessed entry, two projecting stairwells, and protected garage entry **-no dormers, no gables, no bay windows.**
B-6 Garages:
Existing: the existing structure at 24 St. Lawrence and three of the surrounding homes have garages.
Proposed: The Redevelopment does have a recessed garage entry, living space above the garage, the garage door is less than 40% of the width of the building.

Principal C; Orientation to the Street: “The building’s facade shall reinforces a sense of the public realm of the sidewalk while providing a sense of transition into the private realm of the home.” "Design of dwellings can enhance the pedestrian friendliness and sociability of the street while protecting the privacy of the residents’ internal home life."

Existing: the existing structure at 24 St. Lawrence Street and the surrounding homes have entrances from central halls that lead to living spaces on the street level. The existing facades, windows and and first floor living levels include the occupants and neighbors in an active pedestrian and sidewalk experience.
Proposed: the Redevelopment no living spaces in all four levels that face the street. The facade is composed of a central parking entry, a street level garage, an elevator core, and two stair wells **-no living space on the facade, no orientation to the street, no neighborhood participation.**

The 24 St. Lawrence Street Redevelopment project that does not comply with Appendix 7 and the size, scale, and predominant character defining architectural features of the neighborhood.

Please let us know the date of the upcoming Planning Department workshop for the Redevelopment of 24 St. Lawrence Street. I hope the linked images and files help with the Planning Department’s evaluation of the 24 St. Lawrence Street Redevelopment.

Sincerely, Rob.

Rob Whitten / AIA

Whitten Architects
207.774.0111 x101
37 Silver Street
Portland, Maine 04101
www.whittenarchitects.com

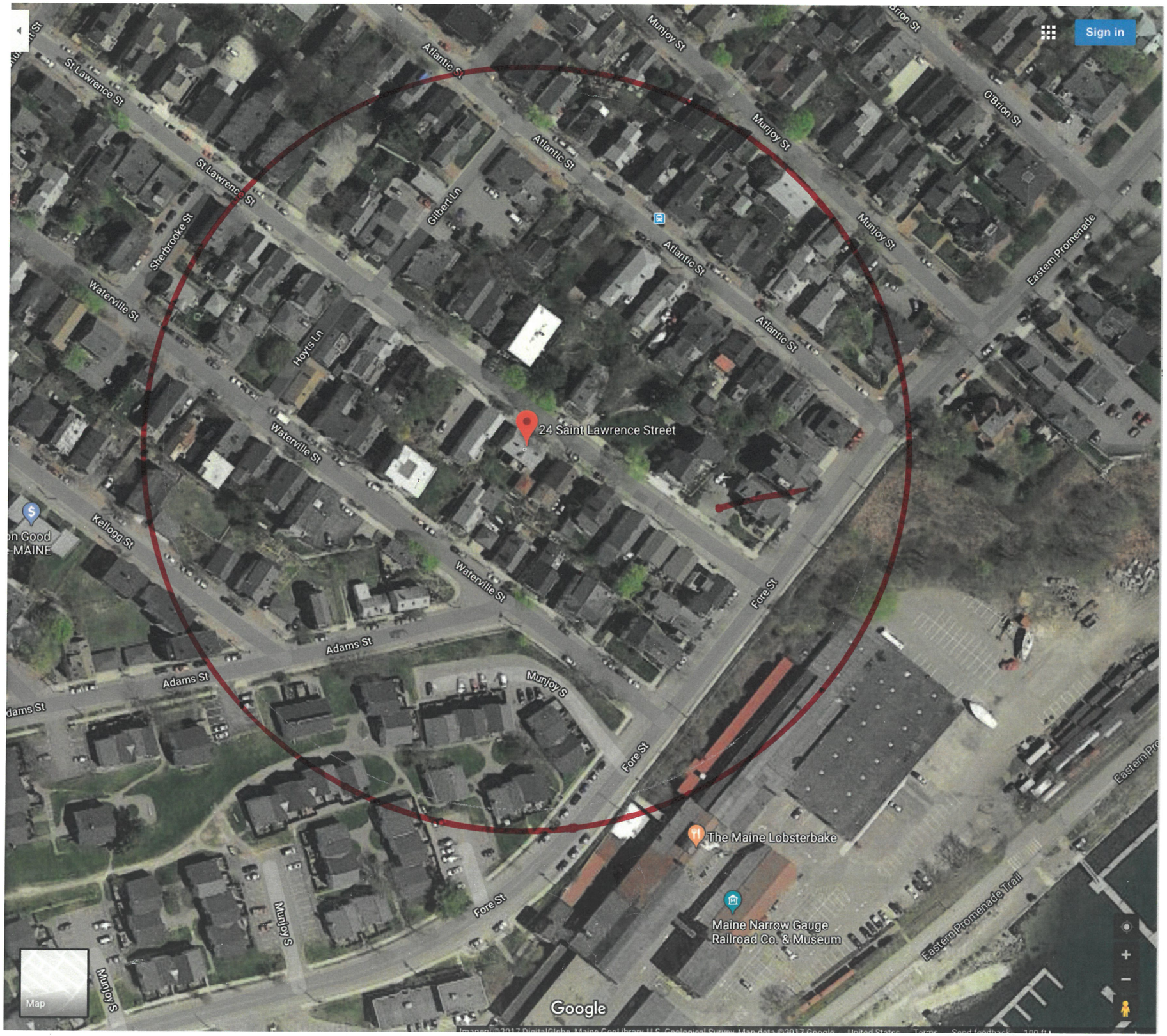
https://drive.google.com/open?id=1xuhri-gBRrtVRH7XTLWVMM9A0VxsyWfX

Rob Whitten / AIA

Whitten Architects
207.774.0111 x101
37 Silver Street
Portland, Maine 04101
www.whittenarchitects.com

--

Shukria Wiar, Planner
Planning Division
City of Portland 389 Congress Street
Portland, ME 04101
Ph: 207.756.8083
Fax: 207.756.8258



24 St. LAWRENCE

2 BLOCK

RADIUS



24 St. LAWRENCE

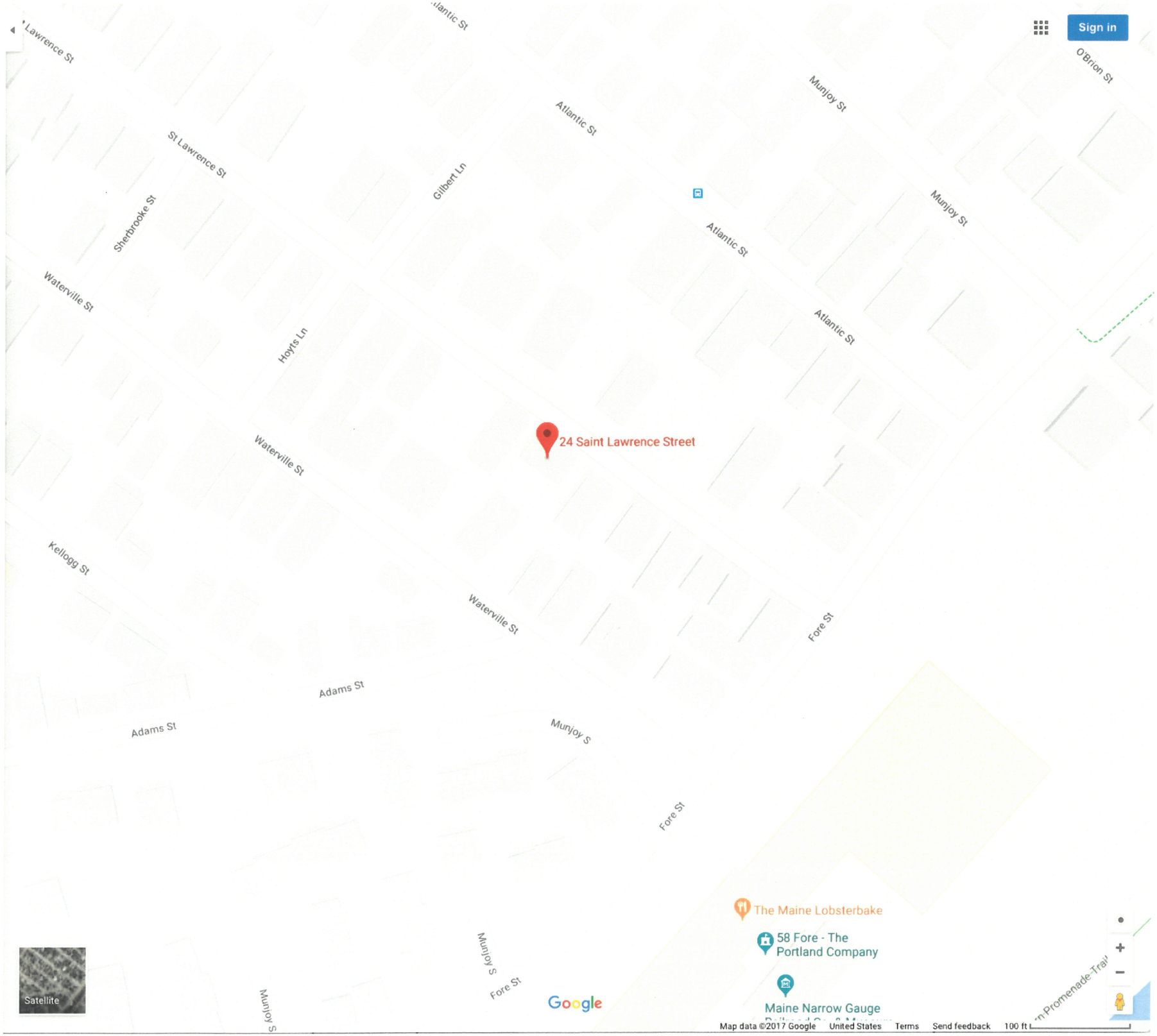
300' RADIUS



24 St. LAWRENCE

APPROXIMATE LOT

W/ EXT'G STRUCTURES



PATTERN OF STRUCTURE TO OPEN SPACE


47 St Lawrence St
Portland, Maine
Google, Inc.
Street View - Oct 2015
St Lawrence St
GILBERT
Hoyts
NO on 2
PROGRESSION
DOWN St. LAWRENCE St.
PAST 24
Google
Image capture: Oct 2015 © 2017 Google United States Terms Report a problem


47 St Lawrence St
Portland, Maine
Google, Inc.
Street View - Oct 2015
GILBERT Ln
Hoyts Ln
THIS SIDE OF STREET 2ND & 4TH TUESDAY OF THE MONTH
St Lawrence St
Google
Image capture: Oct 2015 © 2017 Google United States Terms Report a problem


44 St Lawrence St
Portland, Maine
Google, Inc.
Street View - Oct 2015
St Lawrence St
Google


40 St Lawrence St
Portland, Maine
Google, Inc.
Street View - Oct 2015
St Lawrence St
© 2015 Google
Google
Image capture: Oct 2015 © 2017 Google United States Terms Report a problem


32 St Lawrence St
Portland, Maine
Google, Inc.
Street View - Oct 2015
29
24
St Lawrence St
Google
Image capture: Oct 2015 © 2017 Google United States Terms Report a problem


32 St Lawrence St
Portland, Maine
Google, Inc.
Street View - Oct 2015
24
St Lawrence St
Google


28 St Lawrence St
Portland, Maine
Google, Inc.
Street View - Oct 2015
St Lawrence St
24
Google
Image capture: Oct 2015 © 2017 Google United States Terms Report a problem

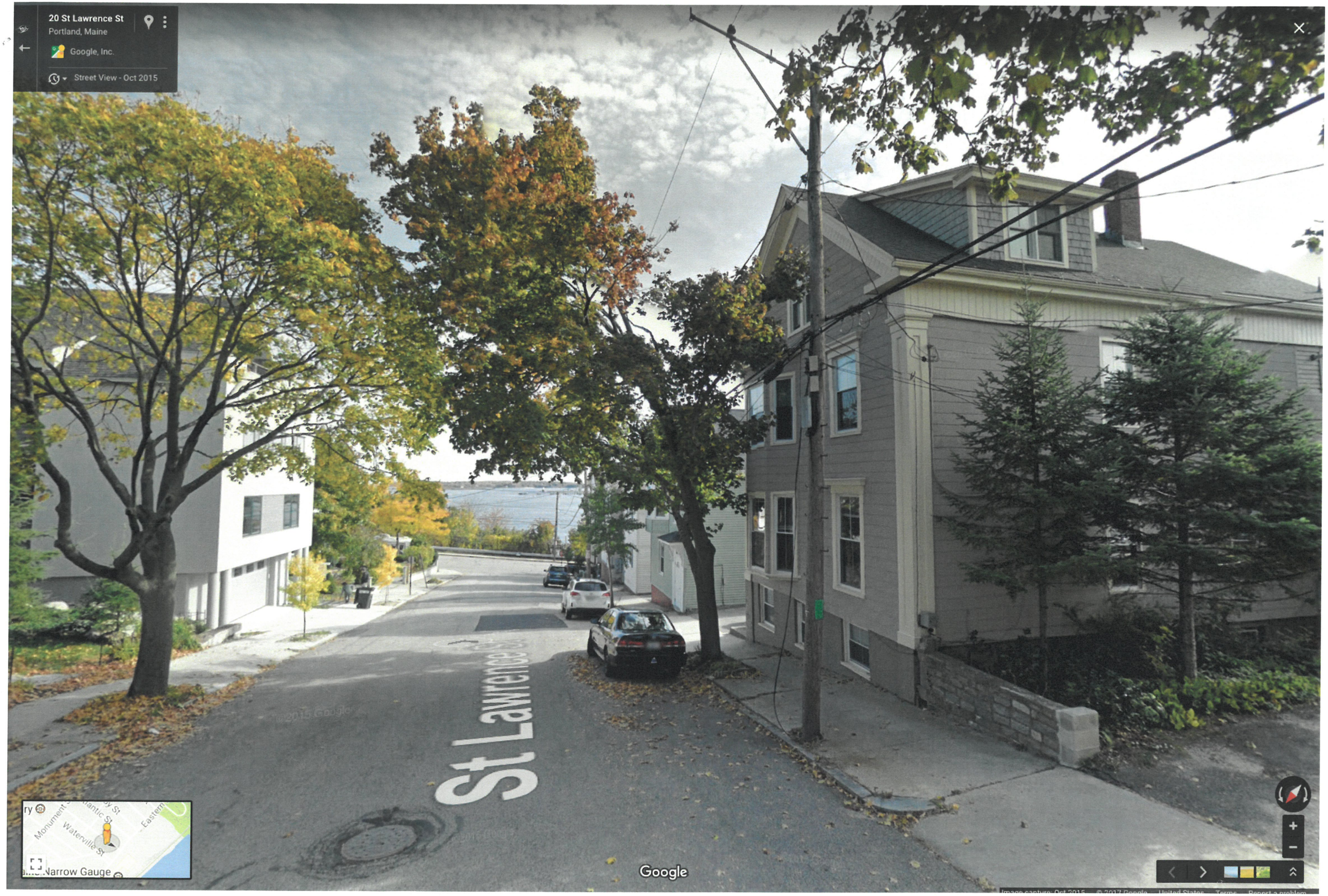


FASCIA & EAVE.
63 COURSES OF SIDING
15 COURSES OF BRICK
(40")

24

24 ST. LAWRENCE
ELEVATION


24 St Lawrence St
Portland, Maine
Google, Inc.
Street View - Oct 2015
St Lawrence
Google
Image capture: Oct 2015 © 2017 Google United States Terms Report a problem
24


20 St Lawrence St
Portland, Maine
Google, Inc.
Street View - Oct 2015
St Lawrence St
Google


9 St Lawrence St
Portland, Maine
Google, Inc.
Street View - Oct 2015
St Lawrence St
Google
Image capture: Oct 2015 © 2017 Google United States Terms Report a problem



PROGRESSION
UP ST. LAWRENCE ST.
PAST 24


9 Fore St
Portland, Maine
Google, Inc.
Street View - Aug 2017
Monument St
Munjoy St
Google
Image capture: Aug 2017 © 2017 Google United States Terms Report a problem


9 St Lawrence St
Portland, Maine
Google, Inc.
Street View - Oct 2015
24
St Lawrence St
Google


13 St Lawrence St
Portland, Maine
Google, Inc.
Street View - Oct 2015
24
St Lawrence St
©2017 Google
Google


17 St Lawrence St
Portland, Maine
Google, Inc.
Street View - Oct 2015
24
St Lawrence
PROTECT PORTLAND'S SCENIC BEAUTY
YES ON 2
Munjoy St
Atlant
24 Saint La
Narrow Gauge
o. & Museum
Google
Image capture: Oct 2015
© 2017 Google
United States
Terms
Report a problem


20 St Lawrence St
Portland, Maine
Google, Inc.
Street View - Oct 2015
24
St Lawrence St
Google
Image capture: Oct 2015 © 2017 Google United States Terms Report a problem



FASCIA & EAVE.
63 COURSES OF SIDING
15 COURSES OF BRICK
(40") = 3'-4"

63
× 4"
252/12 = 21'

SO EAVE @ 25'
24 FROM ℄ FRONT

24 ST. LAWRENCE
ELEVATION


24 St Lawrence St
Portland, Maine
Google, Inc.
Street View - Oct 2015
24
St Lawrence St
Google
Image capture: Oct 2015 © 2017 Google United States Terms Report a problem


28 St Lawrence St
Portland, Maine
Google, Inc.
Street View - Oct 2015
St Lawrence St
Google
Image capture: Oct 2015 © 2017 Google United States Terms Report a problem


32 St Lawrence St
Portland, Maine
Google, Inc.
Street View - Oct 2015
St Lawrence St
Google


36 St Lawrence St
Portland, Maine
Google, Inc.
Street View - Oct 2015
St Lawrence St
Monument St
Munjoy St
Google
Image capture: Oct 2015 © 2017 Google United States Terms Report a problem


40 St Lawrence St
Portland, Maine
Google, Inc.
Street View - Oct 2015
St Lawrence St
Google
Image capture: Oct 2015 © 2017 Google United States Terms Report a problem

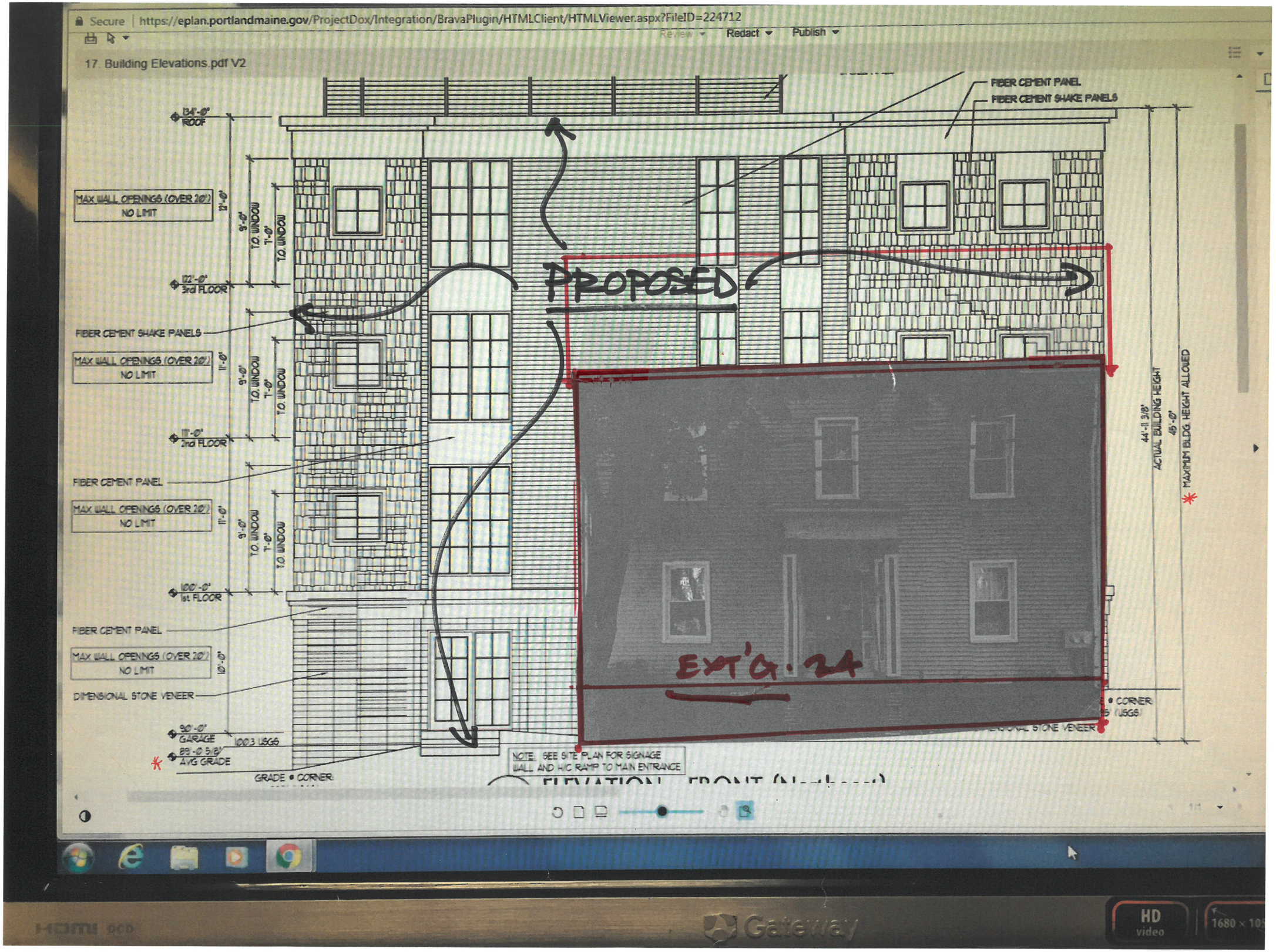
PROPOSED

24
EXT'G.

APPROX
EXT'G

EXCAVATE (ALONG)
EXT'G & PROPOS.

ST. LAWRENCE STREET



Secure | https://eplan.portlandmaine.gov/ProjectDox/Integration/BravaPlugin/HTMLClient/HTMLViewer.aspx?FileID=224712
Review
Redact
Publish
17. Building Elevations.pdf V2
FIBER CEMENT PANEL
FIBER CEMENT SHAKE PANELS
134'-0" ROOF
MAX WALL OPENINGS (OVER 20') NO LIMIT
12'-0"
9'-0" T.O. WINDOW
7'-0" T.O. WINDOW
122'-0" 3rd FLOOR
PROPOSED
FIBER CEMENT SHAKE PANELS
MAX WALL OPENINGS (OVER 20') NO LIMIT
11'-0"
9'-0" T.O. WINDOW
7'-0" T.O. WINDOW
111'-0" 2nd FLOOR
FIBER CEMENT PANEL
MAX WALL OPENINGS (OVER 20') NO LIMIT
11'-0"
9'-0" T.O. WINDOW
7'-0" T.O. WINDOW
100'-0" 1st FLOOR
FIBER CEMENT PANEL
MAX WALL OPENINGS (OVER 20') NO LIMIT
10'-0"
DIMENSIONAL STONE VENEER
90'-0" GARAGE
100.3 USGS
89'-0 5/8" AVG GRADE
GRADE @ CORNER
NOTE: SEE SITE PLAN FOR SIGNAGE WALL AND H/C RAMP TO MAIN ENTRANCE
EXT'G. 24
44'-11 3/8" ACTUAL BUILDING HEIGHT
45'-0" MAXIMUM BLDG. HEIGHT ALLOWED
@ CORNER
(USGS)
STONE VENEER
Gateway
HD video


Secure
https://eplan.portlandmaine.gov/ProjectDox/Integration/BravaPlugin/HTMLClient/HTMLViewer.aspx?FileID=224158
Review
Redact
Publish
19. Front Rendering B.pdf V1
24
PORT CITY
ARCHITECTURE
HD
video
1680 × 1050
Gateway

18. Front Rendering A.jpg - Google Chrome

Secure | https://eplan.portlandmaine.gov/ProjectDox/Integration/BravaPlugin/HTMLClient/HTMLViewer.aspx?FileID=224134

Review Redact Publish

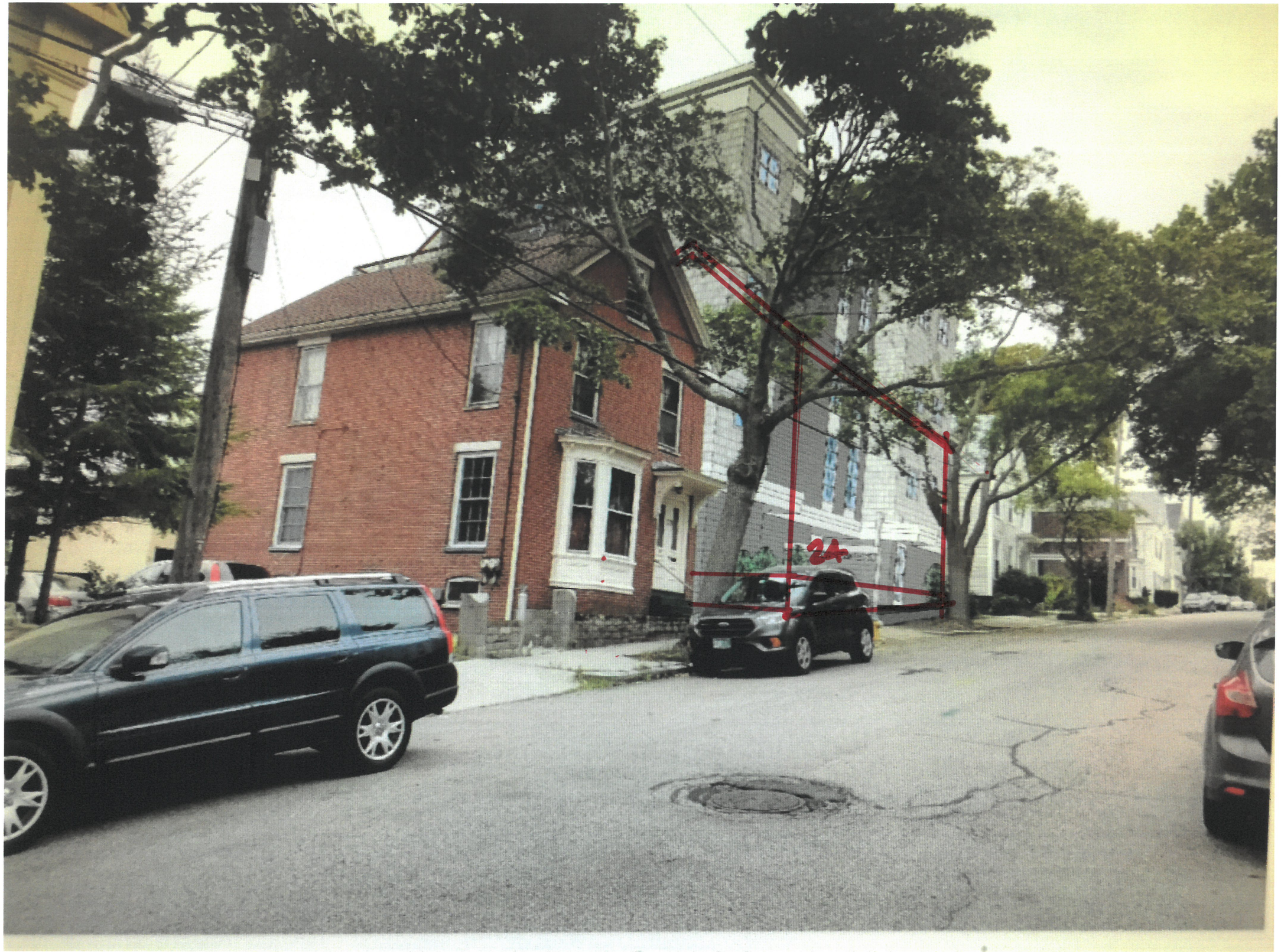
18. Front Rendering A.jpg V1



PORT CITY
ARCHITECTURE

Gateway

HD video | 1680 × 1050 | Universal Inputs


24


24

SUMMIT
GEOENGINEERING SERVICES

November 6, 2017
SGS #17329

Rob Whitten
23 St Lawrence Street
Portland, Maine 04101

Reference: Retaining Wall Evaluation, 23 to 25 Waterville Street, Portland, Maine

Dear Mr. Whitten;

Summit Geoengineering Services (SGS) has completed our evaluation of the existing retaining wall located at the back or north side of the 25 Waterville Street property. The following letter is a summary of our observations and evaluations.

Existing Conditions

The portion of the wall evaluated extends from the northwest corner of the 25 Waterville Street (Tax Map G10SE Lots 016 J020 and 016 J021) to the southeast corner. For the purposes of this report the wall in the northwest corner of the site will be referred to as the western section and the wall section in the southeast corner of the property will be referred to as the eastern section.

The existing wall is separated into three construction types. The eastern portion (first portion) of the wall consists of cast in place concrete. The exposed portion of this wall was about 4.5 feet high. The exposed concrete was in good condition and no cracks or tilting was observed. It is not clear how far this portion of the wall extends below grade. Stacked rock and soil fill was present to a height of 7 feet below the exposed face of this wall section.

The second wall portion (middle section) located directly behind the house is a segment about 21 feet long and consists of a 4.5 feet tall wall over what appears to be a cast in place concrete wall approximately 2 feet thick. The 2 foot thick concrete wall abuts the back of the existing house and appears to extend to the ground surface on the southeast side of the house. This section of wall was not fully accessible. The eastern 15 feet of the upper 4.5 foot wall appears to be cast in place concrete, similar to the eastern portion of the wall. The last 7 feet of this segment consists of a rock wall. The rocks appear to be dry laid with no mortar. A concrete cap has been placed on the dry laid rock section.

The third segment (eastern portion) of the wall consists of a rock and mortar wall with a cast in place concrete cap. The wall extends up 11.5 feet from the surface of a raised bed. The

bed height is about 3 feet. The base of the wall is unknown, but we expect that the wall extends below the bottom of the raised bed. There are a significant number of various size pipes penetrating this wall. The sources of water flowing through these pipes is unknown. The wall appears to have been repointed recently. There is a small crack located in the concrete cap at about the halfway point on this wall. The crack in the cap appears to extend a short distance into the rock and mortar wall. This wall is in good condition overall.

Evaluation

The eastern or first portion of the cast in place concrete wall section is in good condition. This wall is nearly plumb and no cracks or significant deterioration were observed. The thickness, total height, and embedment depth of this wall is not known. This wall appears to be stable in its current condition.

The wall section behind the house (second portion) was not fully accessible and could not be fully evaluated. The eastern 15 or so feet of this wall appears to be cast in place concrete extending from the first wall portion. The concrete appears to be in good condition and overall this section of wall appears to be stable. The last 7 feet of this segment consists of dry laid rocks (no mortar). This wall segment also appears to be stable in its current condition. The underlying 2 foot thick concrete wall was inaccessible.

The eastern wall section is in good condition. There does not appear to be any unstable or structurally unsound portions. In general it is stable in its current condition.

In summary, the existing retaining wall is composed of varying materials and is of varying geometry's and heights. All three wall segments appear to be in good condition for their age and we have no concerns about their overall stability under the current conditions.

Recommendations

We understand that a new multi-story residential building will be constructed on the lot at 24 St Lawrence. The subject retaining wall forms or is close to the back property line of this lot. The two items that could affect the stability of the existing wall are loadings from new wall footings and loads and disturbance from activities during construction of the new building. Of particular concern is the section of dry laid rocks behind the existing house. Construction loadings, vibrations, impacts, and other construction activities may have a significant effect on the condition and stability of the existing wall. Failure of this section of wall will cause significant damage to the adjacent property, especially the existing back wall of the house.

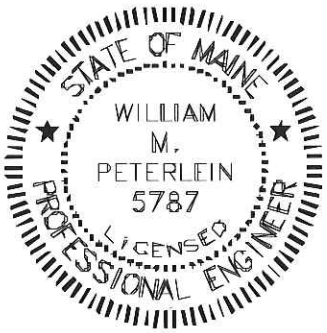
We strongly recommend that the developer of the 24 St. Lawrence Street lot retain the services of a geotechnical consultant to do a more thorough evaluation of the existing retaining wall and evaluate the effects of new building loads and construction activities on

its condition and stability. Information on the composition of the soil behind the existing wall should be obtained as part of this investigation. This investigation should be completed prior to the beginning of construction of the new development.

If there are any questions, please contact me.

Respectfully Submitted,
Summit Geoengineering Services, Inc.

William M. Peterlein, P.E.
President & Principal Engineer



SUMMIT
GEOENGINEERING SERVICES

PHOTOGRAPHIC LOG

Project Name:	**Project No.**
Retaining Wall Evaluation, 25 Waterville Street, Portland	17239

Photo No. 1

Date: 11-1-2017

Description:

Existing wall on the western side of the house at 25 Waterville Street.

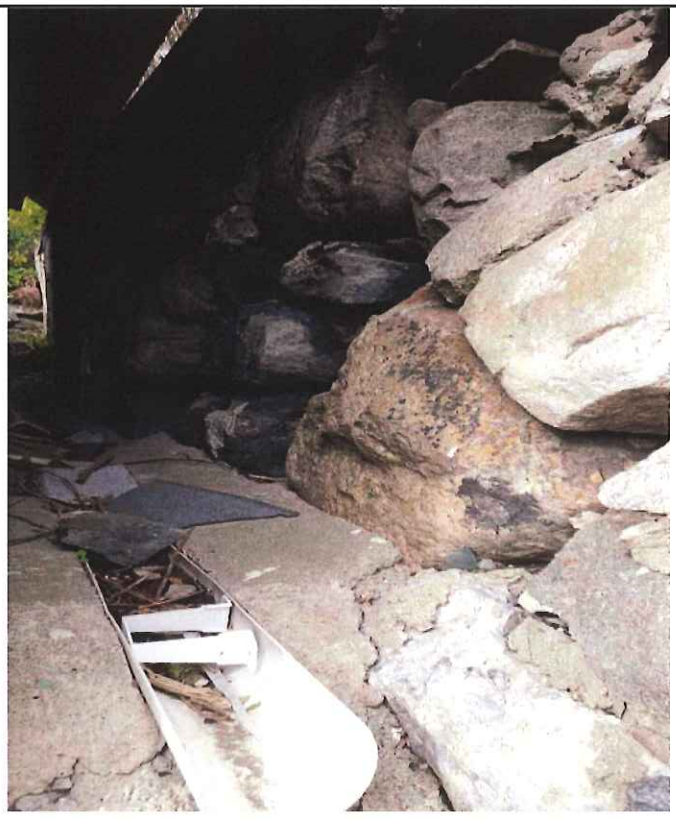


Photo No. 2

Date: 11-1-2017

Description:

Wall section directly behind house. Note the rocks of the wall in the foreground appear to be loosely placed (no mortar).



SUMMIT
GEOENGINEERING SERVICES

PHOTOGRAPHIC LOG

Project Name:	Project No.
Retaining Wall Evaluation, 25 Waterville Street, Portland	17239

Photo No. 3

Date: 11-1-2017

Description:

Eastern section of wall on the 25 Waterveille Street property.



Photo No. 4

Date: 11-1-2017

Description:

Eastern section of wall partially on 25 Waterville property and partially on the adjacent property.



CASCO BAY ENGINEERING

CIVIL & STRUCTURAL ENGINEERING
www.cascobayengineering.com

424 Fore St., Portland, ME 04101 Phone 207.842.2800 Fax 207.842.2828

January 18, 2018

Ms. Pamela Day
25 Waterville Street
Portland, ME 04101

Martica Sawin
28 St. Lawrence Street
Portland, ME 04101

Re: Existing Stone/Concrete Retaining Wall Observation
25 Waterville Street and 28 St. Lawrence Street, Portland, Maine

Project Number: 18-003

Dear Pamela and Martica:

Eric Dube, P.E. of Casco Bay Engineering made a site visit to observe the existing retaining wall at the above referenced property on January 3, 2017. The purpose of the field visit was to observe the condition of the existing retaining wall and to render an opinion.

The existing retaining wall is comprised of variable types and sized stone with some concrete mixed in and also has some areas that are comprised of concrete. The depth of the wall into the existing earth is unknown at this time. The wall is approximately 80 feet long along the 25 Waterville Street property line, directly behind the existing building(s), the wall has a 90 degree jog for approximately 5 feet and then extends another 40 feet behind the 28 St. Lawrence Street property. The wall travels in the Southeast to Northwest direction and varies in height from approximately 8 feet high to 15 feet high directly behind the rear buildings. There are multiple 4 inch tile foundation drain stubs that extend through the wall. It is unknown if there is a drain line that exists behind the wall that potentially provides appropriate drainage relief. The wall is approximately 12 to 18 inches behind the rear building wall at 25 Waterville Street and the wall supports the rear building wall at 28 St. Lawrence Street. The retaining wall appears to be in adequate condition at this time.

I understand that a new 4 to 5 story building is planned to be constructed directly adjacent to the existing rear retaining wall within the next year and you both have specific concerns with regards to the performance of the wall during and after construction. The preliminary site application shows a location of the proposed building but does not give specific foundation details for the proposed construction. The proposed foundation design for the new building is a crucial design factor and will most likely impact the existing stone retaining wall. The following comments discuss possible impacts and other factors that need to be addressed before and/or during the adjacent construction:

1. The depth and proximity of the excavation will most likely impact the wall and needs to be thoroughly planned before the start of construction.
2. The depth of the proposed concrete foundation could impact the existing wall in a negative way if the influence line of the proposed footing is not located below the existing stone wall.

3. If vibratory equipment, pile driving or other similar type equipment is used during the proposed adjacent construction this could negatively impact the structural integrity of the existing retaining wall.
4. If existing tile drains behind the wall are impacted during construction this could negatively impact the future performance of the existing stone retaining wall.
5. Other miscellaneous impacts during construction may be unforeseen and may lead to ongoing future impacts to the existing retaining wall.

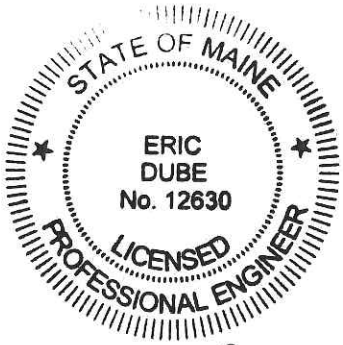
In my professional opinion, prior to any groundbreaking on this project, the developer of the 24 St. Lawrence property should prepare and submit a plan to address the above noted concerns. In addition I recommend that you should have a written agreement in place that clearly states what will happen if any damage occurs either during or after construction. Possible damages to property such as, but not limited to, could be a partial or total collapse of the wall or damage to the adjacent existing structure(s). Please also note that photo documentation and a survey of the existing wall before adjacent construction starts is highly recommended.

Please note that our observations and recommendations should be understood in the context that they are preliminary in nature. The retaining wall structure was not analyzed. Our report is based on visual observations only and should any unforeseen conditions present themselves, our conclusions may change accordingly.

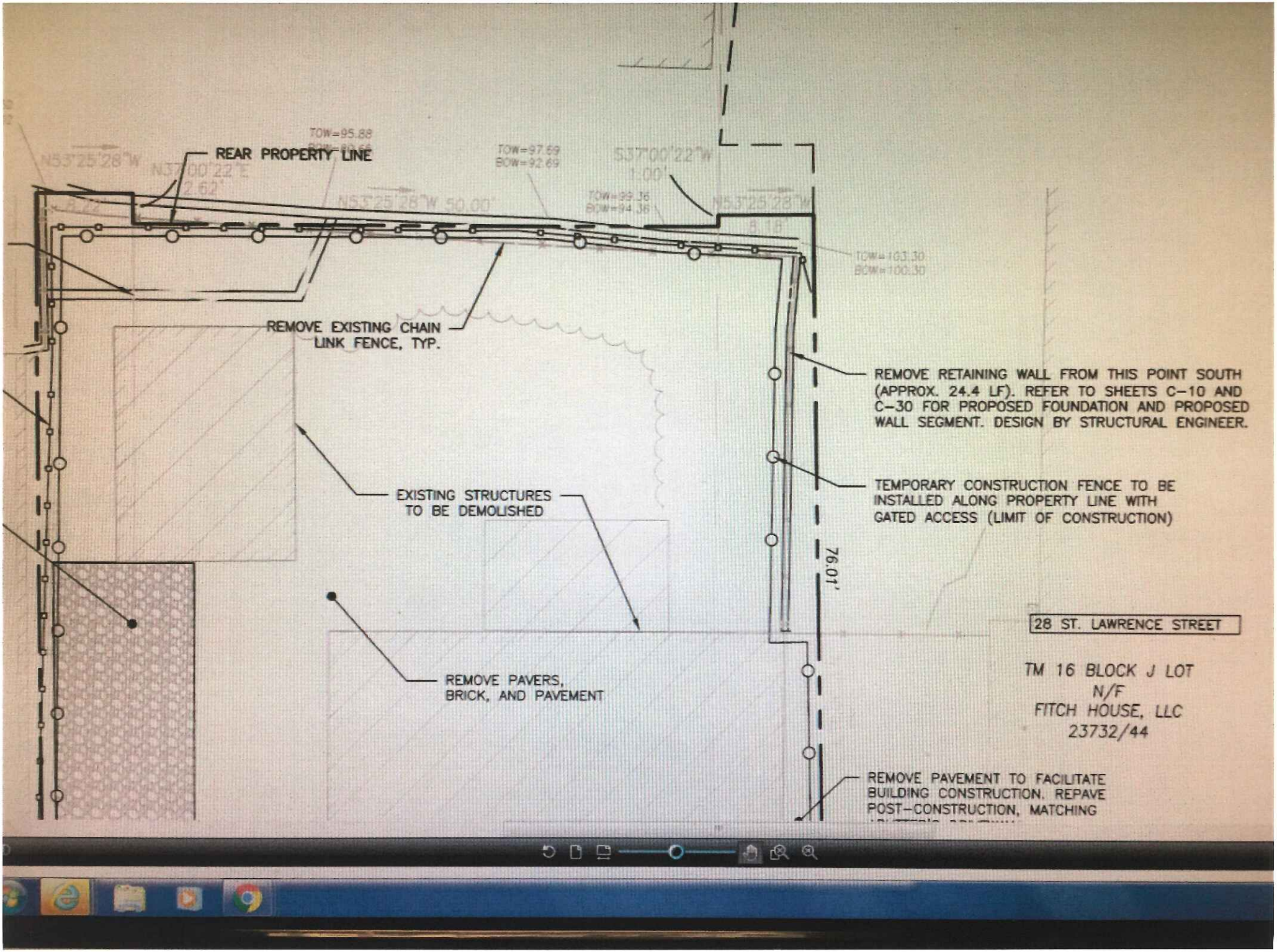
Please let us know if you have any questions.

Sincerely,

Eric Dube, P.E.
Casco Bay Engineering



1-18-18


REAR PROPERTY LINE
REMOVE EXISTING CHAIN LINK FENCE, TYP.
EXISTING STRUCTURES TO BE DEMOLISHED
REMOVE PAVERS, BRICK, AND PAVEMENT
REMOVE RETAINING WALL FROM THIS POINT SOUTH (APPROX. 24.4 LF). REFER TO SHEETS C-10 AND C-30 FOR PROPOSED FOUNDATION AND PROPOSED WALL SEGMENT. DESIGN BY STRUCTURAL ENGINEER.
TEMPORARY CONSTRUCTION FENCE TO BE INSTALLED ALONG PROPERTY LINE WITH GATED ACCESS (LIMIT OF CONSTRUCTION)
REMOVE PAVEMENT TO FACILITATE BUILDING CONSTRUCTION. REPAVE POST-CONSTRUCTION, MATCHING
76.01'
28 ST. LAWRENCE STREET
TM 16 BLOCK J LOT
N/F
FITCH HOUSE, LLC
23732/44

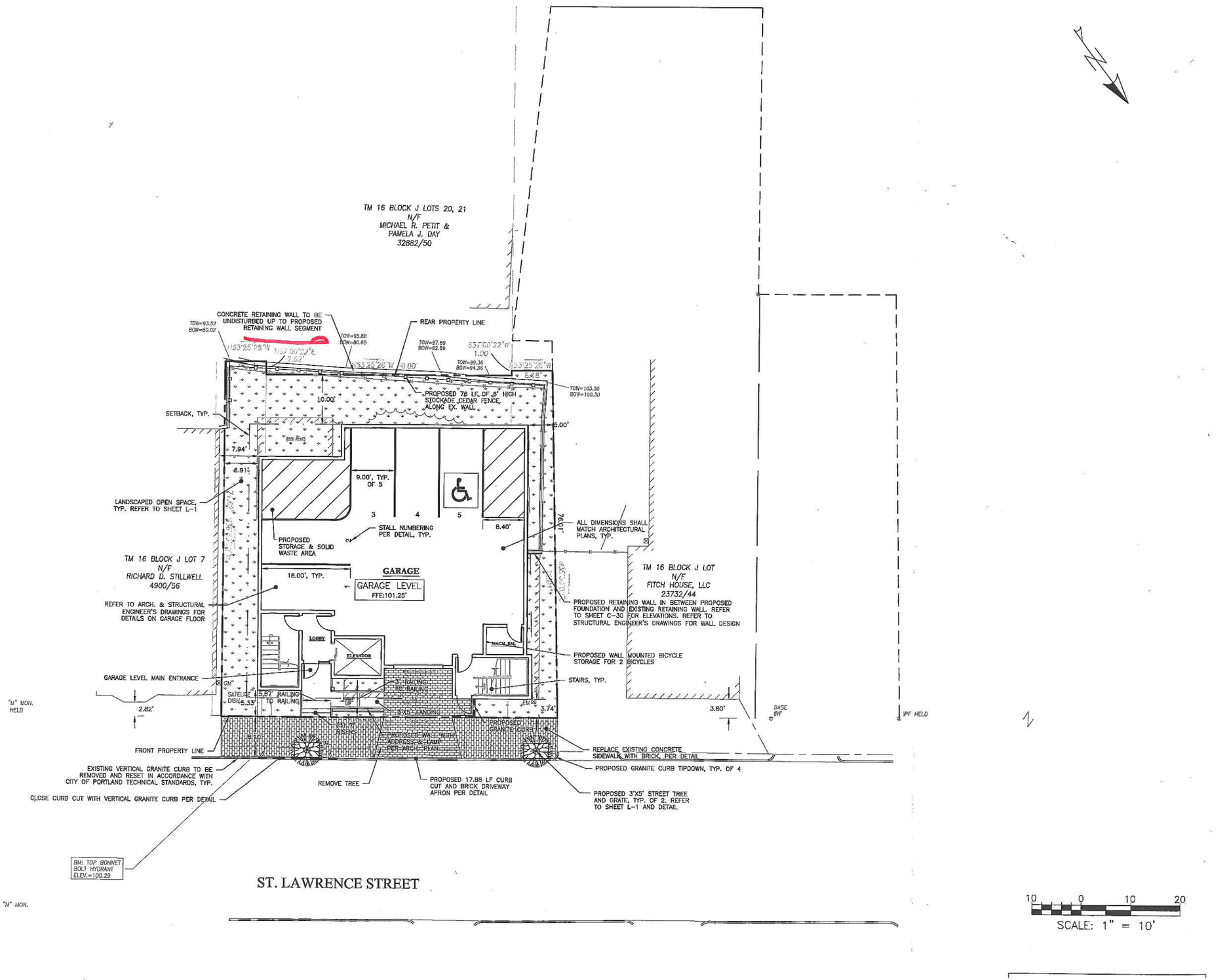
GENERAL NOTES:

1. ALL CONCRETE SIDEWALK ALONG PROPERTY FRONTAGE TO BE REPLACED WITH BRICK PER CITY STANDARD.
2. STRIPING AS INDICATED ON SITE PLAN SHALL BE 4" WIDE. STRIPING SHALL BE YELLOW UNLESS OTHERWISE NOTED.
3. CURB TO BE REMOVED, STOCKPILED AND RESET IN ACCORDANCE WITH DETAIL. BROKEN CURB SHALL BE PROPERLY DISPOSED OF AND SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

SPACE AND BULK STANDARDS			
ZONE: R6	REQUIRED	EXISTING	PROPOSED
MINIMUM LOT SIZE	2,000 SF	4,671 SF	4,671 SF
MINIMUM STREET FRONTAGE	20'	68'	68'
MINIMUM FRONT YARD SETBACK	5' – ORDINANCE 3.3' – ABUTTER AVG.	3.8'	3.7'
MINIMUM SIDE YARD SETBACK	5'	3'	5'
MINIMUM REAR YARD SETBACK	10'	8.7'	10'
STRUCTURE STEPBACKS (SIDE YARD ABOVE 35')	10'	N/A	10'
STRUCTURE STEPBACKS (REAR YARD ABOVE 35')	15'	N/A	15'
MAXIMUM LOT COVERAGE	60%	35%	60%
MINIMUM LOT WIDTH	20'	67'	67'
MAXIMUM BUILDING HEIGHT	45'	24'	44.96'
MINIMUM LANDSCAPED OPEN AREA	20%	45%	32%
MAXIMUM NUMBER OF DWELLING UNITS	725 SF/UNIT = 6	2	5
RESIDENTIAL PARKING	1 SPACE PER UNIT AFTER 3 UNITS = 2 SPACES	2	5
MINIMUM INTERNAL RESIDENT BICYCLE STORAGE SPACES	2 SPACES/5 D.U. = 2	0	2
MAXIMUM GARAGE OPENING	20'	N/A	10'

LEGEND	
HATCH STYLE	ASSOCIATED AREAS
	BRICK SIDEWALK
	GREEN SPACE

GARAGE LEVEL PARKING SUMMARY	
PARKING DIMENSION	# PARKING SPACES
STANDARD (9'X18')	5



NEIGHBOR: WHITTIER
23 St. Law

March 13, 2018
EVALUATION OF REVISED R-6 INFILL DEVELOPMENT
DESIGN PRINCIPALS & STANDARDS

REVISED SUBMITTAL OF 24 ST. LAWRENCE STREET

Monday we were notified that a revised Level III Final Site Plan head been submitted for the Redevelopment of 24 St. Lawrence Street. Please find the 01/11/2018 R-6 Small Infill Design Review of the previous application in separate attachment.

We've taken the 01/11/2018 Planning Department Review of the proposed design for 24 St. Lawrence Street in-fill, redevelopment (-see seperate attached document) and compared it to the **03/13/2018 revised design** -see the red text .

01/11/2018 **Planning Department Design Review Comments** *(red text denotes principles or standards that are not met)*:

Appendix 7: R-6 Infill Development
Principle A Overall Context –Not Met – see below.

01/11/2018- *A-1 Scale and Form:* The scale the project is larger than most buildings on this street which is exacerbated by the placement of the circulation on the front and by creating a broad front façade without a proportionate open space buffer.

03/13/2018: The front of the **revised design** is all circulation: emergency exits, a front entry, parking garage entry, two stair wells, one elevator shaft, corridors to living units, and no living space on the St. Lawrence Street side. NO CHANGE.

01/11/2018 **Design Review Comments:** In those rare instances where a larger scale, wider building has been built, the scale is mitigated by keeping wider setbacks as a buffer and through elements such as bay windows, balconies and porches, varied rooflines, and/or massing changes at the street. Staff suggests that massing and programmatic changes should be made to mitigate the bulk and scale of this project. It appears the proposed project exceeds the maximum Lot Coverage.

03/13/2018: The front of the **revised design** now has one of the five recommended strategies: varied roof line at street.

01/11/2018 **Design Review Comments:** It appears the proposed project exceeds the maximum Lot Coverage.

03/13/2018: The **revised design** Lot Coverage should be verified; it is similar to the 01/11/2018 Lot Coverage.

March 13, 2018
EVALUATION OF REVISED R-6 INFILL DEVELOPMENT
DESIGN PRINCIPALS 7 STANDARDS

REVISED SUBMITTAL OF 24 ST. LAWRENCE STREET

01/11/2018- *A-2 Composition of Principal Facades:* The composition of the street-facing façade has very little reference or relationship to the rhythms and patterns found on the streetscape and surrounding buildings.

03/13/2018: very little reference to the surrounding buildings, more vertical elements, the facade is broken into three pieces that step in and out.

01/11/2018 **Design Review Comments:** The project places all the circulation at the front façade with no living space facing the street.

03/13/2018: The front of the **revised design** is all circulation: emergency exits, front entry, parking garage entry, two stair wells, one elevator shaft, corridors to living units, and no living space on the St. Lawrence Street side. NO CHANGE

01/11/2018 **Design Review Comments:** The front façade should relate to the context through compatible rhythm, size, orientation, and proportion of window and door openings and other predominant, character-defining features found in the neighborhood, especially for multi-family building types.

03/13/2018: The **revised design** door and window proportions or character defining features on front do not relate to the neighborhood.

01/11/2018 **Design Review Comments:** Changing the orientation of the building program could mitigate some of these issues.

03/13/2018: NO CHANGE in orientation of the building program.

01/11/2018 - *A-3 Relationship to the Street:*

01/11/2018 **Design Review Comments:** The project deviates from the pattern of building placement on the lot and the spacing of the residential fabric in this neighborhood – this relationship to the street must be respected.

03/13/2018: Revised design NO CHANGE.

01/11/2018 **Design Review Comments:** The ground floor is raised a whole story which is higher than typical residential development patterns but common for contemporary projects – this elevated living space is created by the ground floor garage.

March 13, 2018
EVALUATION OF REVISED R-6 INFILL DEVELOPMENT
DESIGN PRINCIPALS 7 STANDARDS

REVISED SUBMITTAL OF 24 ST. LAWRENCE STREET

03/13/2018: Revised design NO CHANGE.

Principle B Massing – Not Met – There is concern about the bulk and mass of the building compared with the size of the lot and the established patterns on the surrounding streets.

01/11/2018 **Design Review Comments:** The building is larger in scale than what is found in the context in both height and width of the building.

03/13/2018: Revised design NO CHANGE.

01/11/2018 **Design Review Comments:** In addition, the massing is arranged to place all circulation facing the street and creates an overall massing and façade composition inconsistent with patterns found in the neighborhood.

03/13/2018: Revised design revised composition, SAME MASS.

01/11/2018 **Design Review Comments:** - *B-1 Massing:* The proposed mass is wider on the street than the typical building context.

03/13/2018: Revised design SAME MASS. SAME WIDTH

01/11/2018 **Design Review Comments:** - *B-4 Roof Pitch:* The standard requires that mono pitched roofs shall not have a pitch of less than 7:12.

03/13/2018: Revised design flat roofs, NO CHANGE.

01/11/2018 Principle C Orientation to the Street – Partially Met – The project appropriately provides a sense of transition and privacy for the residential uses, however, the ground floor does not reinforce a sense of the public realm – no porch or ground floor living space fails to enhance the pedestrian friendliness and sociability of the streetscape as desired in this principle statement.

03/13/2018: The front of the **revised design** is all circulation: emergency exits, front entry, parking garage entry, two stair wells, one elevator shaft, corridors to living units, and no living space on the St. Lawrence Street side. NO CHANGE

March 13, 2018
EVALUATION OF REVISED R-6 INFILL DEVELOPMENT
DESIGN PRINCIPALS 7 STANDARDS

REVISED SUBMITTAL OF 24 ST. LAWRENCE STREET

Conclusion:

The revised design does not meet the Planning Department R-6 Small Infill Design Review standards for:
- Principle A Scale and Form.
- Principle B Massing.

The revised design partially meets the Planning Department R-6 Small Infill Design Review standards for:
- Principle C Orientation to the Street

The other Design Review issues which deal the composition of the building components on front of the building on St. Lawrence Street are addressed in the 01/11/2018 Design Review and the proposed 03/13/2018 Revisions. They are:

01/11/2018 *Principle D Proportion and Scale* – Partially Met –
01/11/2018 *Principle E Balance* – Met –
01/11/2018 *Principle F Articulation* – Met –
01/11/2018 *Principle G Materials* – Partially Met –

Sincerely,

Rob.

G. Robinson Whitten, Robin F. Whitten
23 St. Lawrence Street
Portland, Maine 04101

G. Robinson Whitten AIA
Whitten Architects
37 Silver Street
Portland, Maine 04101

Memorandum
Planning and Urban Development Department
Planning Division

To: Sean Dundon, Chair and Members of the Portland Planning Board
From: Matthew Grooms, Planner
Date: March 23, 2018
Re: Five-Unit Condominium, 25 Monument Street, Monument Partners, LLC
Project #: 2017-242 CBL: 016-D-009
Meeting Date: March 27, 2018

I. INTRODUCTION

Monument Partners, LLC has submitted a Level III Site Plan and Subdivision application for a new five-unit residential condominium on a 9,989 square foot parcel located at 25 Monument Street within the Munjoy Hill Neighborhood. This property is surrounded by single and multi-family housing and is located within the R-6 Residential zone and B-1 Neighborhood Business zone. The proposed development involves demolition of an existing three-unit multifamily structure and then construction of a new four-story building with ground-floor structured parking.

The Planning Board will review the application for compliance with the site plan, subdivision and Housing Replacement standards. This project was submitted on October 10, 2017, which is prior to the Council's action to enact the Interim Overlay Zoning and so this project is not subject to the interim provisions.

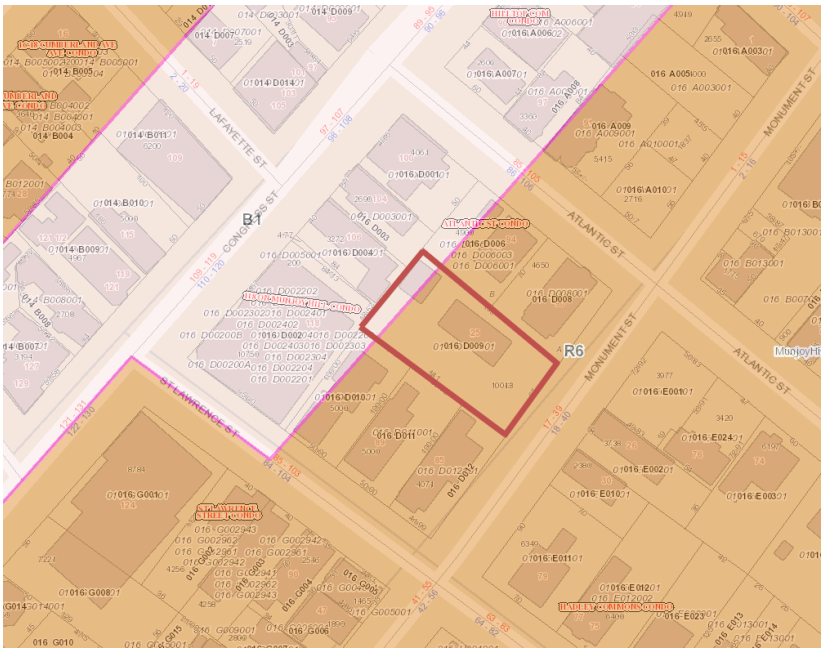


Figure 1: Subject parcel and zoning information

A total of 257 notices were sent to property owners within 500 feet of the site and a legal ad ran in the March 19th and 20th 2018 editions of the Portland Press Herald.

Applicant: Jeff Kane, Monument Partners, LLC
Consultants: Anne Callendar, Whipple Callendar Architects; Casco Bay Engineering; John Schwanda, Owen Haskell INC; Bill Welch, Bernstein Shur; Tom Hanson, Bernstein Shur.

II. REQUIRED REVIEWS

Waiver Requests	*Applicable Standards*
Drive Aisle width – Unspecified width, as narrow as 14' feet Staff Comments: The review staff is recommending that the applicant provide a waiver request justifying parking aisle width.	Technical Manual, *Section 1.14,* requiring that aisle width for right-angle parking be 24 feet per Figure I-27
Compact Spaces – To allow five (5) compact parking spaces in an off-street parking lot of fewer than ten (10) spaces Staff Comments: The review staff is recommending that the applicant provide a waiver request justifying the use of compact parking spaces	Technical Manual, *Section 1.14,* requiring that parking lots of 10 or fewer spaces contain only standard sized parking spaces

Review	*Applicable Standards*
Site Plan	*Section 14-526*
Subdivision	*Section 14-497*

III. PROJECT DATA

Existing Zoning	R-6 Residential, B-1 Neighborhood Business
Existing Use	Residential (3-units)
Proposed Use	5 Residential Units
- Bedroom Mix	5 three-bedroom units
Parcel Size	9,989 SF

	Existing	*Proposed*	*Net Change*
Building Footprint	1,700 SF	5,240 SF	3,540 SF
Building Floor Area	2,706 SF	20,122 SF	17,416 SF
Impervious Surface Area	4,786 SF	5,646 SF	860 SF
Parking Spaces	9	8	-1
Bicycle Parking Spaces	0	5	5
Estimated Cost of Project	$4,700,000		

IV. EXISTING CONDITIONS

The proposed project site is located on Monument Street between St. Lawrence Street and Atlantic Street and is at present occupied by a three-family building and accessory garage structure. This principle building is set back approximately 40' feet from the front property line and the garage is located to the rear of the priniciple building. As indicated by the applicant, both structures are in poor physical condition.

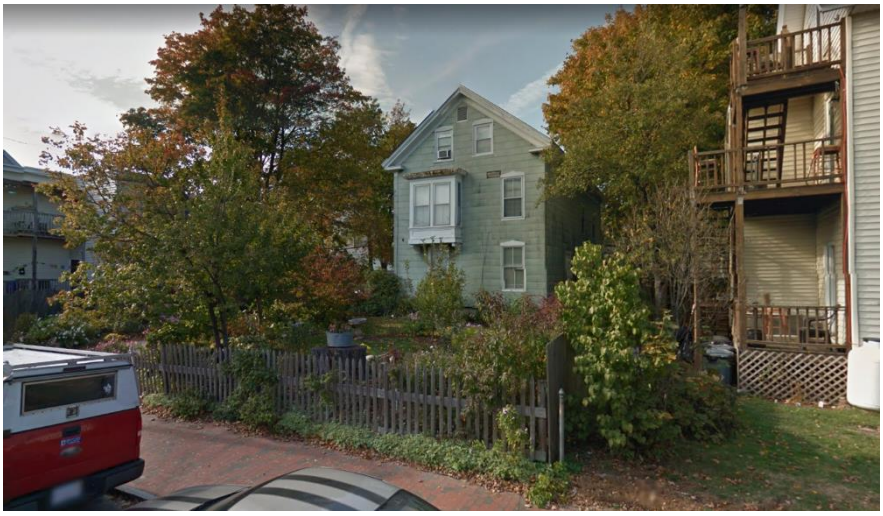


Figure 2: Existing building on-site. To be demolished under this proposal

The site iteself features extensive vegetation located along the property's frontage and around the site's perimeter. In regards to grading, the site gently slopes from the rear of the property towards Monument Street with a grade differential of approximately four (4) feet, between 146' and 142' feet above mean sea level. Stormwater sheet flows across the site towards Monument Street, where it discharges into the city's storm drain through a catch basin located in the center of Monument Street.

V. PROPOSED DEVELOPMENT

The development is proposed as a new, five-unit residential condominium, composed entirely of three-bedroom units housed within a four-story building, measuring approximately 45' feet in height. The ground-floor will provide structured parking for all residents, floors two and three will contain two residential units each and the fourth floor will contain one larger residential unit. All five units will possess one or more balconies and a portion of the building's roof is proposed as a common-area deck. To access these units and common-area, the proposed building features an elevator and stair-tower centrally located within the building that would be accessible through either the garage or via the pedestrian entrance. The pedestrian entrance itself is set back away from the street and features a raised and covered porch which runs along the westerly façade of the building between the street and door.

In regards to site circulation, the existing driveway and curb cut will be shifted slightly to the east and will provide access to the structured parking located at ground level. Once shifted, the curbing and sidewalk will be replaced to match existing conditions along Monument Street. Within the structured parking area, eight (8) parking spaces are proposed, at a rate of 1.6 spaces per unit, consisting of two (2) standard sized spaces, one (1) handicap parking space, and five (5) compact parking spaces. The R-6 does not require parking spaces for the first three (3) units and so the requirement for off-street parking is two (2) spaces.

Along the perimeter of the site, the applicant is proposing extensive vegetation, including a mixture of trees, perennials and shrubs. The property line itself is delineated by an existing 6' foot cedar stockade fence that runs along the westerly and northerly property lines. This fence was recently constructed and will be maintained as is. Along the easterly property line, a new black aluminum fence, measuring 4.5' feet in height is proposed. As required by the site plan ordinance, at least 30% of trees 10" DBH or greater are being preserved on-site, these being located at the rear of the property and incorporated into the overall landscaping plan. A total of three (3) Cockspur Thornless Hawthorn are being proposed as street trees. To the west of the building, a small landscape garden is being proposed that would be accessible to property residents.

With this development, it is proposed that existing utility connections will be upgraded to accommodate more intensive use. The existing 1.5" water line is being discontinued and replaced with a new 6" fire line and 2" domestic connection. Similarly, the existing overhead electric line will be removed and replaced by a new underground line in accordance with both the site plan and subdivision ordinance. The existing gas and sanitary sewer lines will remain unchanged and given that new impervious surface totals less than 1,000 square feet, no stormwater infrastructure is required.

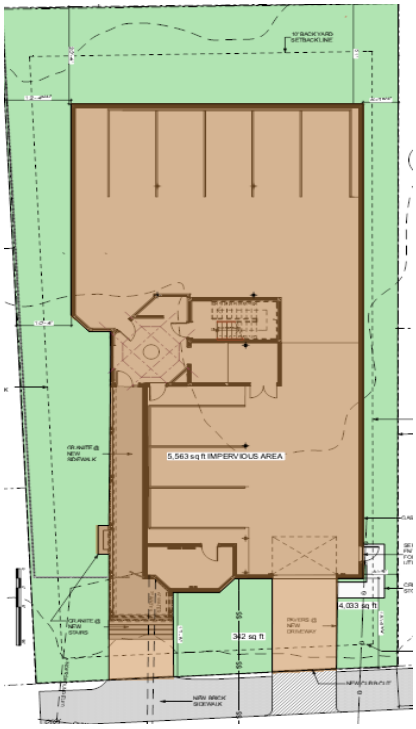


Figure 3: Proposed Site Plan showing covered parking



Figure 4: Rendering of front of proposed building (looking north)



Figure 5: Rendering of front of proposed building (looking northwest)

VI. Public Comment and Neighborhood Meeting

As of the writing of this report, three written comments have been received by the Planning Division. The concerns raised by abutters were primarily focused on building design, particularly the height and massing of the proposed building. A separate issue raised was the trend in demolition of existing buildings and replacement of more affordable residential units with luxury condominiums.

The applicant held a neighborhood meeting on November 1, 2017 and twenty-five (25) members of the public attended. At this meeting, members of the public asked questions regarding process, the possibility of including a workforce housing unit and preservation of on-site vegetation. In response, the applicant noted that the building would not be suitable to accommodate workforce housing and that three (3) trees located at the rear of the

property would be preserved. Concerns raised were predominantly in response to the demolition of a historic structure, and construction of a building incongruous with the surrounding neighborhood. The applicant responded by describing the very poor condition of the existing building and by stating that additional renderings and elevations would be providing showing the scale of the proposed building as it relates to the surrounding context (Attachment F).

VII. RIGHT, TITLE, & INTEREST AND FINANCIAL & TECHNICAL CAPACITY

a. The owner of the property is Monument Partners, LLC. The applicant has provided a copy of a quitclaim deed of sale, recorded at the Cumberland County Registry of Deeds (Book 33797, Page 33), which demonstrates their right, title and interest in the property. (Attachment D)

b. As evidence to demonstrate sufficient financial and technical capacity, the applicant has provided a letter from Key Private Bank indicating that the applicant has sufficient funds to cover the estimated cost of the proposed project, $4,700,000. Similarly, information has been provided on the development team demonstrating the capacity to design and construct the project. (Attachment D)

VIII. ZONING ANALYSIS

The proposed project is a four-story residential condominium with five (5) units and eight (8) off-street parking spaces. The property is located primarily within the R-6 Residential zone, though a narrow strip of the property located at the rear of the site is within the B-1 Neighborhood Business zone. The standards of the R-6 apply to this project given that the standards of the R-6 are more restrictive than those of the B-1.

The proposed use, a five-unit condominium, is a permitted use within the R-6 and the project as proposed is fully compliant with all dimensional requirements. For off street parking, Division 20 requires no parking for the first three units and one parking space per unit for residential uses after the first three in the R-6 zone. Even though two parking spaces required, the applicant is proposing eight (8) parking spaces as shown on the site plan. The staff is asking that the applicant provide a written justification for off-street parking 10% or more in excess of the Division 20 requirement.

IX. DEVELOPMENT REVIEW

A. SITE PLAN SUBMISSION REQUIREMENTS (Section 14-527) and SUBDIVISION PLAT AND RECORDING PLAT REQUIREMENTS (Section 14-496)

The applicant has submitted a recording plat. The final plat will need to be revised to reflect any waivers and conditions of approval that relate to the subdivision plan. Any waivers granted must be recorded at the Registry of Deeds within 90 days of a Planning Board decision. As of the writing of this report, no waiver requests have been made, though the staff is asking that the applicant provide a waiver request for the proposed number of compact parking spaces.

B. SUBDIVISION (Section 14-496)

The proposed development has been reviewed by staff for conformance with the relevant review standards of Portland's Subdivision Ordinance and applicable regulations. Staff comments are listed below.

1. *Will Not Result in Undue Water and Air Pollution (Section 14-497 (a) 1), and Will Not Result in Undue Soil Erosion (Section 14-497 (a) 4)*
   Lauren Swett, P.E. with Woodard and Curran Engineering, has reviewed the erosion and sediment control plans and details, and inspection and maintenance requirements and offers the following comment (Attachment 4):

   - The applicant has noted that a silt fence will be installed along the Monument Street frontage. Additional silt fencing may be needed along the sides of the property to prevent sediment from running onto the abutting properties during construction. Silt fence should be provided around the construction material storage area located in close proximity to the abutter.

2. *Sufficient Water Available (Section 14-497 (a) 2 and 3)*
   The project will be served by a new 2-inch domestic service and 6-inch fire service drawn from the existing water main in Stevens Avenue. An 'Ability to Serve' letter was provided by the Portland Water District.

3. *Will Not Cause Unreasonable Traffic Congestion (Section 14-497 (a) 5)*

The proposed project relocates the existing curb cut and driveway slightly to the east and will feature a 12' foot wide driveway and a garage entrance of 11.79' feet. The proposed relocation of the curb cut provides greater driveway separation of approximately 50' feet. Given the limited trip generation derived from a residential use, Tom Errico, P.E. with T.Y. Lin reviewed the proposal's details including access, parking, construction management plan and vehicle circulation, and has provided the following comments (Attachment 3):

- The parking layout plan notes aisle width dimensions that do not meet City standards. The applicant should provide documentation that supports a waiver request.
- The applicant has provided a vehicle turn analysis that indicates vehicle circulation is feasible. I continue to review this information, but my initial review supports the conclusion that reasonable circulation can be provided. I would note that the building columns will present vehicle turn challenges.
- I find the location and width of the driveway to be acceptable.
- The construction management plan is not acceptable and the applicant shall revise the plan to conform to the City's standard template. I would note a detailed sidewalk closure detour route that is ADA compliant shall be noted.

4. *Will Provide for Adequate Sanitary Sewer and Stormwater Disposal (Section 14-497 (a) 6), and Will Not Cause an Unreasonable Burden on Municipal Solid Waste and Sewage (Section 14-497 (a) 7)*
The applicant is proposing to reuse the existing sewer service. Lauren Swett has reviewed this proposal and has suggested that the applicant confirm with DPW whether the existing connection can adequately serve this project.

5. *Comprehensive Plan (Section 14-497 (a) 9)*
The development has been designed to be consistent with the City's Master Plan, adopted in June of 2017.

B. SITE PLAN STANDARDS (Section 14-526)
The proposed development has been reviewed by staff for conformance with the relevant review standards of Portland's site plan ordinance and applicable regulations. Staff comments are listed below.

1. *Transportation Standards*
   a. Impact on Surrounding Street Systems and Access and Circulation- see Subdivision discussion regarding traffic congestion and site circulation above.

   b. Sidewalks
   The applicant is proposing to replace curbing and sidewalk disturbed as a result of shifting the curb cut and driveway. Staff have indicated that the driveway apron will need to be constructed of the same material as the adjacent sidewalk. The project is located in a brick district.

   c. Public Transit Access
   The public transit requirements do not apply to this project.

   d. Parking
   Eight (8) parking spaces are being proposed, including two (2) standard parking spaces, one (1) handicap parking space and five (5) compact parking spaces. These spaces are located at ground level within the proposed building away from public view.

   The City's Technical Manual requires that parking lots of fewer than ten (10) spaces, include only standard sized parking spaces, and staff are asking that the applicant provide a waiver request of this standard.

   e. Bicycle Parking
   The proposal includes a bicycle storage room with space for more than five (5) bicycles which meets the site plan standard requiring a minimum of two bicycle parking spaces for every five dwelling units.

2. *Environmental Quality Standards*
   f. Preservation of Significant Natural Features

There are no known significant natural features on the site.

g. Landscaping and Landscape Preservation
A landscaping plan was submitted as part of the application. The plan shows three street trees, three site trees to be preserved at the rear of the site, and a mixture of new trees, shrubs and perennials grouped around the perimeter of the project site. The site also features an existing 6' foot cedar stockade fence along the westerly and northerly property lines, and a new 4.5' black aluminum fence along the easterly property line.

Jeff Tarling, the City Arborist, has reviewed the proposed landscaping plan finds it to be in compliance with the city's site landscaping requirements (Attachment 5). A total of five (5) street trees are required, three (3) of which are being provided on-site. The applicant has agreed to pay a fee in lieu for the remaining two (2) trees, calculated at a rate of $400 per tree, for a total contribution of $800.

h. Water Quality, Storm Water Management and Erosion Control
Once developed, this site will feature 860 additional square feet of impervious surface and a combined total of 5,646 square feet. Under Section 5(II)(c) of the City's Technical Manual, it states that a stormwater management plan addressing Maine DEP Chapter 500 General and Flooding standards is not required for new subdivisions which add less than 1,000 square feet of additional impervious surface. As a result, no stormwater management infrastructure is proposed to treat for stormwater quality or quantity. The applicant's plans show stormwater sheet flowing towards Monument Street, into the City's stormdrain.

Lauren Swett has reviewed the applicants plans and project details, and offers the following comments (Attachment 4):

- General Standard: The project will result in a de minimis increase in impervious area, less than 1,000 square feet. As such, the project is not required to include any specific stormwater management features for stormwater quality control.
    - Please clarify the new impervious on-site. The Level III site plan application indicates an increase in impervious area of 860 square feet while the table provided on sheet C.1 indicates an increase of 777 square feet.
    - We encourage the applicant to review the city's Stormwater Service Charge Credit Manual (available online) to evaluate whether they may want to incorporate stormwater quality treatment measures that qualify for a future Stormwater Service Charge credit.

3. *Public Infrastructure and Community Safety Standards*

i. Public Safety and Fire Prevention
Mike Thompson, Division Chief of the Fire Prevention and Community Outreach Division, has reviewed the submitted plans and found them to be acceptable, noting the following points (Attachment 1):

- The main entrance of the building must be the address for the property. This should be consistent with 911, tax assessor, Inspections Division and future mailing address. The address number must be on the street side of the building with numbers that are no less than six inches high.
- This building will be required to be sprinkled.
- Access is acceptable to the Fire Department.
- There are adequate fire hydrants in the area.

j. Availability and Adequate Capacity of Public Utilities
The project will be served by the Portland Water District, City Department of Public Works, and underground/power/cable/communications. Evidence of utility capacity has been provided from the Portland Water District and will be required of other utility providers as well.

4. *Site Design Standards*

k. Snow and Ice Loading

Based upon the roof design, it is not anticipated that snow or ice loading will be a concern to pedestrians within the public right-of-way or on the applicant's property.

l. View Corridors
This site is not within a Protected View Corridor as per the "View Corridor Protection Plan" approved by the Portland City Council in 2001.

m. Historic Resources
The site is not located within a historic district or within 100 feet of a historic district, landmark or landscape and as a result, this project is not required to be reviewed by Historic Preservation.

n. Exterior Lighting
The applicant has submitted a lighting and photometric plan. The plan shows exterior light sconces and walkway lights with the covered porch, and sconces on either side of the garage entrance. All exterior site lighting including lighting of building entrances will be full cutoff with no light emitted above the horizontal plane and light trespass falls within the allowable limits as stipulated under Section 12 of the Technical Manual.

o. Noise and Vibration
Exterior mechanical equipment is to be roof-mounted, and centrally located on top of the building to minimize visibility from adjacent properties and public spaces. It is not anticipated that this equipment will result is adverse conditions related to noise and vibration.

p. Signage and Wayfinding
This standard does not apply to the proposal.

q. Zoning Related Design Standards
A design review according to the *City of Portland Design Manual* Standards was performed for the proposed new construction of a multi-family dwelling at 25 Monument Street. The review was performed by Caitlin Cameron, Urban Designer, Jeff Levine, Planning and Urban Development Director and Matthew Grooms, Planner. The project was reviewed against the R-6 Small Infill Development Design Principles & Standards (Appendix 7 of the Design Manual) as well as the Two-family, Special Needs Independent Living Units, Multiple-family, Loding Houses, Bed and Breakfasts, and Emergency Shelters (Section I of the Design Manual).*B-1b Commercial Business Zones Standards (Section (d) of the Design Manual).*

Design Review Criteria:
The project was reviewed with the *R-6 Alternative Design Review* which has the following criteria:

a. Proposed design is consistent with all of the Principle Statements
b. The majority of the Standards within each Principle are met
c. The guiding principle for new construction under the alternative design review is to be compatible with the surrounding buildings in a two-block radius in terms of size, scale, materials, and siting, as well as the general character of the established neighborhood, thus Standards A-1 through A-3 shall be met.
d. The design plan is prepared by an architect registered in the State of Maine.

Findings of the Design Review:
The proposed design **does not pass** all of the criteria of the R-6 Alternative Design Review – some comments are provided below regarding areas of concern (Attachment 2):

Design Review Comments *(red text denotes principles or standards that are not met)*:

Principle A Overall Context – **Met** – The mass and height of the proposal at the street is consistent and compatible with the surrounding residential context. The type is similar to other triple-decker and four-story multi-family buildings found in the neighborhood.

- *A-1 Scale and Form:* The scale of the project is compatible with the existing context – flat roof, bay window, façade plane changes with porches.

- *A-2 Composition of Principal Facades:* The composition of the front façade has a vertical proportion consistent with the residential character of the neighborhood. The flat roof, porches, and use of bay windows provide a composition referential to neighborhood architectural character. The number and placement of materials is excessive and adds too much complexity in a context that is simple in form, roof lines, and materials. See further comments below on this.
- *A-3 Relationship to the Street:* The building has a relationship to the street consistent with the neighborhood which is setback a few feet to accommodate the bay projection, landscape, entry porch. The street wall varies here with some buildings set further back from the street.

Principle B Massing – **Met** – Most aspects of the building reflect the principle and the majority of the Standards are met by the proposed design.

- *B-1 Massing:* The proposed massing is generally consistent with the neighborhood using a vertical proportion and a bay projection with porches.
- *B-2 Roof Forms:* The flat roof form at the street is consistent with the surrounding context and the multi-family building type.
- *B-3 Main Roofs and Subsidiary Roofs:* There is a clear main roof form.
- *B-4 Roof Pitch:* The roof pitch is more shallow than allowed.
- *B-5 Façade Articulation:* The project employs balconies, bay window, recessed, and covered entry.
- *B-6 Garages:* Garage is integrated into the overall building form and there is living space above garage. Garage door is less than 40% of the façade width.

Principle C Orientation *to the Street* –**Partially Met** – The project appropriately reflects the private/public relationship of residential buildings in this neighborhood. However, the ground floor includes no windows, living space, or entrances at the street to "enhance the pedestrian friendliness and sociability of the streetscape." Staff suggest addressing this concern by bringing the enclosed entry closer to the street, aligned with the front façade, and activate the ground floor by using the bay as lobby space.

- *C-1 Entrances:* The main entry is far back from the street with a long porch – Emphasis should be on the entry rather than the garage door. A metal gate across the porch is inappropriate – if the space needs to be enclosed, bring the entrance to the front façade.
- *C-2 Visual Privacy:* Visual privacy is adequately addressed; No ground floor windows; Finished floor of residences exceeds 24" minimum above sidewalk; Porches are included in front façade design.
- *C-3 Transition Spaces:* The project shows a transition between the street and the front door with a setback, landscaping, and porch.

Principle D Proportion and Scale – **Met** – While the building is human-scaled, the proportions are slightly off because of the extra width created by the garage. The top floor and vertical support at the porch help draw a regulating line at the more contextual proportion.

- *D-1 Windows:* The majority of windows are rectangular with vertical proportion. The two-over-one window proportion is not contextual.

- *D-2 Fenestration:* The percent of fenestration on the front façades appear to meet the minimum 12% requirement.
- *D-3 Porches:* Porches extend at least 20% of front façade and meet the minimum dimensional requirements.

Principle E Balance –**Met** – The building façade composition creates a sense of balance with good use of overall and local symmetry.

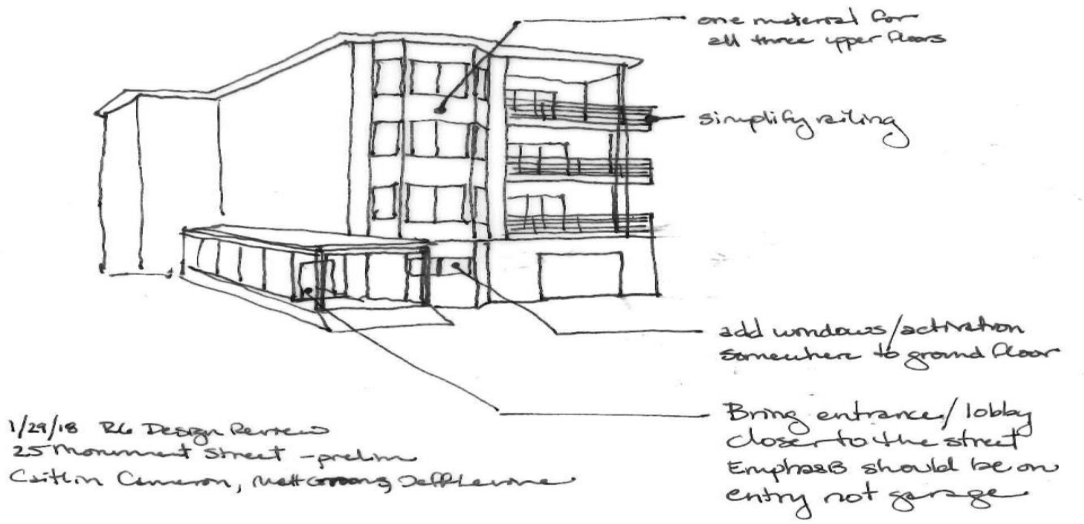
- *E-1 Window and Door Height:* The majority of window and door head heights align along a common horizontal datum.
- *E-2 Window and Door Alignment:* The majority of windows shall stack so that centerlines of windows are in vertical alignment.
- *E-3 Symmetricality:* Primary window compositions are arranged symmetrically around discernable vertical axes.

Principle F Articulation – **Partially Met** – The project employs several articulation methods to create visually interesting facades. However, the number and placement of materials creates a busy façade and is inconsistent with the character of the context.

- *F-1 Articulation:* Project employs a cornice, expression lines, materials with texture and scale, and porch details that provide shadow lines. Is there trim or corner boards? How will the corners be detailed?
- *F-2 Window Types:* Two window types.
- *F-3 Visual Cohesion:* There are excessive variations in materials disrupting the visual cohesion, creating awkward proportions, creating a façade more complex and busy than found in the context. Two materials – the railing and the vertical shiplap - contribute to the busy character of the building and break the façade inappropriately for the building type and context. Staff suggest only one material orientation (vertical or horizontal) should be applied consistently through the upper floors. The railing should be simplified, taking cues from the neighboring character.
- *F-4 Delineation between Floors:* Floors are delineated with material changes and porches. The delineation between the third and fourth floors is excessive with the material change.
- *F-5 Porches, etc.:* The porches are well integrated into the massing of the building. However, the design of the railing does not meet the standard – the style is overly complex, not integrated into the overall building character or the character found in context. In addition, the design of the entry porch feels boxy and lacking detail compared with the rest of the building. The cornice profile for that porch roof is adding to the heaviness of that design.
- *F-6 Main Entries:* The main entry is set back from the street – emphasis should be on the entry rather than the garage door. Staff suggest bringing the enclosed entry closer to the street, aligned with the front façade and activated the ground floor by using the bay as lobby space. Porch width may need to be revised to accommodate this.
- *F-7 Articulation Elements:* Project includes a cornice projecting at least 6"; there does not appear to be trim or corner boards; offsets meet 12" minimum; pronounced cornice.

Principle G Materials – **Partially Met** - The dominant neighborhood materials are small-scale residential choices such as clapboard, shingle, and brick. There is an excessive number of materials – the predominant context is that of simplicity.

- *G-1 Materials:* Clapboard and brick are in keeping with the residential context. Vertical orientation of siding is less common.
- *G-2 Material and Façade Design:* The brick at the ground floor with clapboard above is an appropriate placement according to their nature. The bay does not need a difference material orientation to be effective as an articulation/massing element.
- *G-3 Chimneys:* Not applicable
- *G-4 Window Types:* Two window types used.
- *G-5 Patios and Plazas:* Landscape plan indicates concrete pavers.



XII. NEXT STEPS

1. Address staff comments
2. Address additional comments of the Planning Board
3. Prepare final plan submission, including subdivision and site plan submittal requirements as included in 14-496(1) and (b) and 14-527(e) and (f) for review by the Planning Authority and Planning Board
4. Hold final Planning Board Hearing

XIII. ATTACHMENTS

PLANNING BOARD REPORT ATTACHMENTS

1. Preliminary Planning and Fire Comments
2. Preliminary Design Review Comments
3. Preliminary Traffic Review Comments
4. Preliminary Peer Review Comments
5. Preliminary Landscape Review Comments
6. Public Comment
    a. Karen Snyder (10.30.17)
    b. Karen Snyder (11.07.17)
    c. Rob Whitten (11.20.17)

APPLICANT'S SUBMITTALS

A. Application Form
B. Project Description and Zoning Assessment
C. Right, Title & Interest
D. Financial and Technical Capacity
E. 25 Monument Street Design Standards Review
F. Neighborhood Meeting Notes
G. 25 Monument Street Ability to Serve Letters
H. Mechanical Roof Units Spec Sheets

I. HVAC Emissions Standards
J. Solid Waste Management
K. Geotechnical Report
L. 25 Monument Street – Street Trees
M. Construction Management Narrative
N. Construction Management Plan – Erosion Control

PLANS

Plan 1. Cover Sheet
Plan 2. Boundary Survey
Plan 3. Site Plan
Plan 4. Landscape Plan
Plan 5. Architectural Perspectives and Plans
Plan 6. Architectural Elevations
Plan 7. AutoTurn Analysis
Plan 8. Plat Plan
Plan 9. Mechanical Roof Plan
Plan 10. Site Lighting
Plan 11. Utility Plan & Details
Plan 12. Driveway & Sidewalk Details
Plan 13. Monument Rendering, I
Plan 14. Monument Rendering II

Planning and Urban Development Department
Planning Division

February 16, 2018

Jeff Kane
Monument Partners, LLC
380 Sixth Street, South
Naples, FL 34102

Anne Callendar
Whipple Callender Architects
PO Box 1276
Portland, ME 04104

RE: Staff Review Comments for 25 Monument Street – 5-unit condominium (2017-243) – Planning Board Review

Project Name:	25 Monument Street	Project ID:	(2017-234)
Project Address:	25 Monument Street	CBL:	338-K-004
Applicant:	Monument Partners, LLC		
Planner:	Matthew Grooms		

Dear Mr. Kane and Ms. Callender,

Thank you for submitting a Level III Site Plan and Subdivision application for the demolition of an existing three-unit residential building and construction of a five unit residential condominium at 25 Monument Street predominantly within the R-6 residential zone and partially within the B-1 neighborhood business zone. This project is being reviewed as a preliminary plan subject to the following applicable Land Use Code provisions:

- Site Plan Ordinance, Article V
- Subdivision Ordinance, Arcticle IV
- Division 7, R-6 and R-6A Residential Zones
- Division 9, B-1 and B-1b Neighborhood Business Zones
- Division 20, Off-Street Parking Standards

Final Plan for Planning Board Review: Staff Review Comments

I. Site Plan Standards

1. At present the ADA accessible entrance to the building is through the garage and across the internal driveway. Would the applicant consider making the principal entrance ADA accessible?
2. From the provided site plan, it is difficult to determine what portion of the existing sidewalk is being replaced. Please provide a limit of work line and clearly identify areas for reconstruction.

3. The construction details for the driveway are to be modified to reflect updated details by DPW in plan view and cross-section to show the provision of an ADA-compliant pedestrian access route of 5' minimum denoting a maximum 2% cross-slope. The updated details (3) are attached; the appropriate detail for the site conditions should be selected.
4. The construction detail for the brick sidewalk is to be modified to show a maximum 2% cross-slope for its entire width.
5. With the final submission, the applicant shall provide a plan showing plant numbers, sizes and locations on the property. Tree save protection measures should similarly be identified on the plan and in narrative form.
6. In speaking with the City Arborist, three of the street trees provided on site qualify as street trees. A total of two additional street trees or acceptable alternative shall be provided.
7. All applicable 'ability to serve' letters shall be provided with the final plan submission or shall be made a condition of approval if not supplied.
8. The location of site lighting and appropriate details have been provided. A photometric plan is also required which demonstrates acceptable light trespass.
9. The applicant shall provide details for fencing being proposed on-site.

II. Zoning Review

10. Building elevations shall provide height measurements so as to determine compliance with R-6 height maximums. Similarly, while the required stepback is provided, it is not clear if the stepback is provided at the required height, or if the stepback is at least 10 feet from the property line.
11. Does the proposed lot coverage of 56% take into account the covered porch? Please note, under zoning, this area of the site counts towards that requirement.
12. As required under Division 29. Housing Preservation and Replacement, upon approval of the project, the applicant will be required to post a performance guarantee or letter of credit in an amount equilvalent to the amount the applicant would have been required to contribute to the City's Housing Trust Fund if that option had been pursued (subsection g of this division). This security will be held until completion of the project and issuance of a Certificate of Occupancy.

III. Subdivision Review

13. When available, a copy of the condo docs shall be provided for review by Corporation Counsel.
14. The subdivision plat should indicate the stepback line as well as setback lines.

IV. Fire Review

15. The main entrance of the building must be the address fro the property. This should be consistent with 911, tax assessor, Inspections Division and future mailing address. The address number must be on the street side of the building with numbers that are no less than six inches high.
16. This building will be required to be sprinkled.
17. Access is acceptable to the Fire Department
18. There are adequate fire hydrants in the area.

Additional Submittals Required:

Please upload the digital plans and documents to address staff comments. Upon receipt of the revised material, the City of Portland will review the additional plans and information for conformance with applicable ordinances. Please be aware that an application expires within 120 days of the date upon which this written request for additional information was made and only *one set of revised plans* may be submitted for review.

If you have any questions, feel free to contact me at (207) 874-8725 or by email at mgrooms@portlandmaine.gov.

Sincerely,
Matthew Grooms
Planner

Electronic Distribution:
Tuck O'Brien, Planning Division Director
Barbara Barhydt, Development Review Services Manager
Jennifer Thompson, Associate Corporation Counsel
Anne Machado, Zoning Administrator
Captain Keith Gautreau, Fire
Keith Gray, DPW
Jeff Tarling, City Arborist
Tom Errico, P.E., TY Lin Associates
Lauren Swett, P.E., Woodard & Curran

Planning and Urban Development Department
Planning Division

Subject: R-6 Small Infill & Multi-family Design Review – 25 Monument Street

Written by: Caitlin Cameron, Urban Designer

Date of Review: Monday, January 29, 2018

A design review for the proposed multi-family project at 25 Monument Street was conducted according to the *City of Portland Design Manual* Standards by Caitlin Cameron, Urban Designer, Matt Grooms, Planner, and Jeff Levine, Department Head, within the Planning Division of the Planning & Urban Development Department. The project was reviewed against the *R-6 Small Infill Development Design Principles & Standards* (Appendix 7 of the Design Manual).

Findings of the Design Review:
The proposed design **does not pass** all of the criteria of the *R-6 Alternate Design Review* – some comments are provided below regarding areas of concern.

Design Review Comments *(red text denotes principles or standards that are not met)**:***

Principle A Overall Context – Met – The mass and height of the proposal at the street is consistent and compatible with the surrounding residential context. The type is similar to other triple-decker and four-story multi-family buildings found in the neighborhood.

- *A-1 Scale and Form:* The scale of the project is compatible with the existing context – flat roof, bay window, façade plane changes with porches.
- *A-2 Composition of Principal Facades:* The composition of the front façade has a vertical proportion consistent with the residential character of the neighborhood. The flat roof, porches, and use of bay windows provide a composition referential to neighborhood architectural character. The number and placement of materials is excessive and adds too much complexity in a context that is simple in form, roof lines, and materials. See further comments below on this.
- *A-3 Relationship to the Street:* The building has a relationship to the street consistent with the neighborhood which is setback a few feet to accommodate the bay projection, landscape, entry porch. The street wall varies here with some buildings set further back from the street.

Principle B Massing – Met – Most aspects of the building reflect the principle and the majority of the Standards are met by the proposed design.

- *B-1 Massing:* The proposed massing is generally consistent with the neighborhood using a vertical proportion and a bay projection with porches.
- *B-2 Roof Forms:* The flat roof form at the street is consistent with the surrounding context and the multi-family building type.
- *B-3 Main Roofs and Subsidiary Roofs:* There is a clear main roof form.

- *B-4 Roof Pitch:* The roof pitch is more shallow than allowed.
- *B-5 Façade Articulation:* The project employs balconies, bay window, recessed, and covered entry.
- *B-6 Garages:* Garage is integrated into the overall building form and there is living space above garage. Garage door is less than 40% of the façade width.

Principle C Orientation to the Street –Partially Met – The project appropriately reflects the private/public relationship of residential buildings in this neighborhood. However, the ground floor includes no windows, living space, or entrances at the street to "enhance the pedestrian friendliness and sociability of the streetscape." Staff suggest addressing this concern by bringing the enclosed entry closer to the street, aligned with the front façade, and activate the ground floor by using the bay as lobby space.

- *C-1 Entrances:* The main entry is far back from the street with a long porch – Emphasis should be on the entry rather than the garage door. A metal gate across the porch is inappropriate – if the space needs to be enclosed, bring the entrance to the front façade.
- *C-2 Visual Privacy:* Visual privacy is adequately addressed; No ground floor windows; Finished floor of residences exceeds 24" minimum above sidewalk; Porches are included in front façade design.
- *C-3 Transition Spaces:* The project shows a transition between the street and the front door with a setback, landscaping, and porch.

Principle D Proportion and Scale – Met – While the building is human-scaled, the proportions are slightly off because of the extra width created by the garage. The top floor and vertical support at the porch help draw a regulating line at the more contextual proportion.

- *D-1 Windows:* The majority of windows are rectangular with vertical proportion. The two-over-one window proportion is not contextual.
- *D-2 Fenestration:* The percent of fenestration on the front façades appear to meet the minimum 12% requirement.
- *D-3 Porches:* Porches extend at least 20% of front façade and meet the minimum dimensional requirements.

Principle E Balance –Met – The building façade composition creates a sense of balance with good use of overall and local symmetry.

- *E-1 Window and Door Height:* The majority of window and door head heights align along a common horizontal datum.
- *E-2 Window and Door Alignment:* The majority of windows shall stack so that centerlines of windows are in vertical alignment.
- *E-3 Symmetricality:* Primary window compositions are arranged symmetrically around discernable vertical axes.

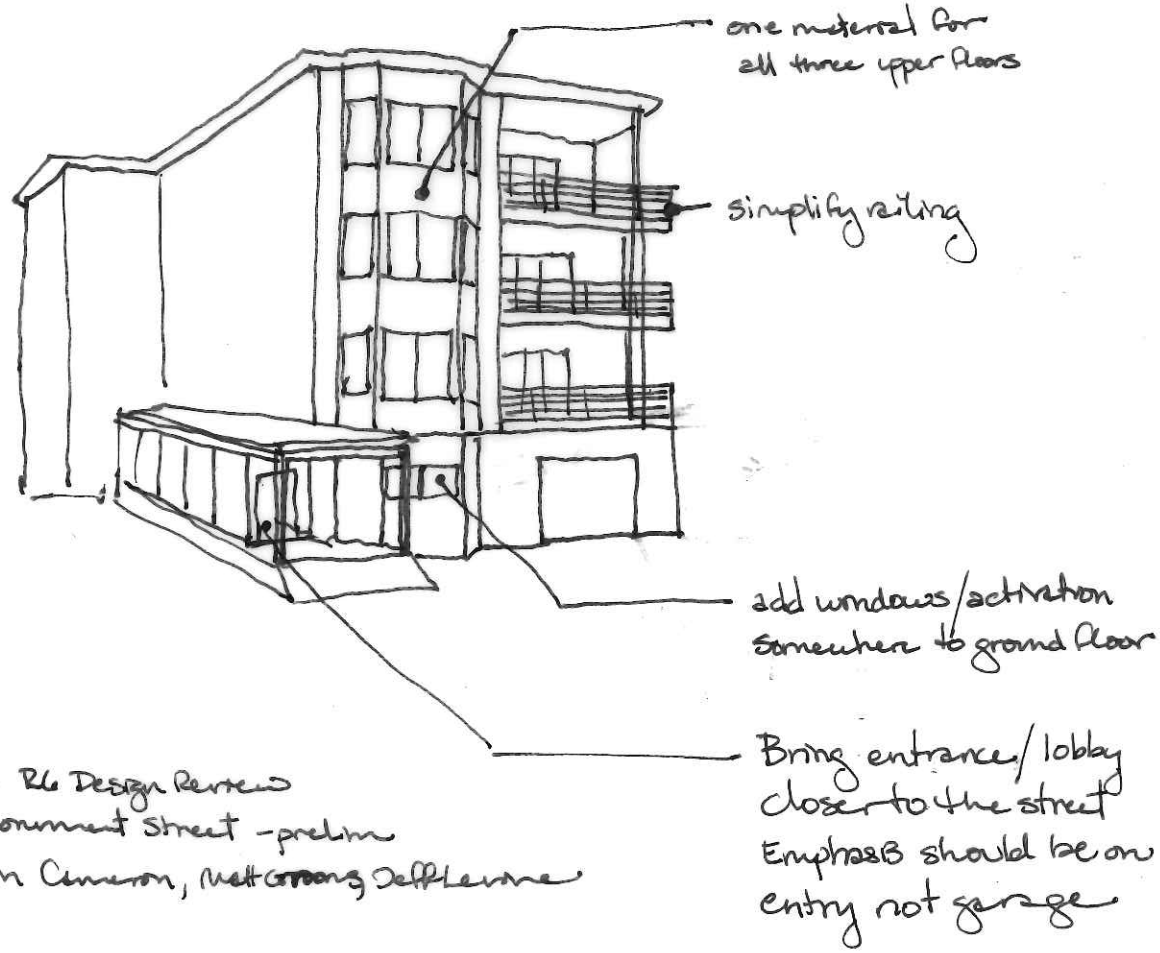
Principle F Articulation – Partially Met – The project employs several articulation methods to create visually interesting facades. However, the number and placement of materials creates a busy façade and is inconsistent with the character of the context.

- *F-1 Articulation:* Project employs a cornice, expression lines, materials with texture and scale, and porch details that provide shadow lines. Is there trim or corner boards? How will the corners be detailed?
- *F-2 Window Types:* Two window types.

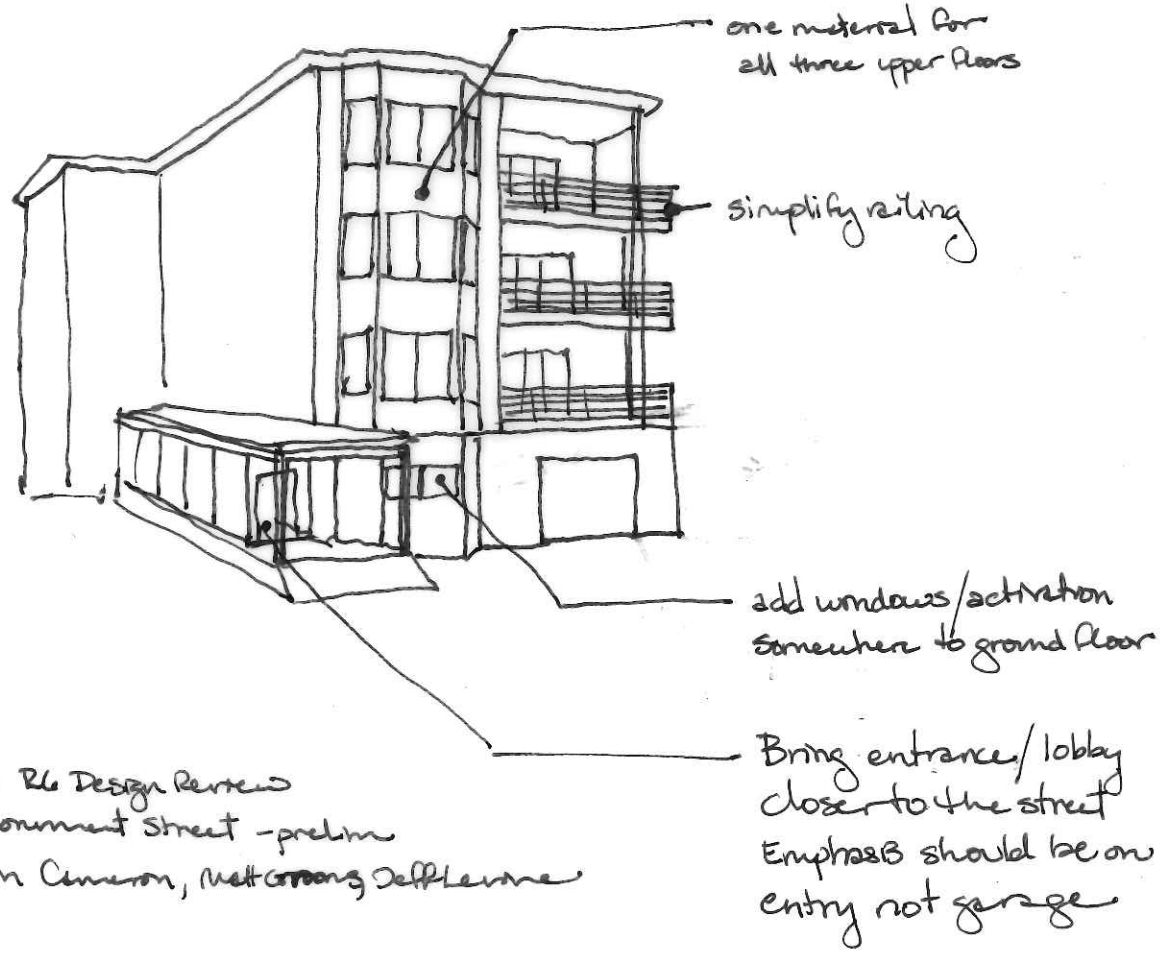
- *F-3 Visual Cohesion:* There are excessive variations in materials disrupting the visual cohesion, creating awkward proportions, creating a façade more complex and busy than found in the context. Two materials – the railing and the vertical shiplap - contribute to the busy character of the building and break the façade inappropriately for the building type and context. Staff suggest only one material orientation (vertical or horizontal) should be applied consistently through the upper floors. The railing should be simplified, taking cues from the neighboring character.
- *F-4 Delineation between Floors:* Floors are delineated with material changes and porches. The delineation between the third and fourth floors is excessive with the material change.
- *F-5 Porches, etc.:* The porches are well integrated into the massing of the building. However, the design of the railing does not meet the standard – the style is overly complex, not integrated into the overall building character or the character found in context. In addition, the design of the entry porch feels boxy and lacking detail compared with the rest of the building. The cornice profile for that porch roof is adding to the heaviness of that design.
- *F-6 Main Entries:* The main entry is set back from the street – emphasis should be on the entry rather than the garage door. Staff suggest bringing the enclosed entry closer to the street, aligned with the front façade and activated the ground floor by using the bay as lobby space. Porch width may need to be revised to accommodate this.
- *F-7 Articulation Elements:* Project includes a cornice projecting at least 6"; there does not appear to be trim or corner boards; offsets meet 12" minimum; pronounced cornice.

Principle G Materials – Partially Met - The dominant neighborhood materials are small-scale residential choices such as clapboard, shingle, and brick. There is an excessive number of materials – the predominant context is that of simplicity.

- *G-1 Materials:* Clapboard and brick are in keeping with the residential context. Vertical orientation of siding is less common.
- *G-2 Material and Façade Design:* The brick at the ground floor with clapboard above is an appropriate placement according to their nature. The bay does not need a difference material orientation to be effective as an articulation/massing element.
- *G-3 Chimneys:* Not applicable
- *G-4 Window Types:* Two window types used.
- *G-5 Patios and Plazas:* Landscape plan indicates concrete pavers.



1/29/18 R6 Design Review
25 Monument Street - prelim
Caitlin Cameron, Matt Groom, Jeff Levine



1/29/18 R6 Design Review
25 Monument Street - prelim
Caitlin Cameron, Matt Groom, Jeff Levine

Portland Maine Yes. Google's good here.

Matthew Grooms <mgrooms@portlandmaine.gov>

25 Monument Street - Preliminary Traffic Comments

Tom Errico <thomas.errico@tylin.com> Thu, Mar 22, 2018 at 1:38 PM
To: Matthew Grooms <mgrooms@portlandmaine.gov>
Cc: Keith Gray <kgray@portlandmaine.gov>, Jeremiah Bartlett <JBartlett@portlandmaine.gov>, Bruce Hyman <bhyman@portlandmaine.gov>, Lauren Swett <lswett@woodardcurran.com>, "Jeff Tarling (JST@portlandmaine.gov)" <JST@portlandmaine.gov>

Hi Matt – I have reviewed the application materials and offer the following Preliminary Traffic Comments.

- The parking layout plan notes aisle width dimensions that do not meet City standards. The applicant should provide documentation that supports a waiver request.
- The applicant has provided a vehicle turn analysis that indicates vehicle circulation is feasible. I continue to review this information, but my initial review supports their conclusion that reasonable circulation can be provided. I would note that the building columns will present vehicle turn challenges.
- I find the location and width of the driveway to be acceptable.
- The construction management plan is not acceptable and the applicant shall revise the plan to conform to the City's standard template. I would note a detailed sidewalk closure detour route that is ADA compliant shall be noted.

If you have any questions, please contact me.

Best regards,

Thomas A. Errico, PE
Senior Associate
Traffic Engineering Director
TY LIN INTERNATIONAL
12 Northbrook Drive
Falmouth, ME 04105
+1.207.781.4721 main
+1.207.347.4354 direct
+1.207.400.0719 mobile
+1.207.781.4753 fax
thomas.errico@tylin.com
Visit us online at www.tylin.com
Twitter | Facebook | LinkedIn | Google+

"One Vision, One Company"

COMMITMENT & INTEGRITY
DRIVE RESULTS

41 Hutchins Drive
Portland, Maine 04102
www.woodardcurran.com

T 800.426.4262
T 207.774.2112
F 207.774.6635

MEMORANDUM

TO: Matt Grooms, Planner
FROM: Lauren Swett, PE & Craig Sweet, PE
DATE: February 1, 2018
RE: 25 Monument Street, Level III Site Plan Application

Woodard & Curran has reviewed the Level III Site Plan Application for the proposed development located at 25 Monument Street in Portland, Maine. The project involves the demolition of an existing two (2) family house and construction of a five (5) unit building.

Documents Reviewed by Woodard & Curran

- Level III Site Plan Application and attachments, prepared by Whipple-Callender Architects, on behalf of Monument Partners, LLC.
- Plan Sheets 1-7, dated October 17, 2017, prepared by Whipple-Callender Architects, on behalf of Monument Partners, LLC.
- Plan sheets C.2 and C.3, dated January 25, 2018, prepared by Whipple-Callender Architects, on behalf of Monument Partners, LLC.

Comments

1) The application is preliminary. Woodard & Curran will perform a review of the Final Application upon receipt of those documents. The following comments reflect items that should be included as part of the Final Application.
2) Final plans must be stamped by a professional engineer (Section 14-527, sub-section (f) of the City of Portland Land Use Ordinance).
3) In accordance with Section 5 of the City of Portland Technical Manual, a Level III development project is required to submit a stormwater management plan pursuant to the regulations of MaineDEP Chapter 500 Stormwater Management Rules, including conformance with the Basic, General, and Flooding Standards. We offer the following comments:
   a) Basic Standard: Plans, notes, and details have been provided to address erosion and sediment control requirements, inspection and maintenance requirements, and good housekeeping practices in accordance with Appendix A, B, & C of MaineDEP Chapter 500.
      - The Applicant has noted that silt fence will be installed along the Monument Street frontage. Additional silt fencing may be needed along the sides of the property to prevent sediment from running onto the abutting properties during construction. Silt fence should be provided around the construction material storage area located in close proximity to the abutter.
   b) General Standard: The project will result in a de minimis increase in impervious area, less than 1,000 square feet. As such, the project is not required to include any specific stormwater management features for stormwater quality control.
      - Please clarify the new impervious area onsite, the Level III Site Plan application indicates an increase in impervious area of 860 square feet while the table provided on sheet C.1 indicates an increase of 777 square feet.
      - We encourage the Applicant to review the City's Stormwater Service Charge Credit Manual (available online) to evaluate whether they may want to incorporate stormwater quality treatment measures that qualify for a future Stormwater Service Charge credit.
   c) Flooding Standard: The project will result in a de minimis increase in impervious area of less than 1,000 square feet. As such, the project is not required to include specific stormwater management features to control the rate or quantity of stormwater runoff from the site.
4) The utility plan identifies an oil water separator floor drain in the rear portion of the garage. The Applicant should confirm that this will connect to the sewer. We recommend showing additional spot grades in the front section of the garage to ensure that drainage is able to get to the floor drain.

5) Based on the proposed contours, it appears that the intent for drainage behind the building is to drain to a shallow swale that will direct water around the sides of the building. Some additional spot grades and flow arrows should be provided to ensure that water behind the building does not drain onto the adjacent properties.
6) Locations of foundation and roof drains should be identified.
7) It is unclear if the existing sewer service is being reused, or if a new service is proposed. Please clarify and provide confirmation from the City of Portland Department of Public Works of ability to serve.
8) Engineering details in conformance with the City of Portland Technical Manual should be provided, including granite curbing, sidewalk, pavement repair, etc.
9) An ability to serve letter from the Portland Water District has been provided. The Applicant should ensure that the water service information on the plans provided to the City has not been changed since the December 5, 2017 plans were approved by the Portland Water District.
10) Per the City of Portland's current sidewalk material policy, driveway aprons must be constructed of the same material as the adjacent sidewalks. It is unclear on the plans if this is the case. A brick sidewalk apron should be provided, and the plans should include a detail.

Portland Maine Yes. Google's good here.

Matthew Grooms <mgrooms@portlandmaine.gov>

25 Monument Street Tree & Landscape Review

Jeff Tarling <jst@portlandmaine.gov> Mon, Feb 5, 2018 at 4:42 PM
To: Matthew Grooms <mgrooms@portlandmaine.gov>
Cc: Bruce Hyman <bhyman@portlandmaine.gov>, Errico Thomas <thomas.errico@tylin.com>

Hi Matt -

In review of the proposed project at 25 Monument Street the landscape plan submitted by Anthony Muench LA. The tree and landscape plan concepts
work well as they contain a mix of wood fencing, trees, shrubs and herbeaus
plantings that will help as a buffer along with adding interest to the site.

A condition for the final approval should show plant numbers, sizes and location on the plot. The landscape plan as submitted is well thought out and appropriate for the project, fine tuning the plant details would be good for the final approval along with 'tree save' protection measures spelled out. This helps us with post development inspection.

Three of the trees along the sidewalk could qualify for street-trees.

Thanks,

Jeff

Jeff Tarling
City Arborist - City of Portland Maine
Parks, Recreation & Facilities Department
Forestry & Horticulture
212 Canco Road
Portland, ME. 04103
(207) 808-5446
jst@portlandmaine.gov

Google Groups

25 Monument New Development Plan- Opposition to another Teardown

Karen Snyder <karsny@yahoo.com> Oct 30, 2017 1:33 PM
Posted in group: **Planning Board**

Hi,

I am voicing my opposition of yet another property on Munjoy Hill being torn down due to the following reasons:

- The scale of the proposed structure does not fit the scale of the surrounding buildings.
- The architecture is not compatible with the architecture style of surrounding buildings on Munjoy Hill
- More affordable rental units being removed from the housing market to replace with hi luxury condos.

I am very concerned that the Planning Board and Planning Department do not ensure that these developers are adhering to Chapter 14 Land Usage Zoning Ordinance. It is not that complicated.

It clearly states multiple times in the Chapter 14 Land Usage Zoning Ordinance that the new developments "shall be designed to be compatible with the architecture style of the building and preserve the single-family appearance of the building"

Section 14-66 page 51 section e, d...
Section 14-78 page 66, section d
etc

Please see attached photo of 25 Monument After pic.
Does that seem in scale and has a compatible architecture style?

This is just another reason why the R6 Zone change needs to be changed back.

Regards,
Karen Snyder

Attachment:
Monument_25_Before.JPG
Monument_25_After.jpg





Portland Maine | Yes. Google's good here.

Jennifer Munson <jmy@portlandmaine.gov>

11/7/2017 Week - Efforts for Saving Munjoy Hill Neighorhood

Karen Snyder <karsny@yahoo.com> Tue, Nov 7, 2017 at 8:02 AM
Reply-To: Karen Snyder <karsny@yahoo.com>
To: Mary Casale <dirtgirl1@aol.com>, Douglas Martica <tica1529@gmail.com>, "Maggy W." <mswnola@gmail.com>, Pa Ag <pagopian1@yahoo.com>, Pamela Day <pday2304@gmail.com>, Pam Macomber <pam@ninestonesspa.com>, Barbara Vestal <vestal@chesterandvestal.com>, Ian Jacob <iancasperjacob@gmail.com>, Rob Whitten <rob@whittenarchitects.com>, Berry Manter <berrymanter@yahoo.com>, Peter Macomber <pbm@macomber.com>, Carol and Richard Stillwell <rstillwell@maine.rr.com>, Peter Murray <pmurray@gwi.net>, Jayne Hurley <jhurley@cspinet.org>, Stacy Mitchell <stacy.ilsr@gmail.com>
Cc: Jmy <jmy@portlandmaine.gov>

Hi All,

Since all of you were either at the Neighborhood Meetings for 25 Monument and/or 24 St. Lawrence last week, you realized that not one of us surrounding property owners was happy with both or either proposed development designs.

We ALL need to be consistent and voice our opinions to the city this week the following ways:

Action #1: Please send email to City-Planning Board/Planning Dept regarding 25 Monument and/or 24 St. Lawrence Neighborhood meeting (separate emails if you do both)

Send to: planningboard@portlandmaine.gov, jlevine@portlandmaine.gov, sgo@portlandmaine.gov; jmy@portlandmaine.gov
Copy: Anyone you wish and if you want Councilor Belinda Ray bsr@portlandmaine.gov

Action #2: Attend and voice your concern at the District 1 Meeting this Wedensday, 11/8/2017 at 6:30pm at East End Community School
- Please voice your concern at this meeting.

Action #3: Please send this email to anyone else you know that needs to get involved with this. The more of us Munjoy Hill property owners/tenants that group together to voice our concern, the more they will take notice.

If there are any questions, concerns or issues, please do not hesitate to contact me.

Regards,
Karen Snyder
72 Waterville

Google Groups

24 St.Lawrence St, 25 Monument Street

Rob Whitten <rob@whittenarchitects.com> Nov 20, 2017 9:54 AM
Posted in group: **Planning Board**

Hello,

My wife, Robin F. Whitten, and I live at 23 St. Lawrence Street on Munjoy Hill. We are very concerned about the proposed demolition of 24 St. Lawrence Street and 25 Monument Street. Both are viable structures that could be renovated and improved. They are part of the fabric of our neighborhood.

Please include us in the public notification list for the pending Planning Board Workshops for both structures.

Thank you.

Sincerely, Rob.

Rob Whitten / AIA

Whitten Architects
207.774.0111 x101
37 Silver Street
Portland, Maine 04101
www.whittenarchitects.com

I. Project Information (Please enter n/a on those fields that are not applicable)

Project Name:	Monument Partners Condominums
Proposed Development Address:	25 Monument Street
Project Description:	New Residential Building:4-stories, 5 Condominiums, with parking garage
Chart/Block/Lot:	16-D-9
Preliminary Plan	
Final Plan	

II. Contact Information (Please enter n/a on those fields that are not applicable)

APPLICANT

Name:	Jeff Kane
Business Name:	Monument Partners LLC
Address:	380 Sixth Street, South
City/State:	Naples, FL
Zip Code:	34102
Work #:	207-775-2696 x 105
Home #:	n/a
Cell #:	(207) 210-1245
Fax #:	n/a
E-mail:	jeffkane.jdk@gmail.com

OWNER

Name:	Monument Partners LLC
Address:	380 Sixth Street, South
City/State:	Naples, FL
Zip Code:	34102
Work #:	n/a
Home #:	n/a
Cell #:	(207) 210-1245
Fax #:	n/a
E-mail:	jeffkane.jdk@gmail.com

AGENT/REPRESENTATIVE

Name:	Anne Callender, Whipple I Callender Architects
Address:	PO Box 1276
City/State:	Portland ME
Zip Code:	04104
Work #:	207-775-2696 x 105
Home #:	n/a
Cell #:	n/a
Fax #:	207-775-3631
E-mail:	anne@whipplecallender.com

BILLING (to whom Invoices will be forwarded to)

Name:	Jeff Kane
Address:	380 Sixth Street, South
City/State:	Naples, FL
Zip Code:	34102
Work #:	n/a
Home #:	n/a
Cell #:	(207) 210-1245
Fax #:	n/a
E-mail:	jeffkane.jdk@gmail.com

ENGINEER

Name:	Casco Bay Engineering
Address:	424 Fore Street
City/State:	Portland, ME
Zip Code:	04101
Work #:	207-842-2800
Home #:	n/a
Cell #:	n/a
Fax #:	207-842-2828
E-mail:	ericd@cascobayengineering.com

SURVEYOR

Name:	John Schwanda, PLS; Owen Haskell Inc.
Address:	390 US Route One, Unit 10
City/State:	Falmouth, ME
Zip Code:	04105
Work #:	207-774-0424 x 30
Home #:	n/a
Cell #:	n/a
Fax #:	207-774-0511
E-mail:	jschwanda@owenhaskell.com

ARCHITECT

Name:	Anne Callender, Whipple I Callender Architects
Address:	PO Box 1276
City/State:	Portland, ME
Zip Code:	04104
Work #:	207-775-2696 x 105
Home #:	n/a
Cell #:	n/a
Fax #:	207-775-3631
E-mail:	anne@whipplecallender.com

ATTORNEY

Name:	Bill Welch and Tom Hanson, Bernstein Shur
Address:	PO Box 9729
City/State:	Portland, ME
Zip Code:	04104-5029
Work #:	207-774-1200
Home #:	n/a
Cell #:	n/a
Fax #:	207-770-2590
E-mail:	wwelch@bernsteinshur.com

DESIGNATED PERSON(S) FOR UPLOADING INTO e-PLAN

Name:	Anne Callender
E-mail:	anne@whippiecallender.com
Name:	
E-mail:	
Name:	
E-mail:	

III. APPLICATION FEES

LEVEL III DEVELOPMENT (check applicable review)

☑	Less than 50,000 sq. ft.	$750.00
☐	50,000 – 100,000 sq. ft.	$1,000.00
☐	100,000 – 200,000 sq. ft.	$2,000.00
☐	200,000 – 300,000 sq. ft.	$3,000.00
☐	Over 300,000 sq. ft.	$5,000.00
☐	Parking lots over 100 spaces	$1,000.00
☐	After-the-fact Review	$1,000.00 + applicable application fee above

PLAN AMENDMENTS (check applicable review)

☐	Planning Staff Review	$250.00
☐	Planning Board Review	$500.00

OTHER REVIEWS (check applicable review)

☐	Traffic Movement	$1,500.00
☐	Stormwater Quality	$250.00
☑	Subdivision	$500.00 + applicable fee for lots/units below
	# of Subdivision Lots/Units [5] x $25.00 each	$ 125.00
☐	Site Location	$3,500.00 + applicable fee for lots/units below
	# of Site Location Lots/Units [ ] x $200.00 each	$
☐	Change of Use	
☐	Flood Plain	
☐	Shoreland	
☐	Design Review	
☐	Housing Replacement	
☐	Historic Preservation	
	TOTAL APPLICATION FEE DUE:	$ 1375

IV. FEES ASSESSED AND INVOICED SEPARATELY

- Notices to abutters (receipt of application, workshop and public hearing meetings) ($.75 each)
- Legal Ad in the Newspaper (% of total ad)
- Planning Review ($52.00 hour)
- Legal Review ($75.00 hour)
- Third Party Review (all outside reviews or analysis, eg. Traffic/Peer Engineer, are the responsibility of the applicant and will be assessed and billed separately)

V. PROJECT DATA (Please enter n/a on those fields that are not applicable)

TOTAL AREA OF SITE	9,989	sq. ft.
PROPOSED DISTURBED AREA OF THE SITE	8,700	sq. ft.
If the proposed disturbance is greater than one acre, then the applicant shall apply for a Maine Construction General Permit (MCGP) with DEP and a Stormwater Management Permit, Chapter 500, with the City of Portland.		
IMPERVIOUS SURFACE AREA		
Impervious Area (Total Existing)	4,786	sq. ft.
Impervious Area (Total Proposed)	5,648	sq. ft.
Building Ground Floor Area and Total Floor		
Building Footprint (Total Existing)	1,700	sq. ft.
Building Footprint (Total Proposed)	5,240	sq. ft.
Building Floor Area (Total Existing)	2,706	sq. ft.
Building Floor Area (Total Proposed)	20,122	sq. ft.
ZONING		
Existing	R6	
Proposed, If applicable	n/a	
LAND USE		
Existing	Residential	
Proposed	Residential	
RESIDENTIAL, IF APPLICABLE		
# of Residential Units (Total Existing)	3	
# of Residential Units (Total Proposed)	5	
# of Lots (Total Proposed)	1	
# of Affordable Housing Units (Total Proposed)	0	
PROPOSED BEDROOM MIX		
# of Efficiency Units (Total Proposed)	0	
# of One-Bedroom Units (Total Proposed)	0	
# of Two-Bedroom Units (Total Proposed)	0	
# of Three-Bedroom Units (Total Proposed)	5	
PARKING SPACES		
# of Parking Spaces (Total Existing)	9	
# of Parking Spaces (Total Proposed)	8	
# of Handicapped Spaces (Total Proposed)	1	
BICYCLE PARKING SPACES		
# of Bicycle Spaces (Total Existing)	0	
# of Bicycle Spaces (Total Proposed)	5+	
ESTIMATED COST OF THE PROJECT	$4,700,000	

VI. APPLICANT SIGNATURE

By digitally signing the attached document(s), you are signifying your understanding this is a legal document and your electronic signature is considered a ***legal signature*** per Maine state law.

I hereby certify that I am the Owner of record of the named property, or that the owner of record authorizes the proposed work and that I have been authorized by the owner to make this application as his/her authorized agent. I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in this application is issued, I certify that the Planning Authority and Code Enforcement's authorized representative shall have the authority to enter all areas covered by this permit at any reasonable hour to enforce the provisions of the codes applicable to this permit.

This application is for a Level III Site Plan review. It is not a permit to begin construction. An approved site plan, a Performance Guarantee, Inspection Fee, Building Permit, and associated fees will be required prior to construction. Other Federal, State or local permits may be required prior to construction, which are the responsibility of the applicant to obtain.

Signature of Applicant:	Anne Callender
Date:	10/10/2017

25 MONUMENT STREET
PORTLAND

DESCRIPTION OF PROJECT

The program for this site consists of a new 5 unit building to replace a dilapidated 2 family house. The building will have a parking level at grade, two 2000 sq. ft. +- apartments on the second level, two 2000 sq. ft. +- apartments on the third level, and a 4000 +- sq. ft. apartment on the fourth level. A small basement storage room and a roof deck will serve all occupants.

The building meets all Portland zoning requirements and design standards. No waivers are requested. Substitution of street trees where infeasible to be approved by city arborist.

25 Monument St. is in the R-6 zone.

Dimensional requirements will be met. Area calculations and set-back lines are shown on the cover page of the drawings.

Dimensional Requirements:
Lot size 2000 sf +
Min dwelling size 725 sf+
Front yard setback 5' + from property line
(A greater front yard setback is encouraged by the design standards and provided here.)
Rear yard setback: 10' from property line
Side yard setbacks 5' from property line
Setbacks above 35': 10' from property line
Maximun lot coverage: 60%
Maximum height: 45' (exclusive of roof deck/mechanical/stair and elevator enclosure)
Landscaped open area 20%

Per subdivision requirements, 30% of trees 10" DBH will be kept.
Street trees: Where one street tree per unit is not feasible due to narrow street frontage, the applicant requests that plantings within view of sidewalk be approved by city arborist.

Off street parking required: 2 spaces plus 2 bicycle storage plus 2-wheeled vehicle storage.
This building will have parking spaces for two full sized cars, 6 compact cars, and 10 or more bicycles or two wheeled vehicles, all enclosed on the first level. Auto turn analysis is included in this submittal.
Minimum driveway width for one-way traffic: 12'

SHORT FORM WARRANTY DEED

MELINDA Y.M. MCCLURE, of Portland, Maine, **RAYMOND A. MORROW** of Portland, Maine, **ESTHER M. MORROW** (f/k/a Esther M. Keister), of South Portland, Maine, and **MARY V. CARD**, of Topsham, Maine (collectively, the "Grantors"), FOR CONSIDERATION PAID, grant to **MONUMENT PARTNERS, LLC**, a Maine limited liability company, with a mailing address of 380 6th Street South Naples, FL 34102 (the "Grantee"), with WARRANTY COVENANTS, certain real property, together with any improvements thereon, located at 25 Monument Street, City of Portland, County of Cumberland, Maine and more particularly described as follows:

A certain parcel of land situated on the northwesterly side of Monument Street in the City of Portland, County of Cumberland, and State of Maine, bounded and described as follows:

Beginning at the easternmost corner of the land now or formerly of Christopher Coose and Lisa Silverman (see Book 12732, Page 50) on the northwesterly side of Monument Street, which point is located 100.00 feet northeasterly of the point of intersection of the northwesterly sideline of Monument Street and the northeasterly sideline of St. Lawrence Street, all as shown on "ALTA/NSPS Land Title Survey 25 Monument Street, Portland, Maine made for Monument Partners, LLC dated January 13, 2017 Owen Haskell, Inc. Job no. 2016-378p";

Thence, N 53°16' 17" W by said land and by the land now or formerly of Laurence W. Gross and Barbara E. Colby (Book 30580, Page 89 and Book 33076, Page 101) a distance of 141.35 feet to the land of 118 Congress Street Condominiums;

Thence, N 37° 52' 58" E by said land 18.51 feet to the land now or formerly of Eben Albert-Knopp (Book 26803, Page 278);

Thence, N 38° 51' 27" E by said land and by the land now or formerly of John & Carolyn Whitaker (Book 32921, Page 151) a distance of 56.35 feet to the land now or formerly of Atlantic Street Condominium;

Thence, S 50° 24' 16" E by said land and by the land now or formerly of Atlantic Street Properties, LLC (Book 32772, Page 230) a distance of 138.48 feet to Monument Street;

Thence, S 36° 14' 35" W by Monument Street 67.89 feet to the point of beginning.

For Grantors source of title see Deed of Distribution by Personal Representative from Melinda Yvonne Morrow McClure, Personal Representative of the Estate of Mary Viola Morrow to Melinda Y.M. McClure, Raymond A. Morrow, Esther M. Keister, and Mary V. Card dated April 30, 2014 and recorded at the Cumberland County Registry of Deeds in Book 31472, Page 99 and Deed from Timothy J. Keister to Esther M. Keister dated March 9, 2015 and recorded at the Cumberland County Registry of Deeds in Book 32134, Page 38.

MAINE REAL ESTATE TAX PAID

WITNESS our hands and seals on this 31st day of January, 2017.

Witness — Melinda Y.M. McClure

Witness — Raymond A. Morrow

Witness — Esther M. Morrow

Witness — Mary V. Card

State of Maine
County of Cumberland, ss January 31, 2017

PERSONALLY APPEARED the above-named Melinda Y.M. McClure, Raymond A. Morrow, Esther M. Morrow and Mary V. Card and acknowledged the foregoing instrument to be their free act and deed.

Before me,

Notary Public/Attorney At Law
Commission Expires:
Print Name: William M. Welch

Received
Recorded Register of Deeds
Jan 31,2017 12:45:54P
Cumberland County
Nancy A. Lane

Key Private Bank

investments | trust | banking

One Canal Plaza, 2nd Floor
Portland, ME 04101

September 5, 2017

To Whom It May Concern:

This letter confirms that as of 9/05/17, Monument Partners LLC has at Key Bank, N.A., the funds to cover the estimated project cost listed in the site plan for 25 Monument Street.

Melissa Rodrigue

Melissa Rodrigue, Vice President
Relationship Manager
Key Private Bank
One Canal Plaza
Portland, ME 04101
207-874-7054
Melissa_Rodrigue@keybank.com

Key Private Bank is part of KeyBank National Association (KeyBank). Bank and trust products are provided by KeyBank, Member FDIC and Equal Housing Lender. Credit products are subject to credit approval. Investment and insurance products are:

NOT FDIC INSURED • NOT BANK GUARANTEED • MAY LOSE VALUE • NOT A DEPOSIT • NOT INSURED BY ANY FEDERAL OR STATE AGENCY

Key Private Bank does not give legal advice.

ADL3546

DESIGN STANDARDS REVIEW
Assessment of development's consistency with applicable design standards contained in Section 14-526 and in City of Portland Design Manual for 25 Monument Street Portland.

Project
25 Monument Street
Portland

New 5 Unit Apartment Building

Zone
The site is located in an R-6 zone.

Design Standards

Principle A: Overall Context

A building design shall contribute to and be compatible with the predominant character-defining architectural features of the neighborhood.

A-1 Scale and form must relate to those found in residential building within 2 block radius…

Buildings within 2 blocks are mostly multifamily. Two and a half story wood framed apartment buildings are common. Most of the roof-scapes have been changed to accommodate more capacity. The oldest date from the early 1800s and the newest from a year or two ago. The largest building on the same block is a 12 unit 36,000 s.f. apartment building built in 2014. This building fits between the extremes and is consistent in scale and form with it's nearest neighbors.

A-2 Relate the composition of the new building façade, -rhythm, size, orientation and proportions of window and door openings - to those of its neighbors…

This building is L –shaped, with the narrowest portion of the L facing Monument Street. That portion is similar in width and height to several of the flat roofed multi-unit buildings in the two block radius. Window and door openings are larger than those in the oldest buildings but no larger than those in the newer buildings.

A-3 Relationship to the Street: Respect the rhythm, spacing and orientation of residential structures along streets w/in2 blocks…

The front L of this building will be even with the side of the building to the east of it and further back (20'+-) on the site than those facades nearby that abut the sidewalk. A wide stoop with wide steps face the street and a landscaped zone abuts the sidewalk. The intent is to create a stoop with steps wide enough to sit on comfortably. A transparent metal fence set back from the steps will delineate the more private zone from the public zone. Both zones will be visible and landscaped.

Principle B: Massing

B-1 Massing should be harmonious with the massing of existing buildings…

This building's L-shape breaks the massing down into two parts. Set backs in the enclosed portion of the building to accommodate balconies and set-backs on the third floor to suite the zoning ordinance further break down the massing scale. Its mass is consistent with other multi-unit buildings nearby and much smaller than the 12 unit building previously mentioned on the same block.

B-3 Roof Forms shall refer to the architectural forms found w/in 2 blocks…

This building's roofs are flat except where the massing steps back on the third floor. 14 of the buildings with a 2-block radius have flat roofs.

B-4 Gable roofs…

B-4 is not applicable to this building.

B-5 Façade Articulation: Provide variety in the massing by incorporating two or more of the following…

2. Balconies
3. Recessed entries
4. Covered porches
5. Bay windows

All are incorporated in this building.

B-6 Garages, if integrated into the building form, must have a door no larger than 40% of the building's overall width.

This building's garage is 12 wide, which is 24% of the Monument St. façade width.

Principle C: Orientation to the Street

C-1 Emphasize and orient the main entrance to the street…

As described above, the main entrance faces the street. A wide granite stepped stoop with porch roof above invites occupants to pass out candy on Halloween night.

C-2 Visual privacy of occupants…

Is assured, as the apartments start on the second floor level.

C-3 Transition spaces…

Have been described above.

Principle D: Proportion and Scale

D-1 The majority of windows shall be rectangular and vertically proportioned…

Windows in this building are rectangular. Wide picture windows with transom lights are used in the public spaces where we want view and light; smaller casement windows without transom lights are used in bathrooms and bedrooms. None of the windows are double hung, as found in the older buildings of the neighborhood. The wider windows in this building serve a purpose, both to gain light and view and to represent the technology of the 21st century. Efforts have been made to arrange these windows in a pleasing rhythm on the façade.

D-2 Fenestration… shall be at least 12% of the total façade area…

Windows in the street façade of this building make up 17% of the front façade.

D-3 Porches shall extend horizontally for 20% of the front façade…

The stoop of this building is 6' wide (12%) of the street façade and 50' deep. A wider porch, or an entrance door on the street façade are impossible to accomplish on this building due to the need for a first floor parking level and an entry/stair/elevator core that serves units from the center of the building.

Principle E: Balance

E-1 Window and door heights must align…

Door headers are 6'8" throughout this building. Window headers are 6' 8" or one transom window size higher than 6' 8", so that window frames align horizontally.

E-2 The majority of windows shall align vertically…

Wherever possible, this has been done.

E-3 Symmetricality: primary windows shall be symmetrically aligned around building's centerline.

This building's composition is intended to be balanced but not symmetrical.

Principle F Articulation

F-1 Triim, reveals, etc, shall be consistent to the style of the building…

Trim is consistent and fairly minimal on this building. It is not intended to be historical, but of its time.

F-2 Window types

See above.

F-3 Visual cohesion

Brick and granite sheath the first floor; lapped horizontal siding the second and third floor; lapped vertical siding the top floor. The building is designed to appear lighter as it goes up.

F-4 Delineation between floors…

Is provided by consistent trim on the balconies and change in siding orientation on the top floor.

F-5 Porches, railings etc. …shall be integrated into the overall composition…

Railings in this building will be made of steel shapes set in panels between posts at consistent intervals. The shapes may be welded mesh or die cut panels or bars in a pattern. They will be consistent throughout the building.

F-6 Maine Entries…

See above.

F-8 Articulation

1. Eaves and rakes shall have min. projection of 6". This building has 2' cornices.
2. Façade trim shall be 4" min. Windows on this building have no trim. Porch trim is wider than 4".
3. There are no offsets.
4.

Principle G: Materials

G-1 Materials shall be harmonious with surrounding buildings…

This building has brick base and lapped siding on the upper levels, (similar to surrounding buildings.)

G-2 Materials shall be true to their nature

If thin brick is used, it will not in any location show as thin.

G-3 Chimnies

Do not exist in this building

G-4 Window types

See above.

G-5 Patios and Plazas

Not applicable.

WHIPPLE | CALLENDER ARCHITECTS

Neighborhood Meeting Minutes
Development of 25 Monument Street, Portland

Wednesday, November 1, 2017 at 6 pm, East End Community Center

Attending:
Anne Callender, Whipple-Callender Architects, Portland
Craig Cooper, Rainbow Builders, Cape Elizabeth
Jeff Kane, property owner, Falmouth
Jennifer Morrow, 21 Quebec St #1, Portland
Larry Gross, 93 St. Lawrence St, Portland
Cindie Greaton, 95 Atlantic St #2, Portland
Coral McCracken, 645 Congress St, Portland
Jay Norris, 172 Eastern Promenade, Portland
Karen Snyder, 72 Waterville St, Portland
Gary (illegible), 14 Monument St, Portland
Jacob Halpert, 74 Atlantic St, Portland
Stacy Mitchell, 74 Atlantic St, Portland
Donalee Santoro, 72 Munjoy St #4, Portland
George Fennell 130 Eastern Promenade #3, Portland
John Whitaker, 104 Congress St, Portland
Maggy Wolf, 27 St. Lawrence St, Portland
Jayne Hurley, 11 St. Lawrence St, Portland
Will Williams, 24 St. Lawrence St, Portland
Pamela Day, 25 Waterville St, Portland
George Rheault, 28 Hanover St, Portland
Tica Douglas, 11 Munjoy St, Portland
Barbara Beckelman, 118 Congress St, Portland
Susan Koen, 118 Congress St, Portland
two people declined to sign in

6-6:15 – informal viewing of elevation and plans

6:15 – Jeff Kane introduces himself and speaks of he and his wife's long connection to Maine and their desire to be good neighbors. The building, as designed by Whipple-Callender Architects, is fully compliant with city regulations without any variances. It will include five units including one that the Kanes will live in, two on each of the first two floors and owner unit on the top floor.

Anne Callender explained that the building will be well within the setbacks, slightly shorter than the allowable height, contextually appropriate with bays, porches, divided windows, gardens, renovated brick sidewalks, brick lower level and wood siding above. Besides the architectural features, the mass will be broken up with variation in textures and color. Lot coverage will be approximately 56% below the 60% allowed, with 40% gardens above the 20% required. Eight off-street parking places will be provided for residents in the lower level along with storage.

PO Box 1276 Portland Maine 04104 207-775-2696 Fax 207-775-3631

Questions/concerns from the audience included:

What is the timetable? A spring start is desired but depends on permitting.

Will the gardens be for neighborhood use? No but will be shared by all the residents.

Several questions about the preservation of trees on the site. Audience members desire the maximum preservation of the green canopy. Several trees will need to be removed to make way for the construction activity. The property owner is planning to limb up and preserve three trees along back border and will plant several new trees.

There is a request for the property owner to consider workforce/affordable housing. Although the cost of the units is not yet determined, it is expected that with the cost of purchasing and preparing the property and building costs of approximately $300/sq ft that the units will not be not be appropriate for workforce housing.

Craig Cooper noted that Jeff Kane was not a developer and he was constructing this building for his own residence and enjoyment.

A question about whether the building could be sunk by 5' to reduce the overall height was addressed by the builder and architect. It cannot be given the height of the street and drainage concerns. The architect and builder expect to tie into city storm sewers so not extra water will impact the area.

The mass of the building in the context of the neighborhood is a concern for many. Architectural renderings will be revised to more accurately portray the scale of the surrounding buildings. Examples of buildings of similar mass exist within the neighborhood will be documented.

The removal rather than the restoration or renovation of a historic home is also a concern. The home is not original to the site but was moved there from elsewhere in Portland. The builder speaks to the unsafe condition of the home and foundation and his opinion that it is not a good candidate for restoration or renovation. It was not up to code and sided with asbestos shingles. The previous inefficient and run-down three units will be replaced with five tight, energy-efficient units.

The preference for building on empty lots is expressed by an audience member.

Preserving historical buildings and recent zoning changes are wider issues that may be addressed at the district meeting.

Several audience members welcomed us to the neighborhood and expressed their support of the project as they were leaving the meeting.

The meeting ends at 7:05 pm.


COLOR YOUR PLATE


COLOR
YOUR
PLATE

Portland Water District

FROM SEBAGO LAKE TO CASCO BAY

December 4, 2017

David Latham
Casco Bay Engineering
424 Fore Street #3A
Portland, ME 04101

Re: 25 Monument Street, PO
Ability to Serve with PWD Water

Dear Mr. Latham:

The Portland Water District has received your request for an Ability to Serve Determination for the noted site submitted on November 17, 2017. Based on the information provided per plans dated December 5, 2017, we can confirm that the District will be able to serve the proposed project as further described in this letter. **Please note that this letter constitutes approval of the water system as currently designed. Any changes affecting the approved water system will require further review and approval by PWD.**

Conditions of Service

The following conditions of service apply:

- A new 6-inch fire service and 2-inch domestic service may be installed from the water main in Monument Street. The service should enter through the properties frontage on Monument Street at least 10-feet from any side property lines.

- The existing property is currently served with a 1.5-inch copper domestic water service and must be terminated as part of the project by shutting the corporation valve and cutting the pipe from the water main.

- Please note that only one meter and one bill will be associated to each domestic service line. This one master meter would be located in a common space that all tenants could gain access to if necessary.

Prior to construction, the owner or contractor will need to make an appointment to complete a service application form and pay all necessary fees. The appointment shall be requested through MEANS@pwd.org or by calling 207-774-5961 ext. 3199. Please allow (3) business days to process the service application paperwork. PWD will guide the applicant through the new development process during the appointment.

225 DOUGLASS STREET P.O. BOX 3553 PORTLAND, MAINE 04104-3553
PHONE: 207.774.5961 FAX: 207.761.8307 WEB: WWW.PWD.ORG

Existing Site Service

According to District records, the project site does currently have existing water service. A 1.5-inch diameter copper domestic service line provides water service to the site. Please refer to the "Conditions of Service" section of this letter for requirements related to the use of this service.

Water System Characteristics

According to District records, there is an 6-inch diameter cast iron water main in Monument Street and a public fire hydrant located approximately 100 feet from the site. The most recent static pressure reading was 54 psi on March 16, 2017.

Public Fire Protection

The installation of new public hydrants to be accepted into the District water system will most likely not be required. It is your responsibility to contact the Portland Fire Department to ensure that this project is adequately served by existing and/or proposed hydrants.

Domestic Water Needs

The data noted above indicates there should be adequate pressure and volume of water to serve the domestic water needs of your proposed project.

Private Fire Protection Water Needs

You have indicated that this project will require water service to provide private fire protection to the site. Please note that the District does not guarantee any quantity of water or pressure through a fire protection service. Please share these results with your sprinkler system designer so that they can design the fire protection system to best fit the noted conditions. If the data is out of date or insufficient for their needs, please contact MEANS to request a hydrant flow test and we will work with you to get more complete data.

Should you disagree with this determination, you may request a review by the District's Internal Review Team. Your request for review must be in writing and state the reason for your disagreement with the determination. The request must be sent to MEANS@PWD.org or mailed to 225 Douglass Street, Portland Maine, 04104 c/o MEANS. The Internal Review Team will undertake review as requested within 2 weeks of receipt of a request for review.

If the District can be of further assistance in this matter, please let us know.

Sincerely,
Portland Water District



Robert A. Bartels, P.E.
Senior Project Engineer

M-SERIES

SUBMITTAL DATA: MXZ-3C30NAHZ2

MULTI-INDOOR INVERTER HEAT-PUMP SYSTEM

MITSUBISHI ELECTRIC

Job Name:	
System Reference:	Date:



Outdoor Unit: MXZ-3C30NAHZ2

25 Monument Street
Typical Mechanical Roof
Top Unit

ACCESSORIES

- ☐ 3/8" x 1/2" Port Adapter (MAC-A454JP-E)
- ☐ 1/2" x 3/8" Port Adapter (MAC-A455JP-E)
- ☐ 1/2" x 5/8" Port Adapter (MAC-A456JP-E)
- ☐ 1/4" x 3/8" Port Adapter (PAC-493PI)
- ☐ 3/8" x 5/8" Port Adapter (PAC-SG76RJ-E)
- ☐ M-NET Adapter (PAC-IF01MNT-E)
- ☐ Airflow Guide (PAC-SH96SG-E)

(For data on specific indoor units, see the MXZ-C Technical and Service Manual.)

Specifications			Model Name
Unit Type			MXZ-3C30NAHZ2
Cooling* (Non-ducted / Ducted)	Rated Capacity	Btu/h	28,400 / 27,400
	Capacity Range	Btu/h	6,000 - 28,400
	Rated Total Input	W	2,272 / 2,661
Heating at 47°F* (Non-ducted / Ducted)	Rated Capacity	Btu/h	28,600 / 27,600
	Capacity Range	Btu/h	7,200 - 36,000
	Rated Total Input	W	2,096 / 2,187
Heating at 17°F* (Non-ducted/Ducted)	Rated Capacity	Btu/h	18,000 / 16,500
	Maximum Capacity	Btu/h	28,600 / 27, 600
	Rated Total Input	W	1,991 / 1,993
Heating at 5°F*	Maximum Capacity	Btu/h	28,600
Energy Star® (ENERGY STAR products are third-party certified by an EPA-recognized Certification Body.)			Yes
Electrical Requirements	Power Supply	Voltage, Phase, Hertz	208 / 230V, 1-Phase, 60 Hz
	Recommended Fuse/Breaker Size	A	40
	MCA	A	30.5
Voltage	Indoor - Outdoor S1-S2	V	AC 208 / 230
	Indoor - Outdoor S2-S3	V	DC ±24
Compressor			DC INVERTER-driven Twin Rotary
Fan Motor (ECM)		F.L.A.	2.43
Sound Pressure Level	Cooling	dB(A)	54
	Heating		58
External Dimensions (H x W x D)		In / mm	41-9/32 x 37-13/32 x 13 1048 x 950 x 330
Net Weight		Lbs / kg	189 / 86
External Finish			Munsell No. 3Y 7.8/11
Refrigerant Pipe Size O.D. — Eight Ports	Liquid (High Pressure)	In / mm	1/4 / 6.35
	Gas (Low Pressure)		A:1/2 / 12.7 ; B,C: 3/8 / 9.52
Max. Refrigerant Line Length		Ft / m	230 / 70
Max. Piping Length for Each Indoor Unit		Ft / m	82 / 25
Max. Refrigerant Pipe Height Difference	If IDU is Above ODU	Ft / m	49 / 15
	If IDU is Below ODU		49 / 15
Connection Method			Flared/Flared
Refrigerant			R410A

*** Rating Conditions per AHRI Standard:**

Cooling | Indoor: 80° F (27° C) DB / 67° F (19° C) WB
Cooling | Outdoor: 95° F (35° C) DB / W.B. 23.9° C (75° F)

Heating at 47°F | Indoor: 70° F (21° C) DB / 60° F (16° C) WB
Heating at 47°F | Outdoor: 47° F (8° C) DB / 43° F (6° C) WB

Heating at 17° F | Indoor: 70° F (21° C) DB
Heating at 17° F | Outdoor: 17° F (-8° C) DB / 15° F (-9° C) WB

Specifications are subject to change without notice.

© 2016 Mitsubishi Electric US, Inc.

SPECIFICATIONS: MXZ-3C30NAHZ2, contd.

OPERATING RANGE:

	Outdoor
Cooling	D.B. 14 to 115° F [D.B. −10 to 46° C]*1
Heating	W.B. -13 to 65° F [W.B. −25 to 18° C]

*1. D.B. 5 to 115° F [D.B. −15 to 46° C], when an optional Air Outlet Guide is installed.

ENERGY EFFICIENCIES:

Indoor Unit Type	SEER	EER	HSPF	COP @ 47°F	COP @ 17°F
Non-ducted (06 + 06 + 09)	18.0	12.5	11.0	4.00	2.65
Ducted and Non-ducted	17.00	11.40	10.40	3.85	2.58
Ducted (09 + 09 + 09)	16.0	10.3	9.8	3.70	2.50

NOTES:

- Minimum of two Indoor Units must be connected to the MXZ-3C30NAHZ2.
- Minimum installed capacity cannot be less than 12,000 Btu/h.
- Total connected capacity must not exceed 130% of outdoor unit capacity.
- System can operate with only one Indoor Unit turned on.
- Information provided at 208/230V.
- For Reference:
  - MXZ-C Technical & Service Manual for detailed specifications and additional information per Indoor Unit Combination.
  - MXZ Series Multi-Zone Indoor/Outdoor Combination Table for allowed unit combinations.

MVZ CONNECTION RULES:

- Only 1 MVZ may be used on any system.
- When an MVZ is connected, total connected capacity must be 100% or less.
- When an MVZ is connected, no P-Series indoor units can be used (PCA, PLA, or PEAD).

Notes:

Specifications are subject to change without notice.

© 2016 Mitsubishi Electric US, Inc.

MXZ-3C30NAHZ2 OPERATIONAL PERFORMANCE

NON-DUCTED:

# of indoor unit	Total Nominal Capacity (x1000 Btu/h)	Total Indoor Unit Capacity (Btu/h)	Operational Performance for Indoor Unit Combinations (Unit A + Unit B + Unit C)	Cooling Capacity Range (Btu/h) Heating Capacity Range (Btu/h)		
				Unit A	Unit B	Unit C
1	6	6,000 7,400	6	6,000 7,400	-	-
1	9	9,000 11,000	9	9,000 11,000	-	-
1	12	12,000 14,400	12	12,000 14,400	-	-
1	15	14,000 18,000	15	14,000 18,000	-	-
1	18	17,200 21,600	18	17,200 21,600	-	-
1	24	22,500 22,600	24	22,500 22,600	-	-
2	12	12,000 14,800	6 + 6	6,000 7,400	6,000 7,400	-
2	15	15,000 18,400	6 + 9	6,000 7,400	9,000 11,000	-
2	18	18,000 22,000	6 + 12	6,000 7,500	12,000 14,500	-
2	21	20,000 22,000	6 + 15	6,000 6,400	14,000 15,600	-
2	24	23,000 23,000	6 + 18	5,900 5,900	17,100 17,100	-
2	30	24,000 24,000	6 + 24	5,100 5,900	18,900 18,100	-
2	18	18,000 22,000	9 + 9	9,000 11,000	9,000 11,000	-
2	21	20,000 22,000	9 + 12	8,600 9,500	11,400 12,500	-
2	24	23,000 23,000	9 + 15	9,000 8,700	14,000 14,300	-
2	27	24,000 24,000	9 + 18	8,200 8,100	15,800 15,900	-
2	33	24,000 24,000	9 + 24	6,900 7,900	17,100 16,100	-
2	24	23,000 23,000	12 + 12	11,500 11,500	11,500 11,500	-
2	27	24,000 24,000	12 + 15	11,100 10,700	12,900 13,300	-
2	30	24,000 24,000	12 + 18	9,900 9,600	14,100 14,400	-
2	36	24,000 24,000	12 + 24	8,300 9,300	15,700 14,700	-
2	30	24,000 24,000	15 + 15	12,000 12,000	12,000 12,000	-
2	33	24,000 24,000	15 + 18	10,800 10,900	13,200 13,100	-
2	36	24,000 24,000	18 + 18	12,000 12,000	12,000 12,000	-
3	18	18,000 22,000	6 + 6 + 6	6,000 7,300	6,000 7,300	6,000 7,300
3	21	21,000 25,800	6 + 6 + 9	6,000 7,400	6,000 7,400	9,000 11,000
3	24	24,000 28,400	6 + 6 + 12	6,000 7,200	6,000 7,200	12,000 14,000
3	27	26,000 28,400	6 + 6 + 15	6,000 6,400	6,000 6,400	14,000 15,600
3	30	28,400 28,600	6 + 6 + 18	5,800 5,800	5,800 5,800	16,700 17,000
3	36	28,400 28,600	6 + 6 + 24	4,900 5,700	4,900 5,700	18,500 17,300

© 2016 Mitsubishi Electric US, Inc.

MXZ-3C30NAHZ2 OPERATIONAL PERFORMANCE, contd.

NON-DUCTED:

# of indoor unit	Total Nominal Capacity (x1000 Btu/h)	Total Indoor Unit Capacity (Btu/h)	Operational Performance for Indoor Unit Combinations (Unit A + Unit B + Unit C)	Cooling Capacity Range (Btu/h) Heating Capacity Range (Btu/h)		
				Unit A	Unit B	Unit C
3	24	24,000 28,400	6 + 9 + 9	6,000 7,100	9,000 10,600	9,000 10,600
3	27	28,400 28,400	6 + 9 + 12	6,300 6,400	9,500 9,500	12,600 12,500
3	30	28,400 28,600	6 + 9 + 15	5,900 5,800	8,800 8,600	13,700 14,100
3	33	28,400 28,600	6 + 9 + 18	5,300 5,300	7,900 7,900	15,200 15,400
3	30	28,400 28,600	6 + 12 + 12	5,700 5,800	11,400 11,400	11,400 11,400
3	33	28,400 28,600	6 + 12 + 15	5,300 5,300	10,700 10,300	12,400 12,900
3	36	28,400 28,600	6 + 12 + 18	4,800 4,900	9,700 9,500	13,900 14,200
3	36	28,400 28,600	6 + 15 + 15	5,000 4,900	11,700 11,900	11,700 11,900
3	27	28,400 28,400	9 + 9 + 9	9,500 9,500	9,500 9,500	9,500 9,500
3	30	28,400 28,600	9 + 9 + 12	8,500 8,600	8,500 8,600	11,400 11,300
3	33	28,400 28,600	9 + 9 + 15	8,000 7,900	8,000 7,900	12,400 12,900
3	36	28,400 28,600	9 + 9 + 18	7,300 7,200	7,300 7,200	13,900 14,200
3	33	28,400 28,600	9 + 12 + 12	7,700 7,900	10,300 10,300	10,300 10,300
3	36	28,400 28,600	9 + 12 + 15	7,300 7,200	9,700 9,500	11,400 11,900
3	36	28,400 28,600	12 + 12 + 12	9,500 9,500	9,500 9,500	9,500 9,500

© 2016 Mitsubishi Electric US, Inc.

MXZ-3C30NAHZ2 OPERATIONAL PERFORMANCE, contd.

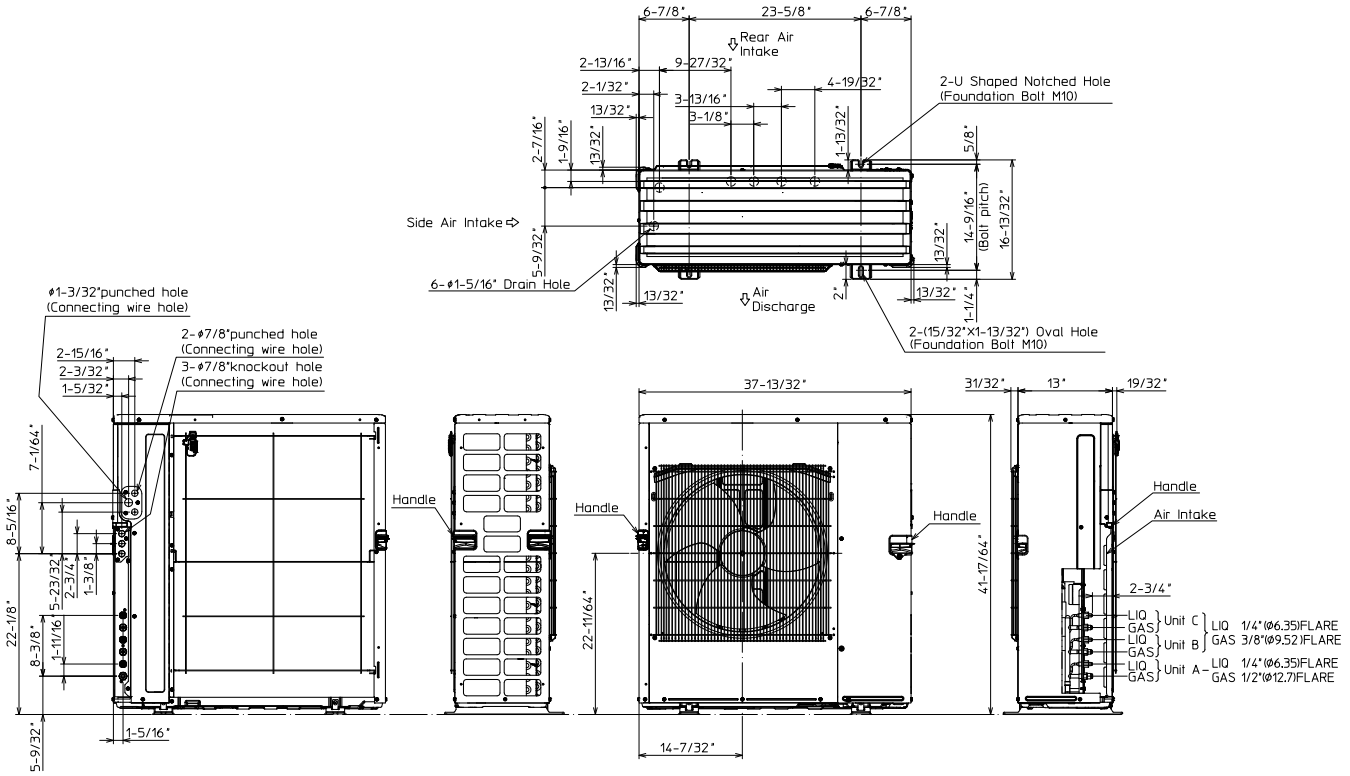
DUCTED:

# of indoor unit	Total Nominal Capacity (x1000 Btu/h)	Total Indoor Unit Capacity (Btu/h)	Operational Performance for Indoor Unit Combinations (Unit A + Unit B + Unit C)	Cooling Capacity Range (Btu/h) Heating Capacity Range (Btu/h)		
				Unit A	Unit B	Unit C
1	9	9,000 10,900	9	9,000 10,900	-	-
1	12	12,000 13,600	12	12,000 13,600	-	-
1	15	15,000 18,000	15	15,000 18,000	-	-
1	18	17,200 21,600	18	17,200 21,600	-	-
1	24	22,600 24,000	24	22,600 24,000	-	-
2	18	18,000 21,800	9 + 9	9,000 10,900	9,000 10,900	-
2	21	21,000 22,800	9 + 12	9,000 10,100	12,000 12,700	-
2	24	24,000 24,000	9 + 15	9,000 9,100	15,000 14,900	-
2	27	24,000 24,000	9 + 18	8,200 8,000	15,800 16,000	-
2	33	24,000 24,000	9 + 24	6,800 7,500	17,200 16,500	-
2	24	24,000 24,000	12 + 12	12,000 12,000	12,000 12,000	-
2	27	24,000 24,000	12 + 15	10,700 10,300	13,300 13,700	-
2	30	24,000 24,000	12 + 18	9,900 9,300	14,100 14,700	-
2	36	24,000 24,000	12 + 24	8,300 8,700	15,700 15,300	-
2	30	24,000 24,000	15 + 15	12,000 12,000	12,000 12,000	-
2	33	24,000 24,000	15 + 18	11,200 10,900	12,800 13,100	-
2	36	24,000 24,000	18 + 18	12,000 12,000	12,000 12,000	-
3	27	27,000 27,400	9 + 9 + 9	9,000 9,100	9,000 9,100	9,000 9,100
3	30	27,400 27,600	9 + 9 + 12	8,200 8,500	8,200 8,500	11,000 10,600
3	33	27,400 27,600	9 + 9 + 15	7,500 7,600	7,500 7,600	12,500 12,500
3	33	27,400 27,600	9 + 12 + 12	7,500 7,900	10,000 9,900	10,000 9,900
3	36	27,400 27,600	12 + 12 + 12	9,100 9,200	9,100 9,200	9,100 9,200
3	36	27,400 27,600	9 + 9 + 18	7,000 6,900	7,000 6,900	13,400 13,700
3	36	27,400 27,600	9 + 12 + 15	6,900 7,100	9,100 8,800	11,400 11,700

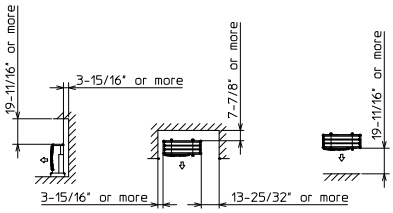
© 2016 Mitsubishi Electric US, Inc.

DIMENSIONS: MXZ-3C30NAHZ2

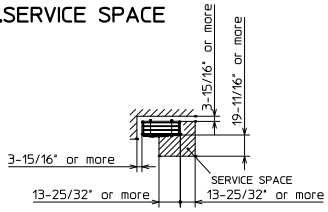
Unit: inch (mm)

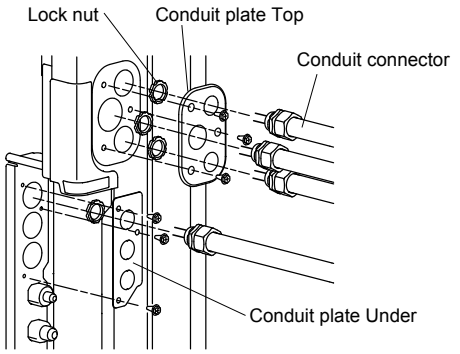


1.FREE SPACE



2.SERVICE SPACE





MITSUBISHI ELECTRIC
COOLING & HEATING

1340 Satellite Boulevard. Suwanee, GA 30024
Toll Free: 800-433-4822 www.mehvac.com

FORM# MXZ-3C30NAHZ2 for Multiple Indoor Unit Styles - 201611

Specifications are subject to change without notice.

© 2016 Mitsubishi Electric US, Inc.

MITSUBISHI ELECTRIC
COOLING & HEATING

P-SERIES

SUBMITTAL DATA: PKA-A12HA4 & PUY-A12NHA4 (-BS)

12,000 BTU/H WALL-MOUNTED AIR-CONDITIONING SYSTEM

Job Name:	Location:	Date:
Purchaser:	Engineer:	
Submitted to:	For ☐Reference ☐Approval ☐Construction	
System Designation:	Schedule No.:	



Indoor Unit: PKA-A12HA4

25 Monument Street
Elevator Mechanical
Roof Top Unit



Outdoor Unit: PUY-A12NHA4 (-BS)

GENERAL FEATURES

- Wall-mounted indoor unit for residential and commercial applications
- Shiny-white–exterior plastic; compact design
- Quiet operation—both indoor and outdoor units
- Self-check function—integrated diagnostics
- Limited warranty: five years parts and seven years compressors

UNIT OPTION

- ☐ Standard Model……..PUY-A12NHA4
- ☐ Sea Coast (BS) Model……..PUY-A12NHA4-BS

ACCESSORIES

Indoor Unit

- ☐ Mini Condensate Pump (SI3100-230, 230V)
- ☐ L-Connector Pipe (PAC-SC84PI; for left side unit piping installation)

Outdoor Unit

- ☐ Drain Pan (PAC-SG63DP)
- ☐ Drain Socket (PAC-SG61DS)
- ☐ Three-pole Disconnect Switch (TAZ-MS303)
- ☐ Wind Baffle (WB-PA1)
- ☐ Air Outlet Guide (PAC-SG58SG)
- ☐ Mounting Base (DSD-400N)
- ☐ Mounting Pad (ULTRILITE1)
- ☐ Wall-mounting Brackets (CWMB1)

Controller Options

- ☐ Wireless Wall-mounted Remote Controller Kit (MHK1)**
- ☐ Portable Central Controller (MCCH1)**
- ☐ Outdoor Air Sensor (MOS1)**
- ☐ Wired Wall-mounted Controller (PAR-31MAA)**
- ☐ Simple MA Remote Controller (PAC-YT53CRAU)**

**See Submittal for information on each option.

- ☐ M-NET Adapter (PAC-SF81MA)
- ☐ CN51 Connector for Multiple Remote Controller Adapters/Duct Fan Controller (PAC-725AD)
- ☐ CN32 Connector for Remote On/Off (PAC-715AD)
- ☐ Remote Temperature Sensor (PAC-SE41TS)
- ☐ Remote Operation Adapter - Display and On/Off (PAC-SF40RM)
- ☐ Hand-held Wireless Remote Controller (PAR-FL32MA; req. PAR-FA32MA-E)
- ☐ Wireless Signal Receiver Module (PAR-FA32MA-E)
- ☐ Lockdown Bracket for Hand-held Controller (RCMKP1CB)
- ☐ Control/Service Tool (PAC-SK52ST)

R410A INVERTER

SEACOAST PROTECTION

- External Outer Panel: Phosphate coating + Acrylic-Enamel coating
- Fan Motor Support: Epoxy resin coating (at edge face)
- Separator Assembly ; Valve Bed: Epoxy resin coating (at edge face)
- Screws (used outer side): Zinc nickel coating 5μm + Polyvinylidene chloride coating

"Blue Fin" treatment is an anti-corrosion treatment that is applied to the condenser coil to protect it against airborne contaminants..

Specifications are subject to change without notice.

© 2013 Mitsubishi Electric US, Inc.

SPECIFICATIONS: PKA-A12HA4 & PUY-A12NHA4 (-BS)

Cooling*
Rated Capacity . . . . . 12,000 Btu/h
Minimum Capacity . . . . . 6,000 Btu/h
SEER . . . . . 15.2 Btu/h/W
EER . . . . . 10.1 Btu/h/W
Total Input . . . . . 1,190 W

*** Rating Conditions per AHRI Standard**
Cooling | Indoor: 80º F (27º C) DB / 67º F (19º C) WB
Cooling | Outdoor: 95º F (35º C) DB / 75º F (24º C) WB

Electrical Requirements
Power Supply . . . . . 208 / 230V, 1-Phase, 60 Hz
Recommended Fuse/Breaker Size . . . . . 15 A

Voltage
Indoor - Outdoor S1-S2 . . . . . AC 208 / 230V
Indoor - Outdoor S2-S3 . . . . . DC ±24V

OPERATING CONDITIONS

		Indoor Intake Air Temp.	Outdoor Intake Air Temp.
Cooling	Maximum	95º F (35º C) DB 71º F (22º C) WB	115º F (46º C) DB
	Minimum	67º F (19º C) DB 57º F (14º C) WB	0º F** (-18º C) DB

** With optional wind baffle accessory installed. If not installed, the minimum temperature will be 23º F (-5º C) DB.

Indoor Unit
MCA . . . . . 1 A
Blower Motor (ECM) . . . . . 0.33 F.L.A.
Blower Motor Output . . . . . 30 W
Airflow (Lo - Mid - Hi) . . . . . 320 - 370 - 425 Dry CFM
290 - 335 - 380 Wet CFM
Air Filter . . . . . Polypropylene Honeycomb
Sound Pressure Level (Lo - Mid - Hi) . . . . . 36 - 40 - 43 dB(A)
SHF 0.81
Moisture Removal . . . . . 2.0 pt./h

DIMENSIONS	UNIT INCHES / MM
W	35-3/8 / 898
D	9-13/16 / 249
H	11-5/8 / 295

Weight . . . . . 29 lbs. / 13 kg
External Finish . . . . . Munsell No. 1.0Y 9.2 / 0.2
Field Drainpipe Size O.D. . . . . 5/8" / 16 mm

Outdoor Unit
Compressor . . . . . DC Inverter-driven Twin Rotary
MCA . . . . . 13 A
MOCP . . . . . 15 A
Fan Motor (ECM) . . . . . 0.35 F.L.A.
Sound Pressure Level
Cooling . . . . . 46 dB(A)

DIMENSIONS	INCHES / MM
W	31-1/2 / 800
D	11-13/16 + 7/8 / 300 + 23
H	23-5/8 / 600

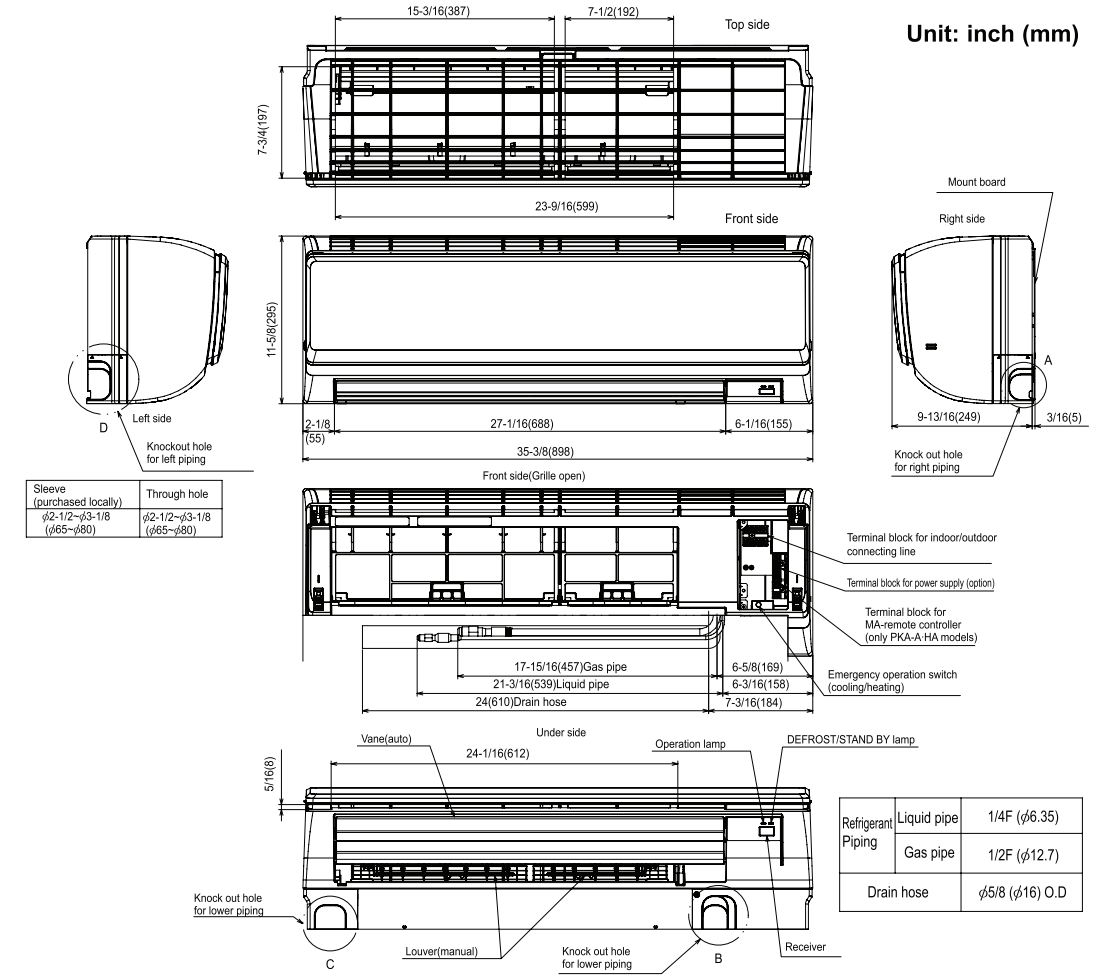
Weight . . . . . 82 lbs. / 37 kg
External Finish . . . . . Munsell No. 3Y 7.8 / 1.1
Refrigerant Type R410A
Refrigerant Pipe Size O.D.
Gas Side . . . . . 1/2" / 12.7 mm
Liquid Side . . . . . 1/4" / 6.35 mm
Max. Refrigerant Pipe Length . . . . . 100' / 30 m
Max. Refrigerant Pipe Height Difference . . . . . 100' / 30 m
Connection Method . . . . . Flared

Notes:

Specifications are subject to change without notice.
© 2013 Mitsubishi Electric US, Inc.

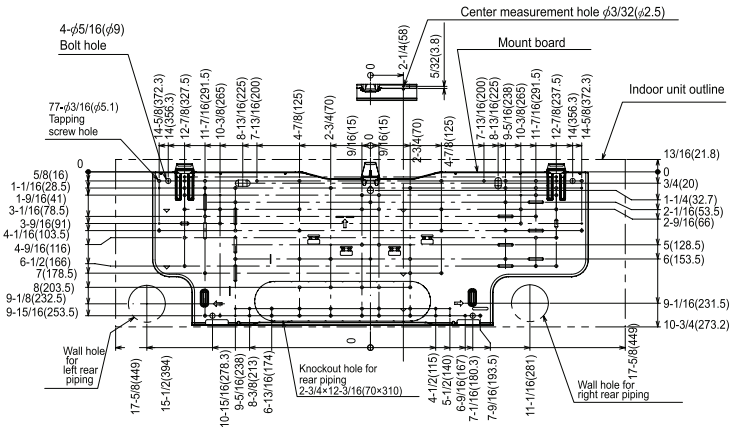
DIMENSIONS: PKA-A12HA4

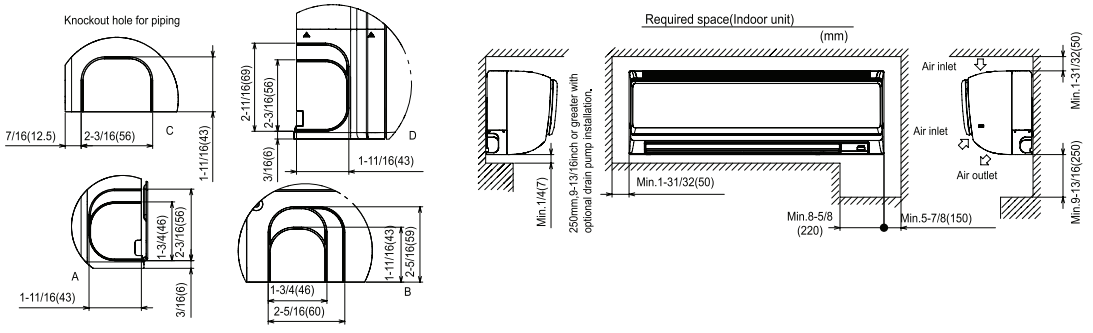
Unit: inch (mm)



Sleeve (purchased locally)	Through hole
ϕ2-1/2~ϕ3-1/8 (ϕ65~ϕ80)	ϕ2-1/2~ϕ3-1/8 (ϕ65~ϕ80)

Refrigerant Piping	Liquid pipe	1/4F (ϕ6.35)
	Gas pipe	1/2F (ϕ12.7)
Drain hose		ϕ5/8 (ϕ16) O.D



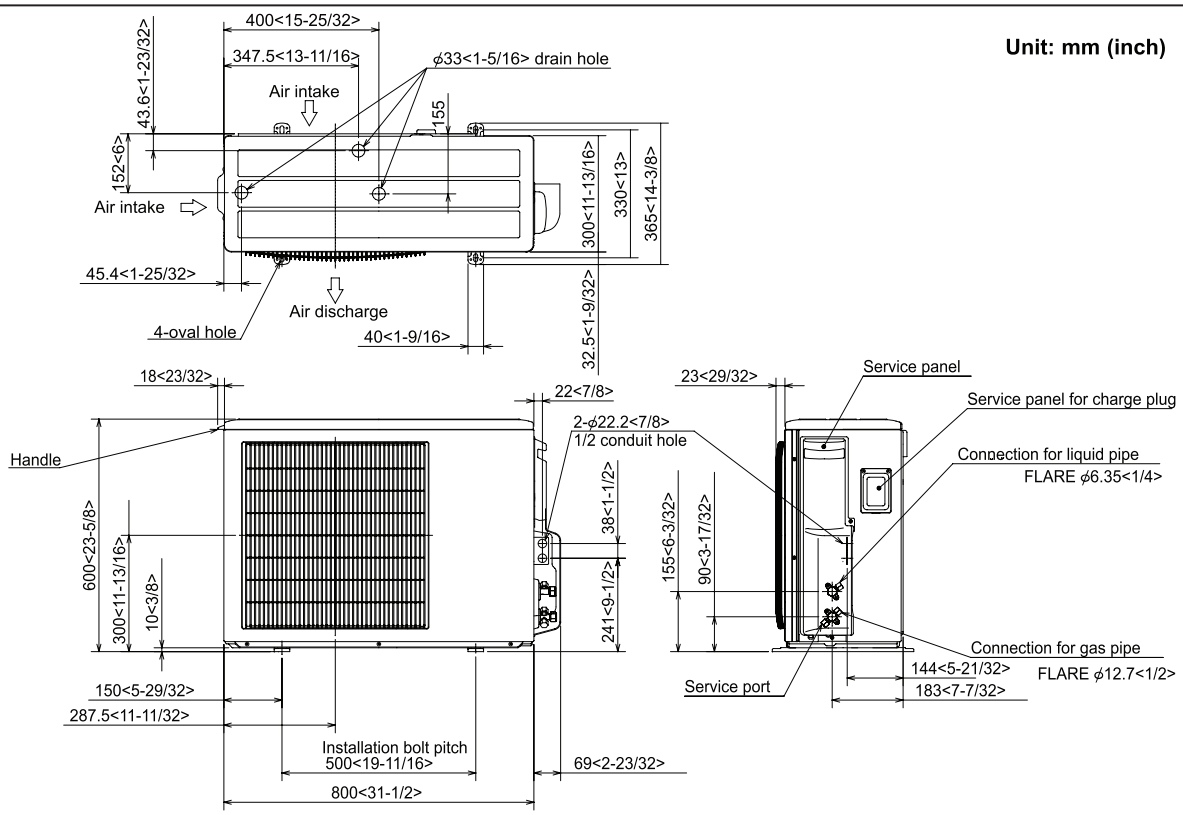


Specifications are subject to change without notice.

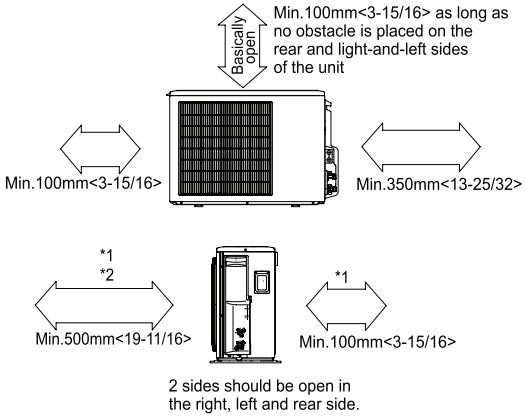
© 2013 Mitsubishi Electric US, Inc.

DIMENSIONS: PUY-A12NHA4 (-BS)

Unit: mm (inch)

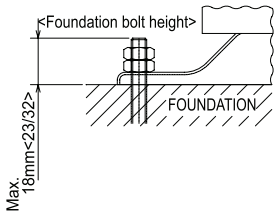


Clearance space around the outdoor unit



FOUNDATION BOLTS

Please secure the unit firmly with 4 foundation M10<W3/8> bolts. (Bolts, washers and nut must be purchased locally.)



PIPING-WIRING DIRECTION

Piping and wiring connection can be made from the rear direction only.

Minimum installation space for outdoor unit

*1 In the place where short cycle tends to occur, cooling and heating capacity and power consumption might get lowered 10%. Air outlet guide (optional) will help them improve.

*2 If air discharges to the wall, the surface might get stained.

FORM# PKA-A12HA4 - PUY-A12NHA4 (-BS) - 201311

Specifications are subject to change without notice.

© 2013 Mitsubishi Electric US, Inc.

1340 Satellite Boulevard
Suwanee, GA 30024
Tele: 678-376-2900 • Fax: 800-889-9904
Toll Free: 800-433-4822
www.mehvac.com

HVAC Emissions

The new building located at 25 Monument Street will include heat pumps which are emissions free, 100% electric. Supplementary heat in the units will also be electric.

The garage, located on the first floor, will have a couple of gas fired unit heaters manufactured by Reznor which meet the ANSI emissions standard for gas fired unit heaters. This standard requires carbon monoxide (CO) emissions to be below 400 ppm.

REZNOR®

Separated Combustion, Low Static Commercial/Industrial Unit Heaters

Model UDAS



Sizes 30-125 carry an additional approval for use in residential garage/workshops under CSA International Requirement 10.96 - U.S. and CR96-0005 - Canada

25 Monument St
Gas fired Unit Heater
for Garage/First floor

CSA 2.6b

ANSI Z83.8b

DESCRIPTION

Reznor® V3 Series Model UDAS gas-fired separated combustion unit heaters are available in 14 sizes ranging from 30,000 to 400,000 BTUH gas input. All sizes are approved for commercial/industrial installations. Sizes 30-125 carry an additional approval for use in attached residential garage/workshop application. Model UDAS heaters are designed for 82-83% thermal efficiency and are approved for installation in the United States and Canada by the Canadian Standards Association (CSA).

Reznor® V3 Series unit heaters have a refreshing new appearance with a glossy white cabinet finish and less visible hardware. Each size cabinet is easily suspended from either 2 or 4 suspension points. Or, an optional hanger kit for Sizes 30-125 allows for ceiling mounting. The low voltage terminal strip on the outside of the cabinet makes connecting control wiring easy with no panels to remove. The addition of a "G" terminal to the low voltage strip, along with the new design of the circuit board, allows for fan only operation (without adding relays). All units have a factory installed gas line nipple to the exterior of the cabinet for easy gas service connection.

The preeminent new internal feature is the TCORE² ® heat exchanger and single burner combustion system. Other standard features include a single-stage gas valve, multi-try direct spark ignition with timed lockout, pressure switch to verify vent flow, resiliently isolated venter motor, venter wheel with improved housing, resiliently isolated axial fan and motor assembly, a high temperature limit control, interlock door switch, and a built-in disconnect switch. Sizes 30-125 also include a flame rollout safety switch. Operation is controlled through an integrated circuit board. The circuit board monitors heater operation and has LED diagnostic indicator lights to identify abnormalities in control functions.

The 1ST ever separated combustion system in the commercial/industrial heating industry **was introduced on a Reznor heater** in the 1960s, and that proven technology is continued in this new separated combustion product. Model UDAS separated combustion units require installation of a specially designed combustion air/vent system including the unique concentric adapter box that allows for only one building penetration for both the vent and combustion air.

The new V3 Series unit heaters are designed to provide all the features you expect in a Reznor heater plus improved efficiency, easier installation, and a new look ***~ both inside and out.*** Look for the unique white unit with no visible front and bottom hardware, deep red louvers, black side handle, and angled corner to know you have a genuine Reznor unit by Thomas & Betts.

STANDARD FEATURES

- Sizes 30-400 certified for commercial/industrial heating application
- Sizes 30-125 carry an additional approval for use in residential garage/workshop heating applications
- 82-83% Thermal efficient ***~ TOP in its class!***
- 50-60°F Rise range
- TCORE² titanium stabilized aluminized steel heat exchanger
- Patented [A] single burner combustion system including a one-piece burner assembly
- 115/1/60 Supply voltage
- 115 Volt open fan motor with internal overload protection
- Transformer for 24-volt controls
- Integrated circuit board with diagnostic indicator lights
- Multi-try direct ignition with timed lockout
- Fan relay (included on the circuit board)
- Single-stage natural gas valve (field adjustable for operation to 9,000 ft. elevation ⊘)
- Vibration/noise isolated fan and venter motors
- Sealed control compartment houses all electrical components
- 2-pt ***and*** 4-pt Suspension ***~ standard on all sizes***
- Built-in disconnect switch (20A @ 115V Rating)
- External terminal strip for 24-volt wiring
- Sealed junction box for supply wiring
- External gas connection
- Fully gasketed door panel with safety door switch
- Full fan guard ***~ engineered for safety***
- Improved cabinet design with less visible hardware

[A] U.S. Patent No. 6,889,686.

OPTIONAL FEATURES - FACTORY INSTALLED

- Single-stage, propane gas valve (field adjustable for operation to 9,000 ft. elevation [B])
- Two-stage natural gas or propane gas valve - Sizes 60-400
- 409 or 316 Stainless steel heat exchangers
- Totally enclosed fan motor (Sizes 30-250, 115V only)

ACCESSORIES - FIELD INSTALLED

- Horizontal or Vertical Combustion Air/Vent Kit including concentric adapter [C]
- Thermostat
- Thermostat guard with locking cover
- Vertical louvers
- Downturn nozzle kits
- Gas conversion kits (natural and propane)
- Primary/secondary controls for zoning up to six units
- Ceiling suspension kit - Sizes 30-125
- Hanger kits for 1" pipe
- Stepdown transformer (for 208/115, 230/115 or 460/115 supply voltage)
- Manual shutoff valves

[B] Pressure switch change required for installations above 6,000 ft.
[C] Selection of either a horizontal or vertical combustion air/vent kit is required.

TECHNICAL DATA

Model UDAS

Size		30	45	60	75	100	125	150	175	200	225	250	300	350	400
Input Heating Capacity	BTUH	30,000	45,000	60,000	75,000	105,000	120,000	150,000	175,000	200,000	225,000	250,000	300,000	350,000	400,000
	(kw/h)	(8.8)	(13.2)	(17.6)	(22.0)	(30.8)	(35.2)	(44.0)	(51.3)	(58.6)	(65.9)	(73.3)	(87.9)	(102.6)	(117.2)
Thermal Efficiency (%)		82	83	83	83	83	83	83	83	83	83	83	83	83	83
Output Heating Capacity [D]	BTUH	24,600	37,350	49,800	62,250	87,150	99,600	124,500	145,250	166,000	186,750	207,500	249,000	290,500	332,000
	(kw/h)	(7.2)	(10.9)	(14.6)	(18.2)	(25.5)	(29.2)	(36.5)	(42.6)	(48.7)	(54.7)	(60.8)	(73.0)	(85.1)	(97.3)
Gas Connection (inches) [E]	Natural	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	3/4	3/4	3/4	3/4	3/4
	Propane	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	3/4	3/4	3/4	3/4	3/4
Vent Connection [F] (inches diameter)		4	4	4	4	4	4	5	5	5	5	5	6	6	6
Combustion Air Inlet [F] (inches diameter)		4	4	4	4	4	4	6	6	6	6	6	6	6	6
Control Amps (24 volt)		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Full Load Amps (115 volt)		1.9	2.4	2.4	3.3	3.9	5.1	3.8	3.8	4.6	7.5	7.5	11.0	11.0	11.0
Maximum Over Current Protection (115V) [G]		15	15	15	15	15	15	15	15	15	15	15	20	20	20
Normal Power Consumption (watts)		109	155	155	217	276	354	392	392	491	747	747	1086	1086	1086
Discharge Air Temperature Rise (°F)		50	55	60	60	60	60	60	60	60	60	60	60	60	60
Air Volume	CFM	456	629	769	961	1345	1537	1921	2242	2562	2882	3202	3843	4483	5123
	(M^3/min)	(12.9)	(17.8)	(21.8)	(27.2)	(38.1)	(43.5)	(54.4)	(63.5)	(72.5)	(81.6)	(90.7)	(108.8)	(126.9)	(145.1)
Discharge Air Opening Area	ft^2	0.96	0.96	1.25	1.25	2.01	2.01	2.56	2.56	2.56	3.51	3.51	4.79	4.79	4.79
	(M^2)	(0.09)	(0.09)	(0.12)	(0.12)	(0.19)	(0.19)	(0.24)	(0.24)	(0.24)	(0.33)	(0.33)	(0.45)	(0.45)	(0.45)
Output Velocity	FPM	475	656	616	770	668	763	752	877	1003	820	911	802	936	1069
	(M/min)	(145)	(200)	(188)	(235)	(204)	(233)	(229)	(267)	(306)	(250)	(278)	(244)	(285)	(326)
Fan Motor HP [H]	Open	0.02	0.03	0.03	0.06	1/30	1/20	1/6	1/6	1/6	1/4	1/4	1/2	1/2	1/2
	Enclosed	0.06	0.06	0.06	0.06	1/20	1/20	1/4	1/4	1/4	1/4	1/4	1/2	1/2	1/2
Fan Motor	RPM	1550	1550	1550	1550	1050	1050	1050	1050	1050	1050	1050	1050	1050	1050
Fan Diameter	inches	10	10	12	12	16	16	18	18	18	20	20	24	24	24
Sound Level	dba @ 15 ft	40	40	40	49	54	55	51	52	53	56	56	59	61	62
Approximate Net Weight	lbs	55	60	68	73	97	102	173	188	188	204	216	270	295	307
	(kg)	(25)	(27)	(31)	(33)	(44)	(46)	(78)	(85)	(85)	(93)	(98)	(122)	(134)	(139)
Approximate Ship Weight	lbs	63	68	76	81	120	125	206	221	221	247	259	323	348	360
	(kg)	(29)	(31)	(34)	(37)	(54)	(57)	(93)	(100)	(100)	(112)	(117)	(147)	(158)	(163)

[D] CSA rating for altitudes to 2000 ft.
[E] Size shown is for gas connection to a single stage gas valve, not supply line size.
[F] Smaller and/or larger vent and combustion air pipe diameters may be allowed; refer to the Venting Installation Manual for Separated Combustion Units, Form I-V-SC. If vent diameter is different from vent connection, reducer/enlargers will be field-required.
[G] MOP = 2.25 x largest motor FLA + remaining load. Answer is rounded down to the next size of commercially available circuit breaker or fuse.
[H] All other information in this table is based on a heater equipped with a standard 115 volt open fan motor.

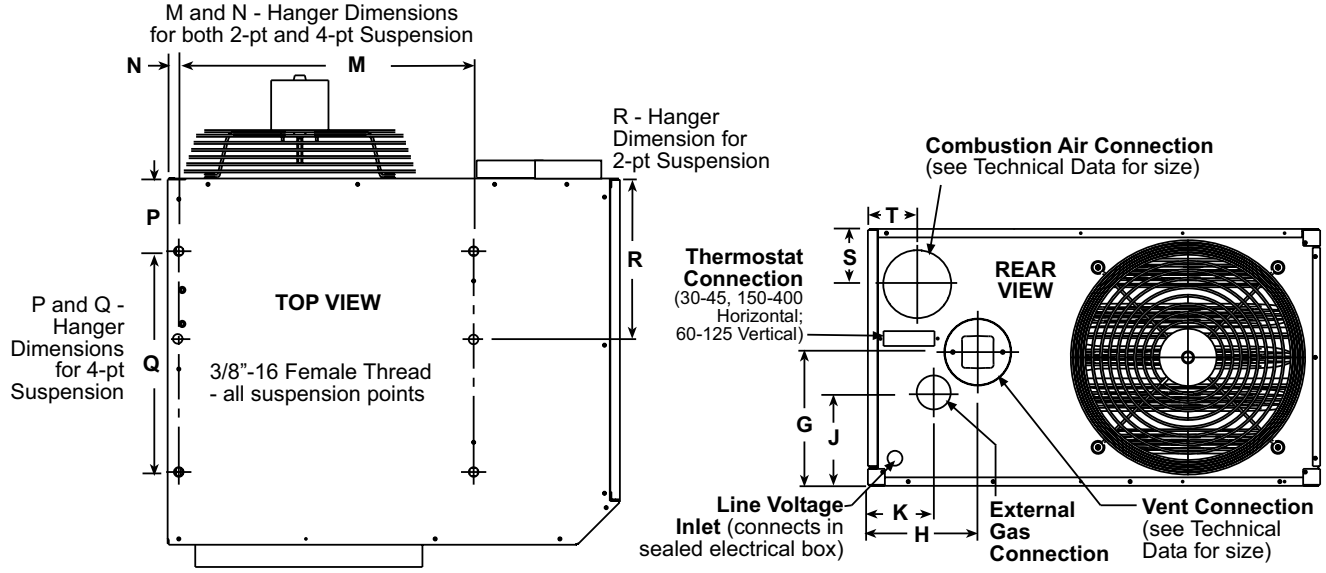
For installations where dirt, dust, and other air borne contamination is present in the indoor environment, it is recommended to use separated combustion units (Model UDAS). These models use air from outside the space for combustion. This will help reduce the build up of contaminates on the burner which would affect the combustion process. Refer to the installation manuals for recommended frequency of maintenance and cleaning.

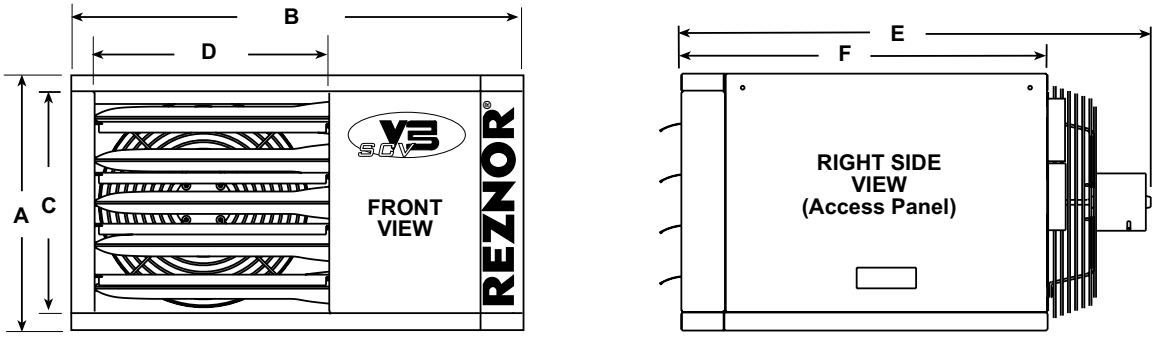
DIMENSIONS

Model UDAS ±1/16" (2mm)

Size	A	B	C	D	E	F	G	H	J	K	M	N	P	Q	R	S	T
30, 45	12 1/8	26 5/8	10	13 13/16	26	21 9/16	5 3/16	6 1/2	2 11/16	3 7/8	17 3/8	11/16	4 5/16	13	9 9/16	2 15/16	2 15/16
60	15 1/8	26 5/8	13	13 13/16	27	21 9/16	7 7/8	6 1/2	5 1/2	3 7/8	17 3/8	11/16	4 5/16	13	10 1/2	3 1/4	2 15/16
75	15 1/8	26 5/8	13	13 13/16	27 5/8	21 9/16	7 7/8	6 1/2	5 1/2	3 7/8	17 3/8	11/16	4 5/16	13	10 1/2	3 1/4	2 15/16
100	23 1/8	26 5/8	21	13 13/16	28 5/8	21 9/16	14 1/2	6 1/2	8 3/4	3 7/8	17 3/8	11/16	4 5/16	13	10 1/2	4 5/8	2 15/16
125	23 1/8	26 5/8	21	13 13/16	29 3/8	21 9/16	14 1/2	6 1/2	8 3/4	3 7/8	17 3/8	11/16	4 5/16	13	10 1/2	4 5/8	2 15/16
150, 175, 200	20 1/8	38 3/16	16	23	42	35 3/8	8 1/2	8 1/4	5 7/16	6 1/2	25 11/16	1 3/8	8 3/16	22 3/16	16 3/8	4 1/8	8 5/16
225, 250	26 1/8	38 3/16	22	23	42	35 3/8	13 1/16	8 13/16	9	6 1/2	25 11/16	1 3/8	8 3/16	22 3/16	15 5/8	5 9/16	8 5/16
300, 350, 400	34 1/8	41	30	23	42	35 3/8	17 1/16	9	11 13/16	7 5/16	27 11/16	1 3/8	8 3/16	22 3/16	16 3/16	9 1/16	8 9/16

Size	A	B	C	D	E	F	G	H	J	K	M	N	P	Q	R	S	T
30, 45	(308)	(676)	(254)	(351)	(660)	(548)	(132)	(165)	(68)	(98)	(441)	(17)	(110)	(330)	(243)	(75)	(75)
60	(384)	(676)	(330)	(351)	(686)	(548)	(200)	(165)	(140)	(98)	(441)	(17)	(110)	(330)	(267)	(83)	(75)
75	(384)	(676)	(330)	(351)	(702)	(548)	(200)	(165)	(140)	(98)	(441)	(17)	(110)	(330)	(267)	(83)	(75)
100	(587)	(676)	(533)	(351)	(727)	(548)	(368)	(165)	(222)	(98)	(441)	(17)	(110)	(330)	(267)	(117)	(75)
125	(587)	(676)	(533)	(351)	(746)	(548)	(368)	(165)	(222)	(98)	(441)	(17)	(110)	(330)	(267)	(117)	(75)
150, 175, 200	(511)	(970)	(406)	(584)	(1,067)	(899)	(216)	(210)	(138)	(165)	(652)	(35)	(208)	(564)	(416)	(105)	(211)
225, 250	(664)	(970)	(559)	(584)	(1,067)	(899)	(332)	(224)	(229)	(165)	(652)	(35)	(208)	(564)	(397)	(141)	(211)
300, 350, 400	(867)	(1,041)	(762)	(584)	(1,067)	(899)	(433)	(229)	(300)	(186)	(703)	(35)	(208)	(564)	(411)	(230)	(217)





CLEARANCE FROM COMBUSTIBLES

Size	Top		Flue Connector		Access Panel [J]		Non-Access Side		Bottom [K]		Rear [L]	
	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm
30-125	1	25	6	152	18	457	1	25	1	25	18	457
150-400	4	102	6	152	18	457	2	51	1	25	18	457

[J] Access Panel clearance is required for service clearance to controls
[K] Suspend the heater so that the bottom is a minimum of 5' (1.5M) above the floor.
[L] Rear clearance is required for air movement. Rear clearance should be measured from the fan motor.
Refer to Reznor web site www.RezSpec.com for venting/inlet air requirements for Reznor Separated Combustion Units

Solid Waste Management

The new building located at 25 Monument Street will include a 78 sf. trash/ recycling room on the first floor. In addition, the owner plans to contract with Troiano Waste Services for a weekly removable of solid waste.

R E P O R T

17-1218 S

December 6, 2017

Explorations and Geotechnical Engineering Services

Proposed Housing
25 Monument Street
Portland, Maine

Prepared For:
Whipple-Callendar Architects
Attn: John Whipple
136 Pleasant Avenue
Portland, ME 04103

Prepared By:
S. W. Cole Engineering, Inc.
287 Portland Road
Gary, Maine 04039
T: {207-657-2866

S.W.COLE ENGINEERING, INC.

- *Geotechnical Engineering*
- *Construction Materials Testing and Special Inspections*
- *GeoEnvironmental Services*
- *Test Boring Explorations*

www.swcole.com

TABLE OF CONTENTS

1.0 INTRODUCTION 1
1.1 Scope and Purpose 1
1.2 Site and Proposed Construction 1
2.0 EXPLORATION AND TESTING 2
2.1 Explorations 2
2.2 Field Testing 2
2.3 Laboratory Testing 2
3.0 SUBSURFACE CONDITIONS 3
3.1 Soil and Bedrock 3
3.2 Groundwater 4
4.0 EVALUATION AND RECOMMENDATIONS 4
4.1 General Findings 4
4.2 Site and Subgrade Preparation 4
4.3 Excavation and Dewatering 5
4.4 Foundations 6
4.5 Foundation Drainage 6
4.6 Slab-On-Grade 6
4.7 Entrance Slabs and Sidewalks 7
4.8 Fill, Backfill and Compaction 7
4.9 Weather Considerations 8
4.10 Paved Areas 9
4.11 Design Review and Construction Testing 9
5.0 CLOSURE 10

Appendix A Limitations
Appendix B Figures
Appendix C Exploration Logs & Key
Appendix D Laboratory Test Results

17-1218 S

December 6, 2017

Whipple-Callendar Architects
Attn: John Whipple
136 Pleasant Avenue
Portland, ME 04103

Subject: Explorations and Geotechnical Engineering Services
Proposed Housing Structure
25 Monument Street
Portland, Maine

Dear John:

In accordance with our Proposal, dated October 18, 2017, we have performed subsurface explorations for the subject project. This report summarizes our findings and geotechnical recommendations and its contents are subject to the limitations set forth in Appendix A.

1.0 INTRODUCTION

1.1 Scope and Purpose

Our scope of services included six test boring explorations, soils laboratory testing, a geotechnical analysis of the subsurface findings and preparation of this report.

1.2 Site and Proposed Construction

We understand the site consists of a rectangular, 0.229 acre lot located at 25 Monument Street in Portland, Maine. The site is currently occupied by a multi-story residential wood-framed structure with a full basement with associated garage, driveway, and landscape areas. Existing grades generally slope down to the southeast, towards Monument Street, varying from about elevation 146 to 142 feet (project datum).

We understand proposed construction includes razing the existing site structures in favor of a new multi-story housing structure with ground level heated parking below. We anticipate parking space will have a concrete slab. We understand the building will be rectangular in shape, occupying a plan footprint of about 5,650 SF. Driveway access to the ground level parking will be provided off of Monument Street. Proposed structural loading and finish grades are not available at this time, however we anticipate proposed finish floor elevation to be within 1 to 2 feet of existing grades.

Proposed and existing site features are shown on the "Exploration Location Plan" attached in Appendix B.

2.0 EXPLORATION AND TESTING

2.1 Explorations

Six test borings (B-1 through B-6) were made at the site on November 7, 2017 by S. W. Cole Explorations, LLC, a subsidiary of S. W. Cole Engineering, Inc. (S.W.COLE). The exploration locations were selected and established in the field by S.W.COLE using measurements from existing site features. The approximate exploration locations are shown on the "Exploration Location Plan" attached in Appendix B. Logs of the explorations and a key to the notes and symbols used on the logs are attached in Appendix C. The elevations shown on the logs were estimated based on topographic information shown on the "Exploration Location Plan".

2.2 Field Testing

The test borings were drilled using solid-stem and hollow-stem augers. The soils were sampled at 2 to 5 foot intervals using a split spoon sampler and Standard Penetration Testing (SPT) techniques. SPT blow count results are shown on the logs.

2.3 Laboratory Testing

Soil samples obtained from the explorations were returned to our laboratory for further classification and testing. Soil moisture content test results are noted on the logs. The results of a two soil gradation tests are attached in Appendix D.

3.0 SUBSURFACE CONDITIONS

3.1 Soil and Bedrock

In general, the explorations encountered topsoil (lawn) or sand and gravel (driveway) overlying fill overlying native sand overlying glacial till. The principal strata encountered are summarized below; refer to the attached logs for more detailed descriptions of the subsurface findings.

Surficial: Borings B-1 through B-3 encountered several inches of sand and gravel fill overlying uncontrolled fill. Borings B-4 through B-6 encountered about 6 to 10 inches of topsoil with organics overlying uncontrolled fill.

Uncontrolled Fill: Each of the borings encountered loose to medium dense fill below the surficial material. The fill appears to vary in thickness from about 2 to 5 feet at the exploration locations and generally consists of dark brown silty sand with varying amounts of gravel and brick with some cobbles (uncontrolled fill). The fill was observed to extend to depths of about 4 to 5 feet below the ground surface at borings B-1, B-2 and B-4. Organics were observed in the fill at borings B-2, B-4 and B-6. It is likely that the fill at borings B-3, B-5 and B-6 may be thicker, but may consist of on-site native soils as the darker color soil and brick were only observed to depths of about 2 feet below the ground surface.

Sands: Underlying the fill, the explorations generally encountered medium dense to very dense sand with varying amounts of silt, gravel and some cobbles extending to depths of about 8 feet below the existing ground surface.

Till: Below the sandy soils, the explorations encountered dense to very dense glacial till consisting of silty sand with varying amounts of gravel and some cobbles.

Refusal: The explorations were terminated in the dense glacial till soil (not refusal) at depths of 17 feet below the existing ground surface.

Not all the strata were encountered at each exploration; refer to the attached logs for more detailed subsurface information.

3.2 Groundwater

The soils encountered at the test borings were moist to wet from the ground surface. Saturated soils were encountered at depths varying from 10 to 13 feet at explorations B-1, B-2, B-4 and B-6. Long term groundwater information is not available. It should be anticipated that groundwater levels will fluctuate, particularly in response to periods of snowmelt and precipitation, as well as changes in site use.

4.0 EVALUATION AND RECOMMENDATIONS

4.1 General Findings

Based on the subsurface findings, the proposed construction appears feasible from a geotechnical standpoint. The principle geotechnical considerations include:

- Spread footing foundations and a slab-on-grade floors bearing on properly prepared subgrades appear suitable for the proposed building. Footings should bear on densified, native non-organic sandy soils or compacted Structural Fill. On-grade floor slabs should bear on at least 12-inches of properly compacted Structural Fill overlying densified, native non-organic sandy soils.

- All topsoil, remnant structures, foundations, fill and debris must be completely removed from beneath the proposed building area and entrance slabs and backfilled with properly compacted Structural Fill. The existing basement area will need to be backfilled with compacted Structural Fill or Granular Borrow.

- Uncontrolled fills including brick was encountered at the explorations. We recommend all pavement subgrades be proof-rolled prior to placing pavement gravels. Stumps, wood and soils with organics, if encountered would require complete removal and replacement with compacted Structural Fill or additional sub-base gravel. Given the site is a developed, urban lot, remnant structures, fills and utilities should be expected to be encountered during excavation.

4.2 Site and Subgrade Preparation

We recommend site preparation begin with the construction of an erosion control system to protect adjacent drainage ways and areas outside the construction limits. As much

vegetation as possible should remain outside the construction areas to lessen the potential for erosion and site disturbance.

Building Pad and Footings: As discussed, the site was previously developed. Foundation remnants and fill with organics and construction debris were encountered at the explorations. Uncontrolled fills, relic structures, foundations and debris must be completely removed from beneath the proposed building and entrance slabs. The extent of removal should extend 1 foot laterally outward from outside edge of perimeter footings for every 1-foot of excavation depth (1H:1V bearing splay). The over-excavated areas beneath footings should be backfilled with compacted Structural Fill or Granular Borrow. The void left from the existing basement area should be backfilled with compacted Structural Fill or Granular Borrow beneath slab areas. All subgrades should be proof-rolled and densified with several passes of a vibratory roller-compactor weighing at least 5 tons prior to placing new fills.

Paved and Utilities: Uncontrolled fill with organics should be completely removed. Uncontrolled granular fills should be proof-rolled and densified with several passes of a vibratory roller-compactor weighing at least 5 tons. Areas that become soft or continue to yield after densification should be removed and replaced with compacted Structural Fill or additional sub-base gravel or pipe bedding, as appropriate.

4.3 Excavation and Dewatering

Excavation work will generally encounter uncontrolled fills, remnant structures and native sandy soils. Earthwork and grading activities should occur during drier, non-freezing weather of Spring, Summer and Fall. Sumping and pumping dewatering techniques should be adequate to control groundwater in excavations, if encountered. Controlling the water levels to at least one foot below planned excavation depths will help stabilize subgrades during construction. Excavations must be properly shored or sloped in accordance with OSHA Regulations to prevent sloughing and caving of the sidewalls during construction. Care must be taken to preclude undermining adjacent structures, utilities and roadways. The design and planning of excavations, excavation support systems, and dewatering is the responsibility of the contractor.

4.4 Foundations

We recommend the proposed buildings be supported on spread footings founded on densified native sandy soils or compacted Structural Fill placed on densified native sandy soils or compacted Granular Borrow in over-excavated areas. For foundations bearing on properly prepared subgrades, we recommend the following geotechnical parameters for design consideration:

Geotechnical Parameters for Spread Footings and Foundation Walls	
Design Frost Depth (100 year AFI)	4.5 feet
Net Allowable Soil Bearing Pressure	3.5 ksf
Base Friction Factor	0.35
Total Unit Weight of Backfill	125 pcf
At-Rest Lateral Earth Pressure Coefficient	0.5
Internal Friction Angle of Backfill	30°
Seismic Soil Site Class	D (IBC 2009)
Estimated Total Settlement	1-inch or less
Differential Settlement	½-inch or less

4.5 Foundation Drainage

We recommend an underdrain system be installed adjacent to the outside edge of the perimeter footings. The underdrain pipe should consist of 4-inch diameter, perforated SDR-35 foundation drain pipe bedded in Crushed Stone and wrapped in non-woven geotextile fabric, such as Mirafi 160N or equal. The underdrain pipe must have a positive gravity outlet protected from freezing, clogging and backflow. Surface grades should be sloped away from the building for positive surface water drainage. General underdrain details are illustrated on the “Foundation Detail Sketch” attached in Appendix B.

4.6 Slab-On-Grade

On-grade floor slabs in heated areas may be designed using a subgrade reaction modulus of 100 pci (pounds per cubic inch) provided the slab is underlain by at least 12-inches of compacted Structural Fill placed over properly prepared subgrades. The structural engineer or concrete consultant must design steel reinforcing and joint spacing appropriate to slab thickness and function.

We recommend a sub-slab vapor retarder particularly in areas of the building where the concrete slab will be covered with an impermeable surface treatment or floor covering that may be sensitive to moisture vapors. The vapor retarder must have a permeance

that is less than the floor cover or surface treatment that is applied to the slab. The vapor retarder must have sufficient durability to withstand direct contact with the sub-slab base material and construction activity. The vapor retarder material should be placed according to the manufacturer's recommended method, including the taping and lapping of all joints and wall connections. The architect and/or flooring consultant should select the vapor retarder products compatible with flooring and adhesive materials.

The floor slab should be appropriately cured using moisture retention methods after casting. Typical floor slab curing methods should be used for at least 7 days. The architect or flooring consultant should assign curing methods consistent with current applicable American Concrete Institute (ACI) procedures with consideration of curing method compatibility to proposed surface treatments, flooring and adhesive materials.

4.7 Entrance Slabs and Sidewalks

Entrance slabs and sidewalks adjacent to the building must be designed to reduce the effects of differential frost action between adjacent pavement, doorways, and entrances. We recommend that non-frost susceptible Structural Fill be provided to a depth of at least 4.5 feet below the top of entrance slabs. This thickness of Structural Fill should extend the full width of the entrance slab and outward at least 4.5 feet, thereafter transitioning up to the bottom of the adjacent sidewalk or pavement gravels at a 3H:1V or flatter slope. General details of this frost transition zone are shown on the "Foundation Detail Sketch" attached in Appendix B.

4.8 Fill, Backfill and Compaction

We recommend the following fill and backfill materials: recycled products must also be tested in accordance with applicable environmental regulations and approved by a qualified environmental consultant.

Common Borrow: Fill to raise grades in landscape areas should be non-organic compactable earth meeting the requirements of 2014 MaineDOT Standard Specification 703.18 Common Borrow.

Granular Borrow: Subgrade fill to raise grades in the existing basement area, beneath slab areas can be sand or silty sand meeting the requirements of 2014 MaineDOT Standard Specification 703.19 Granular Borrow or Structural Fill.

Structural Fill: Backfill for foundations, slab base material, material below exterior entrances slabs and subgrade fill in the existing basement area should be clean, non-frost susceptible sand and gravel meeting the gradation requirements for Structural Fill as given below:

Structural Fill	
Sieve Size	**Percent Finer by Weight**
4 inch	100
3 inch	90 to 100
¼ inch	25 to 90
#40	0 to 30
#200	0 to 6

Crushed Stone: Crushed Stone, used for underdrain aggregate should be washed ¾-inch crushed stone meeting the requirements of 2014 MaineDOT Standard Specification 703.22 Underdrain Backfill Material Type C.

Reuse of Site Soils: The uncontrolled fill containing organics and construction debris are unsuitable for reuse in building and paved areas, but may be suitable for reuse as Common Borrow in landscape areas, provided they are at a compactable moisture content at the time of reuse. The non-organic granular fill without construction debris and the native sandy soils may be suitable for use as Granular Fill to raise grades within the existing basement area provided they are at a moisture content at the time of placement.

Placement and Compaction: Fill should be placed in horizontal lifts and compacted such that the desired density is achieved throughout the lift thickness with 3 to 5 passes of the compaction equipment. Loose lift thicknesses for grading, fill and backfill activities should not exceed 12 inches. We recommend that fill and backfill in building and paved areas be compacted to at least 95 percent of its maximum dry density as determined by ASTM D-1557. Crushed Stone should be compacted with 3 to 5 passes of a vibratory plate compactor having a static weight of at least 500 pounds.

4.9 Weather Considerations

Construction activity should be limited during wet and freezing weather and the site soils may require drying or thawing before construction activities may continue. The contractor should anticipate the need for water to temper fills in order to facilitate compaction during

dry weather. If construction takes place during cold weather, subgrades, foundations and floor slabs must be protected during freezing conditions. Concrete and fill must not be placed on frozen soil; and once placed, the concrete and soil beneath the structure must be protected from freezing.

4.10 Paved Areas

We anticipate paved areas will be subjected primarily to passenger vehicle and light delivery truck traffic. Considering the site soils, and proposed usage, we offer the following pavement section for consideration.

FLEXIBLE (HMA) PAVEMENT SECTION – 2014 MaineDOT Standard Specs	
Pavement Layer	**Material Thickness**
MaineDOT 9.5 mm Hot Mix Asphalt	1 ¼ inches
MaineDOT 19.0 mm Hot Mix Asphalt	2 ¼ inches
MaineDOT 703.06 Aggregate Base Type A	6 inches
MaineDOT 703.06 Aggregate Subbase Type D	12 inches

The base and subbase materials should be compacted to at least 95 percent of their maximum dry density as determined by ASTM D-1557. Hot mix asphalt pavement should be compacted to 92 to 97 percent of its theoretical maximum density as determined by ASTM D-2041. A tack coat should be used between successive lifts of bituminous pavement.

It should be understood that frost penetration can be on the order of 4.5 feet in this area. In the absence of full depth excavation of frost susceptible soils below paved areas and subsequent replacement with non-frost susceptible compacted fill, frost penetration into the subgrade will occur and some heaving and distress of pavement must be anticipated.

4.11 Design Review and Construction Testing

S.W.COLE should be retained to review the construction documents prior to bidding to determine that our earthwork, foundation and pavement recommendations have been properly interpreted and implemented.

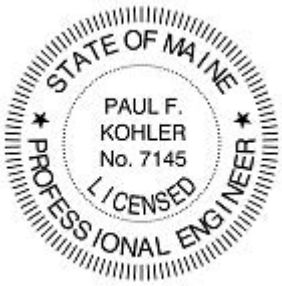
A soils and concrete testing program should be implemented during construction to observe compliance with the design concepts, plans, and specifications. S.W.COLE is available to observe earthwork activities, the preparation of foundation bearing surfaces and pavement subgrades, as well as to provide testing and IBC Special Inspection services for soils, concrete, steel, spray-applied fireproofing, structural masonry and asphalt construction materials.

5.0 CLOSURE

It has been a pleasure to be of assistance to you with this phase of your project. We look forward to working with you during the construction phase of the project.

Sincerely,

S. W. Cole Engineering, Inc.



Paul F. Kohler, P.E.
Senior Geotechnical Engineer

PFK:mas

APPENDIX A

Limitations

This report has been prepared for the exclusive use of Whipple-Callendar Architects for specific application to the proposed *housing structure located at 25 Monument Street in Portland, Maine*. S. W. Cole Engineering, Inc. (S.W.COLE) has endeavored to conduct our services in accordance with generally accepted soil and foundation engineering practices. No warranty, expressed or implied, is made.

The soil profiles described in the report are intended to convey general trends in subsurface conditions. The boundaries between strata are approximate and are based upon interpretation of exploration data and samples.

The analyses performed during this investigation and recommendations presented in this report are based in part upon the data obtained from subsurface explorations made at the site. Variations in subsurface conditions may occur between explorations and may not become evident until construction. If variations in subsurface conditions become evident after submission of this report, it will be necessary to evaluate their nature and to review the recommendations of this report.

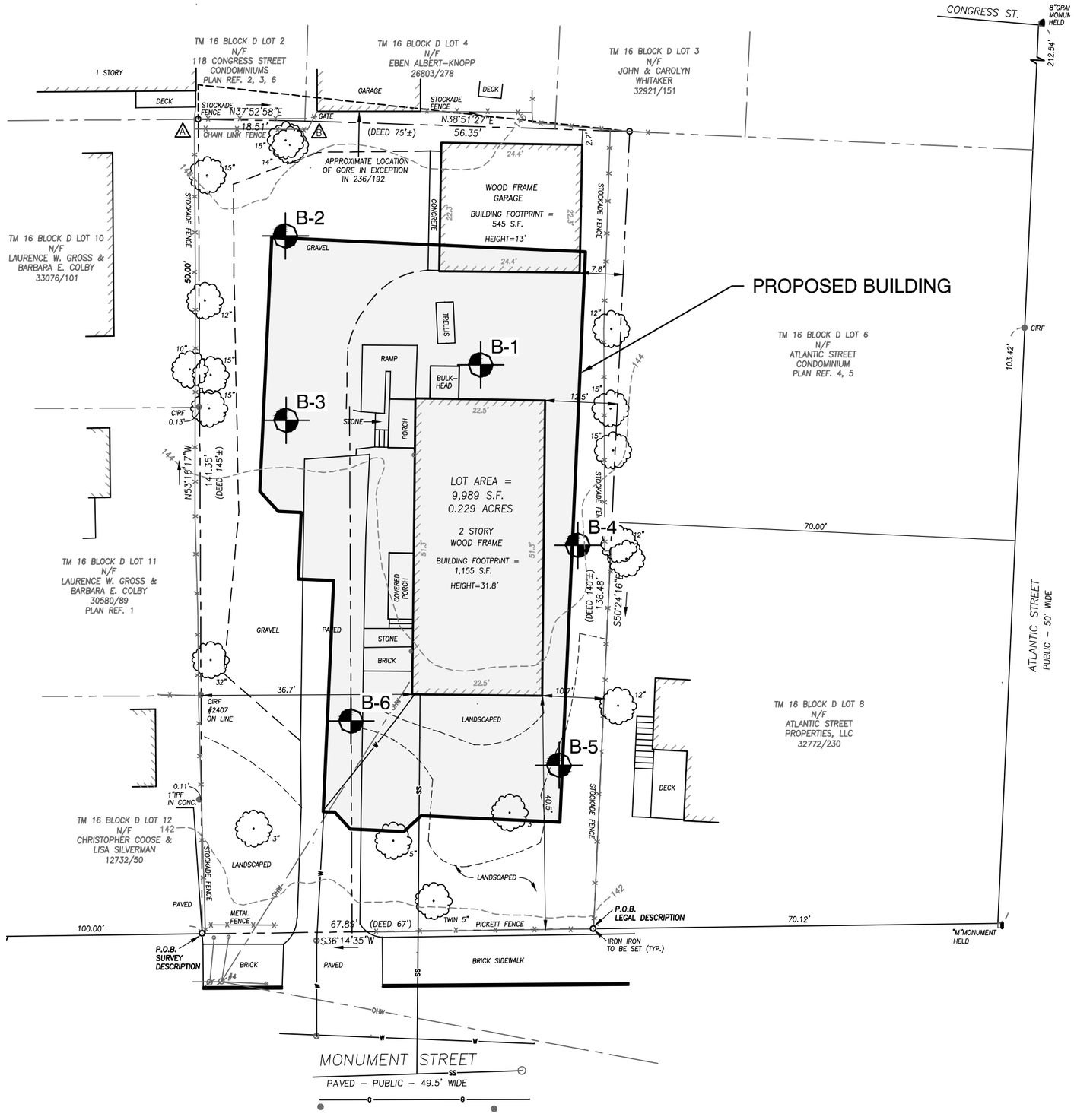
Observations have been made during exploration work to assess site groundwater levels. Fluctuations in water levels will occur due to variations in rainfall, temperature, and other factors.

S.W.COLE's scope of services has not included the investigation, detection, or prevention of any Biological Pollutants at the project site or in any existing or proposed structure at the site. The term "Biological Pollutants" includes, but is not limited to, molds, fungi, spores, bacteria, and viruses, and the byproducts of any such biological organisms.

Recommendations contained in this report are based substantially upon information provided by others regarding the proposed project. In the event that any changes are made in the design, nature, or location of the proposed project, S.W.COLE should review such changes as they relate to analyses associated with this report. Recommendations contained in this report shall not be considered valid unless the changes are reviewed by S.W.COLE.

APPENDIX B

Figures



LEGEND:

APPROXIMATE BORING LOCATION

NOTES:

1. EXPLORATION LOCATION PLAN WAS PREPARED FROM A 1"=10' SCALE PLAN OF THE SITE ENTITLED "ALTA / NSPS LAND TITLE SURVEY," PREPARED BY OWEN HASKELL, INC., DATED JANUARY 13, 2017, REVISED JANUARY 18, 2017.
2. TOPOGRAPHIC CONTOURS AND PROPOSED BUILDING OUTLINE WERE OVERLAID ON THE ABOVE REFERENCED PLAN FROM A SCALE PLAN OF THE SITE ENTITLED "PROPOSED SITE PLAN," PREPARED BY WHIPPLE CALLENDER ARCHITECTS, DATED NOVEMBER 9, 2017 AND PROVIDED AS A PORTABLE DOCUMENT FORMAT (PDF) FILE.
3. THE BORINGS WERE LOCATED IN THE FIELD BY MEASUREMENTS FROM EXISTING SITE FEATURES.
4. THIS PLAN SHOULD BE USED IN CONJUNCTION WITH THE ASSOCIATED S. W. COLE ENGINEERING, INC. GEOTECHNICAL REPORT.
5. THE PURPOSE OF THIS PLAN IS ONLY TO DEPICT THE LOCATION OF THE EXPLORATIONS IN RELATION TO THE EXISTING CONDITIONS AND PROPOSED CONSTRUCTION AND IS NOT TO BE USED FOR CONSTRUCTION.

0 20 40 Feet

S.W.COLE ENGINEERING, INC.

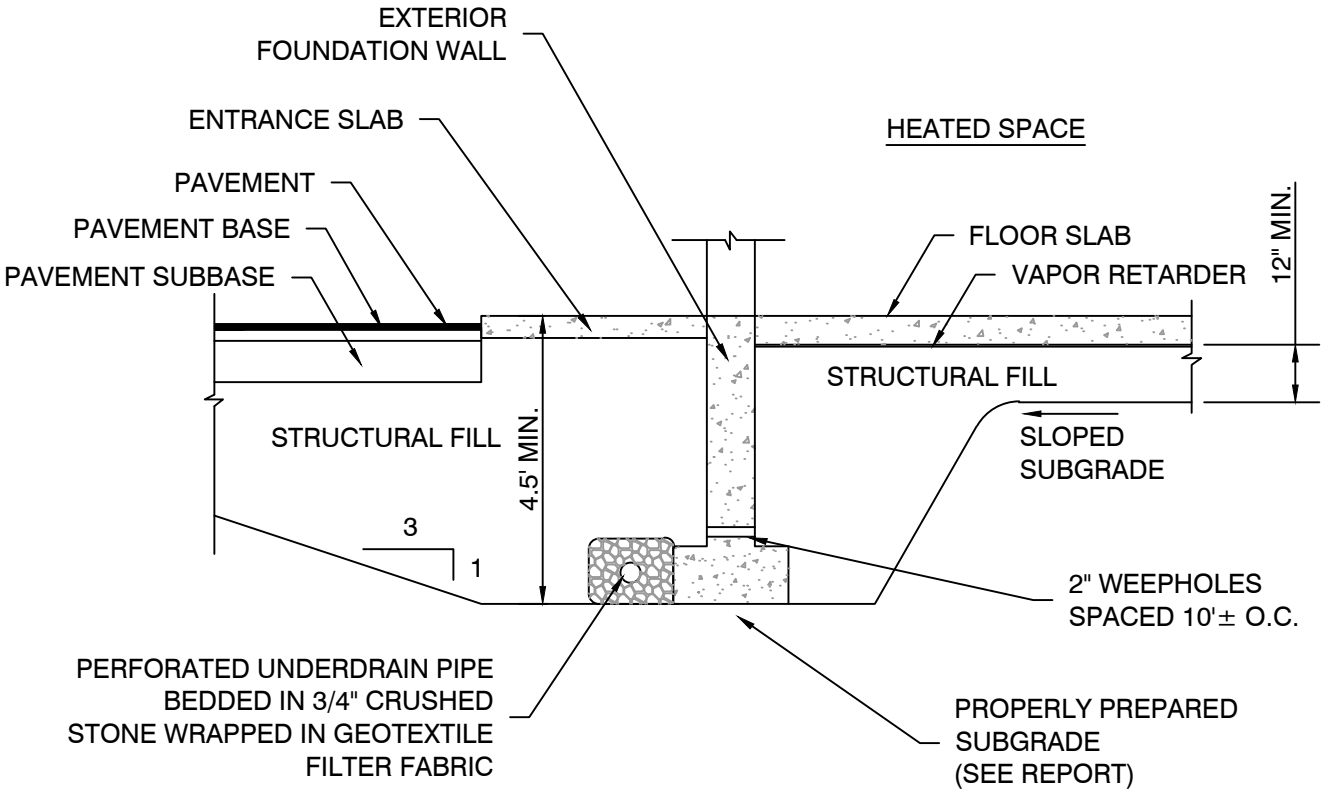
WHIPPLE CALLENDER ACHITECTS

EXPLORATION LOCATION PLAN

PROPOSED HOUSING
25 MONUMENT STREET
PORTLAND, MAINE

Job No.:	17-1218	Scale:	1" = 20'
Date :	11/27/2017	Sheet:	1

R:\2017\17-1218\CAD\Drawings\17-1218 ELP.dwg, 11/27/2017 9:42:39 AM, 1:1, CEM, S. W. Cole Engineering, Inc.



NOTE:

1. UNDERDRAIN INSTALLATION AND MATERIAL GRADATION RECOMMENDATIONS ARE CONTAINED WITHIN THIS REPORT.

2. DETAIL IS PROVIDED FOR ILLUSTRATIVE PURPOSES ONLY, NOT FOR CONSTRUCTION.

S.W.COLE ENGINEERING, INC.

WHIPPLE CALLENDER ACHITECTS

FOUNDATION DETAIL SKETCH

PROPOSED HOUSING
25 MONUMENT STREET
PORTLAND, MAINE

Job No.:	17-1218	Scale:	Not to Scale
Date :	11/16/2017	Sheet:	2

R:\2017\17-1218\CAD\Drawings\17-1218 FDS.dwg, 11/16/2017 6:50:56 AM, 1:1, CEM, S. W. Cole Engineering, Inc.

APPENDIX C

Exploration Logs and Key

S.W.COLE EXPLORATIONS, LLC

BORING LOG

CLIENT: Whipple Callender Architects
PROJECT: 25 Monument St
LOCATION: 25 Monument St, Portland, ME

BORING NO.: B- 1
SHEET: 1 of 1
PROJECT NO. 17-1218
DATE START: 11/7/2017
DATE FINISH: 11/7/2017

Drilling Information

LOCATION: See Exploration Location Plan | **ELEVATION (FT):** 145' +/- | **TOTAL DEPTH (FT):** 17.0 | **LOGGED BY:** Paul Kohler
DRILLING CO.: S. W. Cole Explorations, LLC | **DRILLER:** Scott Hollabaugh | **DRILLING METHOD:** Hollow Stem Auger
RIG TYPE: Track Mounted Diedrich D-50 | **AUGER ID/OD:** 2 1/4 in / 5 5/8 in | **SAMPLER:** Standard Split-Spoon
HAMMER TYPE: Automatic | **HAMMER WEIGHT (lbs):** 140 / 300 | **CASING ID/OD:** N/A /N/A | **CORE BARREL:**
HAMMER EFFICIENCY FACTOR: | **HAMMER DROP (inch):** 30 / 16
WATER LEVEL ELEVATIONS (ft): ▽ 135.20 ft
GENERAL NOTES:

KEY TO NOTES AND SYMBOLS: Water Level; ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling; D = Split Spoon Sample; U = Thin Walled Tube Sample; R = Rock Core Sample; V = Field Vane Shear; Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot; WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector; S_v = Field Vane Shear Strength, kips/sq.ft.; q_u = Unconfined Compressive Strength, kips/sq.ft.; N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_2O Depth	Remarks
			1D		0-2	24/12	2-2-3-2			Loose dark brown silty SAND with brick (fill)		
			2D		2-4	24/12	3-4-4-6					
										4.0		
140	5		3D		5-7	24/14	19-25-35-50			Very dense gray gravelly SAND, some silt, some cobbles		
										8.0		
										Very Dense brown gravelly silty SAND, some cobbles (glacial till)	▽	
135	10		4D		10-12	24/18	15-25-30-35					
										14.0		
130	15		5D		15-17	24/20	19-25-31-32			Very dense brown silty SAND, some gravel (glacial till)		
										17.0		
										Bottom of Exploration at 17.0 feet		

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING / WELL 17-1218.GPJ SWCE TEMPLATE.GDT 12/5/17

BORING LOG

S.W.COLE EXPLORATIONS, LLC

CLIENT: Whipple Callender Architects
PROJECT: 25 Monument St
LOCATION: 25 Monument St, Portland, ME

BORING NO.: B- 2
SHEET: 1 of 1
PROJECT NO. 17-1218
DATE START: 11/7/2017
DATE FINISH: 11/7/2017

Drilling Information

LOCATION: See Exploration Location Plan | **ELEVATION (FT):** 145.5' +/- | **TOTAL DEPTH (FT):** 17.0 | **LOGGED BY:** Paul Kohler
DRILLING CO.: S. W. Cole Explorations, LLC | **DRILLER:** Scott Hollabaugh | **DRILLING METHOD:** Hollow Stem Auger
RIG TYPE: Track Mounted Diedrich D-50 | **AUGER ID/OD:** 2 1/4 in / 5 5/8 in | **SAMPLER:** Standard Split-Spoon
HAMMER TYPE: Automatic | **HAMMER WEIGHT (lbs):** 140 / 300 | **CASING ID/OD:** N/A /N/A | **CORE BARREL:**
HAMMER EFFICIENCY FACTOR: | **HAMMER DROP (inch):** 30 / 16
WATER LEVEL ELEVATIONS (ft): ▽ 132.50 ft Soils wet to saturated at approx 13 ft
GENERAL NOTES:

KEY TO NOTES AND SYMBOLS: Water Level; ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling; D = Split Spoon Sample; U = Thin Walled Tube Sample; R = Rock Core Sample; V = Field Vane Shear; Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot; WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector; S_v = Field Vane Shear Strength, kips/sq.ft.; q_u = Unconfined Compressive Strength, kips/sq.ft.; N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_2O Depth	Remarks
145			1D		0-2	24/10	8-7-20-17			Medium dense dark brown gravelly silty SAND with brick (fill)		
			2D		2-4	24/12	8-14-35-15	w =6.7 %		2.0 Medium dense grayish-brown silty SAND with brick, some cobbles, peices of wood (fill)		
140	5		3D		5-5.6	7/4	21-25/1"			5.0 Dense brown silty SAND with gravel and cobbles		
										8.0 Dense becoming Very dense grayish-brown SAND and silt, some gravel, some clay (glacial till)		
135	10		4D		10-12	24/24	16-17-17-25				▽	
130	15		5D		15-16.9	23/16	20-27-36-50/5"					
										17.0 Bottom of Exploration at 17.0 feet		

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING / WELL 17-1218.GPJ SWCE TEMPLATE.GDT 12/5/17

S.W.COLE EXPLORATIONS, LLC

BORING LOG

CLIENT: Whipple Callender Architects
PROJECT: 25 Monument St
LOCATION: 25 Monument St, Portland, ME

BORING NO.: B- 3
SHEET: 1 of 1
PROJECT NO. 17-1218
DATE START: 11/7/2017
DATE FINISH: 11/7/2017

Drilling Information

LOCATION: See Exploration Location Plan | **ELEVATION (FT):** 144.5' +/- | **TOTAL DEPTH (FT):** 17.0 | **LOGGED BY:** Paul Kohler
DRILLING CO.: S. W. Cole Explorations, LLC | **DRILLER:** Scott Hollabaugh | **DRILLING METHOD:** Hollow Stem Auger
RIG TYPE: Track Mounted Diedrich D-50 | **AUGER ID/OD:** 2 1/4 in / 5 5/8 in | **SAMPLER:** Standard Split-Spoon
HAMMER TYPE: Automatic | **HAMMER WEIGHT (lbs):** 140 / 300 | **CASING ID/OD:** N/A /N/A | **CORE BARREL:**
HAMMER EFFICIENCY FACTOR: | **HAMMER DROP (inch):** 30 / 16
WATER LEVEL ELEVATIONS (ft): No free water observed
GENERAL NOTES:

KEY TO NOTES AND SYMBOLS: Water Level; ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling
D = Split Spoon Sample; U = Thin Walled Tube Sample; R = Rock Core Sample; V = Field Vane Shear
Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot
WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector
S_v = Field Vane Shear Strength, kips/sq.ft.; q_u = Unconfined Compressive Strength, kips/sq.ft.; N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_2O Depth	Remarks
			1D		0-2	24/4	9-8-5-10			Medium dense dark brown silty SAND, some gravel, with brick (fill)		
			2D		2-4	24/16	10-8-8-15	w =2.3 %		2.0 Medium dense light brown gravelly SAND, some silt, some cobbles		
140	5		3D		5-5.8	10/4	18-50/4"					
135	10		4D		10-12	24/18	18-36-40-39			8.0 Very dense grayish-brown gravelly SAND and silt, trace clay (glacial till)		
130	15		5D		15-15.9	11/10	25-50/5"			17.0 Bottom of Exploration at 17.0 feet		

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING / WELL 17-1218.GPJ SWCE TEMPLATE.GDT 12/5/17

S.W.COLE EXPLORATIONS, LLC

BORING LOG

CLIENT: Whipple Callender Architects
PROJECT: 25 Monument St
LOCATION: 25 Monument St, Portland, ME

BORING NO.: B- 4
SHEET: 1 of 1
PROJECT NO. 17-1218
DATE START: 11/7/2017
DATE FINISH: 11/7/2017

Drilling Information

LOCATION: See Exploration Location Plan | **ELEVATION (FT):** 144' +/- | **TOTAL DEPTH (FT):** 17.0 | **LOGGED BY:** Paul Kohler
DRILLING CO.: S. W. Cole Explorations, LLC | **DRILLER:** Scott Hollabaugh | **DRILLING METHOD:** Hollow Stem Auger
RIG TYPE: Track Mounted Diedrich D-50 | **AUGER ID/OD:** 2 1/4 in / 5 5/8 in | **SAMPLER:** Standard Split-Spoon
HAMMER TYPE: Automatic | **HAMMER WEIGHT (lbs):** 140 / 300 | **CASING ID/OD:** N/A /N/A | **CORE BARREL:**
HAMMER EFFICIENCY FACTOR: | **HAMMER DROP (inch):** 30 / 16
WATER LEVEL ELEVATIONS (ft): ▽ 133.50 ft Soils wet to saturated at approx 10.5 ft
GENERAL NOTES:

KEY TO NOTES AND SYMBOLS: Water Level; ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling; D = Split Spoon Sample; U = Thin Walled Tube Sample; R = Rock Core Sample; V = Field Vane Shear; Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot; WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector; S_v = Field Vane Shear Strength, kips/sq.ft.; q_u = Unconfined Compressive Strength, kips/sq.ft.; N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_20 Depth	Remarks
			1D		0-2	24/6	2-2-3-2			0.5 Topsoil with organics Loose dark brown silty SAND with organics, some gravel (fill)		
			2D		2-4	24/1	4-4-4-3					
140										4.0 Very dense light brown SAND and gravel, some silt		
	5		3D		5-7	24/16	18-24-31-38	w =1.8 %				
										8.0 Dense becoming very dense grayish-brown silty SAND, some gravel, trace clay (glacial till)		
135												
	10		4D		10-12	24/20	13-16-15-18				▽	
130												
	15		5D		15-17	24/20	20-30-33-30					
										17.0 Bottom of Exploration at 17.0 feet		

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING / WELL 17-1218.GPJ SWCE TEMPLATE.GDT 12/5/17

S.W.COLE EXPLORATIONS, LLC

BORING LOG

CLIENT: Whipple Callender Architects
PROJECT: 25 Monument St
LOCATION: 25 Monument St, Portland, ME

BORING NO.: B- 5
SHEET: 1 of 1
PROJECT NO. 17-1218
DATE START: 11/7/2017
DATE FINISH: 11/7/2017

Drilling Information

LOCATION: See Exploration Location Plan | **ELEVATION (FT):** 143' +/- | **TOTAL DEPTH (FT):** 17.0 | **LOGGED BY:** Paul Kohler
DRILLING CO.: S. W. Cole Explorations, LLC | **DRILLER:** Scott Hollabaugh | **DRILLING METHOD:** Hollow Stem Auger
RIG TYPE: Track Mounted Diedrich D-50 | **AUGER ID/OD:** 2 1/4 in / 5 5/8 in | **SAMPLER:** Standard Split-Spoon
HAMMER TYPE: Automatic | **HAMMER WEIGHT (lbs):** 140 / 300 | **CASING ID/OD:** N/A /N/A | **CORE BARREL:**
HAMMER EFFICIENCY FACTOR: | **HAMMER DROP (inch):** 30 / 16
WATER LEVEL ELEVATIONS (ft): No free water observed
GENERAL NOTES:

KEY TO NOTES AND SYMBOLS: Water Level; ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling
D = Split Spoon Sample; U = Thin Walled Tube Sample; R = Rock Core Sample; V = Field Vane Shear
Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot
WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector
S_v = Field Vane Shear Strength, kips/sq.ft.; q_u = Unconfined Compressive Strength, kips/sq.ft.; N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_2O Depth	Remarks
			1D		0-2	24/12	8-7-6-4			Topsoil with organics		
										0.8 Medium dense dark brown silty SAND and brick (fill)		
			2D		2-4	24/16	4-5-10-10			2.0 Medium dense brown gravelly SAND, trace silt, some cobbles		
140												
	5		3D		5-6.7	20/10	15-12-15-50/2"					
135										8.0 Dense brown silty SAND, some gravel, trace clay (glacial till)		
	10		4D		10-12	24/24	15-18-30-30					
130										12.0 Very dense gray SAND and silt, trace gravel, trace clay (glacial till)		
	15		5D		15-17	24/24	20-25-30-39	w =7.7 %				
										17.0 Bottom of Exploration at 17.0 feet		

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING / WELL 17-1218.GPJ SWCE TEMPLATE.GDT 12/5/17

S.W.COLE EXPLORATIONS, LLC

BORING LOG

CLIENT: Whipple Callender Architects
PROJECT: 25 Monument St
LOCATION: 25 Monument St, Portland, ME

BORING NO.: B- 6
SHEET: 1 of 1
PROJECT NO. 17-1218
DATE START: 11/7/2017
DATE FINISH: 11/7/2017

Drilling Information

LOCATION: See Exploration Location Plan | **ELEVATION (FT):** 143' +/- | **TOTAL DEPTH (FT):** 17.0 | **LOGGED BY:** Paul Kohler
DRILLING CO.: S. W. Cole Explorations, LLC | **DRILLER:** Scott Hollabaugh | **DRILLING METHOD:** Hollow Stem Auger
RIG TYPE: Track Mounted Diedrich D-50 | **AUGER ID/OD:** 2 1/4 in / 5 5/8 in | **SAMPLER:** Standard Split-Spoon
HAMMER TYPE: Automatic | **HAMMER WEIGHT (lbs):** 140 / 300 | **CASING ID/OD:** N/A /N/A | **CORE BARREL:**
HAMMER EFFICIENCY FACTOR: | **HAMMER DROP (inch):** 30 / 16
WATER LEVEL ELEVATIONS (ft): ▽ 131.80 ft
GENERAL NOTES:

KEY TO NOTES AND SYMBOLS: Water Level; ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling; D = Split Spoon Sample; U = Thin Walled Tube Sample; R = Rock Core Sample; V = Field Vane Shear; Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot; WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector; S_v = Field Vane Shear Strength, kips/sq.ft.; q_u = Unconfined Compressive Strength, kips/sq.ft.; N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_2O Depth	Remarks
			1D		0-2	24/16	6-8-10-12			0.5 Topsoil with organics Medium dense brown gravelly silt SAND, some silt, some brick, some cobbles (fill)		
140			2D		2-4	24/10	12-10-13-10			2.0 Medium dense light brown SAND, some silt, some gravel		
	5		3D		5-7	24/20	14-18-25-27			4.0 Medium dense to dense brown gravelly SAND, some silt		
135										8.0 Dense to very dense brown silty SAND, some gravel, trace clay (glacial till)		
	10		4D		10-12	24/18	18-24-23-27				▽	
130												
	15		5D		15-17	24/14	15-20-25-23					
										17.0 Bottom of Exploration at 17.0 feet		

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING NO.: B- 6

S.W.COLE ENGINEERING, INC. • Geotechnical Engineering • Field & Lab Testing • Scientific & Environmental Consulting

KEY TO NOTES & SYMBOLS
Test Boring and Test Pit Explorations

All stratification lines represent the approximate boundary between soil types and the transition may be gradual.

Key to Symbols Used:

w	-	water content, percent (dry weight basis)
q_u	-	unconfined compressive strength, kips/sq. ft. - laboratory test
S_v	-	field vane shear strength, kips/sq. ft.
L_v	-	lab vane shear strength, kips/sq. ft.
q_p	-	unconfined compressive strength, kips/sq. ft. – pocket penetrometer test
O	-	organic content, percent (dry weight basis)
W_L	-	liquid limit - Atterberg test
W_P	-	plastic limit - Atterberg test
WOH	-	advance by weight of hammer
WOM	-	advance by weight of man
WOR	-	advance by weight of rods
HYD	-	advance by force of hydraulic piston on drill
RQD	-	Rock Quality Designator - an index of the quality of a rock mass.
γ_T	-	total soil weight
γ_B	-	buoyant soil weight

Description of Proportions:

Trace:	0 to 5%
Some:	5 to 12%
"Y"	12 to 35%
And	35+%
With	Undifferentiated

Description of Stratified Soils

Parting:	0 to 1/16" thickness
Seam:	1/16" to 1/2" thickness
Layer:	½" to 12" thickness
Varved:	Alternating seams or layers
Occasional:	one or less per foot of thickness
Frequent:	more than one per foot of thickness

REFUSAL: **Test Boring Explorations** - Refusal depth indicates that depth at which, in the drill foreman's opinion, sufficient resistance to the advance of the casing, auger, probe rod or sampler was encountered to render further advance impossible or impracticable by the procedures and equipment being used.

REFUSAL: **Test Pit Explorations** - Refusal depth indicates that depth at which sufficient resistance to the advance of the backhoe bucket was encountered to render further advance impossible or impracticable by the procedures and equipment being used.

Although refusal may indicate the encountering of the bedrock surface, it may indicate the striking of large cobbles, boulders, very dense or cemented soil, or other buried natural or man-made objects or it may indicate the encountering of a harder zone after penetrating a considerable depth through a weathered or disintegrated zone of the bedrock.

APPENDIX D

Laboratory Test Results

S.W.COLE ENGINEERING, INC.

Report of Gradation

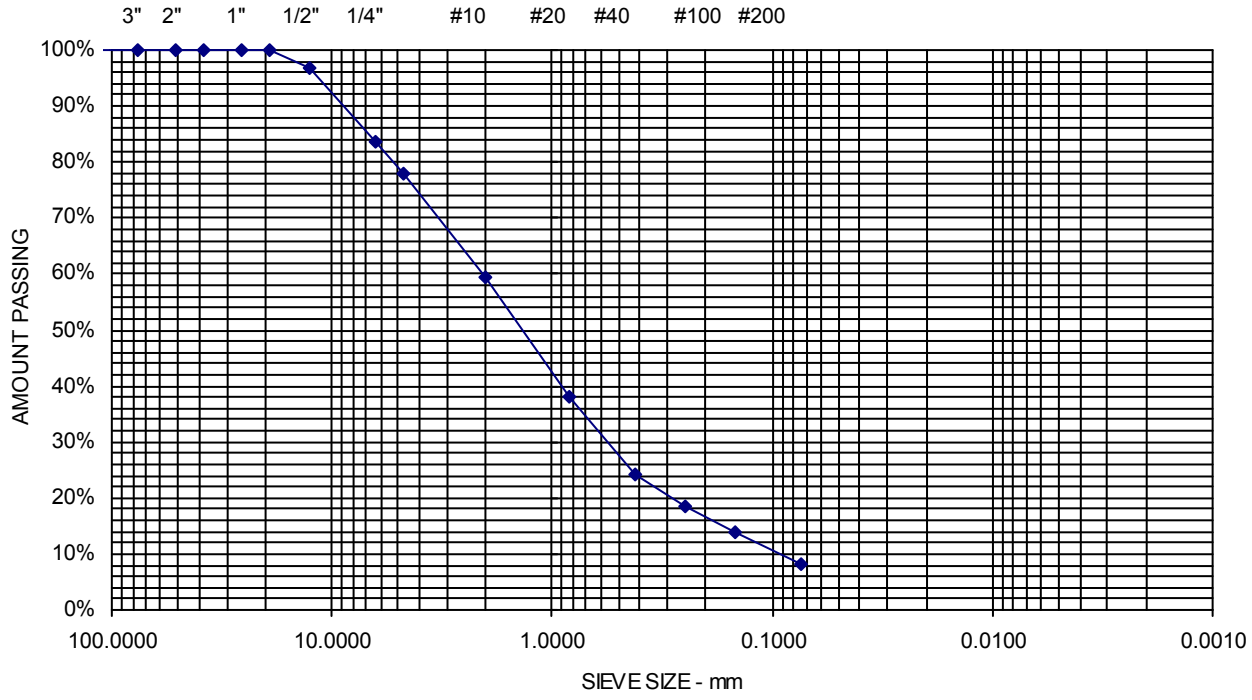
ASTM C-117 & C-136

Project Name: PORTLAND ME - PROPOSED HOUSING STRUCTURE - GEOTECHNICAL ENGINEERING SERVICES
Client: WHIPPLE - CALLENDER ARCHITECTS

Material Source: **B-3 2D 2-4**

Project Number: 17-1218
Lab ID: 23135G
Date Received: 11/15/2017
Date Completed: 11/17/2017
Tested By: TIMOTHY STOREY

STANDARD DESIGNATION (mm/µm)	SIEVE SIZE	AMOUNT PASSING (%)	
150 mm	**6"**	**100**	
125 mm	**5"**	**100**	
100 mm	**4"**	**100**	
75 mm	**3"**	**100**	
50 mm	**2"**	**100**	
38.1 mm	**1-1/2"**	**100**	
25.0 mm	**1"**	**100**	
19.0 mm	**3/4"**	**100**	
12.5 mm	**1/2"**	**97**	
6.3 mm	**1/4"**	**84**	
4.75 mm	**No. 4**	**78**	22.2% Gravel
2.00 mm	**No. 10**	**59**	
850 um	**No. 20**	**38**	
425 um	**No. 40**	**24**	69.5% Sand
250 um	**No. 60**	**18**	
150 um	**No. 100**	**14**	
75 um	**No. 200**	**8.2**	8.2% Fines



Comments: w = 2.3%

Sheet

S.W.COLE ENGINEERING, INC.

Report of Gradation

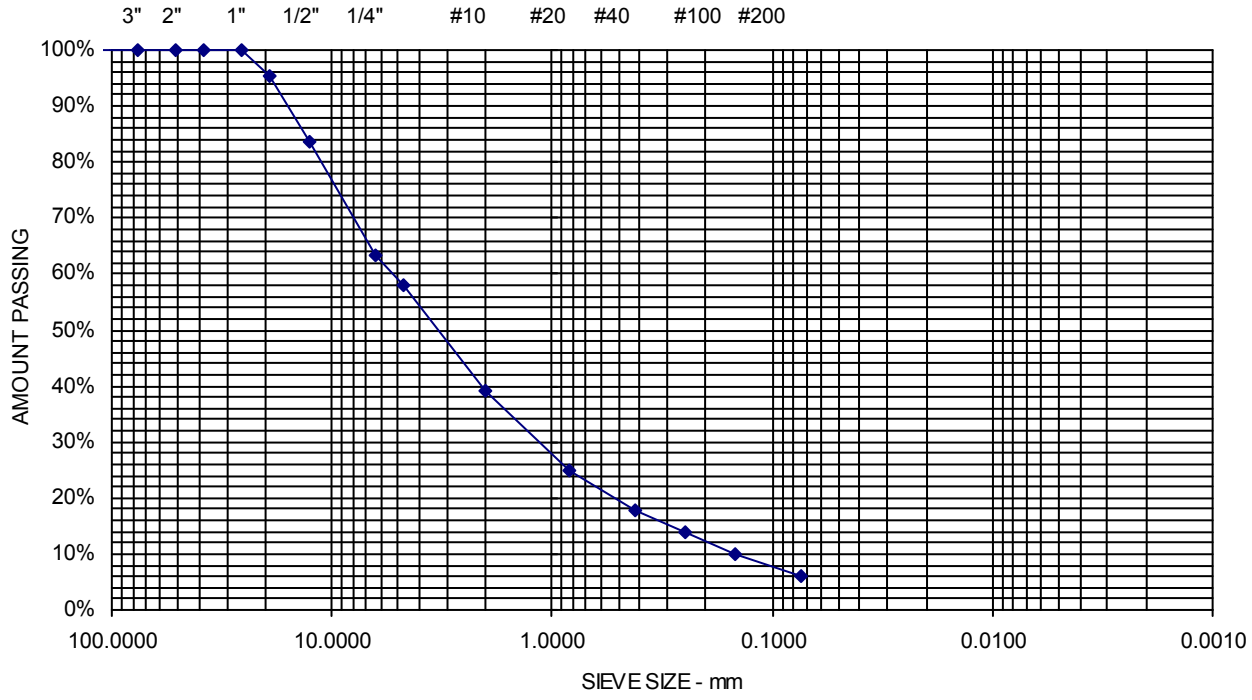
ASTM C-117 & C-136

Project Name: PORTLAND ME - PROPOSED HOUSING STRUCTURE - GEOTECHNICAL ENGINEERING SERVICES
Client: WHIPPLE - CALLENDER ARCHITECTS

Material Source: **B-4 3D 5-7**

Project Number: 17-1218
Lab ID: 23136G
Date Received: 11/15/2017
Date Completed: 11/17/2017
Tested By: TIMOTHY STOREY

STANDARD DESIGNATION (mm/µm)	SIEVE SIZE	AMOUNT PASSING (%)	
150 mm	**6"**	**100**	
125 mm	**5"**	**100**	
100 mm	**4"**	**100**	
75 mm	**3"**	**100**	
50 mm	**2"**	**100**	
38.1 mm	**1-1/2"**	**100**	
25.0 mm	**1"**	**100**	
19.0 mm	**3/4"**	**95**	
12.5 mm	**1/2"**	**84**	
6.3 mm	**1/4"**	**64**	
4.75 mm	**No. 4**	**58**	42% Gravel
2.00 mm	**No. 10**	**39**	
850 um	**No. 20**	**25**	
425 um	**No. 40**	**18**	52% Sand
250 um	**No. 60**	**14**	
150 um	**No. 100**	**10**	
75 um	**No. 200**	**6.0**	6% Fines



Comments: w = 1.8%

Sheet

STREET TREES & ABILITY TO SERVE MEMO

The new building located at 25 Monument Street will include the planting of 3 new street trees as shown on L.1. The owner will pay $400 each for two additional trees as an alternate to the five required trees as discussed with Jeff Tarling, City Arborist.

We have already submitted the "ability to serve" from the Portland Water District and the Sewer approval is part of the planning board process.

DOCUMENT M

Construction Management Plan
25 Monument Street, Portland, Me
Monument Partners, LLC Applicant

A. Construction Management Principals

Rainbow Construction Inc, the Construction Manager, will minimize impacts from the construction, such as noise, vibrations, ground movement, truck traffic, and other construction related factors to the surrounding building and communities. Demolition of the existing building and site work will be performed by L.P. Murray & Sons. Rhodes Concrete is the subcontractor for the foundation and concrete work. Work will be performed Monday through Friday excluding holidays, beginning at 7 am and ending at 6 pm daily. The work site will be closed to pedestrian access throughout the construction with a temporary fence along Monument Street.

B. Development Review of Construction Management Plan

The Construction Management Plan minimizes impacts to areas surrounding the building/construction site and will be the primary considerations in the process.

C. Performance Guarantees, Inspection Fees, Preconstruction Meeting, and Permits

Prior to scheduling a preconstruction meeting and the issuance of any city required permits, Monument Partners LLC and Rainbow Construction shall meet all of the requirements contained in Section 14-530. Development review fees and post approval requirements and 14-532. General requirements and enforcement of Portland's Land Use Code.

Other permits, as applicable, include:

1. **Street Opening and Street Occupancy Permits:** Construction activity in the public right-of-way are controlled by Chapter 25 and sewer and storm water system connections are controlled by Chapters 24 and 32 of the Land Use Code. All required permits shall be obtained through the Department of Public Works and the requests shall conform with the approved construction management plan.
2. **Blasting:** Blasting, if required, shall conform with all measures of Article VIII. Regulation of Explosives in the Land Use Code and Section 3.7 Standards for Blasting and Regulation of Explosives in Portland's Technical Manual. We are not expecting to do any blasting.

D. Construction Administration and Communication

The Construction Manager will work closely with adjacent abutters, businesses and all parties informed, as far in advance as possible, of scheduled work, particularly work anticipated to cause significant noise, vibrations, or dust.

1. Contact person for Rainbow Construction is Craig Cooper 207-799- 3051 (office) or 207- 831-3004 (cell) and who is available 24 hours. Back up contact person is James Foley (Rainbow Construction Supervisor) is 207-807-2742
2. Construction Signage posted on the site with Contact Information for Contractor
3. All construction site signage is temporary and shall be removed at project completion.

E. Construction Schedule

1. Rainbow Construction proposes the construction schedule as follows:

   April 2018: Demo existing building and excavate site
   May 2018: Pour foundation, piers and slab per construction documents.
   June-November 2018: Completed all rough framing with water tight roof installed.
   November- February 2018: Rough-in of all subcontractors including but not limited to electrical, plumbing, HVAC, security, and sprinkler systems. Also we will complete the finish exterior siding and trim.
   March-April 2018: Complete all rough-in inspections, installation of insulation and sheetrock.
   May-December 2018: Installation of all interior finishes including but not limited to the elevator, flooring, tile, painting, trim work, cabinets, countertops electrical and plumbing fixtures.
   January 2019: Project is substantially complete. Seek Certificate of Occupancy.

2. Hours of Construction. Work will be performed Monday through Friday excluding holidays, beginning at 7 am and ending at 6 pm daily.

3. Material Deliveries: Monday through Friday excluding holidays, beginning at 7 am and ending at 6 pm daily to the job site.

F. Security & Public Safety

1. The Construction Management Plan includes temporary fence along Monument Street and access gates at Monument Street with the intent of separating pedestrian and vehicle circulation from the construction site.
2. Structures undergoing construction, alteration, or demolition operations, including those in underground locations, shall comply with NFPA 1 Chapter 16. *Safeguarding Construction, Alteration, and Demolition Operations.*
3. Fire Safety Program.
   - Construction debris will not be accumulated within the building.
   - Construction debris will be removed from building on a daily basis and disposed of in construction site dumpster. Dumpster will be removed and replaced when full.
   - Large commercial fire extinguishers will be available on site and locations added as building floors are constructed.
   - Existing building to be demolished has had hazardous material abated
   - Existing building to be demolished has had existing utilities turned off and disconnected.
   - Construction personal have been trained in fire prevention and fire fighting protocol. Fire hydrant is available within 50 feet of site and fire department building is located within 500 feet of the building site.
   - Development of a pre-fire plan with the local fire department
   - Rapid communication

- Protection of existing structures and equipment from exposure fires resulting from construction, alteration, and demolition operations
- Any construction activities that require fuel sources or combustible materials, all precautions will be taken to protect workers harm and buildings from damage.

4. Blasting. There is no expectation for the need to perform blasting activities at this site.
5. Any temporary security lighting fixtures shall be full cutoffs.

G. Construction Permitting and Traffic Control Plans

1. Construction Activity in Public Streets: Construction activity in the public right-of-way is controlled by Chapter 25 Article VII of the City Code of Ordinances. Contractor will obtain through the Street Opening Clerk at the Department of Public Works all permits required to excavate and install utilities to the building. At no time will construction activity including delivery vehicles close or block streets or affect public safety access without prior notice and approval of the Department of Public Works.

2. Sewer and Stormwater: Sewer and stormwater water system connections are controlled by Chapters 24 and 32 of the City Code of Ordinance. Contractor will obtain required permits for new connections and abandonment of existing connections through the Street Opening Clerk at the Department of Public Works.

3. Traffic Control Plans: A construction barrier system will be utilized at the street to separate the construction activity from the public street and sidewalk. Signage stating sidewalk closure will be used on the construction fencing. Sidewalk will be closed to pedestrian traffic to protect the general public from construction activity. The sidewalk on the opposite side of the street is available for pedestrians. The section of street between St. Lawrence Street and Atlantic is level so sight distances and visibility of pedestrians and bicyclists activity should not be impacted.

   We will request for the purpose of construction activity the use of public parking spaces and the blockage of the portion of sidewalk for the length of the property. Contractor will file for an occupancy permit with the Department of Public Works.

H. Site Management and Controls

The final Construction Management Plan will address maintaining the site in a safe condition and will include the following:

- **a.** Regular trash and debris removal by Rainbow Construction. Dumpsters from Troiano's Waste Services, Inc will be located on site and emptied as needed.
- **b.** Street cleaning and damage controls
- **c.** Dust controls- The construction shall comply with Portland's requirements under Section 25-129 on Noise, dust and debris
- **d.** Noise: The construction shall comply with Portland's requirements under Section 17-18 of the City Code and Section 25-129 on Noise, dust and debris.

e. Rodent Control will be provided, if needed, by a professional exterminator and consistent with Chapter 22 of the City Code.

f. Snow Removal: Pursuant to Section 25-173 Contractors to ensure a safe means of travel within the work zone. Work to be performed by L.P. Murray and Sons.
1) Snow/ice removal or commence automatically from (1" of snow and up) or Ice
2) Remove snow as needed within the work zone, including parking spaces & not to block any driveways or site lines with the piles of snow.
3) Clear all walks & ramps with the work zone
4) Sand or Salt as needed
5) Clear all basin or drainage to help snow melt
6) This would include Monday-Friday Sat/Sunday/Holidays

I. Erosion Control and Preservation of Trees

1. Rainbow Construction Inc. shall install all erosion and sedimentation controls as depicted on the approved erosion and sedimentation control plan prior to the pre-construction meeting for inspection by the City. The contractor shall regularly inspect the control measures, no less than weekly and after significant storm events, and maintain any installed temporary or permanent stormwater management systems in working order. The contractor shall document all inspection activities and corrective actions and be prepared to provide these documents for inspection by the City, Maine Department of Environmental Protection or the U.S. Environmental Protection Agency upon request.
2. Rainbow Construction Inc shall maintain all tree and landscaping preservation measures as depicted on the landscaping plan within the area of construction.
3. The storage of materials is identified on construction management plan on C3.

J. Construction Staging Area

1. The Construction Management Plan shall depict location of the material staging areas, the location on onsite temporary construction trailers, the location on onsite truck delivery holding areas, the location onsite truck washing stations, masonry mixing stations, the general location of the construction security fence and the general location of temporary construction dumpsters. An open storage areas shall be shown on the plan.
2. Delivery Truck Holding Areas On-Site: The delivery holding area shall be shown on the plan and shall not be blocked during construction. On days when the construction activities require multiple truck deliveries, these deliveries will be scheduled so that there is always adequate on-site area for the holding of the trucks until they can be unloaded. Once at the site all vehicles well be brought within the fence line and will make every attempt to avoid queueing on public streets.

K. Parking During Construction

Rainbow Construction Inc. shall reserve the street parking spaces located directly in front of the property at 25 Monument Street and will obtain the proper parking permits for them.

Once the first floor has been constructed, the interior of the garage will be used for parking of construction vehicles.

EROSION AND SEDIMENTATION NOTES

1. THIS PLAN HAS BEEN DEVELOPED TO PROVIDE A STRATEGY FOR DEALING WITH SOIL EROSION AND SEDIMENTATION DURING AND AFTER PROJECT CONSTRUCTION. THIS PLAN IS BASED ON THE STANDARD AND SPECIFICATIONS FOR EROSION PREVENTION AS CONTAINED IN THE MAINE EROSION AND SEDIMENT CONTROL HANDBOOK FOR CONSTRUCTION: "MAINE EROSION AND SEDIMENT CONTROL BMPs" PUBLISHED BY THE MAINE DEP, LATEST EDITION.

GENERAL EROSION AND SEDIMENTATION CONTROL PRACTICES

1. EROSION/SEDIMENT CONTROL DEVICES
   THE FOLLOWING EROSION SEDIMENTATION CONTROL DEVICES ARE PROPOSED FOR CONSTRUCTION ON THIS PROJECT. INSTALL THESE DEVICES AS INDICATED ON THE PLANS.

1.1 SILT FENCE: SILT FENCE WILL BE INSTALLED ALONG THE DOWN GRADING EDGES OF DISTURBED AREAS TO TRAP RUNOFF BORNE SEDIMENTS UNTIL THE SITE IS STABILIZED. IN AREAS WHERE STORMWATER DISCHARGES THE SILT FENCE WILL BE REINFORCED WITH HAY BALES TO HELP MAINTAIN THE INTEGRITY OF THE SILT FENCE AND TO PROVIDE ADDITIONAL TREATMENT.

1.2 HAY BALES TO BE PLACED IN LOW FLOW DRAINAGE SWALES AND PATHS TO TRAP SEDIMENTS AND REDUCE RUNOFF VELOCITIES. DO NOT PLACE HAY BALES IN FLOWING WATER OR STREAMS.

1.3 STRAW AND HAY MULCH; USED TO COVER DENUDED AREAS UNTIL PERMANENT SEED OR EROSION CONTROL MEASURES ARE IN PLACE. MULCH BY ITSELF CAN BE USED ON SLOPES LESS THAN 15% IN SUMMER AND 8% IN WINTER. ALL OTHER SLOPES MUST BE COVERED WITH JUTE MESH OVER MULCH, OR CURLEX II OR EXCELSIOR MAY BE USED IN PLACE OF JUTE MESH AND MULCH OVER LOAM AND SEED.

2. TEMPORARY EROSION/SEDIMENTATION CONTROL MEASURES
   PROVIDE THE FOLLOWING TEMPORARY EROSION/SEDIMENTATION CONTROL MEASURES DURING CONSTRUCTION OF THE DEVELOPMENT:

2.1 SILTATION FENCE ALONG THE DOWNGRADIENT SIDE OF THE PARKING AREAS AND OF ALL FILL SECTIONS. THE SILTATION FENCE WILL REMAIN IN PLACE UNTIL THE SITE IS 85% REVEGETATED.

2.2 HAY BALES PLACED AT KEY LOCATIONS TO SUPPLEMENT THE SILT FENCE.

2.3 PROTECT TEMPORARY STOCKPILES OF STUMPS, GRUBBINGS, OR COMMON EXCAVATION AS FOLLOWS:

- A. SOIL STOCKPILE SIDE SLOPES SHALL NOT EXCEED 2:1.
- B. AVOID PLACING TEMPORARY STOCKPILES IN AREAS WITH SLOPES OVER 10 PERCENT, OR NEAR DRAINAGE SWALES. SEE ITEM 3 IN CONSTRUCTION PHASE NOTES BELOW.
- C. STABILIZE STOCKPILES WITHIN 15 DAYS BY TEMPORARILY SEEDING WITH A HYDROSEED METHOD CONTAINING AN EMULSIFIED MULCH TACKIFIER OR BY COVERING THE STOCKPILE WITH MULCH.
- D. SURROUND STOCKPILE SOIL WITH SILTATION FENCE AT BASE OF PILE.

2.4 ALL DENUDED AREAS WHICH HAVE BEEN ROUGH GRADED AND ARE NOT LOCATED WITHIN THE BUILDING PAD, OR PARKING AND DRIVEWAY SUBBASE AREA SHALL RECEIVE MULCH WITHIN 30 DAYS OF INITIAL DISTURBANCE OF SOIL OR WITHIN 15 DAYS AFTER COMPLETING THE ROUGH GRADING OPERATIONS. IN THE EVENT THE CONTRACTOR COMPLETES FINAL GRADING AND INSTALLATION OF LOAM AND SOD WITHIN THE TIME PERIODS PRESENTED ABOVE, INSTALLATION OF MULCH AND NETTING, WHERE APPLICABLE, IS NOT REQUIRED.

2.5 IF WORK IS CONDUCTED BETWEEN OCTOBER 15 AND APRIL 15, ALL DENUDED AREAS ARE TO BE COVERED WITH HAY MULCH, APPLIED AT TWICE THE NORMAL APPLICATION RATE, AND ANCHORED WITH FABRIC NETTING. THE PERIOD BETWEEN FINAL GRADING AND MULCHING SHALL BE REDUCED TO A 15 DAY MAXIMUM.

2.6 TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED ONCE THE SITE HAS BEEN STABILIZED OR IN AREAS WHERE PERMANENT EROSION CONTROL MEASURES HAVE BEEN INSTALLED.

3. PERMANENT EROSION CONTROL MEASURES
   THE FOLLOWING PERMANENT CONTROL MEASURES ARE REQUIRED BY THIS EROSION/SEDIMENTATION CONTROL PLAN:

3.1 ALL AREAS DISTURBED DURING CONSTRUCTION, BUT NOT SUBJECT TO OTHER RESTORATION (PAVING, RIPRAP, ETC.), WILL BE LOAMED, LIMED, FERTILIZED AND SEEDED. NATIVE TOPSOIL SHALL BE STOCKPILED AND REUSED FOR FINAL RESTORATION WHEN IT IS OF SUFFICIENT QUALITY.

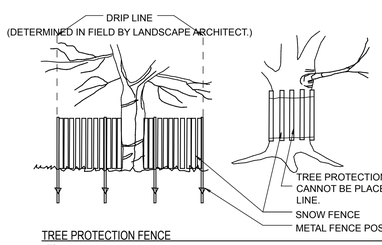
CONSTRUCTION PHASE

THE FOLLOWING GENERAL PRACTICES WILL BE USED TO PREVENT EROSION DURING CONSTRUCTION OF THIS PROJECT.

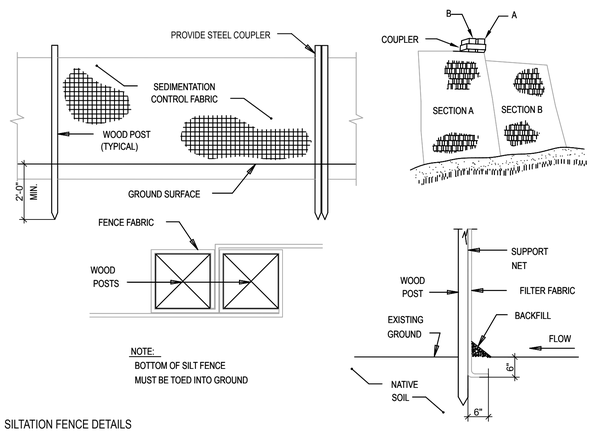
1. ONLY THOSE AREAS UNDER ACTIVE CONSTRUCTION WILL BE CLEARED AND LEFT IN AN UNTREATED OR UNVEGETATED CONDITION. IF FINAL GRADING, LOAMING AND SEEDING WILL NOT OCCUR WITHIN 15 DAYS, SEE ITEM NO. 4.
2. PRIOR TO THE START OF CONSTRUCTION IN A SPECIFIC AREA, SILT FENCING AND/OR HAY BALES WILL BE INSTALLED AT THE TOE OF SLOPE AND IN AREAS AS LOCATED ON THE PLANS TO PROTECT AGAINST ANY CONSTRUCTION RELATED EROSION. IMMEDIATELY FOLLOWING CONSTRUCTION OF CULVERTS AND SWALES, RIP RAP APRONS SHALL BE INSTALLED, AS SHOWN ON THE PLANS.
3. TOPSOIL WILL BE STOCKPILED WHEN NECESSARY IN AREAS WHICH HAVE MINIMUM POTENTIAL FOR EROSION AND WILL BE KEPT AS FAR AS POSSIBLE FROM THE EXISTING DRAINAGE COURSE.
   A. TREATED WITH ANCHORED MULCH (WITHIN 5 DAYS OF THE LAST DEPOSIT OF STOCKPILED SOIL).
4. ALL DISTURBED AREAS EXPECTED TO REMAIN LONGER THAN 30 DAYS SHALL BE EITHER:
   A. TREATED WITH ANCHORED MULCH IMMEDIATELY
5. ALL GRADING WILL BE HELD TO A MAXIMUM 2:1 SLOPE WHERE PRACTICAL. ALL SLOPES WILL BE STABILIZED WITH PERMANENT SEEDING, OR WITH STONE, WITHIN 5 DAYS AFTER FINAL GRADING IS COMPLETE. (SEE POST-CONSTRUCTION REVEGETATION FOR SEEDING SPECIFICATION.)

EROSION CONTROL DURING WINTER CONSTRUCTION

1. WINTER CONSTRUCTION PERIOD: NOVEMBER 1 THROUGH APRIL 15.
2. WINTER EXCAVATION AND EARTHWORK SHALL BE COMPLETED SUCH THAT NO MORE THAN 1 ACRE OF THE SITE IS WITHOUT STABILIZATION AT ANY ONE TIME.
3. EXPOSED AREA SHALL BE LIMITED TO THOSE AREAS TO BE MULCHED IN ONE DAY PRIOR TO ANY SNOW EVENT. AT THE END OF EACH WORK WEEK NO AREAS MAY BE LEFT UNSTABILIZED OVER THE WEEKEND.
4. CONTINUATION OF EARTHWORK OPERATIONS ON ADDITIONAL AREAS SHALL NOT BEGIN UNTIL THE EXPOSED SOIL SURFACE ON THE AREA BEING WORKED HAS BEEN STABILIZED, SUCH THAT NO LARGER AREA OF THE SITE IS WITHOUT EROSION CONTROL PROTECTION AS LISTED IN ITEM 2 ABOVE.
5. AN AREA SHALL BE CONSIDERED TO HAVE BEEN STABILIZED WHEN EXPOSED SURFACES HAVE BEEN EITHER MULCHED WITH STRAW OR HAY AT A RATE OF 150 LB. PER 1000 S.F. (WITH OR WITHOUT SEEDING) OR DORMANT SEEDED, MULCHED AND ANCHORED SUCH THAT SOIL SURFACE IS NOT VISIBLE THROUGH THE MULCH. NOTE: AN AREA IS ALSO CONSIDERED STABLE IF SODDED, COVERED WITH GRAVEL (PARKING LOTS) OR STRUCTURAL SAND.
6. BETWEEN THE DATES OF OCTOBER 15 AND APRIL 1, LOAM OR SEED WILL NOT BE REQUIRED. DURING PERIODS OF ABOVE FREEZING TEMPERATURES THE SLOPES SHALL BE FINE GRADED AND EITHER PROTECTED WITH MULCH OR TEMPORARILY SEEDED AND MULCHED UNTIL SUCH TIME AS THE FINAL TREATMENT CAN BE APPLIED. IF THE DATE IS AFTER NOVEMBER 1 AND IF THE EXPOSED AREA HAS BEEN LOAMED, FINAL GRADED WITH A UNIFORM SURFACE, THEN THE AREA MAY BE DORMANT SEEDED AT A RATE OF 3 TIMES HIGHER THAN SPECIFIED FOR PERMANENT SEED AND THEN MULCHED. IF CONSTRUCTION CONTINUES DURING FREEZING WEATHER, ALL EXPOSED AREAS SHALL BE CONTINUOUSLY GRADED BEFORE FREEZING AND THE SURFACE TEMPORARILY PROTECTED FROM EROSION BY THE APPLICATION OF MULCH. SLOPES SHALL NOT BE LEFT UNEXPOSED OVER THE WINTER OR ANY OTHER EXTENDED TIME OF WORK SUSPENSION UNLESS TREATED IN THE ABOVE MANNER. UNTIL SUCH TIME AS WEATHER CONDITIONS ALLOW, DITCHES TO BE FINISHED WITH THE PERMANENT SURFACE TREATMENT, EROSION SHALL BE CONTROLLED BY THE INSTALLATION OF BALES OF HAY, SILT FENCE OR STONE CHECK DAMS IN ACCORDANCE WITH THE STANDARD DETAILS SHOWN ON THE DESIGN DRAWINGS. NOTE: DORMANT SEEDING SHOULD NOT BE ATTEMPTED UNLESS SOIL TEMPERATURE REMAINS BELOW 50 DEGREES AND DAY TIME TEMPERATURES REMAIN IN THE 30'S.
7. MULCH NETTING SHALL BE USED TO ANCHOR MULCH IN ALL DRAINAGE WAYS WITH A SLOPE GREATER THAN 3% FOR SLOPES EXPOSED TO DIRECT WINDS AND FOR ALL OTHER SLOPES GREATER THAN 8%. VEGETATED DRAINAGE SWALES SHALL BE LINED WITH EXCELSIOR OR CURLEX.
8. MULCH NETTING SHALL BE USED TO ANCHOR MULCH IN ALL DRAINAGE WAYS WITH SLOPES GREATER THAN 15%. AFTER OCTOBER 1 THE SAME APPLIES FOR ALL SLOPES GREATER THAN 8%.
9. BETWEEN THE DATES OF OCTOBER 15 TO NOVEMBER 1, WINTER RYE IS RECOMMENDED FOR STABILIZATION. AFTER NOVEMBER 1, WINTER RYE IS NOT EFFECTIVE. AROUND NOVEMBER 15 OR LATER, ONCE TEMPERATURES OF THE AIR AND SOIL PERMIT, DORMANT SEEDING IS EFFECTIVE.
10. IN THE EVENT OF SNOWFALL (FRESH OR CUMULATIVE) GREATER THAN 1 INCH DURING WINTER CONSTRUCTION PERIOD ALL SNOW SHALL BE REMOVED FROM THE AREAS OF SEEDING AND MULCHING PRIOR TO PLACEMENT.



TREE PROTECTION FENCE
NTS

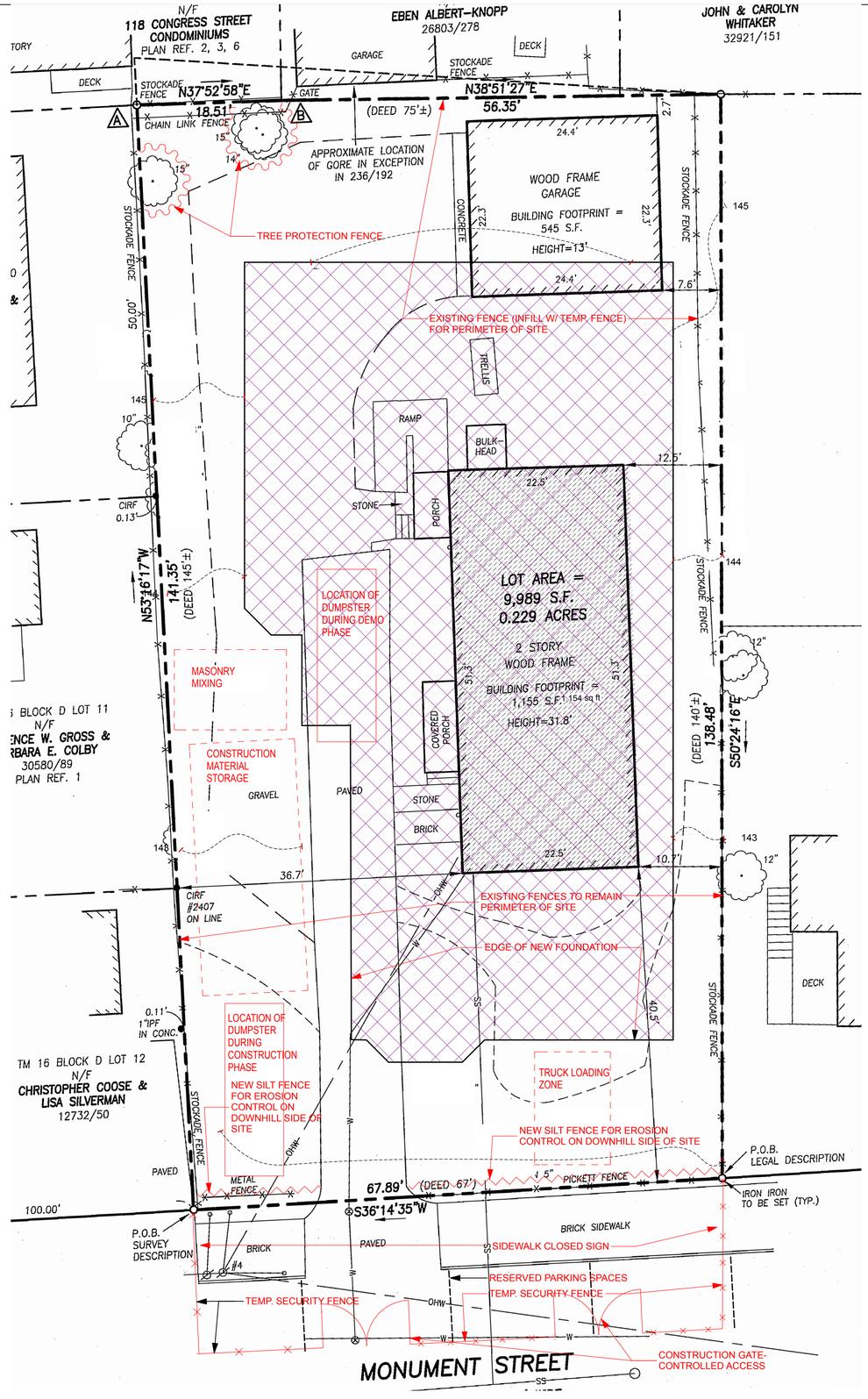


NOTE:
BOTTOM OF SILT FENCE MUST BE TOED INTO GROUND

SILTATION FENCE DETAILS
NTS NTS

SILTATION FENCE INSTALLATION

1. EXCAVATE A 6"x6" TRENCH ALONG THE LINE OF PLACEMENT FOR THE FILTER BARRIER.
2. UNROLL A SECTION AT A TIME AND POSITION THE POSTS AGAINST THE BACK (DOWNSTREAM) WALL OF THE TRENCH.
3. DRIVE POSTS INTO THE GROUND UNTIL APPROXIMATELY 2" OF FABRIC IS LYING ON THE TRENCH BOTTOM. JOIN SECTION AS SHOWN ABOVE.
4. LAY THE TOE-IN FLAP OF FABRIC ONTO THE UNDISTURBED BOTTOM OF THE TRENCH, BACKFILL THE TRENCH AND TAMP THE SOIL. TOE-IN CAN ALSO BE ACCO THE FABRIC FLAP ON UNDISTURBED GROUND AND PILING AND TAMPING FILL AT THE BASE, BUT MUST BE ACCOMPLISHED BY AN INTERCEPTION DITCH.
5. BARRIER SHALL BE MIRAFI SILT FENCE OR APPROVED EQUAL.



1 / C.3 CONSTRUCTION MANAGEMENT & EROSION PLAN

SCALE: 1/8" = 1'-0"

PRELIMINARY REVIEW SET 9-6-2017 NOT FOR CONSTRUCTION

THIS DRAWING IS AN INSTRUMENT OF SERVICE AND SHALL REMAIN THE PROPERTY OF WHIPPLE CALLENDER ARCHITECTS. IT SHALL NOT BE USED FOR ANY OTHER PURPOSE THAT FOR WHICH IT IS SPECIFICALLY FURNISHED

MONUMENT PARTNERS, LLC
25 MONUMENT STREET PORTLAND, ME

WHIPPLE CALLENDER ARCHITECTS
136 PLEASANT AVE.
PORTLAND, ME 04103
P 207.775.2696
F 207.775.3631
www.whipplecallender.com

MARK	DESCRIPTION	DATE

DATE: 1/25/18
CHECKED BY: AEC, JWW
DRAWN BY: JR, AEC, JWW
JOB: 17-KEE
SHEET: CONSTRUCTION MANAGEMENT PLAN & EROSION CONTROL DETAILS

C.3

MONUMENT PARTNERS, LLC

25 MONUMENT STREET, PORTLAND, ME

DEVELOPERS:

MONUMENT PARTNERS, LLC

STRUCTURAL ENGINEERS:

CASCO BAY ENGINEERING
424 FORE STREET
PORTLAND, ME 04101
207 842 2800

ARCHITECTS:

WHIPPLE CALLENDER
P.O. BOX 1276
PORTLAND, ME 04104
207 775 2696

MECHANICAL & ELECTRICAL ENGINEERS:

BENNETT ENGINEERING
P.O. BOX 297
FREEPORT, ME 04032
207 865 1800

CONSTRUCTION MANAGER:

RAINBOW CONSTRUCTION
150 OCEAN HOUSE ROAD
CAPE ELIZABETH, ME 04107
207 799 3051

LANDSCAPE ARCHITECT:

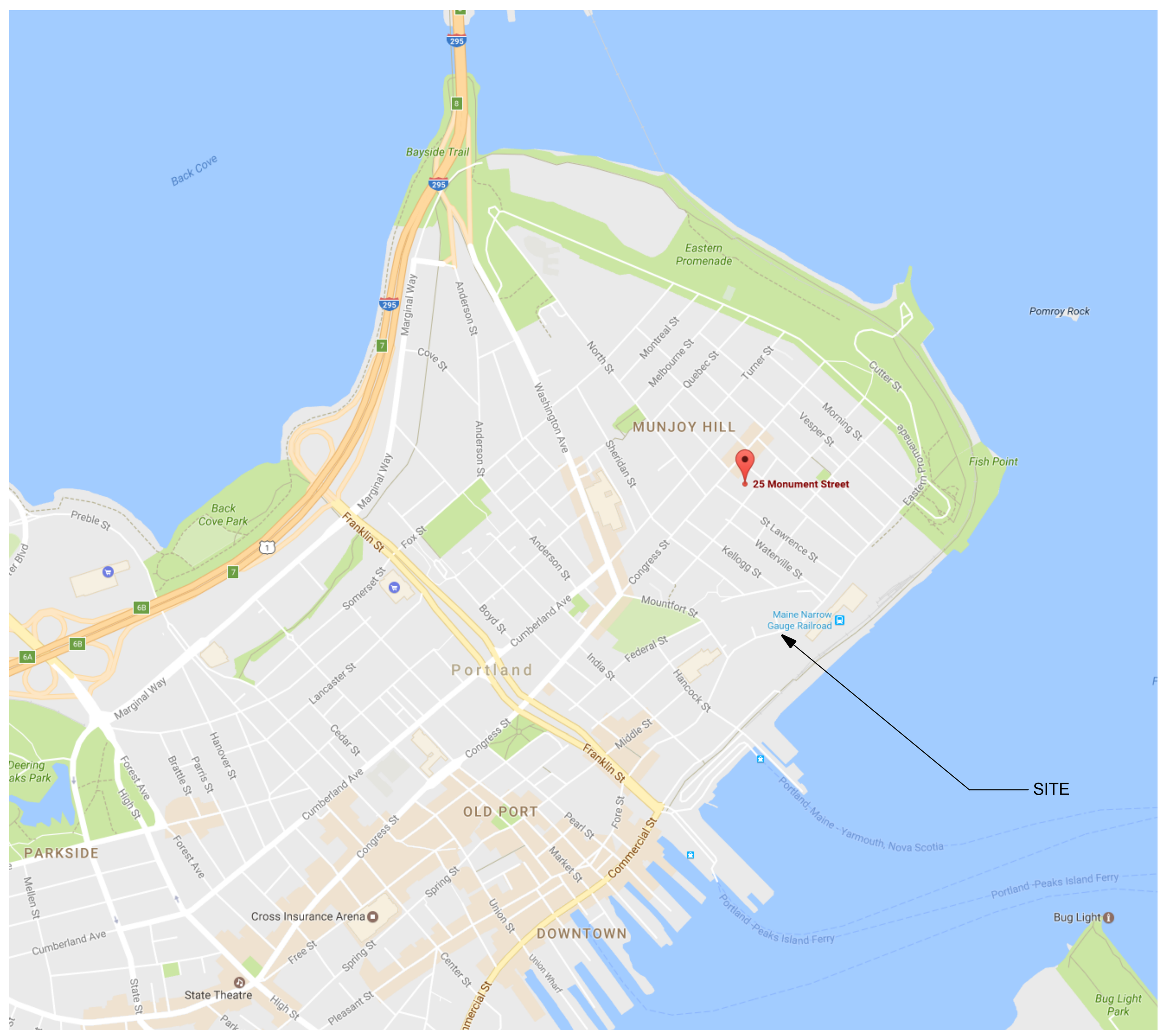
ANTHONY MUENCH
94 COMMERCIAL STREET
PORTLAND, ME 04101
207 761 6621

CIVIL ENGINEER:

CASCO BAY ENGINEERING
424 FORE STREET
PORTLAND, ME 04101
207 842 2800

VICINITY MAP

N



PORTLAND MAINE — NO SCALE

SCOPE OF WORK

NEW FOUR STORY BUILDING (20,122 SQ. FT) WITH GROUND LEVEL GARAGE FOR EIGHT CARS.
TWO HOUSING UNITS EACH ON 2ND AND 3RD FLOOR, WITH PENTHOUSE UNIT ON 4TH FLOOR.

PROJECT DATA & CODES

TOTAL SITE AREA:	9,989 S.F.
EXISTING IMPERVIOUS AREA:	4,786 S.F.
NEW IMPERVIOUS AREA:	5,579 S.F.
NET DIFFERENCE:	793 S.F.
LOT COVERAGE:	56%
ALLOWABLE MAX. LOT COVERAGE:	60%
LANDSCAPED OPEN SPACE:	4320 S.F.
REQUIRED (20%)	1996 S.F.
GARAGE OPENING	12'
ALLOWED 40% OF FACADE:	19'

SQUARE FOOTAGE: TOTAL BUILDING: 20,122 SF
- BASEMENT: 1,128 SF
- 1ST FLOOR: 5,240 SF
- 2ND FLOOR: 4,744 SF
- 3RD FLOOR: 4,744 SF
- 4TH FLOOR: 4,266 SF

WATER MAINS: Monument Street, 25 feet from property line to the north

SITE ACCESS: Monument Street

RELEVANT CODES

INTERNATIONAL BUILDING CODE - 2009 (MUBEC)	REFERENCE
OCCUPANCY:	
IBC - R-2 (APT FLOORS 2-4)	
ALLOWABLE AREA: 21,000 SF FOR TYPE 5B (WITH INCREASES FOR SPRINKLER, 14,000 SF AND NONE FOR FRONTAGE,)	**310.1 & Table 503**
NFPA - New Apartment Building, Enclosed Garage is Storage Occupancy (ordinay hazard)	
Four story building	
Five Condo Units	
IBC - S2 (PARKING - FLOOR 1)	
LOW HAZARD STORAGE, ENCLOSED PARKING. ALLOWABLE AREA: 79,000 SF FOR TYPE 1B (WITHOUT INCREASES) PROPOSED AREA: 5,240 SF. ALLOWABEL HEIGHT: 11 STORIES. PROPOSED HEIGHT: 1 STORY.	**311.3 & Table 503**
PARKING BENEATH GROUP R	
WHERE A MAX ONE STORY ABOVE GRADE GROUP S-2 PARKING GARAGE OF TYPE 1 CONSTRUCTION IS PROVIDED UNDER A BUILDING OF GROUP R THE NUMBER OF STORIES TO BE USED TO DETRIMINE THE MIN. TYPE OF CONSTRCUCTION SHALL BE MEASURED FROM THE FLOOR ABOVE SUCH PARKING AREA.	**509.4**
ONE HOUR SEPARATION BETWEEN OCCUPANCIES S-2 AND R-2	**509.4 & Table 508.4**
CONSTRUCTION TYPES: NFPA type V 000 at Residential; IBC Type 5B (Residential) and Type 1B (S-2 parking garage)	
FIRE RESISTANT RATINGS (REQUIRED) :	
Type 5B (Residential R2)	**Table 601**
Structual Frame: 0 hours	
Bearing Walls (exterior & interior): 0 hours	
Nonbearing walls and partitions: 0 hours	
Floor construction & secondary members: 0 hours	
Roof construction & secondary members: 0 hours	
Type 1B (S-2 Parking Garage)	
Structural Frame: 2 hours	
Bearing Walls (exterior & interior): 2 hours	
Nonbearing walls and partitions: 0 hours	
Floor construction & secondary members: 2 hours	
Roof construction & secondary members: 2 hours	
FIRE PARTITONS:	
Corridor fire partitions (non-bearing): 1/2 hour	**Table 1018.1 & 709.**
Corridor doors: .33 hour in 1- hour wall	**Table 715.4**
Corridor doors to have smoke control	**715.4.3.1**
Dwelling/ sleeping room separation in Type 5B: 1/2 hour with automatic sprinkler system	**709.3 ex. 2**
Elevator shaft enclosures: 2 hours (over 4 stories)	**708.2 ex. 2.2.1**
FIRE PROTECTION	
Automatic Sprinkler Supevisory Service	**901.6.1**
NFPA 13 Sprinkler System	**903.3.1.1**
Fire alarm control unit supervision	**903.4**
Class 1 standpipe in stairwells	**905.4**
Portable fire extinguishers required	**906.1.1**
Manual fire alarm system is not required (but required by NFPA 10)	**907.2.9**
Fire alarm and smoke alarms systems required in Group R-2	**907.2.9**
Visual alarm notification support for fire and smoke: in all dwelling units	**907.5.2.3.4**
Single and multi- station smoke alarms required	**907.2.9.2**
Fire department connections required (as directed by local fire dept.)	**912.1**
MEANS OF EGRESS	**Table 1004.1**
R-2 OCCUPANT LOAD (RESIDENTIAL)	
4,744/200 =24 per floor 2 & 3	
4,266/200 =21 per floor 4	
S-2 OCCPANT LOAD (PARKING)	
5,240/200 =26 first floor	
Minimium stair width: 44 inches	**1009.1**
Maximum dead end corridor < 50'-0"	**1018.4 ex. 2**
Exit discharge through vestibule at Monument Street	**1027.1 ex 1**
Single means of egress allowed	**1006.21**
ACCESSIBLE MEANS OF EGRESS	
Accessible means of egress required	**1007**
Elevator serving as accessible means of egress not required	**1007.1**
Standby power generator not required for elevator	**1007.4**
Area of refuge at elevator not required	**1007.4 ex. 2**
Two way communication system required at each elevator landing	**1007.8**
ELEVATOR: Elevator shaft venting is required	**Elevator code**

NFPA 101 - 2009		
OCCUPANCY	Residential- New Apartment Building	**6.1.8.1.5**
OCCUPANCY	Storage (ordinary hazard) Enclosed Garage	**6.2.2.3**
	Separation between occupanicies is 2 hours (reduced to 1 hour because sprinklered & supervised	**Table 6.1.14.4.1.b**
	Residential above Storage permitted where sprinklered	**30.1.2.3**
CONSTRUCTION TYPE	TYPE V 000 at Residential	**Table A.8.2.1.2**
	Storage Occupancy minimum construction requirement is none; Sprinklered with NFPA 13	**42.1.6**
STAIRS	Min width= 44"	**7.2.2.3.1.2**
	Max height of risers = 7"	
	Min height of risers= 4"	
	Min tread depth = 11"	
	Min. headroom = 6'-8"	
	Max. height between landings = 12'	
	Landings – see 7.2.1.3, 7.2.1.4.3.1 & 7.2.2.3.2	
HANDRAILS AT STAIRS	Not less than 34" and not greater 38" above the tread	**7.2.2.4.4.1**
	Provide min. 2 1/4" min. clearance between rail & wall.	**7.2.2.4.4.5**
	Stairway signage shall comply with 7.2.2.5.4.1 parts A thru M	**7.2.2.5.4**
AREA OF REFUGE	Consisting of a story protected by supervised automatic sprinkler system shall have:	**7.2.12.1.1.**
	1. Each elevator landing provided with two- way communicating system to fire command center or central control point	
	2. Directions for use of two-way comm. System	
	3. Two- way comm. System inludes both audible and visible signals	
SINGLE MEANS OF EGRESS ALLOWED		**30.2.4.3**
	1. Fewer than four dwellings units per story	
	2. Building has approved supevised sprinkler system	
	3. Exit stairway does not serve more than one-half story below the level of exit discharge.	
	4. Travel distance from entrance door of any dwelling unit to an exit does not exceed 35 feet.	
	5. Exit stairway is completely enclosed and has a min. 1 hour fire rating	
	6. All openings between exit stariway and building have self- closing doors and min. 1 hour fore rating.	
	7. All corridors serving as access to exits have min. 1 hour fire rating.	
	8. Horizontal & vertical separation having a min. 1/2 hour fire rating is provided between dwelling units	
TRASH ROOM & STORAGE ROOMS OUTSIDE OF DWELLING UNITS	1 Hour and sprinklered	**Table 30.3.2.1**
CORRIDOR WALLS	1/2 Hour (sprinklered)	**30.3.6.1.2**
CORRIDOR DOORS	20 min. rated (.33 hours)	**30.3.6.2.1**
	Self- closing and self latching	**30.3.6.2.3**
DWELLING UNIT DEMISING WALLS	1/2 hour (sprinklered)	**30.3.7.2**

PORTLAND ZONING CODE		**14-139**
	R6 Multifamily dwellings	
	Parking shall be provided as required by division 20 of this article;	
	Such development shall be subject to (site plan) of this chapter for site plan review and approval	
	Dimensional requirements	
	Minimum lot size: 2,000 sf **Existing lot size: 9,989 sf**	
	Minimum dwelling unit: 725 sf **Proposed: 2,000sf**	
	Street Frontage: 20 ft **Existing: 67 ft**	
	Minimum front yard setback: 5 ft **Proposed front yard setback: 10 ft**	
	Minimum rear yard setback: 10 ft **Proposed rear yard setback: 20 ft**	
	Minimum side yard setback: 5 ft **Proposed side yard setback: South 10 ft, North 6.33 ft**	**14-493**
	Landscaped open space: 20% **Proposed open space: 30%**	
	Maximum lot coverage: 60% **Proposed lot coverage: 56%**	**14-430**
	Maximum height: 45' **Proposed height: 43'-6"**	
	Definitions	**14-332**
	Subdivision shall include the division of a new structureon a tract or parcel of land into 3 or more dwelling units	
	Height Limits	
	Roof structure. Roof structures for the housing of elevators, stairways, tanks, fans, or other building operating equipment not intended for human occupancy, skylights, steeples, roof signs, flag poles, chimneys, smokestacks, radio or television masts, water tanks may be erected above the height of limitation herein prescribed for buildings.	**14-332.3**
	Parking	
	One (1) space per unit required in R-6	
	No spaces required for first three (3) dwelling units	
	Uses requiring off-street bicycle parking	
	Off-street parking for bicycles required	

LIST OF DRAWINGS

A.0	TITLE SHEET
C.1	PROPOSED & EXISTING SITE PLAN
L.1	LANDSCAPE PLANS
A.1	FLOOR PLANS, RENDERING
A.2	EXTERIOR ELEVATIONS
A.3	SITE LIGHTING

MONUMENT PARTNERS, LLC
25 MONUMENT STREET — PORTLAND, ME

WHIPPLE CALLENDER ARCHITECTS
136 PLEASANT AVE.
PORTLAND, ME 04103
P 207.775.2696
F 207.775.3631
www.whipplecallender.com

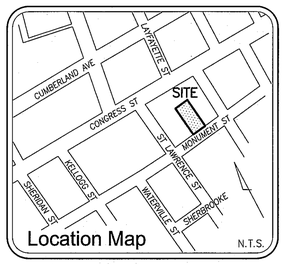
MARK	DATE	DESCRIPTION

DATE: 12/12/17
CHECKED BY: AEC, JWW
DRAWN BY: JR, AEC, JWW
JOB: 17-KEE
SHEET TITLE: TITLE SHEET

A.0

PLANNING BOARD REVIEW SET
NOT FOR CONSTRUCTION

THIS DRAWING IS AN INSTRUMENT OF SERVICE AND SHALL REMAIN THE PROPERTY OF WHIPPLE CALLENDER ARCHITECTS.
IT SHALL NOT BE USED FOR ANY OTHER PURPOSE THAT FOR WHICH IT IS SPECIFICALLY FURNISHED



Legend:

- CAPPED IRON ROD SET
- IRON PIPE OR ROD FOUND
- MONUMENT FOUND
- UTILITY POLE
- MANHOLE
- WATER VALVE OR SHUTOFF
- GAS VALVE
- DECIDUOUS TREE
- FENCE
- CURB
- LANDSCAPED AREA
- OHW — OVERHEAD WIRES
- W — WATER LINE
- G — GAS LINE
- SS — SANITARY SEWER
- CONC. — CONCRETE
- L/S — LANDSCAPED AREA
- CIRF — CAPPED IRON ROD FOUND
- IPF/IRF — IRON PIPE OR ROD FOUND
- P.O.B. — POINT OF BEGINNING
- 000/000 — DEED BOOK AND PAGE
- N/F — NOW OR FORMERLY
- A — POSSIBLE ENCROACHMENT

Plan References:

1. "RECORDING PLAT AT 89 ST. LAWRENCE STREET, PORTLAND, MAINE MADE FOR OWNER OF RECORD LAWRENCE W. GROSS DECEMBER 8, 2015 OWEN HASKELL, INC. JOB NO. 2014-011P"

2. "STANDARD BOUNDARY SURVEY ON 118 CONGRESS STREET, PORTLAND, MAINE MADE FOR THERIAULT/LANDMAIN ASSOCIATES JULY 13, 1998 OWEN HASKELL, INC. JOB NO. 98168P" REVISED 10-25-13.

3. "CONDOMINIUM PLAN 118 ON MUNJOY HILL, 118 CONDOMINIUMS, LLC, 118 CONGRESS STREET, PORTLAND, ME NOVEMBER 13, 2013 PINKHAM & GREER" RECORDED IN PLAN BOOK 215, PAGE 240.

4. "CONDOMINIUM PLAT ATLANTIC STREET CONDOMINIUMS 94 ATLANTIC STREET, PORTLAND, MAINE MADE FOR OWNER OF RECORD ATLANTIC STREET DEVELOPMENT, LLC NOVEMBER 15, 2006 OWEN HASKELL, INC. JOB NO. 99103P" RECORDED IN PLAN BOOK 207, PAGE 175.

5. "STANDARD BOUNDARY AND TOPOGRAPHIC SURVEY ON ATLANTIC STREET, PORTLAND, MAINE MADE FOR EDWARD & KAREN WALSH JUNE 3, 1999 OWEN HASKELL, INC. JOB NO. 99103P" REVISED 6/18/99.

6. "PLAN OF LAND IN PORTLAND, MAINE SURVEYED FOR STANDARD OIL COMPANY OF NEW YORK DEC. 1926 BY E. C. JORDAN & CO."

Notes:

1. OWNER OF RECORD: MELINDA Y.M. MCCLURE, RAYMOND A. MORROW, ESTHER M. MORROW, AND MARY V. CARD, 54 ASPEN AVENUE, SOUTH PORTLAND, MAINE; CUMBERLAND COUNTY REGISTRY OF DEEDS BOOK 32134, PAGE 38 AND BOOK 31472, PAGE 99.

2. LOCUS IS SHOWN AS PORTLAND PROPERTY MAP 16 BLOCK D LOT 9.

3. BEARINGS ARE GRID NORTH AS BASED ON MARKERS FOUND ON PLAN REFERENCE 1 AND COORDINATES PROVIDED BY THE CITY OF PORTLAND ENGINEERING DEPARTMENT.

4. THE 1852 EXCEPTION (236/192) SEEMS TO INDICATE THAT THE REAR LINE SHOULD BE PARALLEL TO MONUMENT STREET. HOWEVER, THE DEED IN 1850 OF THIS PARCEL SAYS IT IS BOUNDED BY A CONTEMPLATED STREET. A REAR LINE PARALLEL WITH MONUMENT STREET DOES NOT MATCH THE DIMENSIONS FOR THE LOTS ON CONGRESS STREET, WHEREAS THE LINE SHOWN HEREON MATCHES THE DIMENSIONS ON THE ABUTTING DEEDS AND PLAN REF.5.

5. NO EVIDENCE WAS OBSERVED OF RECENT EARTH MOVING WORK, BUILDING CONSTRUCTION OR BUILDING ADDITIONS, RECENT STREET OR SIDEWALK CONSTRUCTION OR REPAIRS. NO PROPOSED CHANGES IN STREET LINES ARE KNOWN BY THIS SURVEYOR.

6. UNDERGROUND UTILITIES MARKED BY DIGSMART.

7. FENCES: FENCE ALONG COOSE AND SILVERMAN, FROM STREET TO IPF, IS OWNED BY MCCLURE ET.AL., REMAINDER IS NOT; FENCE ALONG GROSS AND COLBY APPEARS TO BE THEIRS; STOCKADE FENCE ALONG 118 CONGRESS STREET CONDOMINIUMS APPEARS TO BE THEIRS; CHAINLINK FENCE AND GATE AT ALBERT-KNOPP APPEARS TO BELONG TO MCCLURE ET.AL.; FENCE ALONG ALBERT-KNOPP AND WHITAKER APPEAR TO BE THEIRS; FENCE ALONG ATLANTIC STREET PARCELS BELONGS TO MCCLURE ET.AL., PARTLY ON PROPERTY LINE.

Utility Note:

THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES. CALL 1-888-DIGSAFE AT LEAST THREE BUSINESS DAYS BEFORE PERFORMING ANY CONSTRUCTION. DUE TO OSHA CONFINED SPACE REQUIREMENTS, ALL INVERTS AND PIPE SIZES MUST BE VERIFIED PRIOR TO ANY CONSTRUCTION.

Flood Zone Note:

BY GRAPHIC PLOTTING ONLY, THIS PROPERTY IS IN ZONE C OF THE FLOOD INSURANCE RATE MAP, COMMUNITY PANEL NO. 230051 0014B, WHICH BEARS AN EFFECTIVE DATE OF JULY 17, 1986 AND IS NOT IN A SPECIAL FLOOD HAZARD AREA.

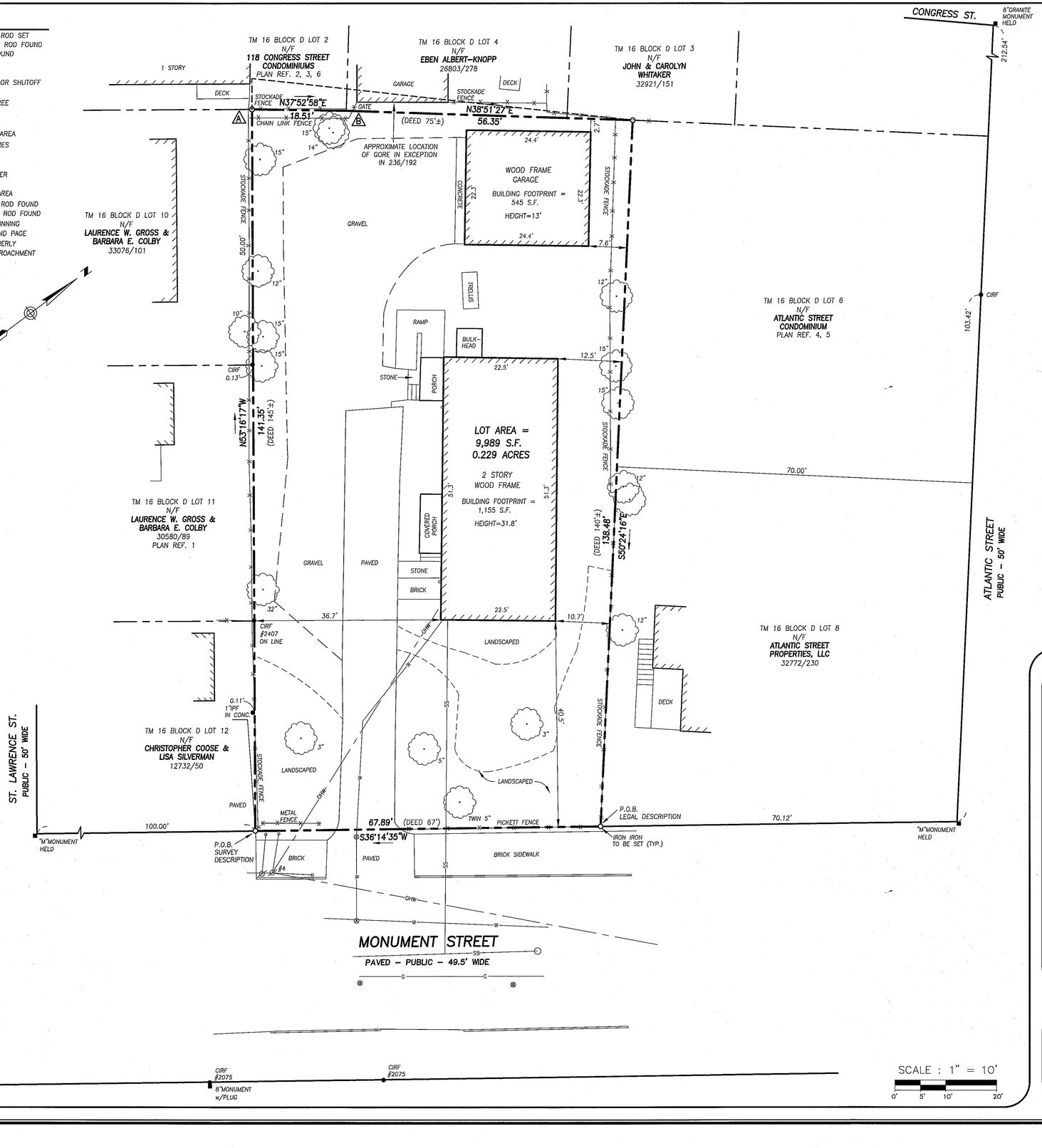
Zoning Information:

NONE PROVIDED BY TITLE INSURER

Possible Encroachments:

A CHAINLINK FENCE ONTO ABUTTER 0.6'±

B GATE ONTO ABUTTER



SCALE : 1" = 10'

0' 5' 10' 20'

Legal Description

A CERTAIN LOT OR PARCEL OF LAND WITH THE BUILDINGS THEREON LOCATED ON MONUMENT STREET IN THE CITY OF PORTLAND, COUNTY OF CUMBERLAND AND THE STATE OF MAINE, MORE PARTICULARLY BOUNDED AND DESCRIBED AS FOLLOWS: BEGINNING AT THE SOUTHERLY CORNER OF A LOT OF LAND CONVEYED BY WILLIAM HOLT TO ONE DOW, ON THE NORTHWESTERLY SIDE OF A CONTEMPLATED STREET AS NOW FENCED, DESIGNED TO BE THE CONTINUATION OF MONUMENT STREET: THENCE RUNNING NORTHWESTERLY ON THE LINE OF SAID DOW'S LAND AND LAND BELONGING TO THE WIDOW BRAZIER ONE HUNDRED AND FORTY FEET TO JUDAH LUNT'S LAND; THENCE SOUTHWESTERLY BY SAID LUNT'S LAND AND LAND BELONGING TO ONE CARLETON SEVENTY-FIVE FEET TO THOMAS WARREN'S LAND; THENCE SOUTHEASTERLY ON THE LINE OF SAID WARREN'S LAND OR LAND RECENTLY OWNED BY HIM, ONE HUNDRED AND FORTY-FIVE FEET TO THE AFORESAID CONTEMPLATED STREET; THENCE NORTHEASTERLY ON THE LINE OF SAID STREET SIXTY-SEVEN FEET TO THE FIRST BOUND, EXCEPTING FROM SAID PREMISES THE PORTION CONVEYED BY THE CITY OF PORTLAND TO SAMUEL L. CARLETON BY QUITCLAIM DEED, DATED MARCH 26, 1852, AND RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN BOOK 236, PAGE 192.

Survey Description

A CERTAIN PARCEL OF LAND SITUATED ON THE NORTHWESTERLY SIDE OF MONUMENT STREET IN THE CITY OF PORTLAND, COUNTY OF CUMBERLAND, AND STATE OF MAINE, BOUNDED AND DESCRIBED AS FOLLOWS:

BEGINNING AT THE EASTERNMOST CORNER OF THE LAND NOW OR FORMERLY OF CHRISTOPHER COOSE AND LISA SILVERMAN (SEE BOOK 12732, PAGE 50) ON THE NORTHWESTERLY SIDE OF MONUMENT STREET, WHICH POINT IS LOCATED 100.00 FEET NORTHEASTERLY OF THE POINT OF INTERSECTION OF THE NORTHWESTERLY SIDELINE OF MONUMENT STREET AND THE NORTHEASTERLY SIDELINE OF ST. LAWRENCE STREET, ALL AS SHOWN ON "ALTA/NSPS LAND TITLE SURVEY 25 MONUMENT STREET, PORTLAND, MAINE MADE FOR MONUMENT PARTNERS, LLC DATED JANUARY 13, 2017 OWEN HASKELL, INC. JOB NO. 2016-378P";
THENCE, N 53° 16' 17" W BY SAID LAND AND BY THE LAND NOW OR FORMERLY OF LAURENCE W. GROSS AND BARBARA E. COLBY (BOOK 30580, PAGE 89 AND BOOK 33076, PAGE 101) A DISTANCE OF 141.35 FEET TO THE LAND OF 118 CONGRESS STREET CONDOMINIUMS;
THENCE, N 37° 52' 58" E BY SAID LAND 18.51 FEET TO THE LAND NOW OR FORMERLY OF EBEN ALBERT-KNOPP (BOOK 26803, PAGE 278);
THENCE, N 38° 51' 27" E BY SAID LAND AND BY THE LAND NOW OR FORMERLY OF JOHN & CAROLYN WHITAKER (BOOK 32921, PAGE 151) A DISTANCE OF 56.35 FEET TO THE LAND NOW OR FORMERLY OF ATLANTIC STREET CONDOMINIUM;
THENCE, S 50° 24' 16" E BY SAID LAND AND BY THE LAND NOW OR FORMERLY OF ATLANTIC STREET PROPERTIES, LLC (BOOK 32772, PAGE 230) A DISTANCE OF 138.48 FEET TO MONUMENT STREET;
THENCE, S 36° 14' 35" W BY MONUMENT STREET 67.89 FEET TO THE POINT OF BEGINNING.

THE ABOVE DESCRIBED LAND IS THE SAME LAND AS DEPICTED HEREON AND THE SAME LAND AS DESCRIBED IN THE DEEDS INTO THE CURRENT OWNERS RECORDED IN BOOK 32134, PAGE 38, AND IN BOOK 31472, PAGE 99.

Schedule B Section 2 Exceptions:

CHICAGO TITLE INSURANCE COMPANY
COMMITMENT TITLE NO. 121516-01 EFFECTIVE DATE: DECEMBER 12, 2016

1. DEFECTS, LIENS, ENCUMBRANCES, ADVERSE CLAIMS OR OTHER MATTERS, IF ANY, CREATED, FIRST APPEARING IN THE PUBLIC RECORDS OR ATTACHING SUBSEQUENT TO THE EFFECTIVE DATE HEREOF BUT PRIOR TO THE DATE THE PROPOSED INSURED ACQUIRES FOR VALUE OF RECORD THE ESTATE OR INTEREST OR MORTGAGE THEREON COVERED BY THIS COMMITMENT. NON SURVEY ITEM

2. RIGHTS, FACTS, INTERESTS OR CLAIMS OF PRESENT TENANTS, LESSEES OR PARTIES IN POSSESSION WHICH ARE NOT SHOWN BY THE PUBLIC RECORDS, BUT WHICH COULD BE ASCERTAINED BY AN INSPECTION OF SAID LAND OR BY MAKING INQUIRY OF PERSONS IN POSSESSION THEREOF. NON SURVEY ITEM

3. ANY LIABILITY FOR MECHANICS' OR MATERIALMEN'S LIENS. NON SURVEY ITEM
4. ANY ENCROACHMENT, ENCUMBRANCE, VIOLATION, VARIATION, ADVERSE CIRCUMSTANCE OR OTHER STATE OF FACTS AFFECTING THE TITLE THAT WOULD BE DISCLOSED BY AN ACCURATE AND COMPLETE SURVEY OF THE LAND. THE TERM "ENCROACHMENT" INCLUDES ENCROACHMENTS OF EXISTING IMPROVEMENTS LOCATED ON THE LAND ONTO ADJOINING LAND, AND ENCROACHMENTS ONTO THE LAND OF EXISTING IMPROVEMENTS LOCATED ON ADJOINING LAND. SEE "POSSIBLE ENCROACHMENTS"

5. REAL ESTATE TAXES AND ASSESSMENTS. NON SURVEY ITEM

6. WATER AND SEWER CHARGES. NON SURVEY ITEM

7. THE EXACT ACREAGE OR SQUARE FOOTAGE OF THE LAND WILL NOT BE INSURED.
LOT AREA = 9,989 S.F. OR 0.229 ACRES

8. TITLE TO AND RIGHTS OF THE PUBLIC AND OTHERS ENTITLED THERETO IN AND TO THOSE PORTIONS OF THE INSURED PREMISES LYING WITHIN THE BOUNDS OF ADJACENT STREETS, ROADS AND WAYS. NO PORTION OF THE LAND DESCRIBED IN THE SURVEY DESCRIPTION IS LOCATED WITHIN MONUMENT STREET.

9. RIGHTS OF THE TENANTS IN POSSESSION AT WILL OR UNDER UNRECORDED LEASES.
NON SURVEY ITEM

ALTA / NSPS Land Title Survey

25 Monument Street
Portland, Cumberland County, Maine
Made for
Monument Partners, LLC

Surveyor's Certification

TO: MONUMENT PARTNERS, LLC AND CHICAGO TITLE INSURANCE COMPANY

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2016 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 1, 2, 3, 4, 6(A), 11, 13, 14, 16, 17, 19 AND 21 OF TABLE A THEREOF. THE FIELD WORK WAS COMPLETED ON JANUARY 11, 2017.

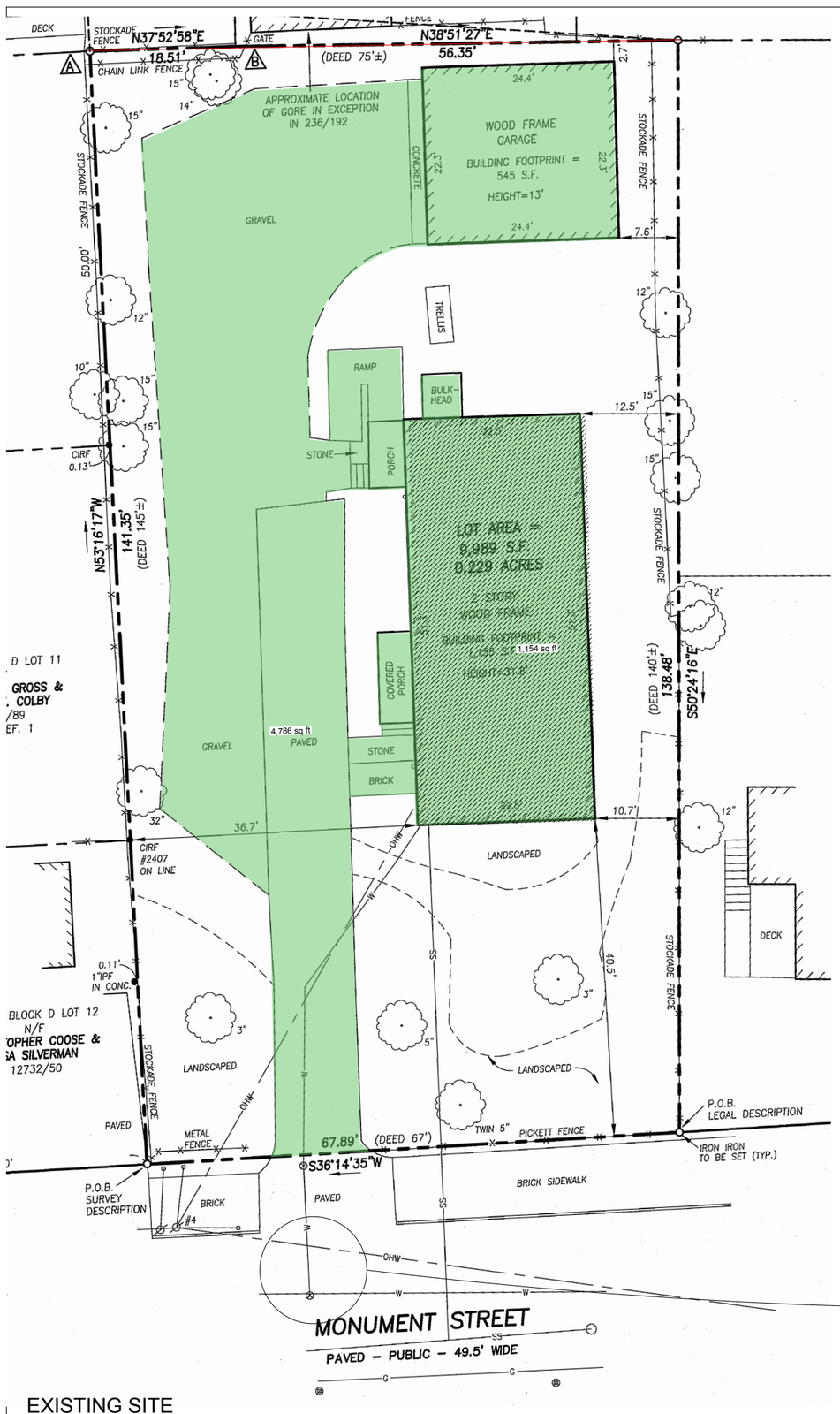
JOHN C. SCHWANDA
PROFESSIONAL LAND SURVEYOR NO. 1252
IN THE STATE OF MAINE

DATE OF PLAT OR MAP: JANUARY 13, 2017
REVISION DATE: JANUARY 18, 2017

STATE OF MAINE — JOHN C. SCHWANDA — NO. 1252 — REGISTERED LAND SURVEYOR

OHI JOB NO. 2016-378P

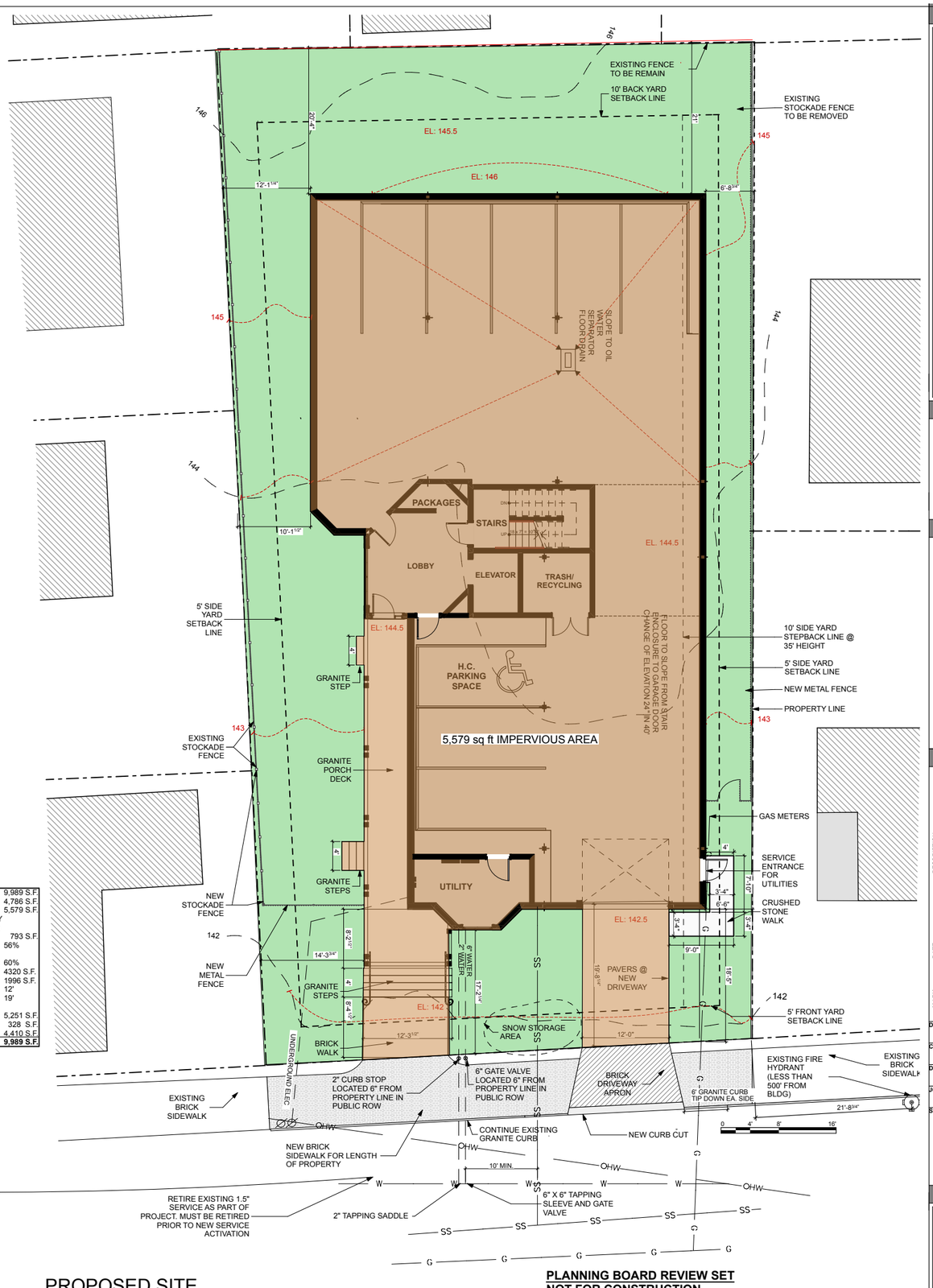
OWEN HASKELL, INC.
PROFESSIONAL LAND SURVEYORS
390 U.S. ROUTE ONE, UNIT 10
FALMOUTH, MAINE 04105
Tel. (207) 774-0424 www.owenhaskell.com



EXISTING SITE

SCALE: 1/8" = 1'-0"

TOTAL SITE AREA:	9,989 S.F.
EXISTING IMPERVIOUS AREA:	4,786 S.F.
NEW IMPERVIOUS AREA:	5,579 S.F.
(INCLUDES DRIVEWAYS, WALKWAY BUT NOT CRUSHED STONE PATH)	
NET DIFFERENCE:	793 S.F.
LOT COVERAGE:	56%
(INCLUDES COVERED PORCH)	
ALLOWABLE MAX. LOT COVERAGE:	60%
LANDSCAPED OPEN SPACE:	4320 S.F.
REQUIRED (20%)	1996 S.F.
GARAGE OPENING	12'
ALLOWED 40% OF FACADE:	19'
BUILDING FOOTPRINT	5,251 S.F.
PAVING	328 S.F.
OPEN SPACE	4,410 S.F.
TOTAL LOT SIZE	**9,989 S.F.**



PROPOSED SITE

SCALE: 1/8" = 1'-0"

PLANNING BOARD REVIEW SET
NOT FOR CONSTRUCTION

THIS DRAWING IS AN INSTRUMENT OF SERVICE AND SHALL REMAIN THE PROPERTY OF WHIPPLE CALLENDER ARCHITECTS. IT SHALL NOT BE USED FOR ANY OTHER PURPOSE THAT FOR WHICH IT IS SPECIFICALLY FURNISHED

MONUMENT PARTNERS, LLC
25 MONUMENT STREET PORTLAND, ME

WHIPPLE CALLENDER ARCHITECTS
136 PLEASANT AVE.
PORTLAND, ME 04103
P 207.775.2696
F 207.775.3631
www.whipplecallender.com

MARK | DATE | DESCRIPTION

DATE: 3/20/18
CHECKED BY: AEC, JNW
DRAWN BY: JR, AEC, JNW
JOB: 17-KEE
SHEET TITLE: EXISTING & PROPOSED SITE PLAN

C.1

NOTES:

1. TREE SHALL BEAR SAME RELATION TO GRADE AS PRIOR TO PLANTING.

2. NEVER CUT A LEADER, THIN BRANCHES & FOLIAGE BY 1/3 RETAINING NORMAL TREE SHAPE.

NOTE 'B':

SECURE GUYS W/ RUBBER HOSE & #12 GA. WIRE SIM. TO STAKING NOTE 'A'.

2" GALV. TURNBUCKLE (3 GUYS/TREE)

CLAMP FOR GUY REMOVAL

TO METAL DEADMAN ANCHORS DRIVEN INTO SUBGRADE

NOTE 'A':

FOR ALL TREES UP TO 2 1/2" CAL. USE 2"x2" OR 2 1/2" □ STAKES W/ 2-#12 GA. GALV. WIRE ENCASED IN 2 PLY REINF. RUBBER HOSE. 1/2" INSIDE DIA. GUY ALL TREES OVER 2 1/2" DIA. NOTE 'B'). GUY ALL EVERGREEN TREES.

#12 GA. ANNEALED GALV. WIRE IN RUBBER HOSE (SEE NOTE 'A')

WOOD STAKES - DARK WALNUT OIL STAIN - ONE COAT, 3 STAKES/TREE

APPROVED TREE WRAP, LAP ENDS DO NOT STAPLE. WRAP TO HT. OF 2ND BRANCH

3" SHREDDED BARK MULCH (EXCEPT AS NOTED)

REMOVE BURLAP FROM TOP 1/3RD OF BALL

6" TEMP. SAUCER

SOIL MIX NOTES
FOR DECIDUOUS TREES USE 4 PARTS TOPSOIL, 1 PART MANURE.
FOR EVERGREEN TREES USE 4 PARTS TOPSOIL, 1 PART PEAT HUMUS.

4" MOUND FOR DRAINAGE

12" | 12" | 2X BALL DIA.

1 L-1 NTS

TREE PLANTING DETAIL

NOTE: SHRUBS SHALL BEAR SAME RELATION TO GRADE AS PRIOR TO PLANTING.

3" BARK MULCH W/ 4" SAUCER

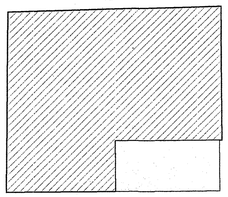
REMOVE BURLAP FROM TOP 1/3 BALL

SOIL MIX NOTES:

4 PARTS TOPSOIL, 1 PART HUMUS FOR EVERGREENS
4 PARTS TOPSOIL, 1 PART MANURE FOR DECIDUOUS SHRUBS

2 L-1 NTS

SHRUB PLANTING DETAIL



PLANTING NOTES

1. The contractor shall supply all plants in quantities sufficient to complete the work shown on plan. Any discrepancies between quantities shown on plant list and those required by this drawing shall not entitle contractor to additional renumeration.
2. Any plant substitutions must be approved by the owner.
3. Any tree or shrub which comes over or under any utility shall be relocated on the site by the landscape architect.
4. All lawn areas to have 6" of topsoil unless noted otherwise.
5. All trees and shrubs shall be placed in the designated areas as shown on the plan and before planting shall be approved by the landscape architect.
6. The contractor shall relocate any tree or shrub as directed by the landscape architect.
7. All plant material installed shall meet the specifications of the American Standard for Nursery Stock (latest edition) as set forth by the American Association of Nurserymen.
8. The landscape contractor shall replace or repair to original condition any and all utilities, paving, curbing, etc., damaged as a result of their operations at no additional cost to the owner.

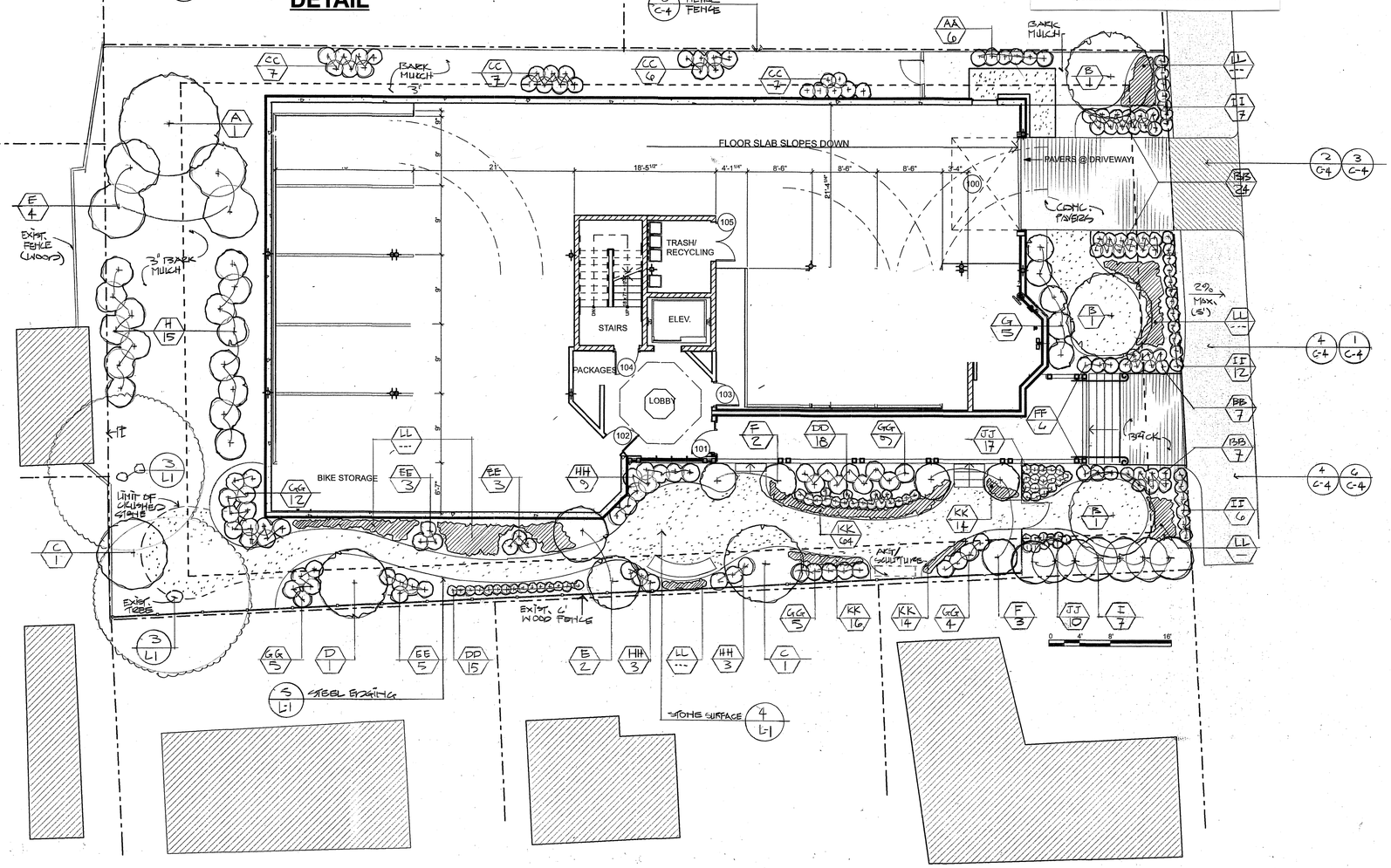
PLANT LIST

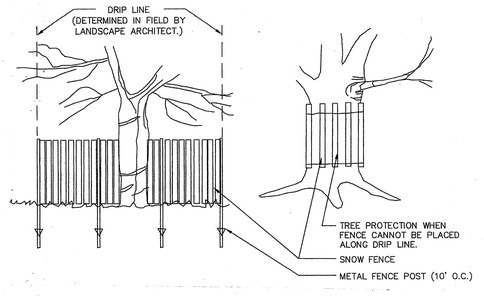
TREES & SHRUBS

KEY	COMMON & BOTANICAL NAME	SIZE	ROOT	QTY	NOTES
A	SHADBLOW AMELANCHIER X.GRANDIFLORA 'Autumn Brilliance'	6-7" Ht.	B&B	1	
B	COCKSPUR THORNLESS HAWTHORN C. CRUZGALLI var. INERMIS	2" Dia.	B&B	3	
C	PAGODA DOGWOOD C. ALTERNIFOLIA	6-8' Ht.	B&B	2	
D	CORNELIAN CHERRY C.MAS	5-6' Ht.	B&B	1	
E	MOHICAN VIBURNUM V. LANTANA 'Mohican'	4-5' Ht.	B&B	6	
F	SHASTA VIBURNUM V. PLICATUM Var. TOMENTOSUM 'SHASTA'	3'-4' HT.	B&B	5	
G	SHASTA VIBURNUM V.PLICATUM VAR. TOMENTOSUM 'Summer Snowflake'	#5	B&B	5	
H	COMPACT REDTWIG DOGWOOD C. SERICEA 'Isanti'	#2	Cont.	15	
I	AMUR PRIVET L. AMURENSIS	#5	Cont.	7	

PERENNIALS

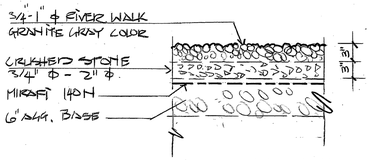
			QTY	NOTES
AA	SWITCH GRASS PANICUM VIRGATUM ' Cheyenne Sky'	------	6	"
BB	DAYLILY VAR. HEMEROCALLIS	PTD	38	BLOOM IN JULY THRU SEPT 18" O.C.
CC	HOSTA 'BIG DADDY'	------	27	
DD	ASTILBE FALSE SPIREA VAR.		33	
EE	LADY FERN FILIX-FEMINA	------	11	
FF	MAIDEN HAIR FERN ADIANTUM PEDATUMLAVEN	CONT.	6	
GG	HAY SCENTED FERN DENNSTAEDTIA PUNCTILOBA	CONT.	35	
HH	OSTRICH FERN MATTEUCCIA STRUTHIOPTERIS	CONT.	15	
II	LAVENDER LAVANDULA ANGUSTIFOLIUM 'Hidcote superior'	------	25	
JJ	PERIWINKLE VINCA MINOR	------	27	
KK	WILD GINGER ASARUM CANADENSE	------	123	@ 9" O.C.
	ECHINACEA PHLOX RUDBECKIA CAMPANULA	------		MIXED VARIETY





3 L-1 NTS

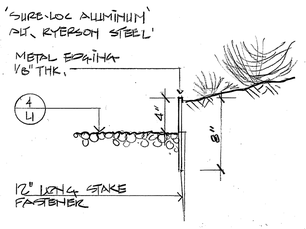
TREE PROTECTION DETAIL



4 L-1

STONE SURFACE DETAIL

NTS



5 L-1 NTS

STEEL EDGING DETAIL

Anthony Muench Landscape Architect
94 Commercial Street Portland, Maine 04101 207.761.6621
amuench@maine.rr.com

REGISTERED LANDSCAPE ARCHITECT ANTHONY MUENCH No. 7 3-19-18 State of Maine

PLANNING BOARD REVIEW SET
NOT FOR CONSTRUCTION

THIS DRAWING IS AN INSTRUMENT OF SERVICE AND SHALL REMAIN THE PROPERTY OF WHIPPLE CALLENDER ARCHITECTS. IT SHALL NOT BE USED FOR ANY OTHER PURPOSE THAT FOR WHICH IT IS SPECIFICALLY FURNISHED

MONUMENT PARTNERS, LLC
25 MONUMENT STREET PORTLAND, ME

WHIPPLE CALLENDER ARCHITECTS
136 PLEASANT AVE.
PORTLAND, ME 04103
P 207.775.2696
F 207.775.3631
www.whipplecallender.com

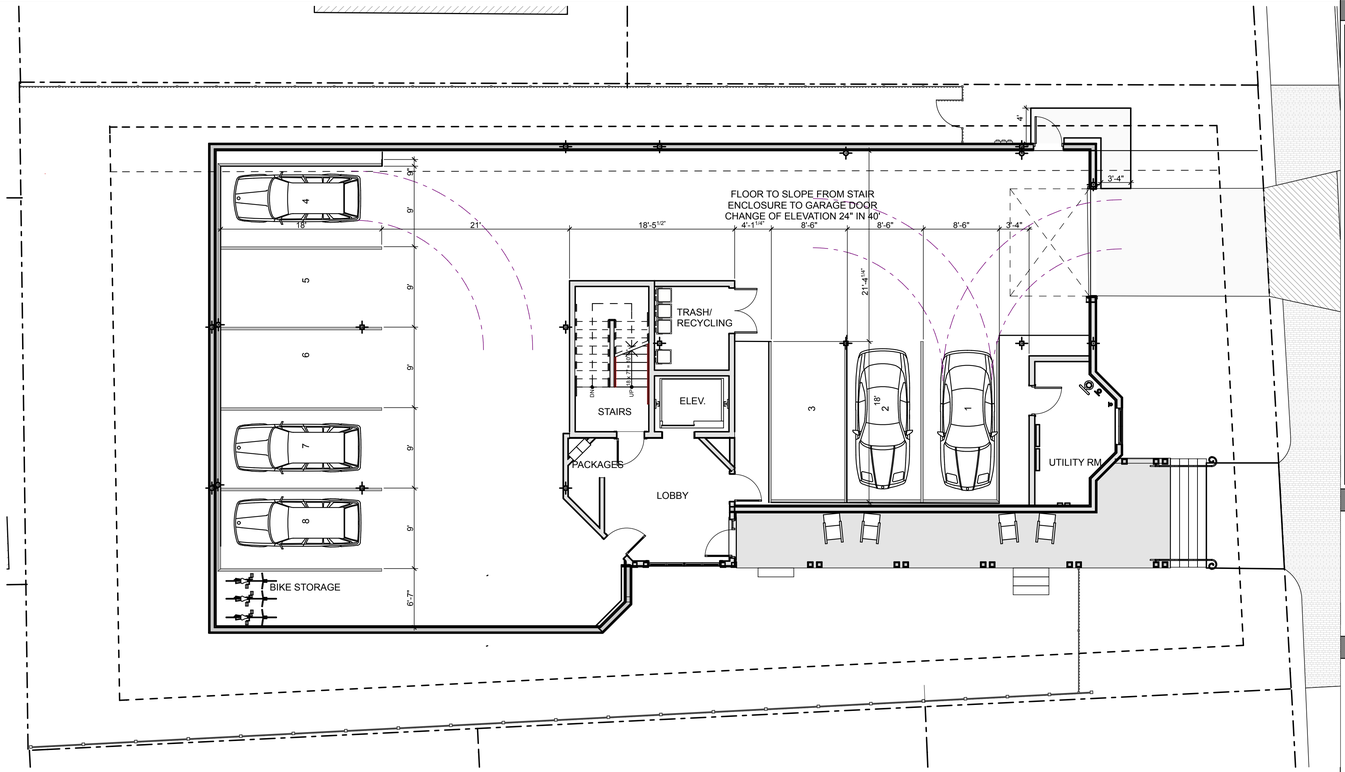
MARK	DATE	DESCRIPTION
	3.19.18	P.B. SUBMISSION

DATE: 1/8/18
CHECKED BY: AEC, JWM
DRAWN BY: JR, AEC, JWM
JOB: 17-KEE
SHEET TITLE: LANDSCAPE PLAN

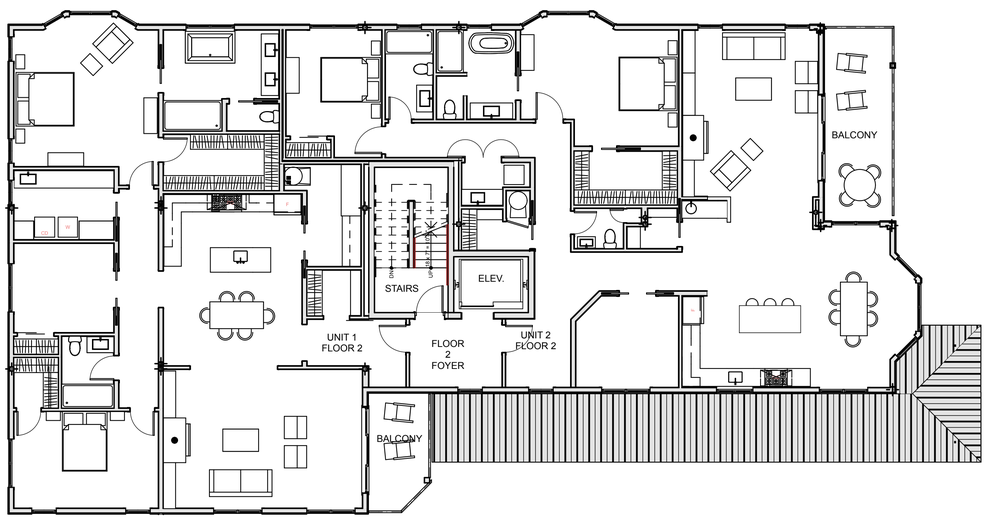
L.1



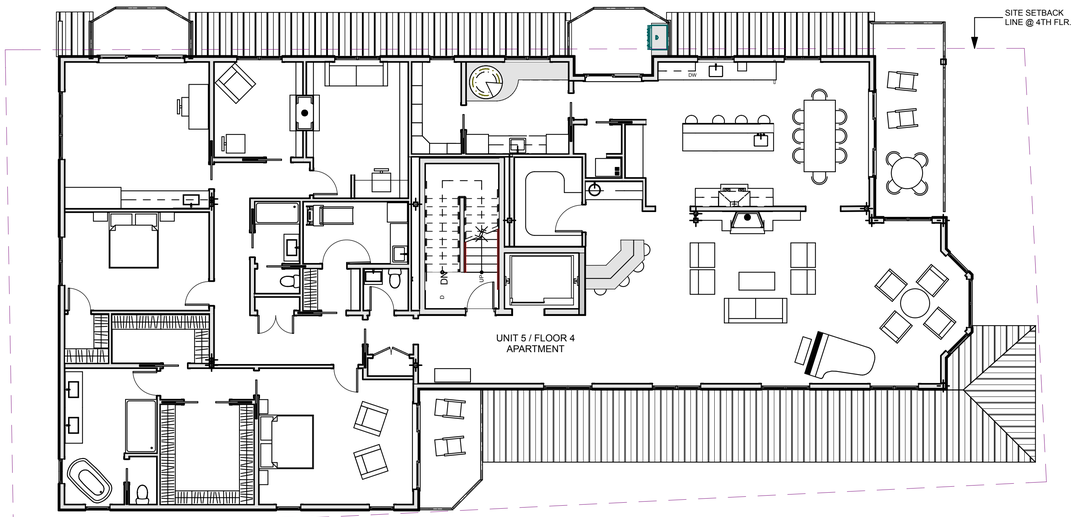
1 / A.1 25 MONUMENT STREET VIEW
SCALE: 1' = 1'-0"



2 / A.1 FIRST FLOOR
SCALE: 1/8" = 1'-0"



3 / A.1 TYPICAL PLAN (SECOND & THIRD FLOORS)
SCALE: 1/8" = 1'-0"



4 / A.1 FOURTH FLOOR PLAN
SCALE: 1/8" = 1'-0"

PLANNING BOARD REVIEW SET
NOT FOR CONSTRUCTION

THIS DRAWING IS AN INSTRUMENT OF SERVICE AND SHALL REMAIN THE PROPERTY OF WHIPPLE CALLENDER ARCHITECTS. IT SHALL NOT BE USED FOR ANY OTHER PURPOSE THAT FOR WHICH IT IS SPECIFICALLY FURNISHED

MONUMENT PARTNERS, LLC
PORTLAND, ME
25 MONUMENT STREET

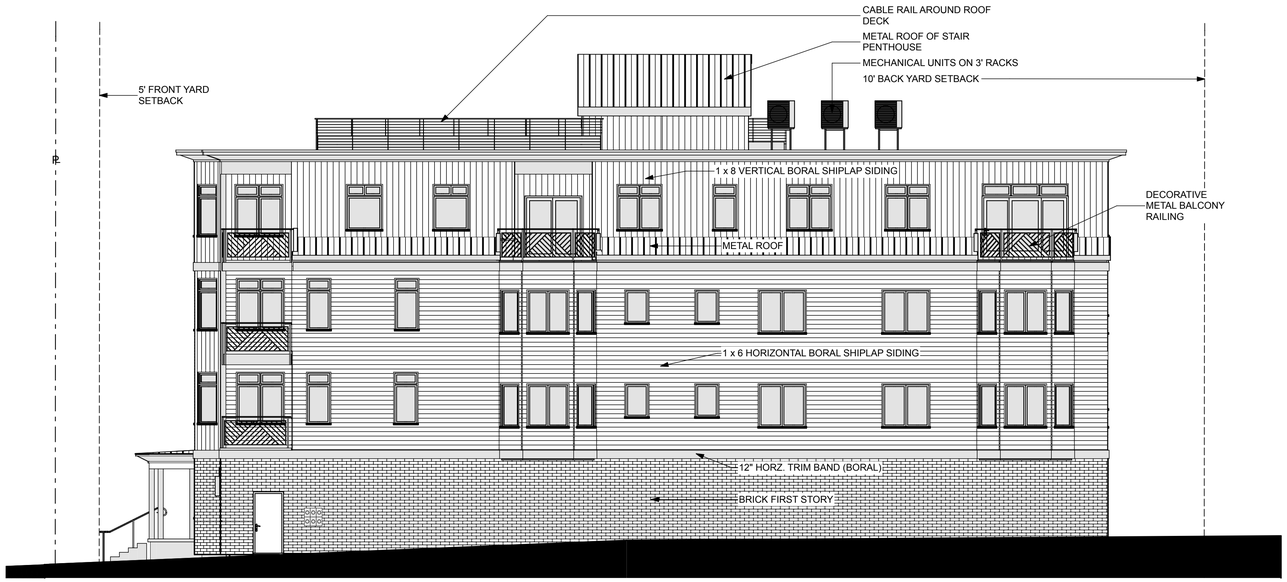
WHIPPLE CALLENDER ARCHITECTS
136 PLEASANT AVE.
PORTLAND, ME 04103
P 207.775.2696
F 207.775.3631
www.whipplecallender.com

MARK	DATE	DESCRIPTION

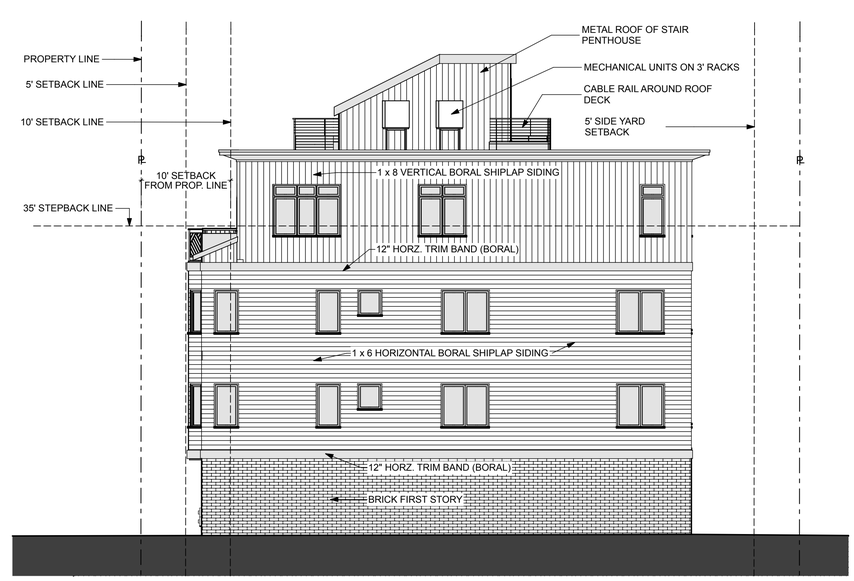
DATE: 3/21/18
CHECKED BY: AEC, JNW
DRAWN BY: JR, AEC, JNW
JOB: 17-KEE
SHEET TITLE: FIRST FLOOR PLAN TYPICAL FLOOR PLAN, FOURTH FLOOR PLAN & RENDERING

A.1

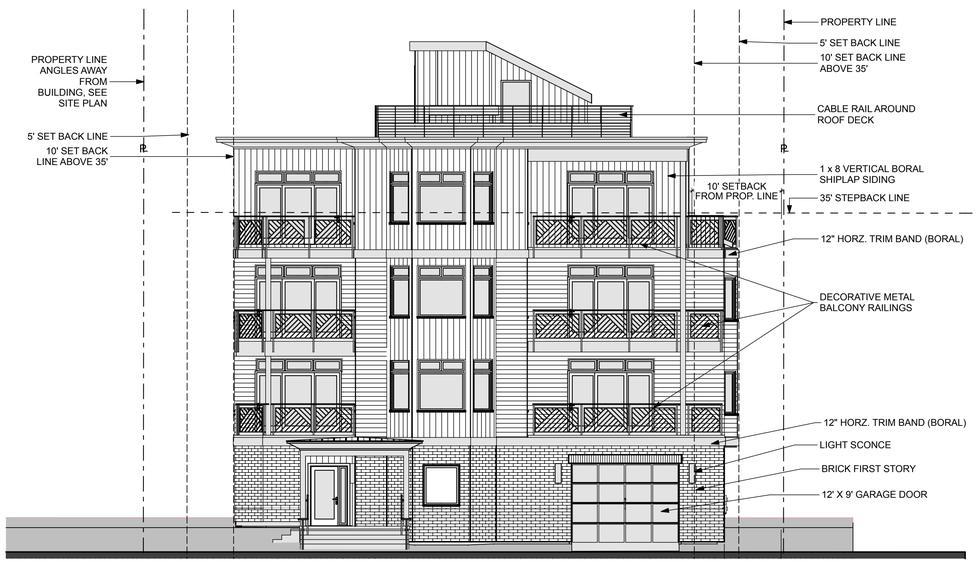
A1 FLOOR PLANS - Plotted on 3/21/18 at 12:00 PM by Jane Callender File Path: P:\M Design\WCA Conceptual - P\M Design 03\Jane 18-21-17.3rvt



1 / A.2 NORTH ELEVATION
SCALE: 1/8" = 1'-0"



2 / A.2 WEST ELEVATION
SCALE: 1/8" = 1'-0"



3 / A.2 EAST ELEVATION
SCALE: 1/8" = 1'-0"



4 / A.2 SOUTH ELEVATION
SCALE: 1/8" = 1'-0"

PLANNING BOARD REVIEW SET
NOT FOR CONSTRUCTION

THIS DRAWING IS AN INSTRUMENT OF SERVICE AND SHALL REMAIN THE PROPERTY OF WHIPPLE CALLENDER ARCHITECTS. IT SHALL NOT BE USED FOR ANY OTHER PURPOSE THAT FOR WHICH IT IS SPECIFICALLY FURNISHED

MONUMENT PARTNERS, LLC
25 MONUMENT STREET PORTLAND, ME

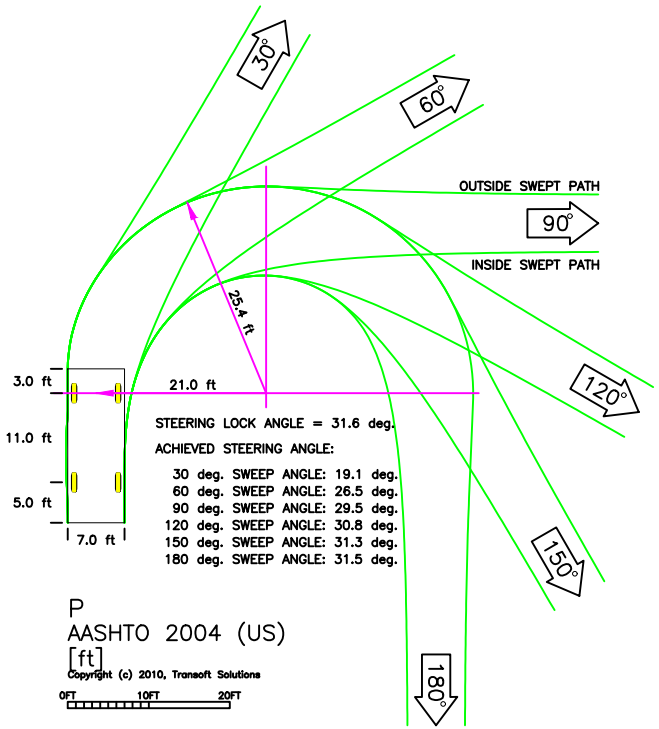
WHIPPLE CALLENDER ARCHITECTS
136 PLEASANT AVE.
PORTLAND, ME 04103
P 207.775.2696
F 207.775.3631
www.whipplecallender.com

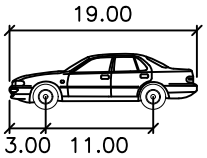
MARK	DATE	DESCRIPTION

DATE: 3/21/18
CHECKED BY: AEC, JNW
DRAWN BY: JR, AEC, JNW
JOB: 17-KEE
SHEET TITLE: EXTERIOR ELEVATIONS

A.2

A.2 EXTERIOR ELEVATIONS - Plotted on 3/21/18 at 10:00 PM by Anne Callender, File Path: P:\M Design\WCA Documents_P\M Design 2017\case 49-24 17 Documents\





P	feet
Width	: 7.00
Track	: 6.00
Lock to Lock Time	: 6.0
Steering Angle	: 31.6

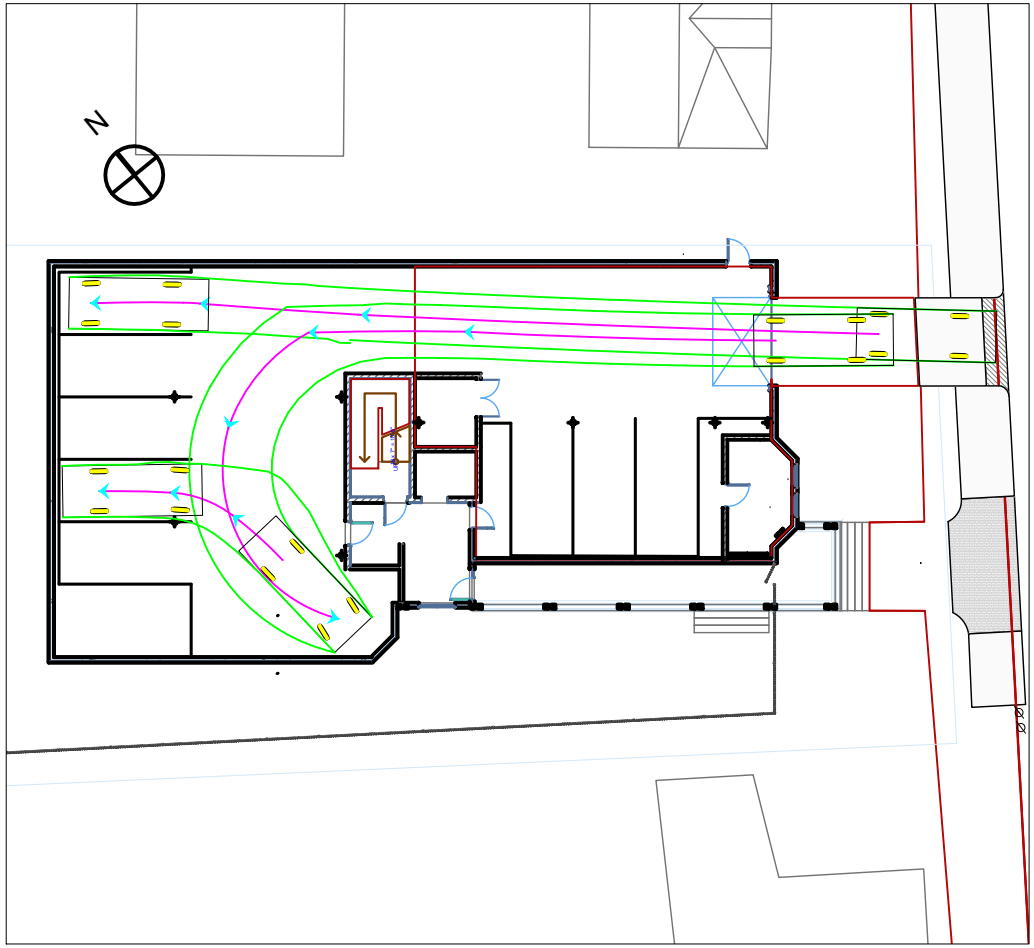
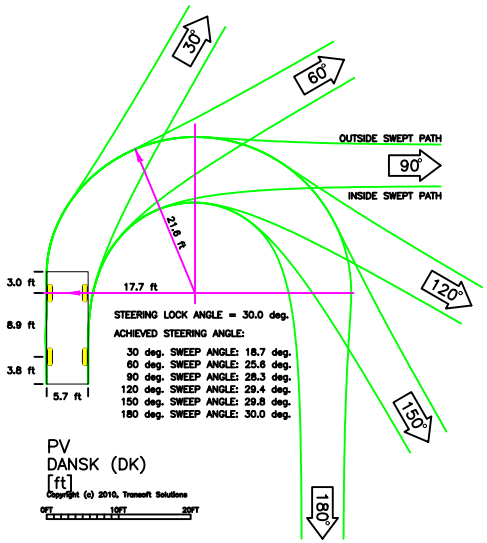
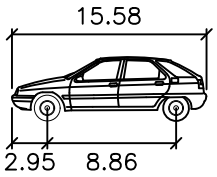


Figure 1

Large Car @ 5 mph
Portland, Maine
September 21, 2017

Maine Traffic Resources
25 Vine Street
Gardiner, ME
04345
tel: (207) 582-5252
fax: (207) 582-1677





PV	feet
Width	: 5.74
Track	: 5.41
Lock to Lock Time	: 6.0
Steering Angle	: 30.0

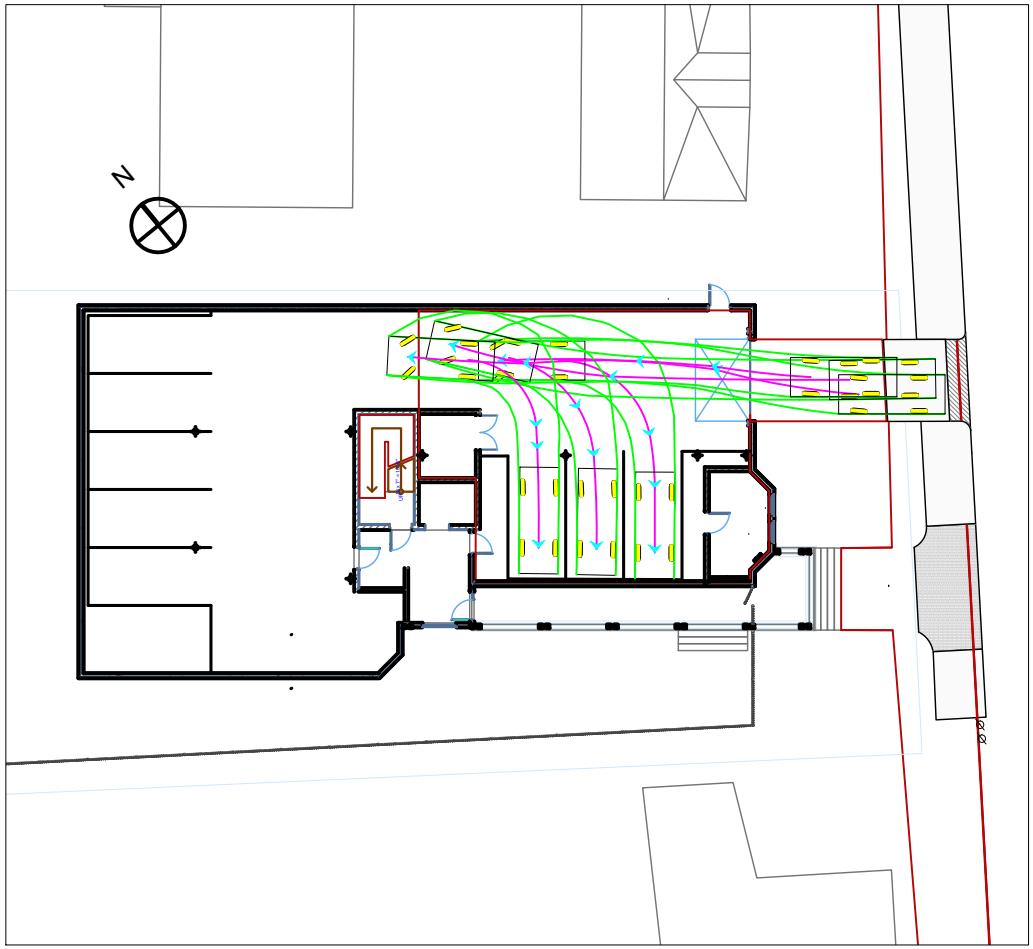
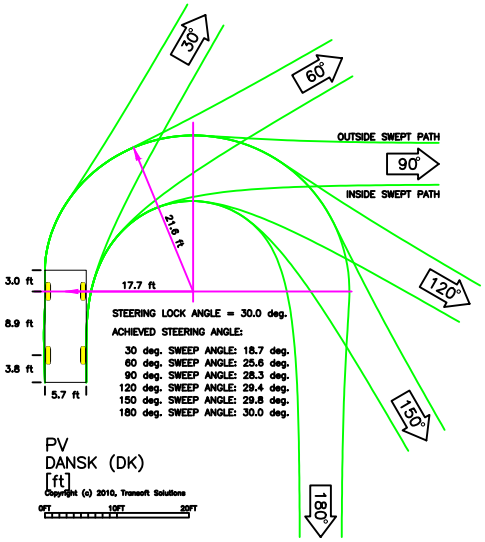
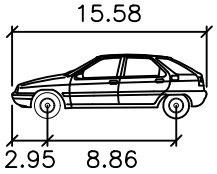


Figure 2

Small Car @ 5 mph
Portland, Maine
September 21, 2017

Maine Traffic Resources
25 Vine Street
Gardiner, ME
04345
tel: (207) 582-5252
fax: (207) 582-1677





PV	feet
Width	: 5.74
Track	: 5.41
Lock to Lock Time	: 6.0
Steering Angle	: 30.0

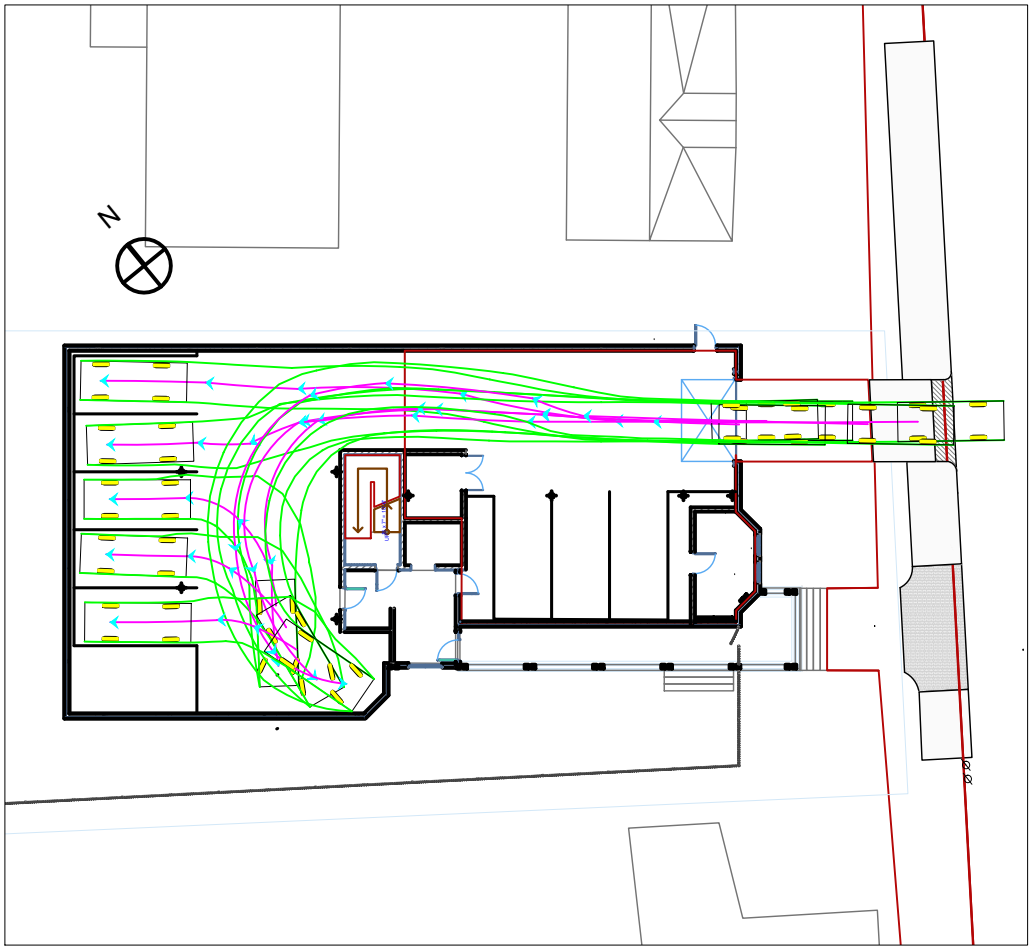


Figure 3

Small Car @ 5 mph
Portland, Maine
September 21, 2017

Maine Traffic Resources
25 Vine Street
Gardiner, ME
04345
tel: (207) 582-5252
fax: (207) 582-1677

Plan References:

1. "RECORDING PLAT AT 89 ST. LAWRENCE STREET, PORTLAND, MAINE MADE FOR OWNER OF RECORD LAWRENCE W. GROSS DECEMBER 8, 2015 OWEN HASKELL, INC. JOB NO. 2014-011P"

2. "STANDARD BOUNDARY SURVEY ON 118 CONGRESS STREET, PORTLAND, MAINE MADE FOR THERIAULT/LANDMANN ASSOCIATES JULY 13, 1998 OWEN HASKELL, INC. JOB NO. 98168P" REVISED 10-25-13.

3. "CONDOMINIUM PLAN 118 ON MUNJOY HILL, 118 CONDOMINIUMS, LLC, 118 CONGRESS STREET, PORTLAND, ME NOVEMBER 13, 2013 PINKHAM & GREER" RECORDED IN PLAN BOOK 215, PAGE 240.

4. "CONDOMINIUM PLAT ATLANTIC STREET CONDOMINIUMS 94 ATLANTIC STREET, PORTLAND, MAINE MADE FOR OWNER OF RECORD ATLANTIC STREET DEVELOPMENT, LLC NOVEMBER 15, 2006 OWEN HASKELL, INC. JOB NO. 99103P" RECORDED IN PLAN BOOK 207, PAGE 175.

5. "STANDARD BOUNDARY AND TOPOGRAPHIC SURVEY ON ATLANTIC STREET, PORTLAND, MAINE MADE FOR EDWARD & KAREN WALSH JUNE 3, 1999 OWEN HASKELL, INC. JOB NO. 99103P" REVISED 6/18/99.

6. "PLAN OF LAND IN PORTLAND, MAINE SURVEYED FOR STANDARD OIL COMPANY OF NEW YORK DEC. 1926 BY E. C. JORDAN & CO."

7. "ALTA/NSPS LAND TITLE SURVEY, 25 MONUMENT STREET, PORTLAND, CUMBERLAND COUNTY, MAINE MADE FOR MONUMENT PARTNERS, LLC" JANUARY 13, 2017, REVISION DATE: JANUARY 18, 2017 BY OWEN HASKELL, INC.

8. "MONUMENT PARTNERS, LLC, 25 MONUMENT STREET, PORTLAND,M ME" OCTOBER 10, 2017 BY WHIPPLE CALLENDER ARCHITECTS

Notes:

1. OWNER / APPLICANT: MONUMENT PARTNERS, LLC, 380 6TH STREET, SOUTH NAPLES, FLORIDA; CUMBERLAND COUNTY REGISTRY OF DEEDS BOOK 33797, PAGE 33.

2. LOCUS IS SHOWN AS PORTLAND PROPERTY MAP 16 BLOCK D LOT 9.

3. BEARINGS ARE GRID NORTH AS BASED ON MARKERS FOUND ON PLAN REFERENCE 1 AND COORDINATES PROVIDED BY THE CITY OF PORTLAND ENGINEERING DEPARTMENT.

4. THE 1852 EXCEPTION (236/192) SEEMS TO INDICATE THAT THE REAR LINE SHOULD BE PARALLEL TO MONUMENT STREET. HOWEVER, THE DEED IN 1850 OF THIS PARCEL SAYS IT IS BOUNDED BY A CONTEMPLATED STREET. A REAR LINE PARALLEL WITH MONUMENT STREET DOES NOT MATCH THE DIMENSIONS FOR THE LOTS ON CONGRESS STREET, WHEREAS THE LINE SHOWN HEREON MATCHES THE DIMENSIONS ON THE ABUTTING DEEDS AND PLAN REF.5.

5. UNDERGROUND UTILITIES MARKED BY DIGSMART.

6. FENCES: FENCE ALONG COOSE AND SILVERMAN, FROM STREET TO IPF, IS OWNED BY MCCLURE ET.AL., REMAINDER IS NOT; FENCE ALONG GROSS AND COLBY APPEARS TO BE THEIRS; STOCKADE FENCE ALONG 118 CONGRESS STREET CONDOMINIUMS APPEARS TO BE THEIRS; CHAINLINK FENCE AND GATE AT ALBERT-KNOPP APPEARS TO BELONG TO MCCLURE ET.AL.; FENCE ALONG ALBERT-KNOPP AND WHITAKER APPEAR TO BE THEIRS; FENCE ALONG ATLANTIC STREET PARCELS BELONGS TO MCCLURE ET.AL., PARTLY ON PROPERTY LINE.

7. THERE ARE NO WETLANDS, FLOOD PLAINS OR SHORELAND ZONES ON THE PROPERTY.

Utility Note:

THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES. CALL 1-888-DIGSAFE AT LEAST THREE BUSINESS DAYS BEFORE PERFORMING ANY CONSTRUCTION. DUE TO OSHA CONFINED SPACE REQUIREMENTS, ALL INVERTS AND PIPE SIZES MUST BE VERIFIED PRIOR TO ANY CONSTRUCTION.

Flood Zone Note:

BY GRAPHIC PLOTTING ONLY, THIS PROPERTY IS IN ZONE C OF THE FLOOD INSURANCE RATE MAP, COMMUNITY PANEL NO. 230051 0014B, WHICH BEARS AN EFFECTIVE DATE OF JULY 17, 1986 AND IS NOT IN A SPECIAL FLOOD HAZARD AREA.

Zoning Information:

ZONING DISTRICT: R6 - RESIDENTIAL 6

ZONING REQUIREMENTS: DIMENSIONAL STANDARDS TO BE IN ACCORDANCE WITH THE APPROVED ZONE AS SHOWN BELOW:

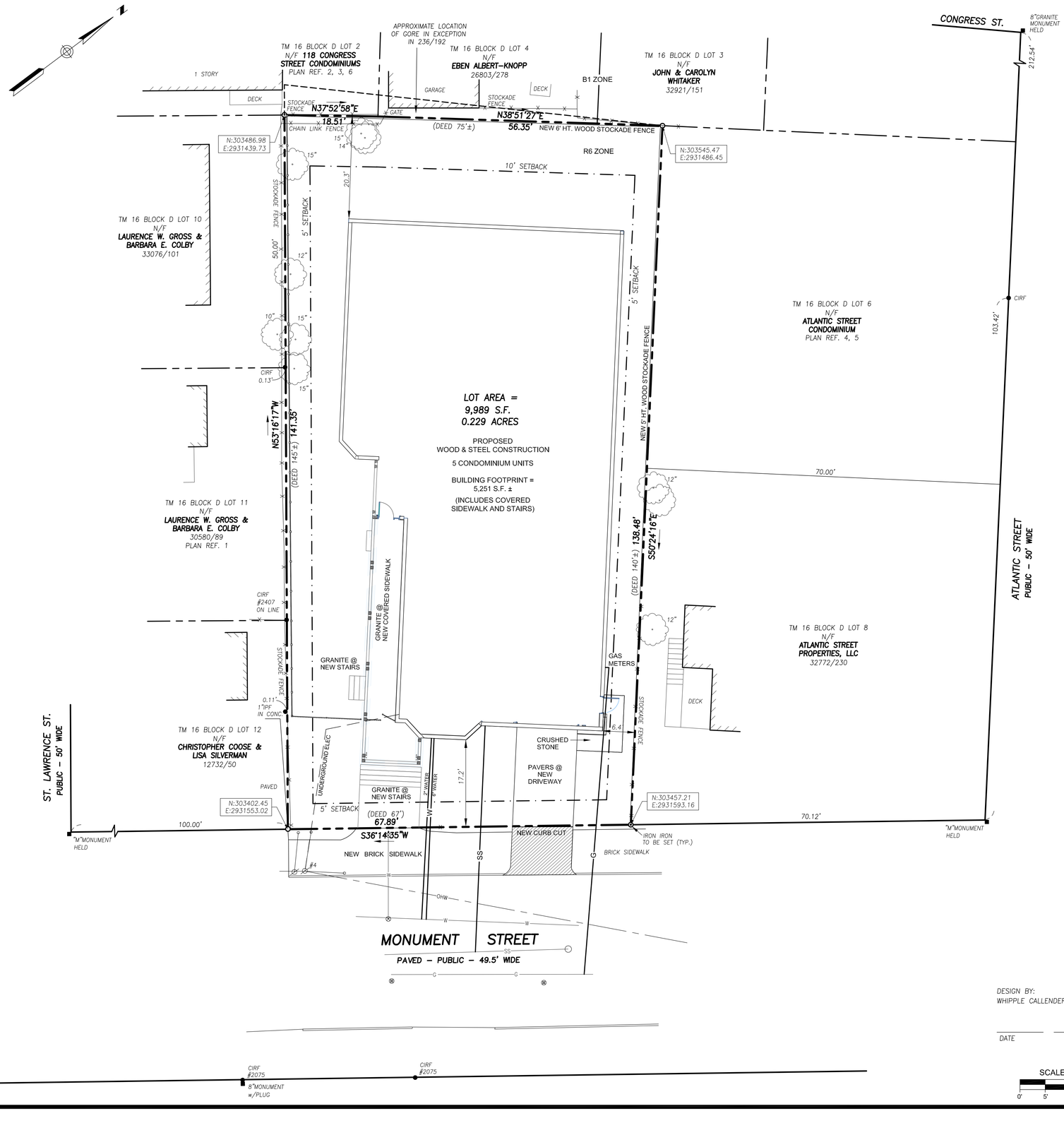
DIMENSIONAL STANDARDS	REQUIRED (R6)	PROVIDED
MINIMUM LOT SIZE	2,000 S.F.	9,989 S.F.
MINIMUM LOT AREA PER DWELLING	725 S.F.	1,248 S.F.
MINIMUM STREET FRONTAGE	20 FEET	67 FEET
MINIMUM FRONT YARD SETBACK	5 FEET	17.2 FEET
MINIMUM SIDE SETBACK	5 FEET	6.4 FEET
MINIMUM REAR SETBACK	10 FEET	20.3 FEET
MAXIMUM BUILDING HEIGHT	45 FEET	43.5 FEET
MAXIMUM LOT COVERAGE	60%	56%
BUILDING		5,251 S.F.
PAVEMENT		328 S.F.
OPEN SPACE		4,410 S.F.
TOTAL LOT SIZE		9,989 S.F.

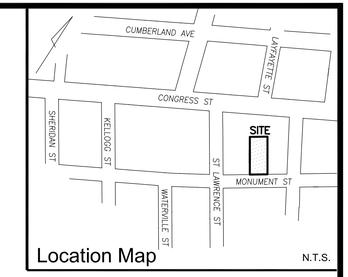
PROPOSED USE: 5 CONDOMINIUM UNIT BUILDING WITH 8 CAR GARAGE

PARKING SUMMARY:

REQUIRED PARKING
PARKING RATIO: 1 SPACE / UNIT
TOTAL: 4 SPACES

PROVIDED PARKING
PARKING GARAGE: 8 SPACES





Legend

- CAPPED IRON ROD SET
- IRON PIPE OR ROD FOUND
- MONUMENT FOUND
- UTILITY POLE
- MANHOLE
- WATER VALVE OR SHUTOFF
- GAS VALVE
- DECIDUOUS TREE
- CONC. CONCRETE
- L/S LANDSCAPED AREA
- CIRF CAPPED IRON ROD FOUND
- IPF/IRF IRON PIPE OR ROD FOUND
- P.O.B. POINT OF BEGINNING
- 000/000 DEED BOOK AND PAGE
- N/F NOW OR FORMERLY
- FENCE
- CURB
- LANDSCAPED AREA
- OHW OVERHEAD WIRES
- W WATER LINE
- G GAS LINE
- SS SANITARY SEWER

APPROVED BY THE
CITY OF PORTLAND PLANNING BOARD

DATE

Certificate: FOR BOUNDARY & EXISTING CONDITIONS

OWEN HASKELL, INC. HEREBY CERTIFIES THAT THIS PLAN IS BASED ON, AND THE RESULT OF, AN ON THE GROUND FIELD SURVEY AND THAT TO THE BEST OF OUR KNOWLEDGE, INFORMATION AND BELIEF, IT CONFORMS TO THE BOARD OF LICENSURE FOR PROFESSIONAL LAND SURVEYORS CURRENT STANDARDS OF PRACTICE.

JOHN C. SCHWANDA, PLS #1252

DEC. 12, 2017
DATE

STATE OF MAINE
JOHN C. SCHWANDA 1252
PROFESSIONAL LAND SURVEYOR

DESIGN BY:
WHIPPLE CALLENDER ARCHITECTS

DATE

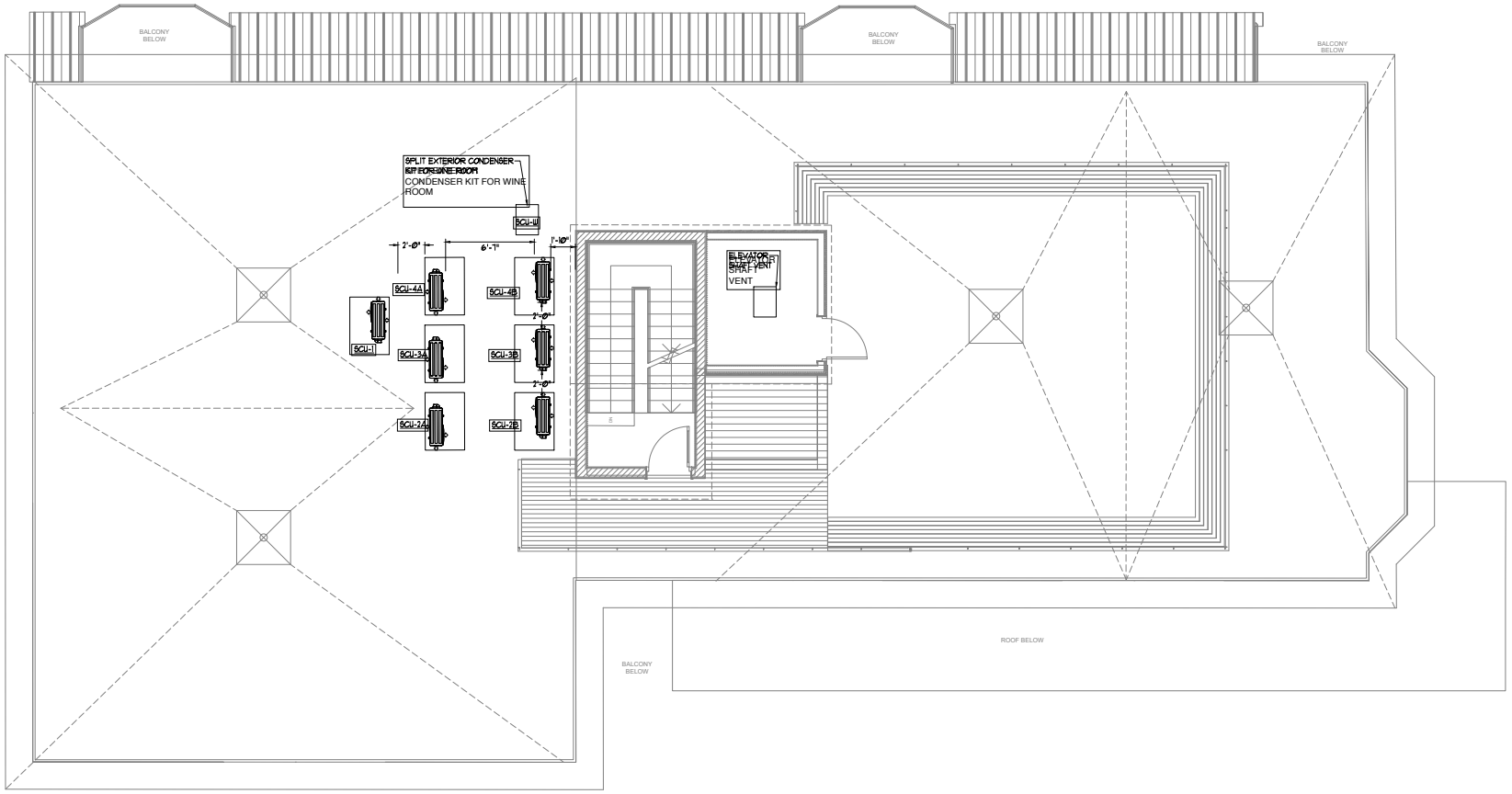
SCALE : 1" = 10'

0' 5' 10' 20'

SUBDIVISION PLAN
AT
25 MONUMENT STREET
PORTLAND, MAINE
MADE FOR RECORD OWNER
MONUMENT PARTNERS, LLC
PORTLAND, MAINE

OWEN HASKELL, INC.
PROFESSIONAL LAND SURVEYORS
390 U.S. ROUTE ONE, UNIT 10, FALMOUTH, MAINE 04105

DRAWN BY: RS / JLW	DATE: DEC. 12, 2017	JOB NO.	2016-378P
CHECKED BY: JCS	SCALE: 1" = 10'	DRWG. NO.	1



N

NOT FOR CONSTRUCTION

THIS DRAWING IS AN INSTRUMENT OF SERVICE AND SHALL REMAIN THE PROPERTY OF WHIPPLE CALLENDER ARCHITECTS. IT SHALL NOT BE USED FOR ANY OTHER PURPOSE THAT FOR WHICH IT IS SPECIFICALLY FURNISHED

BENNETT ENGINEERING
MECHANICAL • ELECTRICAL
(207) 865-9475

MONUMENT 2nd ARTNERS
25 MONUMENT STREET PORTLAND, MAINE

PRELIMINARY NOT FOR CONSTRUCTION
(PRELIMINARY NOT FOR CONSTRUCTION)

WHIPPLE CALLENDER ARCHITECTS
136 PLEASANT AVE.
PORTLAND, ME 04103
P 207.775.2696
F 207.775.3631
www.whipplecallender.com

MARK	DATE	DESCRIPTION

DATE: 12/05/17
CHECKED BY: SPD
DRAWN BY: MEB
JOB: 17-KEE

SHEET TITLE: ROOF MECHANICAL PLAN

M1.6

UNIT HEATER PERFORMANCE SCHEDULE

TAG	SERVES	GAS INPUT MBH	HEAT OUTPUT BTU/HR	OUTPUT VELOCITY FPM	ELECTRICAL			MOUNTING	MFG/MN
					VOLTS	PH	AMPS		
UH-1	GARAGE	125	99,600	763	115	1	5.1	CEILING	REZNOR UDAS 125

PROVIDE WITH TWO-STAGE NATURAL GAS VALVE, HORIZONTAL COMBUSTION AIR/VENT KIT, AND WALL MOUNTED THERMOSTAT

LOUVER PERFORMANCE SCHEDULE

TAG	AIR FLOW (CFM)	SP LOSS (IN.WG)	AIR VEL. (FPM)	FREE AREA (SQFT)	DRAINABLE (Y) OR (N)	BLADE ANGLE & FRAME DEPTH	DIMENSIONS		BASIS OF DESIGN: GREENHECK	
							W	H	SERVICE	MODEL
L-1	2350	0.03	100	0.88	Y	4"	24	48	GARAGE	ELF637BDX
L-2	-	-		0.88	Y	4"	18	18	ERV DISCHARGE	ESD

WITH KYNAR FINISH, COLOR BY ARCHITECT

FAN PERFORMANCE SCHEDULE

TAG	AIRFLOW (CFM)	T.S.P (IN.WG)	NOISE (SONES)	RPM	DRIVE	ELECTRICAL REQUIREMENTS					BASIS OF DESIGN = PANASONIC "WhisperGreen Select", Greenheck (G)		
						HP	BHP	WATTS	AMPS	V/PH/HZ	SERVICE	ARRANGEMENT	MODEL
EF-1	80	0.25	0.4	-	DIRECT	-	-	11.0	-	120/1/60	BATHROOMS (MULTIPLE)	CEILING	FV-05-11VK1
EF-2	100	0.25	0.4	-	DIRECT	-	-	11.0	-	120/1/60	-	CEILING	FV-05-11VK1
EF-3	200	0.5	3	1400	DIRECT	-	-	54.4	0.45	120/1/60	REFUSE/GARAGE (CONTINUOUS)	CEILING	SP-A190
EF-4	2750	0.09	7.2	1048	DIRECT	1/4	0.22	164	1.4	120/1/60	GARAGE (INTERMITTENT)	SIDEWALL	(G) SEI-18-429-B4

EF-1: PROVIDE HUMIDITY SENSOR AND TIME DELAY MODULES, EF-1 FAN AND LIGHT SHALL BE INDEPENDENTLY CONTROLLED
EF-3: PROVIDE WITH MODEL GC 16X3 HOODED WALL CAP
EF-4: PROVIDE VARI-GREEN CONTROLS, CONTROLLED BY CO/NO2 SENSOR AND SPACE OCCUPANCY SENSORS. FAN SHALL OPERATE BASED ON OCCUPANCY OR ELEVATED LEVELS OF CO OR NO2.

PLUMBING FIXTURE CONNECTION SCHEDULE

TAG	DESCRIPTION	SAN	VENT	CW	HW
P-1	FLOOR MOUNTED WATER CLOSET	3"	2"	1/2"	-
P-2	COUNTERTOP LAVATORY	1 1/2"	1 1/2"	1/2"	1/2"
P-2A	WALL MOUNTED LAVATORY	1 1/2"	1 1/2"	1/2"	1/2"
P-3	TUB	2"	1 1/2"	1/2"	1/2"
P-3A	SHOWER	2"	2"	1/2"	1/2"
P-3B	SHOWER	2"	2"	1/2"	1/2"
P-3C	SHOWER	2"	2"	1/2"	1/2"
P-3D	SHOWER	2"	2"	1/2"	1/2"
P-4	DOUBLE BOWL KITCHEN SINK	2"	1 1/2"	1/2"	1/2"
P-4A	SINGLE BOWL KITCHEN SINK	2"	1 1/2"	1/2"	1/2"
P-4B	BAR SINK	2"	1 1/2"	1/2"	1/2"
P-5		-	-	1/2"	-
P-6	WASHING MACHINE HOOK-UP	2"	1 1/2"	1/2"	1/2"
P-7	LAUNDRY SINK	2"	1 1/2"	1/2"	1/2"
FD-1	FLOOR DRAIN (W/ TRAP PRIMER)	2"	1 1/2"	-	-
FPHB	FREEZE PROOF HOSE BIBB	-	-	3/4"	-

MINIMUM SIZE OF BELOW SLAB SANITARY & VENT PIPING SHALL BE 2".
PROVIDE TRAP PRIMERS ON FLOOR DRAINS, CONNECT TO NEAREST FIXTURE.
UNITS SCHEDULED MAY REPRESENT MULTIPLE UNITS, COORDINATE WITH DRAWINGS.
* - PROVIDE DISHWASHER CONNECTIONS, PIPING AND CONNECT TO DISHWASHER

WINE CELLAR COOLING UNIT PERFORMANCE SCHEDULE

* AT 90°F AMBIENT

TAG	TOTAL COOLING (MBH)*	TOTAL HEATING (MBH)	REFRIGERANT	APPROX. REFRIG. CHARGE	MINIMUM AMBIENT TEMP (°F)	FOOTPRINT DIMENSION (INCHES)	OPERATING WEIGHT (LBS)	ELECTRICAL REQUIREMENTS			BASIS OF DESIGN = WHISPERKOOL			
								MCA	MAX FUSE	V/PH/HZ	COMP. STAGING	SOUND (BEL)	SERVICE	MODEL
SAC-W	36.0	-	R-134A	-	-	16x15.5x10	56	6.8	20	115/1/60	-	65	WINE COOLING	CEILING MOUNT

WINE CELLAR EQUIPMENT TO BE VERIFIED BY A WINE STORAGE PROFESSIONAL. EQUIPMENT SHALL BE CAPABLE OF COOLING ROOM DOWN TO 55°F

SPLIT - SYSTEM HEAT PUMP INDOOR UNIT PERFORMANCE SCHEDULE

* AT 95°F AMBIENT, 80°F DB, 67°F WB
** AT 47°F AMBIENT

TAG	NOMINAL COOLING (MBH)*	NOMINAL HEATING CAPACITY (MBH)**	AIRFLOW (CFM)	CORRECTED CAPACITY (BTUH @ -10°F)	COND. DRAIN (IN)	SOUND RATING (DB)	WEIGHT (LBS)	REFRIGERANT PIPE SIZE (IN)		ELECTRICAL REQUIREMENTS		BASIS OF DESIGN: MITSUBISHI		
								LIQUID	GAS	MCA	MAX FUSE	V/PH/HZ	SERVICE	ARRANGEMENT	MODEL
SAC-1	12	-	370		5/8"	40	29	1/4"	1/2"	1.0	-	208/1/60	ELEVATOR	WALL	PKA-A12HA4
SAC-2AA	12	13.600			5/8"			1/4"	3/8"	1.0		208/1/60	UNIT 2A	DUCTED	
SAC-2AB	15	18.000			5/8"			1/4"	3/8"	1.0		208/1/60	UNIT 2A	CASSETTE	
SAC-2BA	12	13.600			5/8"			1/4"	3/8"	1.0		208/1/60	UNIT 2B	DUCTED	
SAC-2BB	15	18.000			5/8"			1/4"	3/8"	1.0		208/1/60	UNIT 2B	CASSETTE	
SAC-3AA	12	13.600		1188	5/8"			1/4"	3/8"	1.0		208/1/60	UNIT 3A	DUCTED	
SAC-3AB	15	18.000		1122	5/8"			1/4"	3/8"	1.0		208/1/60	UNIT 3A	CASSETTE	
SAC-3BA	12	13.600			5/8"			1/4"	3/8"	1.0		208/1/60	UNIT 3B	DUCTED	
SAC-3BB	15	18.000			5/8"			1/4"	3/8"	1.0		208/1/60	UNIT 3B	CASSETTE	
SAC-4A	8.4	10.900	350	9,248	5/8"	36	36	1/4"	3/8"	1.0	-	208/1/60	KITCHEN	CASSETTE	SLZ-KA09NA4RLTH
SAC-4B	8.4	10.900	350	9,248	5/8"	36	36	1/4"	3/8"	1.0	-	208/1/60	LIVING/DINING	CASSETTE	SLZ-KA09NA4RLTH
SAC-4C	8.4	10.900	350	7,475	5/8"	36	36	1/4"	3/8"	1.0	-	208/1/60	FOYER	CASSETTE	SLZ-KA09NA4RLTH
SAC-4DA	11.5	8,140	350	9,278	5/8"	33	50	1/4"	3/8"	1.0	-	208/1/60	OFFICE5	DUCTED	SEZ-KD12NA4RLTH
SAC-4DB	11.5	8,140	350	9,507	5/8"	33	50	1/4"	3/8"	1.0	-	208/1/60	BEDROOM5	DUCTED	SEZ-KD12NA4RLTH

HEAT PUMP OUTDOOR UNIT PERFORMANCE SCHEDULE

TAG	TOTAL COOLING (MBH)	REFRIGERANT	EER	MINIMUM AMBIENT TEMP (°F)	HEATING CAPACITY (Btuh @ 47F)	OPERATING WEIGHT (LBS)	ELECTRICAL REQUIREMENTS			BASIS OF DESIGN: MITSUBISHI			
							MCA	MOCP	V/PH/HZ	-	SOUND (BEL)	SERVICE	MODEL
* SCU-1	12	R-410A	10.1	-13	-	-	-	15	208/1/60	-	46	SAC-1	PUY-A12NA4
* SCU-2A	28.4	R-410A	11.4	-13	28,600	-	-	40	208/1/60	-	58	SAC-1A, 1B, 1C	MXZ-3C30NAHZ2-RI
* SCU-2B	28.4	R-410A	11.4	-13	28,600	-	-	40	208/1/60	-	58	SAC-1A, 1B, 1C	MXZ-3C30NAHZ2-RI
* SCU-3A	28.4	R-410A	11.4	-13	28,600	-	-	40	208/1/60	-	58	SAC-1A, 1B, 1C	MXZ-3C30NAHZ2-RI
* SCU-3B	28.4	R-410A	11.4	-13	28,600	-	-	40	208/1/60	-	58	SAC-2A, 2B	MXZ-3C30NAHZ2-RI
* SCU-4A	28.4	R-410A	11.4	-13	28,600	-	-	40	208/1/60	-	58	SAC-1A, 1B, 1C	MXZ-3C30NAHZ2-RI
* SCU-4B	28.4	R-410A	11.4	-13	28,600	-	-	40	208/1/60	-	58	SAC-1A, 1B, 1C	MXZ-3C30NAHZ2-RI

@ - AT ARI CONDITIONS OF 95°F AMBIENT / 67°F INDOOR WB. PROVIDE 24"H. STANDS FOR THE OUTDOOR UNITS.
* - PROVIDE W/LOW AMBIENT CONTROLS & WIND BAFFLE

MECHANICAL AND PLUMBING SYMBOLS AND ABBREVIATIONS LEGEND

NOTE - USE SYMBOLS AND ABBREVIATIONS AS APPLICABLE FOR THIS MECHANICAL DRAWING SET.
SOME SYMBOLS AND ABBREVIATIONS IN THIS LEGEND MAY NOT APPLY.

SYMBOL	DESCRIPTION
CA	COMPRESSED AIR PIPING (CA)
C	CONDENSATE DRAIN PIPING (C)
CWR	CHILLED WATER RETURN PIPING (CWR)
CWS	CHILLED WATER SUPPLY PIPING (CWS)
FOR	FUEL OIL RETURN PIPING (FOR)
FOS	FUEL OIL SUPPLY PIPING (FOS)
G	GAS PIPING (G)
HWR	HOT WATER RETURN PIPING (HWR)
HWS	HOT WATER SUPPLY PIPING (HWS)
RL	REFRIGERANT LIQUID PIPING (RL)
RG	REFRIGERANT GAS PIPING (RG)
	SANITARY PIPING BELOW FLOOR (SAN)
	SANITARY PIPING ABOVE FLOOR (SAN)
	SANITARY VENT PIPING
RWL	RAINWATER LEADER ABOVE SLAB (RWL)
	COLD WATER PIPING (CW)
	HOT WATER PIPING (HW)
	RECIRCULATED HOT WATER PIPING (RHW)
	PIPE CAP
	DIRECTION OF FLUID FLOW
	ELBOW UP
	ELBOW DOWN
	PIPE TEE UP
	PIPE TEE DOWN
	PIPE REDUCER
	PIPE WITH GUIDE
	PIPE WITH ANCHOR
	BUTTERFLY VALVE
	OS & Y GATE VALVE
	BACKFLOW PREVENTER (BFP)
	CHECK VALVE
	BALANCING VALVE (ADJUSTABLE)
	AUTOMATIC FLOW CONTROL VALVE
	RELIEF VALVE (RV)

SYMBOL	DESCRIPTION
	BALL VALVE
	BALL VALVE
C	3/4" BALL VALVE WITH 3/4" HOSE END
	GATE VALVE
	PRESSURE REDUCING VALVE
	FUSIBLE VALVE
	STRAINER W/BLOWDOWN BALL VALVE
	2-WAY CONTROL VALVE
	SOLENOID VALVE
	3-WAY CONTROL VALVE
	3-WAY CONTROL VALVE (TOP VIEW)
	2 BUTTERFLY VALVES W/SINGLE ACTUATOR
	BUTTERFLY VALVE W/ACTUATOR
	TRIPLE-DUTY VALVE
	UNION
	PIPE FLANGE
	PUMP WITH FLANGES
	BASE MOUNTED PUMP
	CARTRIDGE TYPE INLINE PUMP
	VERTICAL INLINE PUMP
FC	FLEXIBLE PIPE CONNECTION (FC)
	PITCH DOWN
	PETCOCK
	FLOW METER
	PRESSURE GAGE WITH GAGE COCK
	THERMOMETER IN WELL
	WATER FLOW SWITCH
	PRESSURE SWITCH OR SENSOR
	IMMERSION TEMPERATURE SENSOR
	DUCT MOUNTED SMOKE DETECTOR
	ROOM TEMPERATURE SENSOR
	THERMOSTAT OR SENSOR ON WALL

SYMBOL	DESCRIPTION
	T-STAT OR SENSOR W/ TAMPERPROOF GUARD
	MANUAL AIR VENT
	NOTE TAG (NUMBER)
	AIR DEVICE TAG (LETTER) WITH CFM
	ROOM NUMBER
	TURNING VANES
	DUCT W/MANUAL DAMPER
	DUCT W/FLEXIBLE CONNECTION (FC)
	LAGGED DUCT
	DUCT W/ACOUSTIC LINING
	DUCT W/SQUARE-TO-ROUND TRANSITION
	FLEXIBLE DUCT
MOD	MOTOR OPERATED DAMPER
	AIRFLOW OUT
	AIRFLOW IN
	DIAMETER OR FLAT OVAL
	FIRE DAMPER
	ROUND OR FLAT OVAL DUCT DOWN
	ROUND OR FLAT OVAL DUCT UP
	SUPPLY DIFFUSER
	RETURN GRILLE
	STEAM TRAP
	WATER HAMMER ARRESTOR
AAV	AUTOMATIC AIR VENT
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
AHU-*	AIR HANDLING UNIT TAG
AMS	AIRFLOW MONITORING STATION
AMPS	AMPERES
AP	ACCESS PANEL
APD	AIR PRESSURE DROP
AS-*	AIR SEPARATOR TAG
ATC	AUTOMATIC TEMPERATURE CONTROL

ABBREVIATION	DESCRIPTION
B-*	BOILER TAG
BD-*	BYPASS DAMPER TAG
BFP-*	BACKFLOW PREVENTER TAG
BHP	BRAKE HORSEPOWER
BTUH	BRITISH THERMAL UNITS PER HOUR
CBD	COUNTER BALANCED DAMPER
CC-*	COOLING COIL TAG
CFM	CUBIC FEET PER MINUTE
CHLR-*	CHILLER TAG
CO	CLEANOUT
CUH-*	CABINET UNIT HEATER TAG
CP-*	CIRCULATING PUMP TAG
CT-*	COOLING TOWER TAG
Cv	VALVE COEFFICIENT
CW	COLD WATER
CWS/R	CHILLED WATER SUPPLY AND RETURN
DB	DRY BULB
dB RE	DECIBELS RELATIVE TO
DC	DOUBLE CHECK
DCA	DOUBLE CHECK ATMOSPHERIC
DEG F	DEGREES FAHRENHEIT
DIA	DIAMETER
DW	DOWN IN WALL
DN	DOWN
EA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
EDB	ENTERING DRY BULB
EDC-*	ELECTRIC DUCT COIL TAG
EER	ENERGY EFFICIENCY RATIO
EF-*	EXHAUST FAN TAG
EFF	EFFICIENCY
EG-*	EXHAUST GRILLE TAG
ER-*	EXHAUST REGISTER TAG
ESP	EXTERNAL STATIC PRESSURE
ET-*	EXPANSION TANK TAG

ABBREVIATION	DESCRIPTION
EWB	ENTERING WET BULB
EUH-*	ELECTRIC UNIT HEATER TAG
EWT	ENTERING WATER TEMPERATURE
EXG	EXISTING
EXH	EXHAUST
FC	FLEXIBLE CONNECTION
FCO	FLOOR CLEANOUT
FD	FIRE DAMPER
FD-*	FLOOR DRAIN TAG
FLA	FULL LOAD AMPS
FOR	FUEL OIL RETURN
FOS	FUEL OIL SUPPLY
FPHB	FROST PROOF HOSE BIBB
FPM	FEET PER MINUTE
FS-*	FLOOR SINK TAG
FT	FEET
FTR-*	FINTUBE RADIATION TAG
GA	GAGE
GAL	GALLONS
GFUH-*	GAS FIRED WATER HEATER TAG
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GUH-*	GAS UNIT HEATER TAG
HC-*	HEATING COIL TAG
HP	HORSEPOWER
HRV-*	HEAT RECOVERY VENTILATOR TAG
HW	HOT WATER
HWS/R	HOT WATER SUPPLY AND RETURN
I=B+R	INSTITUTE OF BOILER AND RADIATOR MANUFACTURERS
IFUH-*	INDIRECT FIRED WATER HEATER TAG
IN.	INCHES
IV-*	INTAKE VENT TAG
L-*	LOUVER TAG
LAT	LEAVING AIR TEMPERATURE

ABBREVIATION	DESCRIPTION
LB	POUNDS
LD-*	LINEAR DIFFUSER TAG
LTH-W/R	LOW TEMPERATURE HOT WATER
LRA	LOCKED ROTOR AMPS
LWCO	LOW WATER CUTOUT
LWT	LEAVING WATER TEMPERATURE
MAX	MAXIMUM
MBH	THOUSANDS OF BTU PER HOUR
MCA	MINIMUM CIRCUIT AMPACITY
MIN	MINIMUM
NC	NOISE CRITERION
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
OA	OUTSIDE AIR
OBD	OPPOSED BLADE DAMPER
O.D.	OUTSIDE DIAMETER
OED	OPEN ENDED DUCT
OFRWL	OVERFLOW RAINWATER LEADER
OFUH-*	OIL FIRED WATER HEATER TAG
OFRD	OVERFLOW ROOF DRAIN
OPD	OVERCURRENT PROTECTIVE DEVICE
P-*	PLUMBING FIXTURE TAG
PENETN	PENETRATION
PF-*	PADDLE FAN TAG
PSI/A	POUNDS PER SQUARE INCH ABSOLUTE
PSI/G	POUNDS PER SQUARE INCH GAGE
PVC	POLYVINYL CHLORIDE (PIPE)
RA	RETURN AIR
RD	ROOF DRAIN
RDE	RECOMMENDED DUAL ELEMENT FUSE AMPS
RFH-*	RADIANT FLOOR MANIFOLD TAG
RHW	RECIRCULATED HOT WATER
RLA	RUNNING LOAD AMPS
RPM	REVOLUTIONS PER MINUTE
RPS	REVOLUTIONS PER SECOND

ABBREVIATION	DESCRIPTION
RPZ	REDUCED PRESSURE ZONE
RR-*	RETURN REGISTER TAG
RTU	ROOM TEMPERATURE SENSOR
RV	RELIEF VALVE
RWL	RAINWATER LEADER
SA	SUPPLY AIR
SAN	SANITARY (DRAIN & WASTE)
SD	SMOKE DAMPER
SEER	SEASONAL ENERGY EFFICIENCY RATIO
SF	SUPPLY FAN
SP	STATIC PRESSURE
SP-*	SUMP PUMP TAG
SR-*	SUPPLY REGISTER TAG
SQFT	SQUARE FEET
ΔT	TEMPERATURE DIFFERENTIAL
TEMP.	TEMPERATURE
TCP	TEMPERATURE CONTROL PANEL
TMV-*	THERMOSTATIC MIXING VALVE TAG
TSP	TOTAL STATIC PRESSURE
TYP	TYPICAL
UH-*	UNIT HEATER TAG
U.N.O.	UNLESS NOTED OTHERWISE
VAV-*	VARIABLE AIR VOLUME BOX TAG
VB	VACUUM BREAKER
VFD	VARIABLE FREQUENCY INVERTER DRIVE
VTR	VENT THRU ROOF
V/PH/HZ	VOLTS/PHASES/HERTZ
WB	WET BULB
WCO	WALL CLEANOUT
WG	WATER GAGE
WPD	WATER PRESSURE DROP
WSA	WIRE SIZING AMPS
WTD	WATER TEMPERATURE DROP
W/	WITH
ZD-*	ZONE DAMPER TAG

N

NOT FOR CONSTRUCTION

THIS DRAWING IS AN INSTRUMENT OF SERVICE AND SHALL REMAIN THE PROPERTY OF WHIPPLE CALLENDER ARCHITECTS. IT SHALL NOT BE USED FOR ANY PURPOSE IN WHOLE THAT FOR WHICH IT IS SPECIFICALLY INTENDED.

BENNETT ENGINEERING
MECHANICAL • ELECTRICAL
(207) 885-9175

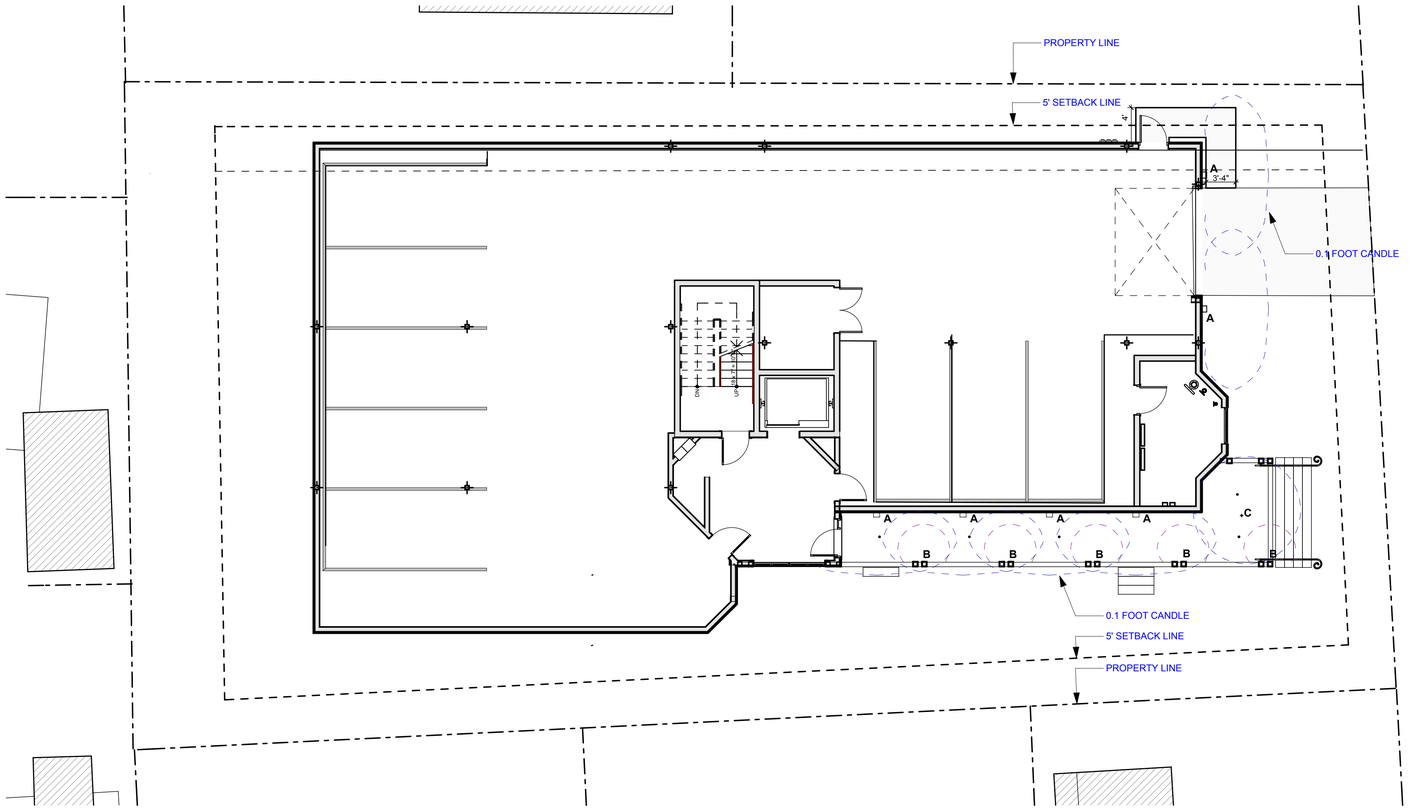
MONUMENT PARTNERS
25 MONUMENT STREET
PORTLAND, MAINE

PROGRESS PRINT
NOT FOR CONSTRUCTION

WHIPPLE CALLENDER ARCHITECTS
136 PLEASANT AVE.
PORTLAND, ME 04103
P 207.775.2696
F 207.775.3631
www.whipplecallender.com

MARK	DATE	DESCRIPTION

DATE: 12/05/17
CHECKED BY:
DRAWN BY:
JOB: 17-KEE
SHEET TITLE:



2
A.3

SITE LIGHTING PLAN

SCALE: 1/8" = 1'-0"

outdoor

LED

pier 60 outdoor

DESCRIPTION
The decorative metal grid on this indoor/outdoor fixture provides a delicate balance of light and shadow. Includes (1) replaceable 9.6 watt 2700K LED module.ADA compliant. 120v.

WEIGHT
4.52lb / 2.05kg ±







ORDERING INFORMATION

type	model	finish	lamp	wet location
LW LED	**639**	**BZ** bronze **SI** silver	**LED** LED Module 9.6w 120v	**W** wet location

FIXTURE TYPE: _____

JOB NAME: _____

LBL

7400 Linder Avenue
Skokie, Illinois 60077

T 847.626.6300
F 847.626.6350

www.lbllighting.com

EXTERIOR LIGHT SCONCE TYPE A: 639 BZ LED W

Specification Sheet / Wall Mount / L36

[MP LIGHTING]



L36

Application Exterior/interior wall, stair and walkway.
Recommended Projects – Commercial, Institutional, Retail, Clinic, Hospitality, Religious, Educational, Architecture.

IP 66

Mounting Mounts to horizontal orientated single gang box only. Box opening must be 2 3/8" wide by 2" tall minimum. Suggested boxes include Scrapper P.S. Blank and Bonville BC1110 (Junction box not included).

Electrical Integral Non Dimmable Driver 120V - 3W (350mA) and or 120V - 6W (700mA)
Integral Dimming Factory for Integral Driver 120V / 277V – 6W
120V with Phase Dimmer and or 0-10V –
*For other inquires please consult factory for remote driver options.

Power Consumption 4.0 Watt (at 350 mA, 3.0 Watt)
8.0 Watt (at 700mA, 6.0 Watt)

Light Output 3.0 Watt, 13lm
6.0 Watt, 28lm
*For photometric data, see page 02

Warranty 5 years limited warranty.
Estimated useful life of LED is 50,000 hours.

Material Anodized aluminum and polycarbonate lens. RoHS compliant.

Weight 1.40ls (0.636kg).

Approval cULus CE

DISCLAIMER Misfunction and damage to product due to improper dimming system installation or misuse will not be covered under warranty. Only DC Drivers are recommended for dimming systems. Consult MP Lighting for recommended drivers.

MP Lighting reserves the right, at its sole discretion, at any time and without notice, to make design changes to any of our products.

Type:

Project:

Modified:

Quantity:

Notes:

Order Guide

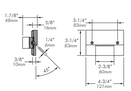
Example: L36-3-W500-MA

Code	Wattage	Color	Finish
L36 -		**W30** -	
	3 = 3W **6** = 6W	**W500** = 3000K, 80+CRI	**MA** = matte clear anodized **BK** = black powder coating **SWC** = white powder coating **SWC*** = like white antimicrobial **CSA** = crystal clear antimicrobial
			*Antimicrobial finishes used as applied **Minimum order required for antimicrobial finish

Specification Sheet / Wall Mount / L36

[MP LIGHTING]

Dimension:

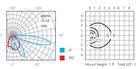


PHOTOMETRIC DATA:

3.0W, 3000K

Polar Candela Distribution

Lumen: 13lm

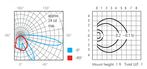


Illuminance at a Distance

6.0W, 3000K

Polar Candela Distribution

Lumen: 28lm



Illuminance at a Distance

WALKWAY LIGHT TYPE B: L36-6-W0-SWC

LITHONIA LIGHTING®

Catalog Number

Notes

Type

FEATURES & SPECIFICATIONS

INTENDED USE — The 6" Wafer-Thin LED recessed downlight with remote driver box combines high quality light output and efficiency while eliminating the yard light housing for competitive affordability. The innovative wafer-slim Type IC design allows easy installation for new construction or remodel from below the ceiling without the requirement of a yard light housing. The LED module maintains at least 70% light output for 36,000 hours. These LED Wafer downlights are intended for closets, attics, hallways, bathrooms, kitchens, basements, soffits, entryways, porches, garages, stairwells, corridors, nursing/retirement homes, condos, elevators, apartments, and any other small areas.

CONSTRUCTION — Ideal for shallow ceiling plenum since a yard light housing is NOT required. A total driver and fixture - approved for direct contact with insulation. Aluminum die cast outer frame. Durable, powder coat paint to prevent rust. Round fixture with integral edge-lit LED's. Steel spring clip for easy installation. Pleenum rated cable connector to connect from module to remote driver box. Isolated driver integrated inside steel remote box with four 3/8" knockouts with slots for pryout. Not suitable for pulling wires.

PATENT PENDING.

INSTALLATION — Ideal for shallow ceiling plenum; no housing required. Steel spring clip for easy installation. 6" cut out template is provided to ensure a correct sized hole is cut into ceiling for proper installation. Pleenum rated cable connector to connect from module to remote driver box. Suitable for installation in it rigid and drop ceiling applications.

OPTICS — Wafer-Thin downlight edge-lit LED technology uses light guided plate to distribute light. Polycarbonate lens provides even illumination throughout the space. Utilized 3000K and 4000K color temperature LEDs.

ELECTRICAL — Connect directly to 120V power supply via provided UL recognized driver. High efficient driver with power factor >.9. Ambient operating temperature: -40°F (-40°C) to +104°F (+40°C). Dimming down to 10% (See page 2 for recommended dimmers). Standard input wattage is 13W, 7W lumens per watt.

LISTINGS — CSA certified to US and Canadian safety standards. ENERGY STAR® certified product. Wet location. Air Tight certified in accordance with ASTM E283-2004.

WARRANTY — 5-year limited warranty. Complete warranty terms located at: www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx

Note: Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25 °C. Specifications subject to change without notice.

Wafer LED Recessed Downlight

WF6

6" LED Module

IC/Non-IC

New Construction/Remodel

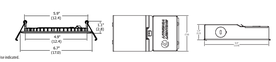




Specifications

Aperture: 4.9 (12.4)
Ceiling opening: 6 (15.2)
Overlap trim: 6.7 (17)
Height: 1.1 (2.8)

All dimensions are inches (centimeters) unless otherwise indicated.



ORDERING INFORMATION For shortest lead times, configure product using **standard options (shown in bold).** **Example:** WF6 LED 30K MW

WF6			
Series	**Lamp**	**CCT/CRI/"R" Lumens***	**Finish**
WF6 6" wafer-thin LED downlight	**LED** LED	**30K** 3000K/80CRI/10W/1020L **40K** 4000K/80CRI/10.6W/1200L	**MW** Matte white **MB** Matte black **BN** Brushed nickel **ORB** Oil-rubbed bronze
	LL LED Low Lumen LED	**27K** 2700K/80CRI/12.7W/780L **30K** 3000K/80CRI/13.6W/867L **40K** 4000K/80CRI/12.9W/944L	

Accessories: Order as separate catalog number.
WF6 FRMKT2 6" new construction pan, retail pack of 12
WF6B BA Remodel pan bar, retail pack of 4
WFEK3/8 6' TTH cable
WFEK3/8 D 10' TTH cable
WFEK2P/8 J 20' TTH cable



Notes
1 Total system delivered lumens.

DOWNLIGHTING WF6

EXTERIOR RECESSED LED TYPE C

PLANNING BOARD REVIEW SET
NOT FOR CONSTRUCTION

THIS DRAWING IS AN INSTRUMENT OF SERVICE AND SHALL REMAIN THE PROPERTY OF WHIPPLE CALLENDER ARCHITECTS. IT SHALL NOT BE USED FOR ANY OTHER PURPOSE THAT FOR WHICH IT IS SPECIFICALLY FURNISHED

MONUMENT PARTNERS, LLC
25 MONUMENT STREET
PORTLAND, ME

WHIPPLE CALLENDER ARCHITECTS

136 PLEASANT AVE.
PORTLAND, ME 04103
P 207.775.2696
F 207.775.3631
www.whipplecallender.com

MARK	DESCRIPTION	DATE

DATE: 3/20/18

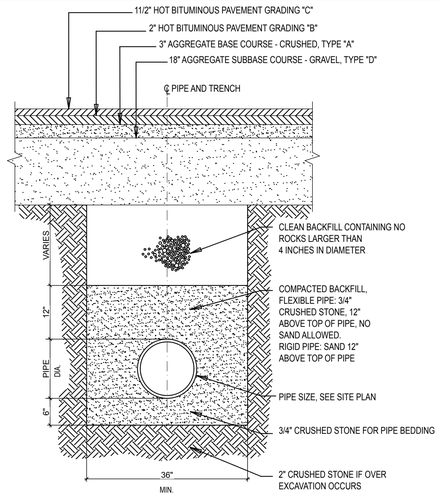
CHECKED BY: AEC, JWW

DRAWN BY: JR, AEC, JWW

JOB: 17-KEE

SHEET TITLE: EXTERIOR LIGHTING

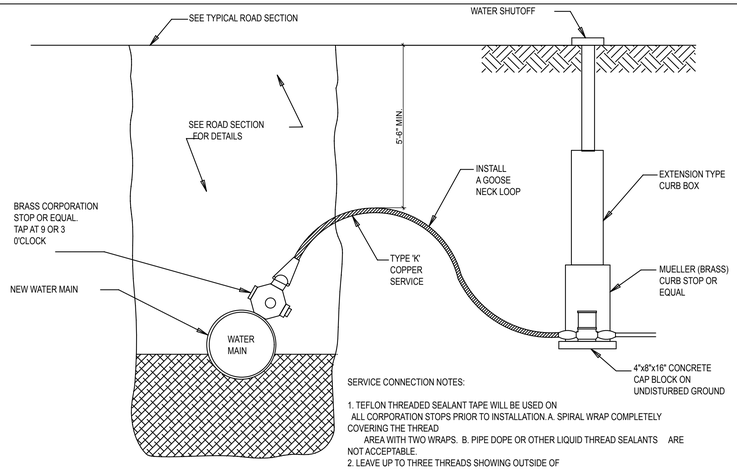
A.3



NOTE:
ANY ALTERNATE TRENCHING OR PAYMENT METHODS SHALL BE APPROVED BY THE CITY.

TYPICAL UNDERGROUND PIPE TRENCH SECTION

NTS



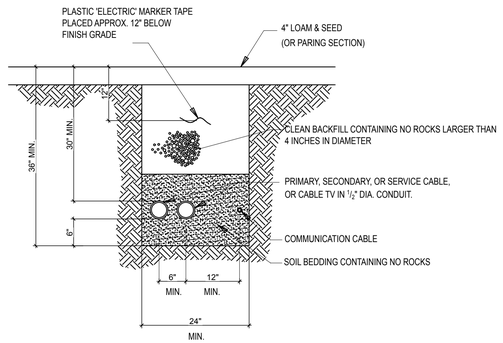
SERVICE CONNECTION NOTES:

1. TEFLON THREADED SEALANT TAPE WILL BE USED ON ALL CORPORATION STOPS PRIOR TO INSTALLATION A. SPIRAL WRAP COMPLETELY COVERING THE THREAD AREA WITH TWO WRAPS. B. PIPE DOPE OR OTHER LIQUID THREAD SEALANTS ARE NOT ACCEPTABLE.
2. LEAVE UP TO THREE THREADS SHOWING OUTSIDE OF PIPE. A TORQUE OF 35 POUNDS IS RECOMMENDED.

TYPICAL SERVICE CONNECTION

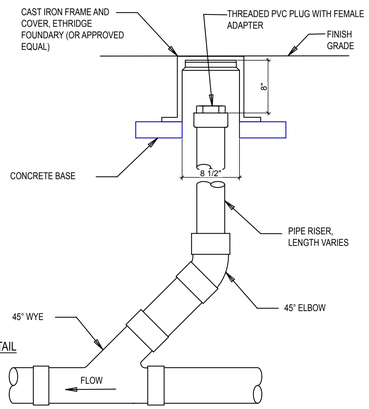
NTS

GENERAL NOTES
1. CONTRACTOR SHALL CONFIRM ALL PIPE SIZES WITH THE CITY WATER DISTRICT.
2. WORK AND MATERIALS TO BE IN ACCORDANCE WITH THE CITY WATER DISTRICT STANDARDS.
3. CONTRACTOR SHALL STUB NEW SERVICES AT THE EDGE OF THE R.O.W. IN THE MIDDLE OF EACH LOT, UNLESS OTHERWISE NOTED ON THE PLAN/PROFILES.
4. FINAL LOCATION OF ALL BLOW OFF VALVES, SHUT OFF VALVES, STREET BOXES AND HYDRANT VALVES SHALL BE IN ACCORDANCE WITH THE CITY WATER DISTRICT.



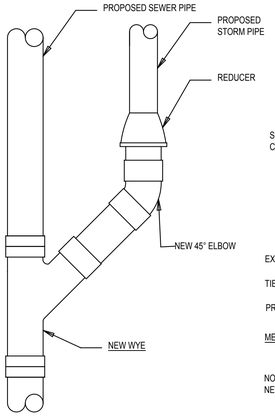
TYPICAL UNDERGROUND WIRE TRENCH SECTION

NTS



SEWER CLEANOUT SECTION DETAIL

NTS

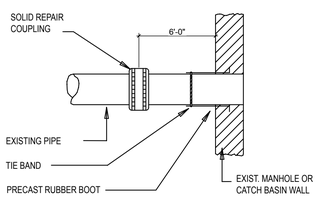


NOTE:
NEW SEWER PIPE MUST BE PRESSURE TESTED AFTER INSTALLATION IS COMPLETE. SEWER DISTRICT STAFF MUST BE PRESENT DURING TESTING AND MUST INSPECT ALL STRUCTURES AND PIPING BEFORE THEY ARE BACK FILLED.

SEWER CONNECTION DETAILS

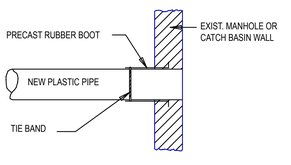
NTS

NOTE:
REMOVE WATERPROOFING FROM STRUCTURE BEFORE APPLYING MORTAR. WATERPROOF AGAIN AFTER MORTAR HAS SET.



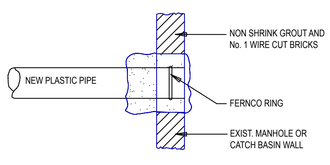
METHOD 1 - EXISTING OR NEW PIPE INTO NEW STRUCTURE

NOTE:
REMOVE WATERPROOFING FROM STRUCTURE BEFORE APPLYING MORTAR. WATERPROOF AGAIN AFTER MORTAR HAS SET. NEW HOLES MUST BE CORE DRILLED INTO MANHOLE. NO JACK HAMMERING OR SAW CUTTING IS ALLOWED TO CONNECT THE PIPE.

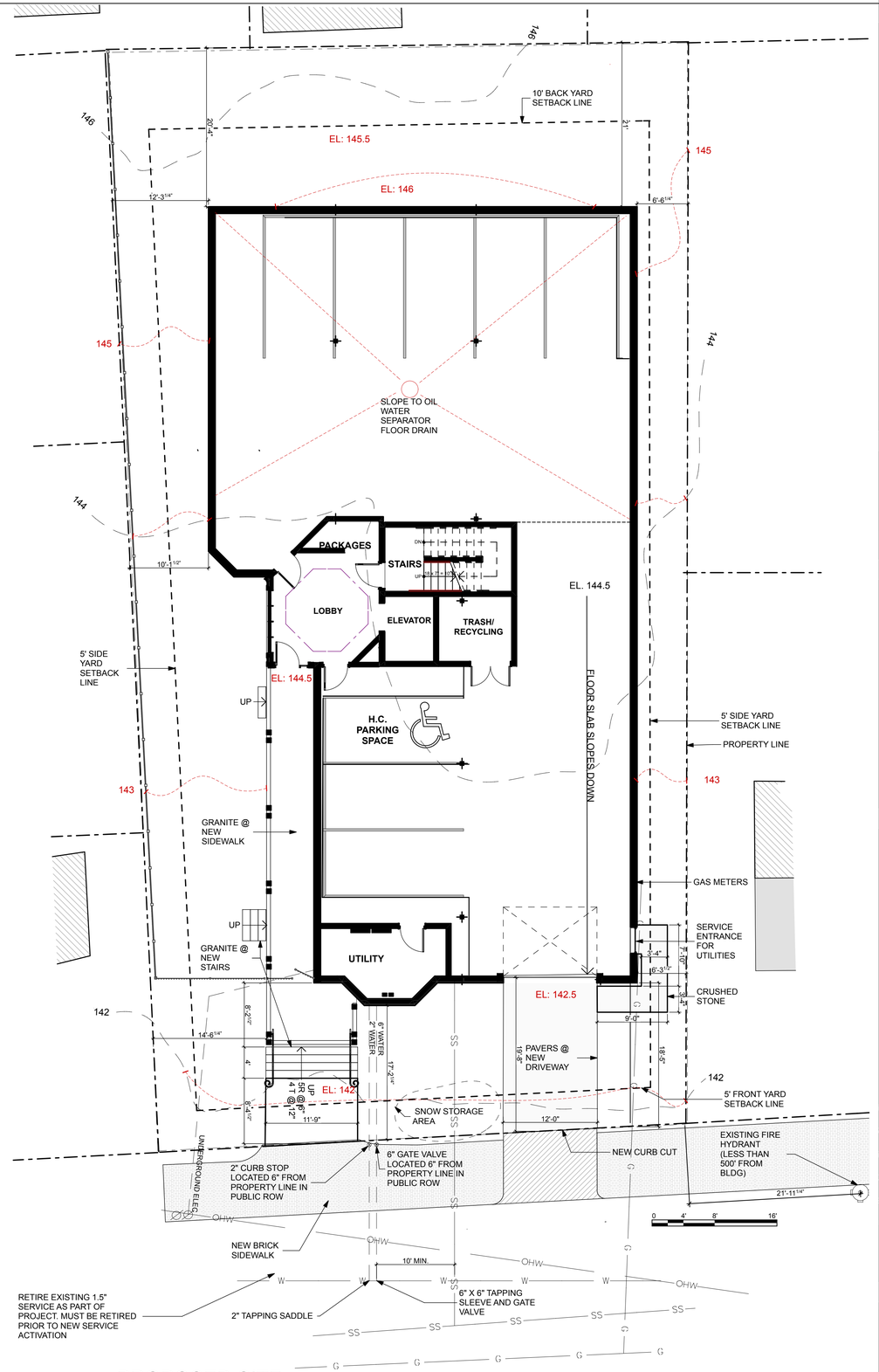


METHOD 2 - NEW CONSTRUCTION

NOTE:
EXISTING MANHOLE OR CATCH BASIN SHALL BE CORE DRILLED FOR PIPE INSTALLATION. IF PIPE DIAMETER IS SO LARGE THAT CORE DRILLING IS PROHIBITED, THE CONTRACTOR MAY USE ANY COMBINATION OF JACK HAMMERING AND SAW CUTTING THE STRUCTURE TO CREATE PIPE OPENING. THE NEW OPENING MUST THEN BE SEALED AND WATERTIGHT BOTH INSIDE AND OUTSIDE THE STRUCTURE.



METHOD 3 - NEW PIPE INTO EXISTING STRUCTURE



PROPOSED SITE

SCALE: 1/8" = 1'-0"

PLANNING BOARD REVIEW SET
NOT FOR CONSTRUCTION

THIS DRAWING IS AN INSTRUMENT OF SERVICE AND SHALL REMAIN THE PROPERTY OF WHIPPLE CALLENDER ARCHITECTS. IT SHALL NOT BE USED FOR ANY OTHER PURPOSE THAT FOR WHICH IT IS SPECIFICALLY FURNISHED

MONUMENT PARTNERS, LLC
25 MONUMENT STREET
PORTLAND, ME

WHIPPLE CALLENDER ARCHITECTS
136 PLEASANT AVE.
PORTLAND, ME 04103
P 207.775.2696
F 207.775.3631
www.whipplecallender.com

MARK	DESCRIPTION	DATE

DATE: 1/25/18
CHECKED BY: AEC, JNW
DRAWN BY: JR, AEC, JNW
JOB: 17-KEE
SHEET TITLE: UTILITY PLAN & DETAILS

C.2

P:\2-Civil_DETAILS & Plotted on 1/25/18 at 2:47 PM by Cynthia File Path: P:\Current WORK Completed_PM Server 2008\cee 17-21-17 Proposed

EROSION AND SEDIMENTATION NOTES

1. THIS PLAN HAS BEEN DEVELOPED TO PROVIDE A STRATEGY FOR DEALING WITH SOIL EROSION AND SEDIMENTATION DURING AND AFTER PROJECT CONSTRUCTION. THIS PLAN IS BASED ON THE STANDARD AND SPECIFICATIONS FOR EROSION PREVENTION AS CONTAINED IN THE MAINE EROSION AND SEDIMENT CONTROL HANDBOOK FOR CONSTRUCTION: "MAINE EROSION AND SEDIMENT CONTROL BMPs" PUBLISHED BY THE MAINE DEP, LATEST EDITION.

GENERAL EROSION AND SEDIMENTATION CONTROL PRACTICES

1. EROSION/SEDIMENT CONTROL DEVICES
   THE FOLLOWING EROSION SEDIMENTATION CONTROL DEVICES ARE PROPOSED FOR CONSTRUCTION ON THIS PROJECT. INSTALL THESE DEVICES AS INDICATED ON THE PLANS.

1.1 SILT FENCE: SILT FENCE WILL BE INSTALLED ALONG THE DOWN GRADING EDGES OF DISTURBED AREAS TO TRAP RUNOFF BORNE SEDIMENTS UNTIL THE SITE IS STABILIZED. IN AREAS WHERE STORMWATER DISCHARGES THE SILT FENCE WILL BE REINFORCED WITH HAY BALES TO HELP MAINTAIN THE INTEGRITY OF THE SILT FENCE AND TO PROVIDE ADDITIONAL TREATMENT.

1.2 HAY BALES TO BE PLACED IN LOW FLOW DRAINAGE SWALES AND PATHS TO TRAP SEDIMENTS AND REDUCE RUNOFF VELOCITIES. DO NOT PLACE HAY BALES IN FLOWING WATER OR STREAMS.

1.3 STRAW AND HAY MULCH; USED TO COVER DENUDED AREAS UNTIL PERMANENT SEED OR EROSION CONTROL MEASURES ARE IN PLACE. MULCH BY ITSELF CAN BE USED ON SLOPES LESS THAN 15% IN SUMMER AND 8% IN WINTER. ALL OTHER SLOPES MUST BE COVERED WITH JUTE MESH OVER MULCH, OR CURLEX II OR EXCELSIOR MAY BE USED IN PLACE OF JUTE MESH AND MULCH OVER LOAM AND SEED.

2. TEMPORARY EROSION/SEDIMENTATION CONTROL MEASURES
   PROVIDE THE FOLLOWING TEMPORARY EROSION/SEDIMENTATION CONTROL MEASURES DURING CONSTRUCTION OF THE DEVELOPMENT:

2.1 SILTATION FENCE ALONG THE DOWNGRADIENT SIDE OF THE PARKING AREAS AND OF ALL FILL SECTIONS. THE SILTATION FENCE WILL REMAIN IN PLACE UNTIL THE SITE IS 85% REVEGETATED.

2.2 HAY BALES PLACED AT KEY LOCATIONS TO SUPPLEMENT THE SILT FENCE.

2.3 PROTECT TEMPORARY STOCKPILES OF STUMPS, GRUBBINGS, OR COMMON EXCAVATION AS FOLLOWS:

- A. SOIL STOCKPILE SIDE SLOPES SHALL NOT EXCEED 2:1.
- B. AVOID PLACING TEMPORARY STOCKPILES IN AREAS WITH SLOPES OVER 10 PERCENT, OR NEAR DRAINAGE SWALES. SEE ITEM 3 IN CONSTRUCTION PHASE NOTES BELOW.
- C. STABILIZE STOCKPILES WITHIN 15 DAYS BY TEMPORARILY SEEDING WITH A HYDROSEED METHOD CONTAINING AN EMULSIFIED MULCH TACKIFIER OR BY COVERING THE STOCKPILE WITH MULCH.
- D. SURROUND STOCKPILE SOIL WITH SILTATION FENCE AT BASE OF PILE.

2.4 ALL DENUDED AREAS WHICH HAVE BEEN ROUGH GRADED AND ARE NOT LOCATED WITHIN THE BUILDING PAD, OR PARKING AND DRIVEWAY SUBBASE AREA SHALL RECEIVE MULCH WITHIN 30 DAYS OF INITIAL DISTURBANCE OF SOIL OR WITHIN 15 DAYS AFTER COMPLETING THE ROUGH GRADING OPERATIONS. IN THE EVENT THE CONTRACTOR COMPLETES FINAL GRADING AND INSTALLATION OF LOAM AND SOD WITHIN THE TIME PERIODS PRESENTED ABOVE, INSTALLATION OF MULCH AND NETTING, WHERE APPLICABLE, IS NOT REQUIRED.

2.5 IF WORK IS CONDUCTED BETWEEN OCTOBER 15 AND APRIL 15, ALL DENUDED AREAS ARE TO BE COVERED WITH HAY MULCH, APPLIED AT TWICE THE NORMAL APPLICATION RATE, AND ANCHORED WITH FABRIC NETTING. THE PERIOD BETWEEN FINAL GRADING AND MULCHING SHALL BE REDUCED TO A 15 DAY MAXIMUM.

2.6 TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED ONCE THE SITE HAS BEEN STABILIZED OR IN AREAS WHERE PERMANENT EROSION CONTROL MEASURES HAVE BEEN INSTALLED.

3. PERMANENT EROSION CONTROL MEASURES
   THE FOLLOWING PERMANENT CONTROL MEASURES ARE REQUIRED BY THIS EROSION/SEDIMENTATION CONTROL PLAN:

3.1 ALL AREAS DISTURBED DURING CONSTRUCTION, BUT NOT SUBJECT TO OTHER RESTORATION (PAVING, RIPRAP, ETC.), WILL BE LOAMED, LIMED, FERTILIZED AND SEEDED. NATIVE TOPSOIL SHALL BE STOCKPILED AND REUSED FOR FINAL RESTORATION WHEN IT IS OF SUFFICIENT QUALITY.

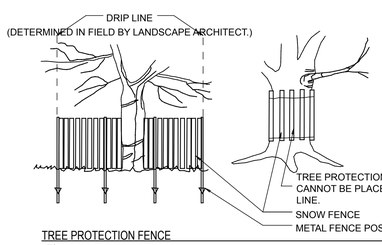
CONSTRUCTION PHASE

THE FOLLOWING GENERAL PRACTICES WILL BE USED TO PREVENT EROSION DURING CONSTRUCTION OF THIS PROJECT.

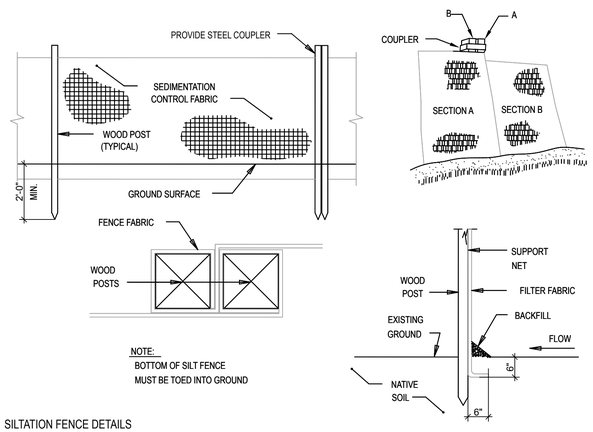
1. ONLY THOSE AREAS UNDER ACTIVE CONSTRUCTION WILL BE CLEARED AND LEFT IN AN UNTREATED OR UNVEGETATED CONDITION. IF FINAL GRADING, LOAMING AND SEEDING WILL NOT OCCUR WITHIN 15 DAYS, SEE ITEM NO. 4.
2. PRIOR TO THE START OF CONSTRUCTION IN A SPECIFIC AREA, SILT FENCING AND/OR HAY BALES WILL BE INSTALLED AT THE TOE OF SLOPE AND IN AREAS AS LOCATED ON THE PLANS TO PROTECT AGAINST ANY CONSTRUCTION RELATED EROSION. IMMEDIATELY FOLLOWING CONSTRUCTION OF CULVERTS AND SWALES, RIP RAP APRONS SHALL BE INSTALLED, AS SHOWN ON THE PLANS.
3. TOPSOIL WILL BE STOCKPILED WHEN NECESSARY IN AREAS WHICH HAVE MINIMUM POTENTIAL FOR EROSION AND WILL BE KEPT AS FAR AS POSSIBLE FROM THE EXISTING DRAINAGE COURSE.
   A. TREATED WITH ANCHORED MULCH (WITHIN 5 DAYS OF THE LAST DEPOSIT OF STOCKPILED SOIL).
4. ALL DISTURBED AREAS EXPECTED TO REMAIN LONGER THAN 30 DAYS SHALL BE EITHER:
   A. TREATED WITH ANCHORED MULCH IMMEDIATELY
5. ALL GRADING WILL BE HELD TO A MAXIMUM 2:1 SLOPE WHERE PRACTICAL. ALL SLOPES WILL BE STABILIZED WITH PERMANENT SEEDING, OR WITH STONE, WITHIN 5 DAYS AFTER FINAL GRADING IS COMPLETE. (SEE POST-CONSTRUCTION REVEGETATION FOR SEEDING SPECIFICATION.)

EROSION CONTROL DURING WINTER CONSTRUCTION

1. WINTER CONSTRUCTION PERIOD: NOVEMBER 1 THROUGH APRIL 15.
2. WINTER EXCAVATION AND EARTHWORK SHALL BE COMPLETED SUCH THAT NO MORE THAN 1 ACRE OF THE SITE IS WITHOUT STABILIZATION AT ANY ONE TIME.
3. EXPOSED AREA SHALL BE LIMITED TO THOSE AREAS TO BE MULCHED IN ONE DAY PRIOR TO ANY SNOW EVENT. AT THE END OF EACH WORK WEEK NO AREAS MAY BE LEFT UNSTABILIZED OVER THE WEEKEND.
4. CONTINUATION OF EARTHWORK OPERATIONS ON ADDITIONAL AREAS SHALL NOT BEGIN UNTIL THE EXPOSED SOIL SURFACE ON THE AREA BEING WORKED HAS BEEN STABILIZED, SUCH THAT NO LARGER AREA OF THE SITE IS WITHOUT EROSION CONTROL PROTECTION AS LISTED IN ITEM 2 ABOVE.
5. AN AREA SHALL BE CONSIDERED TO HAVE BEEN STABILIZED WHEN EXPOSED SURFACES HAVE BEEN EITHER MULCHED WITH STRAW OR HAY AT A RATE OF 150 LB. PER 1000 S.F. (WITH OR WITHOUT SEEDING) OR DORMANT SEEDED, MULCHED AND ANCHORED SUCH THAT SOIL SURFACE IS NOT VISIBLE THROUGH THE MULCH. NOTE: AN AREA IS ALSO CONSIDERED STABLE IF SODDED, COVERED WITH GRAVEL (PARKING LOTS) OR STRUCTURAL SAND.
6. BETWEEN THE DATES OF OCTOBER 15 AND APRIL 1, LOAM OR SEED WILL NOT BE REQUIRED. DURING PERIODS OF ABOVE FREEZING TEMPERATURES THE SLOPES SHALL BE FINE GRADED AND EITHER PROTECTED WITH MULCH OR TEMPORARILY SEEDED AND MULCHED UNTIL SUCH TIME AS THE FINAL TREATMENT CAN BE APPLIED. IF THE DATE IS AFTER NOVEMBER 1 AND IF THE EXPOSED AREA HAS BEEN LOAMED, FINAL GRADED WITH A UNIFORM SURFACE, THEN THE AREA MAY BE DORMANT SEEDED AT A RATE OF 3 TIMES HIGHER THAN SPECIFIED FOR PERMANENT SEED AND THEN MULCHED. IF CONSTRUCTION CONTINUES DURING FREEZING WEATHER, ALL EXPOSED AREAS SHALL BE CONTINUOUSLY GRADED BEFORE FREEZING AND THE SURFACE TEMPORARILY PROTECTED FROM EROSION BY THE APPLICATION OF MULCH. SLOPES SHALL NOT BE LEFT UNEXPOSED OVER THE WINTER OR ANY OTHER EXTENDED TIME OF WORK SUSPENSION UNLESS TREATED IN THE ABOVE MANNER. UNTIL SUCH TIME AS WEATHER CONDITIONS ALLOW, DITCHES TO BE FINISHED WITH THE PERMANENT SURFACE TREATMENT, EROSION SHALL BE CONTROLLED BY THE INSTALLATION OF BALES OF HAY, SILT FENCE OR STONE CHECK DAMS IN ACCORDANCE WITH THE STANDARD DETAILS SHOWN ON THE DESIGN DRAWINGS. NOTE: DORMANT SEEDING SHOULD NOT BE ATTEMPTED UNLESS SOIL TEMPERATURE REMAINS BELOW 50 DEGREES AND DAY TIME TEMPERATURES REMAIN IN THE 30'S.
7. MULCH NETTING SHALL BE USED TO ANCHOR MULCH IN ALL DRAINAGE WAYS WITH A SLOPE GREATER THAN 3% FOR SLOPES EXPOSED TO DIRECT WINDS AND FOR ALL OTHER SLOPES GREATER THAN 8%. VEGETATED DRAINAGE SWALES SHALL BE LINED WITH EXCELSIOR OR CURLEX.
8. MULCH NETTING SHALL BE USED TO ANCHOR MULCH IN ALL DRAINAGE WAYS WITH SLOPES GREATER THAN 15%. AFTER OCTOBER 1 THE SAME APPLIES FOR ALL SLOPES GREATER THAN 8%.
9. BETWEEN THE DATES OF OCTOBER 15 TO NOVEMBER 1, WINTER RYE IS RECOMMENDED FOR STABILIZATION. AFTER NOVEMBER 1, WINTER RYE IS NOT EFFECTIVE. AROUND NOVEMBER 15 OR LATER, ONCE TEMPERATURES OF THE AIR AND SOIL PERMIT, DORMANT SEEDING IS EFFECTIVE.
10. IN THE EVENT OF SNOWFALL (FRESH OR CUMULATIVE) GREATER THAN 1 INCH DURING WINTER CONSTRUCTION PERIOD ALL SNOW SHALL BE REMOVED FROM THE AREAS OF SEEDING AND MULCHING PRIOR TO PLACEMENT.



TREE PROTECTION FENCE
NTS

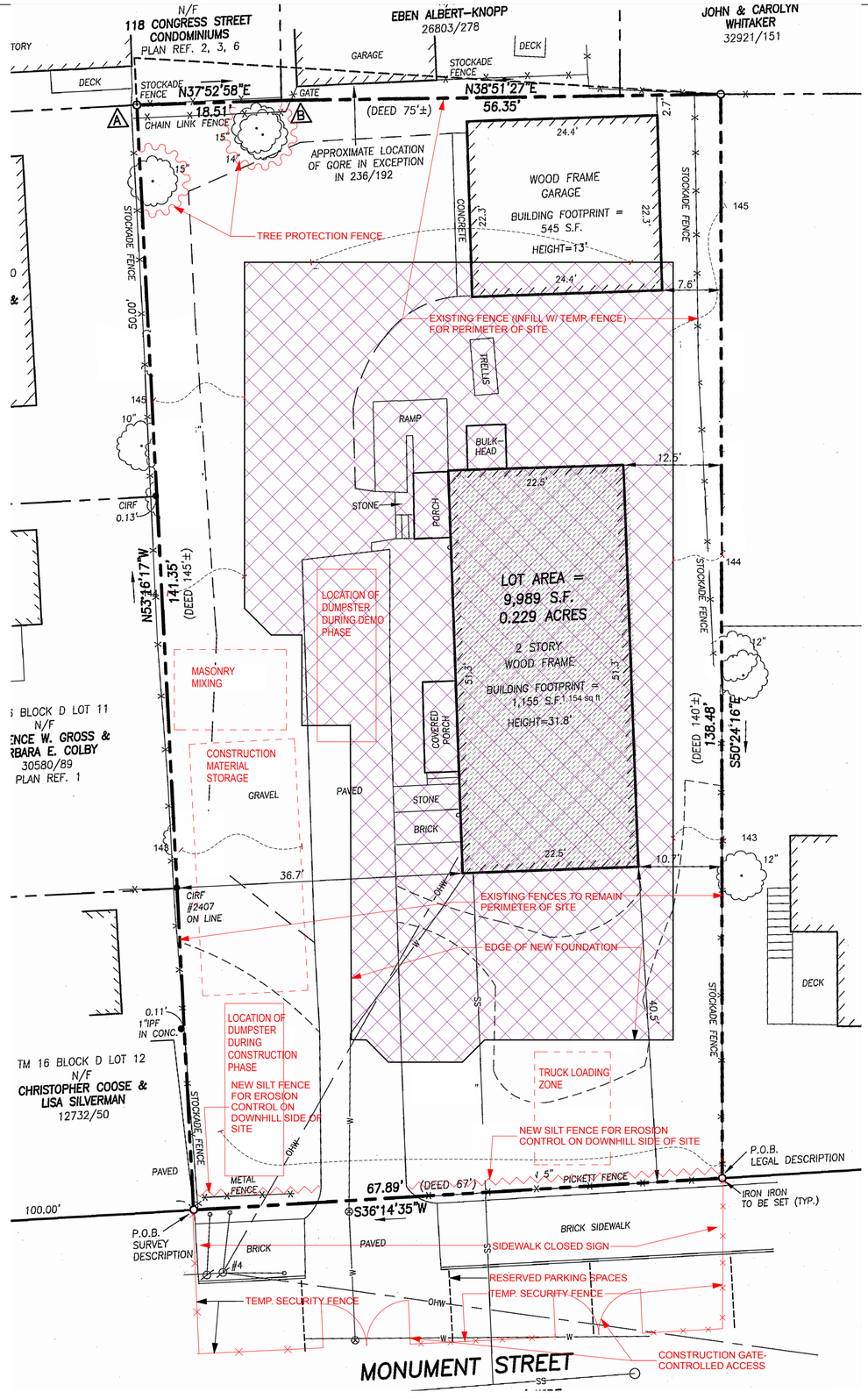


NOTE:
BOTTOM OF SILT FENCE MUST BE TOED INTO GROUND

SILTATION FENCE DETAILS
NTS NTS

SILTATION FENCE INSTALLATION

1. EXCAVATE A 6"x6" TRENCH ALONG THE LINE OF PLACEMENT FOR THE FILTER BARRIER.
2. UNROLL A SECTION AT A TIME AND POSITION THE POSTS AGAINST THE BACK (DOWNSTREAM) WALL OF THE TRENCH.
3. DRIVE POSTS INTO THE GROUND UNTIL APPROXIMATELY 2" OF FABRIC IS LYING ON THE TRENCH BOTTOM. JOIN SECTION AS SHOWN ABOVE.
4. LAY THE TOE-IN FLAP OF FABRIC ONTO THE UNDISTURBED BOTTOM OF THE TRENCH, BACKFILL THE TRENCH AND TAMP THE SOIL. TOE-IN CAN ALSO BE ACCO THE FABRIC FLAP ON UNDISTURBED GROUND AND PILING AND TAMPING FILL AT THE BASE, BUT MUST BE ACCOMPLISHED BY AN INTERCEPTION DITCH.
5. BARRIER SHALL BE MIRAFI SILT FENCE OR APPROVED EQUAL.



1 / C.3 CONSTRUCTION MANAGEMENT & EROSION PLAN

SCALE: 1/8" = 1'-0"

PRELIMINARY REVIEW SET 9-6-2017 NOT FOR CONSTRUCTION

THIS DRAWING IS AN INSTRUMENT OF SERVICE AND SHALL REMAIN THE PROPERTY OF WHIPPLE CALLENDER ARCHITECTS. IT SHALL NOT BE USED FOR ANY OTHER PURPOSE THAT FOR WHICH IT IS SPECIFICALLY FURNISHED

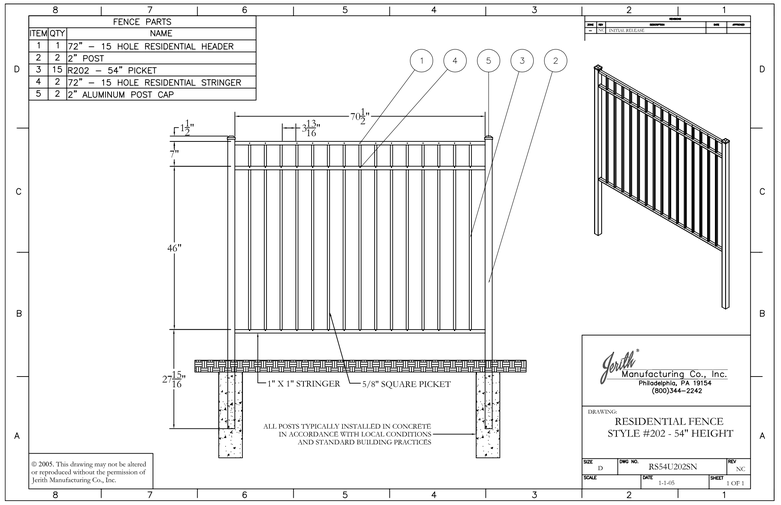
MONUMENT PARTNERS, LLC
25 MONUMENT STREET PORTLAND, ME

WHIPPLE CALLENDER ARCHITECTS
136 PLEASANT AVE.
PORTLAND, ME 04103
P 207.775.2696
F 207.775.3631
www.whipplecallender.com

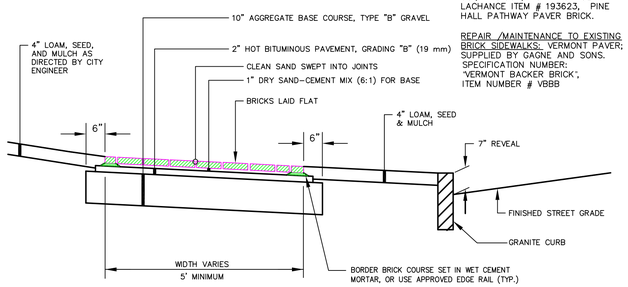
MARK	DESCRIPTION	DATE

DATE: 1/25/18
CHECKED BY: AEC, JWW
DRAWN BY: JR, AEC, JWW
JOB: 17-KEE
SHEET: CONSTRUCTION MANAGEMENT PLAN & EROSION CONTROL DETAILS

C.3



8 C.4 BLACK ALUMINUM FENCE
NOT TO SCALE



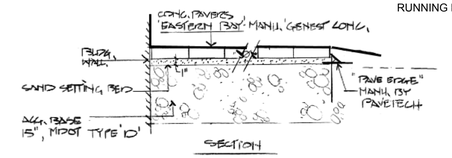
BRICKS TO BE USED:

NEW CONSTRUCTION:
4"x8" PINE HALL PATHWAY PAVER BRICK; MFG. BY PINE HALL BRICK CO., MADISON, NORTH CAROLINA. LACHANCE ITEM # 193623, PINE HALL PATHWAY PAVER BRICK.

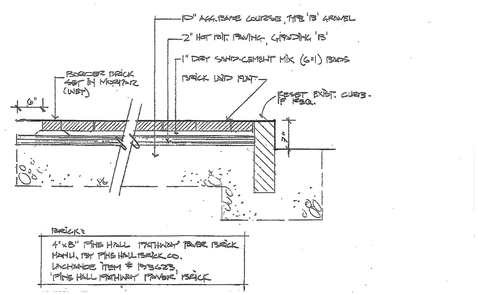
REPAIR /MAINTENANCE TO EXISTING BRICK SIDEWALKS: VERMONT PAVER; SUPPLIED BY GAGNE AND SONS. SPECIFICATION NUMBER: 'VERMONT BACKER BRICK', ITEM NUMBER # VBBB

4 C.4 BRICK SIDEWALK WITH BITUMINOUS BASE
NOT TO SCALE

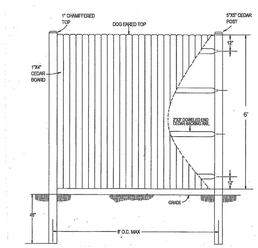
PAVERS SIZE TO BE 4 3/4" WIDE BY 9 1/2" LONG BY 2 3/8" TALL "EASTERN BAY STONE" BY GENEST CONCRETE INC. ,COLOR TO BE GRANITE BLEND IN A RUNNING BOND PATTERN.



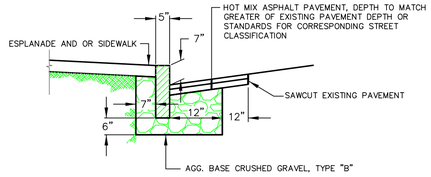
5 C.4 CONCRETE PAVER DETAIL
NOT TO SCALE



6 C.4 BRICK PAVING DETAIL FOR WALK RECONSTRUCTION
NOT TO SCALE



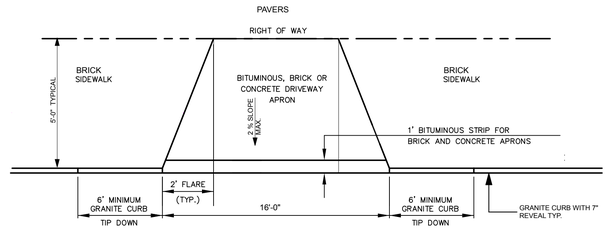
7 C.4 WOOD STOCKADE FENCE
NOT TO SCALE



VERTICAL GRANITE CURB CROSS SECTION

1 C.4 VERT. GRANITE CURB INSTALLATION IN EXISTING STREETS
NOT TO SCALE

NOTE:
MATCH GRADE OF EXISTING DRIVEWAY AT R. O. W. LINE, EXCEPT WHEN DIRECTED OTHERWISE BY CITY ENGINEER.

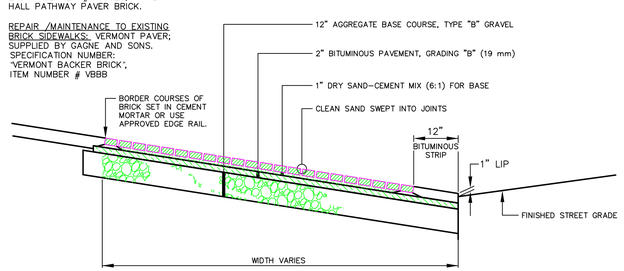


2 C.4 BRICK DRIVEWAY APRON LAYOUT
NOT TO SCALE

BRICKS TO BE USED:

NEW CONSTRUCTION:
4"x8" PINE HALL PATHWAY PAVER BRICK; MFG. BY PINE HALL BRICK CO., MADISON, NORTH CAROLINA. LACHANCE ITEM # 193623, PINE HALL PATHWAY PAVER BRICK.

REPAIR /MAINTENANCE TO EXISTING BRICK SIDEWALKS: VERMONT PAVER; SUPPLIED BY GAGNE AND SONS. SPECIFICATION NUMBER: 'VERMONT BACKER BRICK', ITEM NUMBER # VBBB



3 C.4 BRICK DRIVEWAY APRON WITH BITUMINOUS BASE
SCALE: 1' = 1'-0"

PLANNING BOARD REVIEW SET
NOT FOR CONSTRUCTION

THIS DRAWING IS AN INSTRUMENT OF SERVICE AND SHALL REMAIN THE PROPERTY OF WHIPPLE CALLENDER ARCHITECTS. IT SHALL NOT BE USED FOR ANY OTHER PURPOSE THAT FOR WHICH IT IS SPECIFICALLY FURNISHED

MONUMENT PARTNERS, LLC
25 MONUMENT STREET PORTLAND, ME

WHIPPLE CALLENDER ARCHITECTS
136 PLEASANT AVE.
PORTLAND, ME 04103
P 207.775.2696
F 207.775.3631
www.whipplecallender.com

MARK	DESCRIPTION	DATE

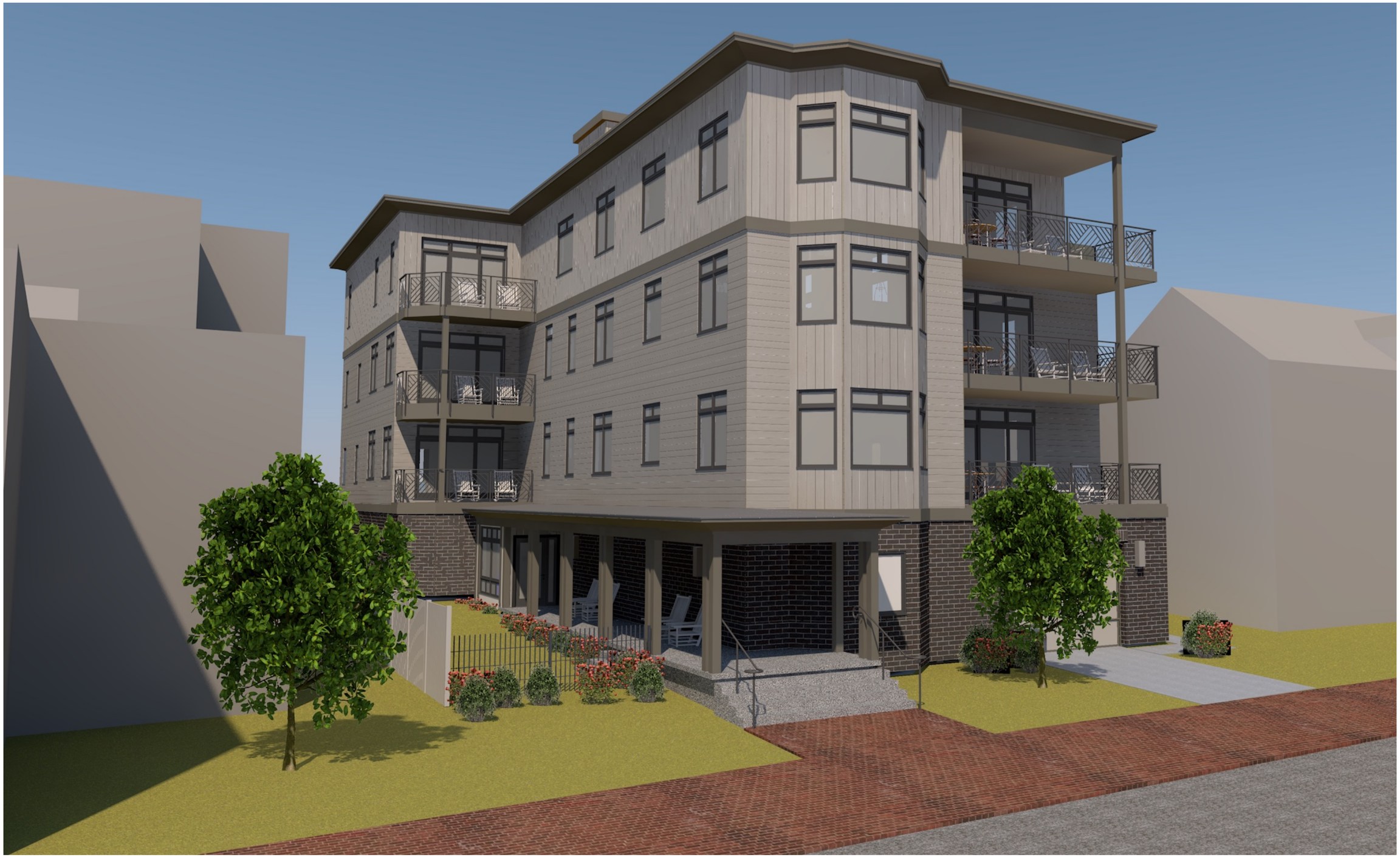
DATE: 3/19/18
CHECKED BY: AEC, JNW
DRAWN BY: JR, AEC, JNW
JOB: 17-KEE
SHEET TITLE: DRIVEWAY & SIDEWALK DETAILS, FENCING

C.4

C:\PROJECTS\MONUMENT PARTNERS\17-KEE\CAD\17-KEE_DRIVEWAY & SIDEWALK DETAILS & FENCING.dwg - Plotted on 3/19/18 at 2:10 PM by Jon Wilson - File Path: P:\M Square JOBS\Commercial - PM Square 2\17xxxx 10-24-17\Accurate

JOB: MONUMENT PARTNERS, LLC
SCALE:

DATE: 3/21/18
DESCRIPTION:



25 MONUMENT STREET VIEW

WHIPPLE | CALLENDER ARCHITECTS
PO BOX 1276 PORTLAND, ME 04104

JOB: MONUMENT PARTNERS, LLC
DATE: 3/21/18
SCALE:
DESCRIPTION:



25 MONUMENT STREET VIEW

WHIPPLE | CALLENDER ARCHITECTS
PO BOX 1276 PORTLAND, ME 04104

Memorandum
Planning and Urban Development Department
Planning Division

To: Sean Dundon, Chair and Members of the Portland Planning Board

From: Jean Fraser, Planner

Date: January 19, 2018

Re: MMC East tower and Visitor Garage Vertical Expansion
22 Bramhall Street
Maine Medical Center (MMC)

Project #: 2017-289 CBL: 053D007/054H001/064C001

Meeting Date: January 23, 2018

I. INTRODUCTION

Maine Medical Center (MMC) has requested a preliminary review of the Level III Site Plan Application to extend the existing East Tower vertically by two stories (approx. 60,000 sq ft) to accommodate 64 single-occupancy inpatient beds, and to extend the existing Visitor's Garage on Congress Street by 3 stories vertically to provide an additional 225 parking spaces. The application also refers to work at the Central Utility Plant and includes the relocation the Helipad to the top of the East Tower.

It is understood that the 64 single-occupancy bedrooms will not add patient capacity as they would allow existing double-occupancy patient rooms elsewhere to be single-occupancy.

The application is the first of three Site Plan applications associated with the short-term MMC expansion plans. The proposals follow on from the City's recent adoption of an MMC Institutional Overlay Zone and the associated Institutional Development Plan and Regulatory Framework (both attached to this Memo). The review includes aspects of the MMC IOZ Regulatory Framework that required action at the time of the first site plan (TDM and Signage Plans).

It is anticipated that there will be two PB Workshops on the East Tower/Visitors Garage proposals. This first Workshop is expected to focus on the following topics:

- Design, including Street Activation
- Helipad
- Construction Management Plan overview, plus East Tower

Future topics would include:

- Construction Management Plan in more detail
- Transportation Demand Management (TDM) Plan
- Site Plan Details

Applicant: Maine Medical Center; Alexander Green, Director of system Planning and Regulatory Compliance
Agent and Engineer: Sebago Technics Inc
Architect: Perkins + Will; Jeffrey Keilman, Senior Project Manager, Senior Associate

Required Reviews:

Applicant's Proposal	*Applicable Standards*
Addition of 60,940 sq ft to the East Tower; addition of 77,021 sq ft to the Visitor Garage	Level III Site Plan Review 14-526
Additions that would increase height; helipad	MMC IOZ Regulatory Framework

Waiver Requests: None identified at this time.

II. PROJECT DATA

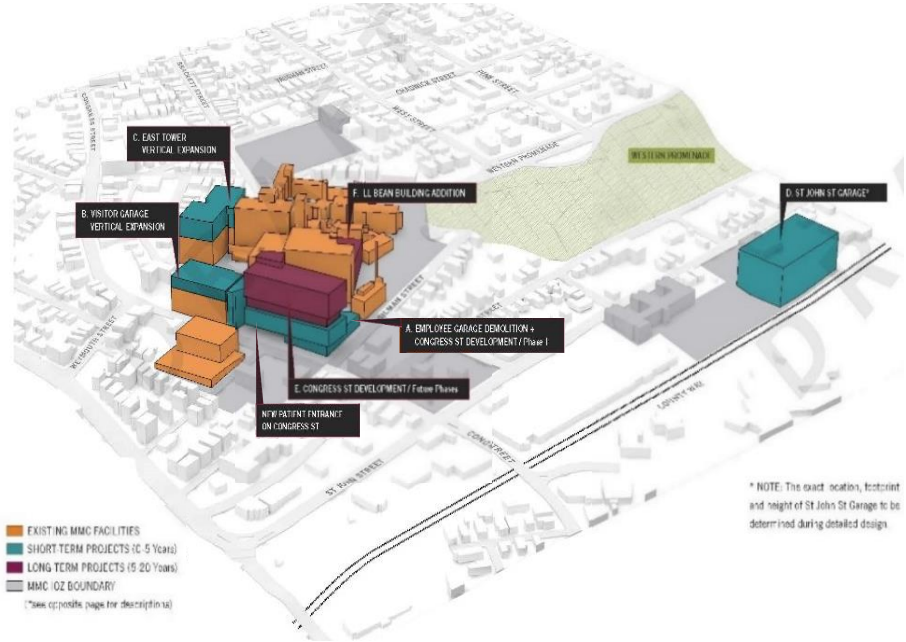
SUBJECT	*DATA for EAST TOWER*	*DATA for VISITORS GARAGE*
Existing Zoning	IOZ	
Existing Use	Hospital	Hospital parking garage
Proposed Use	Hospital- adding single rooms for 64 patient beds	Hospital parking garage – 3-story addition for 225 parking spaces
Parcel Size	12.52 acres	
Impervious Surface Area **--Existing** **--Proposed** **--Net Change**	 415,220 sq ft 0sq ft 0sq ft	 415,220 sq ft 0 sq ft 0 sq ft
Total Disturbed Area	0	0
Building Footprint **--Existing** **--Proposed** **--Net Change**	 30,470 sq ft 0 sq ft 0 sq ft	 25,674 sq ft 0 sq ft 0 sq ft
Building Floor Area **--Existing** **--Proposed** **--Net Change**	 152,350 sq ft 213,290 sq ft 60,940 sq ft	 200,000 sq ft 277,021 sq ft 77,021 sq ft
Parking Spaces **--Existing** **--Proposed** **--Net change** **--# of handicapped spaces**	 2,328 (entire campus) 2,553 225 6	
Bicycle parking Spaces **--Existing** **--Proposed** **--Net change**	 193 (entire campus) 0 0	
Estimated Cost of the Project	TBD	

III. SITE AND CONTEXT

The approved Institutional Development Plan (IDP) (Attachment 4.) provides information regarding the hospital site and its development over the years, along with context information. Photographs of the existing buildings (to be expanded) are included below.

IV. PROPOSALS

The submissions include a description of the proposals and plans and graphics of the proposed "overbuild". The graphic to right is extracted from the IDP in Att.4 (pages 44/45)



East Tower: Addition of two floors (64 patient rooms, single-occupancy):



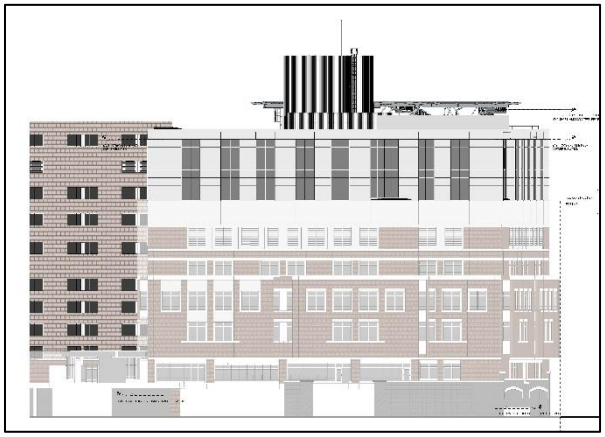
Existing from south



Proposed, comparable rendering (see WSQ – 1)

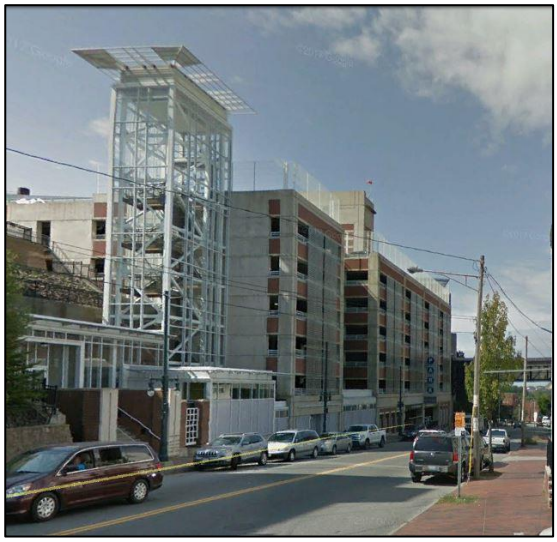


Rendering as viewed from east (Ellsworth Street) showing secondary helipad (see WS Q – 1 which includes additional renderings & before/after comparisons)



South elevation, showing part of east elevation (Plan 14F)

Visitor Garage: 3 additional floors of parking spaces: (renderings not submitted)

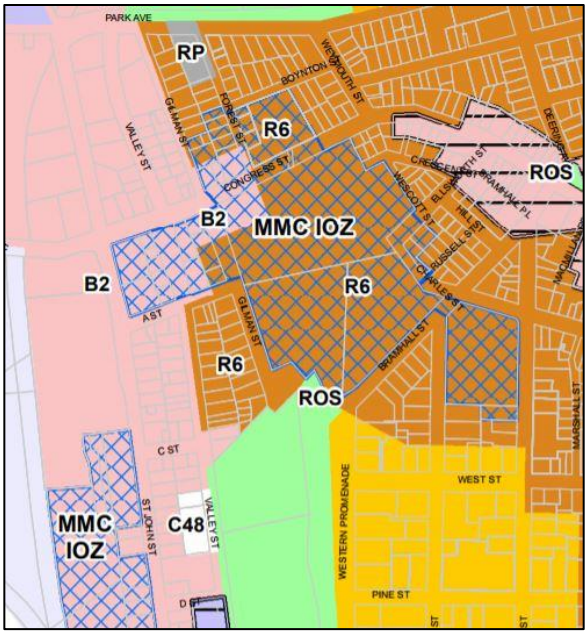


Existing as viewed looking west



Proposed west elevation

V. ZONING ANALYSIS and REVIEW



Overview

The zoning map at right shows the recently adopted MMC IOZ in blue cross hatch:

The MMC IOZ *Regulatory Framework* (Attachment 5) is the zoning ordinance that applies to the proposed site plan projects; this was reviewed by the Planning Board in early 2017 and adopted by the City Council in December 2017.

The proposed additions to the East Tower and the Visitors Garage were included in the IDP background material for the zoning amendment, and the proposals now under site plan review are consistent with what was discussed during that review.

Table 1 below summarizes the Regulatory Framework provisions that apply to the current review and includes staff comments:

TABLE 1 RELEVANT EXTRACTS FROM MMC IOZ REGULATORY FRAMEWORK (entire document is in Att. 5)

MMC IOZ Regulatory Framework provisions	***MMC Site Plan submissions to address the RF provisions***	***Staff Comments***
(c) Uses: Note under list: 1. Mixed Uses: In recognition that Maine Medical Center is part of a mixed-use area of the City, with important existing services and businesses that serve the local and wider community, healthcare facility development fronting onto Congress Street and St. John Street shall activate the public realm, to the extent able, with uses such as service and retail/restaurant, landscaping, active building entrances, pocket parks, etc., on the ground or other publicly accessible level, consistent with the design intent contained in the approved Institutional Development Plan (IDP). In areas identified in the IDP as "Priority zone for commercially oriented/retail uses," usable ground floor retail, restaurant, or comparable community-oriented use that provides services to local residents and employees both during the day and evening hours is required. In areas labeled "Street activation through location of windows, entrances, etc.," usable ground floor retail, restaurant, or community oriented use is encouraged to the extent practicable. Such uses, where constructed or facilitated as part of a healthcare related development, are expressly permitted whether ancillary or supporting the healthcare facility or not, and shall be open and welcoming to the general public in addition to employees or visitors of Maine Medical Center.	The current submission does not include proposals for the existing empty retail units along the base of the Visitors Garage.	Staff consider that the entire building is subject to the review and therefore MMC needs to develop strategies to address any "blank walls' along Congress Street in accordance with the Regulatory Framework and the IDP Design Guidelines/Fig 5.15 re Street Activation (p117 of IDP in Att. 4 to this Memo)
Maximum Building Height: East Tower: 150 feet (the IDP indicated a future height of 141 ft including helipad)	Submitted proposals indicate a height of just over 146 ft but part of the helipad appears to be higher	Clarification required as to helipad height compared to the average grades identified in the IDP.
Maximum Building Height: Visitors Garage: 125 feet (the IDP indicated a future height of 119 ft)	Submitted proposals indicate a height of 119 ft excluding part of the stair tower	Appears to meet dimensional requirements as stair and elevator overruns are considered appurtenances.
Transition Zones – none at these locations	N/A	N/A
Setbacks: East Tower - 20 ft Visitors Garage - up to 40 ft	N/A	N/A

Design Guidelines	See Design Review below	
(f) Signs: 1. At the time of first site plan review following IDP approval, a unified campus-wide Signage Plan shall be submitted for review and approval by the Planning Authority. Any update to such plan due to a change in name or logo shall not require amendment to the IDP. 2. Signs shall be designed in accordance with the campus-wide Signage Plan. All signs shall be designed in proportion and character with building facades and adjacent street typology. All signs shall be coordinated with the building and landscaping design and be constructed of appropriate permanent, high quality materials and finishes.	The applicant has submitted the Signage Plan (Plan 11) that illustrates how the existing signage fits into the campus. The current proposals for the East Tower and Visitors Garage do not necessitate any additional signage, so this plan comprises the current Signage Plan.	Staff anticipate that this Strategy would be updated to take account of the signage needs of the new St Johns Garage and new hospital building (future site plans).
(g) Transportation: (TDM) 1. Transportation Demand Management (TDM): a. At the time of the first site plan review following IDP approval, MMC shall submit a campus- wide TDM Plan substantially in accordance with those TDM objectives and strategies identified in the approved Institutional Development Plan. The TDM Plan may be phased into short-,mid-, and long-term actions to allow for progressive implementation over time. b. The TDM Plan shall be designed to provide transportation choice with the goal of reducing parking demand and single-occupancy vehicle trips to and from MMC by employees and visitors. c. The TDM Plan shall establish parking and trip reduction targets associated with the short-term (0-2 years), mid-term (2-5 years), and the long-term (5+ years), as well as a data collection plan.	The applicant has submitted a TDM Plan (Att. WS S-7).	This is currently under review and detailed comments will be forwarded to the applicant this week, and this will be a topic for the second PB workshop.
(g) Transportation: (Parking) 2. Parking: a. Parking requirements in the IOZ shall be established at the time of site plan review based on a parking study that includes a campus-wide analysis of demand and supply. The parking demand study shall determine parking requirements and shall be sufficient to alleviate parking pressure on surrounding neighborhoods. b. Parking studies developed by MMC shall integrate parking and trip reduction achievements and data contained in the TDM Plan.	The applicant submitted a Parking Demand Study (Att WS S-8) that identifies shortfalls in both visitor and employee parking supply and elaborates on the background information in the approved IDP. The proposals will temporarily remove 2 levels of parking during construction, but will result in a net increase of 225 visitor parking spaces when complete.	Tom Errico, City's consultant traffic engineering reviewer, comments: *During the construction of the Visitor parking garage, the top two floors of the existing garage will be taken out of service. The applicant should provide parking management details addressing the loss of the noted parking spaces.* Staff note that 6 handicapped spaces are included in the 225 new spaces, and request confirmation that this meets ADA requirements
(h) Environment. Development proposed by MMC shall be designed to integrate with the surrounding context, including open space and pedestrian networks and infrastructure.		Staff would like to understand how the Visitor Garage integrates into the surrounding pedestrian network both during construction and after it is completed.
(i) Mitigation measures. MMC shall mitigate site plan impacts to off-premise infrastructure in a manner proportionate to those impacts. Mitigation may include financial or in-kind contributions to existing or planned City projects focused on mitigating the impacts of MMC development. Mitigation contribution shall be determined based on the City's standard procedure in effect at the time of site plan review.		The Construction Management Plan may have impacts on off-premise infrastructure; this is under review.

1. Helipad. MMC shall be governed by the provisions of the Helistop Overlay Zone with the following exceptions: a. Setback requirements of Section 14-327(3); and b. Fencing requirements of Section 14-327(4).	See review comments below.

Design Review in context of MMC IOZ Regulatory Framework

The City's Urban Designer, Caitlin Cameron, has provided a preliminary design review in the context of the Regulatory Framework (Attachment 3); it is quoted below:

The projects at 22 Bramhall Street – East Tower and Visitor Garage expansion - were reviewed according to the adopted IOZ IDP and Regulatory Framework standards by Caitlin Cameron, Urban Designer, Jean Fraser, Planner, and Nell Donaldson, Senior Planner.

In the case of both proposals, the new construction is limited to vertical expansion of existing buildings. The proposals do not alter the footprints, plans, existing materials, or access points to each building. Therefore, the design evaluation is generally limited to the impact on the overall campus design, long views to the campus, and Congress Streetscape.

Design Review Comments*: (questions and unmet standards in red)*

- Please provide a rendering showing the visitor garage project in context on Congress Street.
- More information is requested regarding materials – label materials on elevations.
- More information is requested regarding site lighting.

IDP Design Guidelines

1. New buildings will be designed to contribute to the campus vision and organizational goals identified in the Master Facility Plan and the Transportation Plan, and best practice design standards for healthcare.

East Tower: The East Tower expansion seeks to introduce a contemporary tower that prioritizes the patient experience while also taking advantage of its visual prominence by creating a simple but strong contemporary statement that knits together some of the varying design components of the existing surrounding buildings. The stated MMC vision includes integrating inside and outside – achieved here through the internal circulation and window size and placement, as well as a "50 year palette" that selects materials based on cues from nature to create timeless environment. This vision includes Sky, Sea, and Land as concepts for material/color selection. The white metal panel and large curtain wall system intend to evoke the "sky" – light, recessive, neutral. Planning Board may want to consider if this East Tower design meets this vision for timelessness, integration of inside/outside, and a reflection of modern delivery of healthcare – these design decisions will likely inform future choices for other parts of the campus.

Visitor Garage: The architectural character remains consistent by continuing the existing material palette and expression. In the case of Congress Street, the City's priority is the building interface with the street – keeping the urban street wall edge, activating the ground floor, providing a sense of scale and enclosure for the pedestrian. The MMC vision includes creating a sense of place while allowing new design reflect its location in Portland and Maine, as well as the historic context of the hospital and surrounding neighborhoods. In this case – those goals are met or at least existing conditions are improved upon.

2. The overall composition and experience of the campus will be considered for cohesive identity from approaches along Congress Street and I-295.

East Tower: The addition introduces a new design aesthetic to the MMC campus. The applicant proposes this as the first of several phases that incorporate the vision for the campus as described above and in the applicant's submittal. Staff think this design creates a more visible and contemporary identity to the campus – if approved, future designs should be evaluated for cohesiveness with this new direction.

Visitor Garage: The architectural character remains largely the same as the existing condition and is found to be consistent with the established character. The building addition increases the visibility of the campus from those long views.

3. Building entrances will be oriented toward, located adjacent to, accessible from, a sidewalk in a public right-of-way to create a pedestrian-oriented environment.

East Tower: Not applicable – entrances remain the same with existing ground floor.

Visitor Garage: The existing building has two retail entrances facing Congress Street and steps with a door to access the circulation tower for the garage. The garage currently only has vehicle entrances facing Congress Street which pedestrians can use but there is not a designated pedestrian path/door. From Crescent Street, there is a pedestrian path and doorway.

4. Building designs will relate to and be compatible with the existing, or – in areas of change – planned character of residential and commercial neighbors. Design elements and characteristics to consider include:

- Building placement and relationship to the street
- Overall massing and scale
- Roof forms
- Proportion, directional expression, and composition of facades
- Rhythm of solids to voids
- Rhythm and proportion of openings
- Rhythm of entries and projections
- Relationship of materials, texture, and color

East Tower: The addition is simple in its massing, roof form, and material palette. These two additional floors also change the overall proportion of the building's massing and façade composition. Staff support the direction given the constructability constraints and the limitations of the existing façade character. The window openings are places and scaled to reflect the long views and tower scale of the building. They establish a rhythm consistent with existing building and campus design. The white metal in contrast with the red brick make the proportions top-heavy, but the applicant makes the case that brick is not a viable option for the building addition and that white color palette was selected to integrate with the existing materials and details without introducing yet another element.

Visitor Garage: The massing, roof forms, rhythms, and material relationships remain mostly unchanged from the existing conditions. Scale is the most significant change to this building – staff have requested street view renderings to understand how that scale change will be experienced on the street.

5. Façade materials of buildings will be of high quality, and contribute to an attractive public realm.

East Tower: The applicant indicated the material choices are limited by construction constraints as well as the existing material palette. The proposal is simple white metal panel intended to visually blend with the existing white materials as well as provide a light, recessive quality to the increase in mass and height. Vi sual interest will be provided by material pattern, fenestration, and shadow lines created by angled windows on each façade.

Visitor Garage: The proposal maintains the existing material palette of brick, concrete, and metal screen. Staff agree this is a logical selection to provide consistency to the building. However, staff are concerned about the loss of the canopy on the stair tower as an architectural feature.

6. The design process will consider long views of new buildings including roofs and associated structures to minimize visual impacts and provide visual interest. Rooftop appurtenances will be either screened from view or integrated into the building design, and will not be visible from adjacent streets, Western Promenade, or the Congress Street approach (helipad excluded).

East Tower: The rooftop mechanicals are screened in a way that minimizes their impact and appearance and are visible only from a few directions.

Visitor Garage: Rooftop appurtenances have not been adequately screened or integrated into the building design - this is especially of concern for the long views.

7. Vibrant, contributing and sustainable active ground floors will be provided to add activity and a sense of place to the priority node identified in the City's Comprehensive Plan.

East Tower: Not applicable

Visitor Garage: Staff request the applicant provide more information regarding the ground floor activation facing Congress Street. The building includes storefront, doors oriented to Congress Street, canopies, and adequate site lighting, however, the space is currently vacant and has a translucent film covering the windows and impeding the visual connection and activity from the sidewalk.

8. In areas where the occurrence of limited blank facades along public right-of-ways are unavoidable due to changes in topography or building use requirements, the following strategies will be used to mitigate visual impact:
- providing elements of visual interest along any black walls facing public streets, and,
- working with the City of Portland to ensure adequate lighting of public sidewalks to create a safe pedestrian experience.

East Tower: Not applicable
Visitor Garage: See comment 7. above.

9. Any parking structure within the IOZ will:
- screen views of cars from the public rights-of-way
- provide elements of architectural interest on upper floors to contribute positively to long views and gateway approaches
- for garage structures within 20' of the public right-of-way, meet street activation intent according to street type

East Tower: Not applicable
Visitor Garage: Screening methods will follow the established existing design – solid wall with metal mesh railing with a trellis accent – this current condition successfully screens cars/headlights from Congress and Crescent streets. The current design includes a curtain wall stair tower with an accentuated canopy feature – this roof element appears to be removed from the new addition and rooftop mechanicals are shown without screening or design integration. Staff suggest keeping an element like the canopy will help screen the rooftop mechanicals and meet the guideline of providing architectural interest on upper floors – especially considering with the increased height, these elements will become even more visible from long views. For street activation, see comments 7. above.

Building Relationship to Public Street

1. Urban Main Street (Congress Street)

MMC buildings abutting Congress St will be designed to:
- *Provide urban-levels of density*
- *Create an urban street wall that provides a sense of enclosure to the public realm*
- *Have their primary orientation towards Congress Street*
- *Activate the public sidewalk with building entrances, lobbies, etc.*
- *To the extent possible, given programmatic needs, provide visual interest and ensure pedestrian safety with views into and out of the building along the public sidewalk*
- *To the extent possible, given programmatic needs, provide space for community-oriented uses such as services or retail that can be shared between MMC users, neighbors, and the broader Portland community*
- *Support the existence of neighborhood amenities such as restaurants and other retail uses providing services to local residents and employees both during the day and evening hours.*

In addition to the guidelines listed above, buildings that have frontage on Congress Street and that include parking components will activate portions of or place liner buildings along the ground floor facing Congress Street.

East Tower: Not applicable
Visitor Garage: The building addition maintains the urban street wall already established. The existing building's primary orientation is towards Congress Street. Entrances are not proposed to be changed – there are several existing entrances oriented to Congress Street. For activation, see comment 7. above.

Crime Prevention Through Environmental Design (CPTED)

MMC will incorporate the following design strategies that have been demonstrated to deter crime:
- *Providing a clean and aesthetically pleasing campus environment that is designed with vandal-resistant materials*
- *Providing clear and properly-sized signs in safe locations to ensure safe wayfinding*
- *Ensuring that paths from transit stops, bike storage areas, and parking areas to main pedestrian entrances are well-lit, with clear sight lines*
- *Designing street-level elevations to minimize potential hideouts*

- *To the extent possible, given clinical program demands, providing views in and out of building ground floors populated by users to serve as "eyes on the street"*
- *Generating foot traffic on public sidewalks with pedestrian entrances*

  East Tower: Please indicate any changes to the site lighting or ground level building interface.

  Visitor Garage: Please indicate any changes to the site lighting or ground level building interface.

Mitigating Impacts Through Design

Minimizing Shadow Impacts - Shadow impacts were evaluated as part of the IDP process. Both projects increase building height and will inevitably have some shadow impact – the garage height will increase the shadow cast across Congress Street but, as the applicant has argued, shadows on Congress Street are unavoidable due to the terrain, orientation, and street position. Refer to Plan 13 for shadow analysis of the approved IDP building heights – a couple of residential buildings are impacted in the winter by the increased height.

Context-Sensitive Lighting Design – More information is requested regarding site lighting for both projects.

Mitigating Wind Impact – No information was provided to evaluate this item.

Preserving and Enhancing Viewsheds – The building expansions do not impact Western Promenade viewsheds. Each of these expansions will increase the visibility of the campus from multiple long views.

Regulatory Framework

1. Mixed Uses: . . . *healthcare facility development fronting onto Congress Street and St. John Street shall activate the public realm, to the extent able, with uses such as service and retail/restaurant, landscaping, active building entrances, pocket parks, etc., on the ground or other publicly accessible level, consistent with the design intent contained in the approved IDP. . . .*

East Tower: Not applicable

Visitor Garage: See comment 7. above.

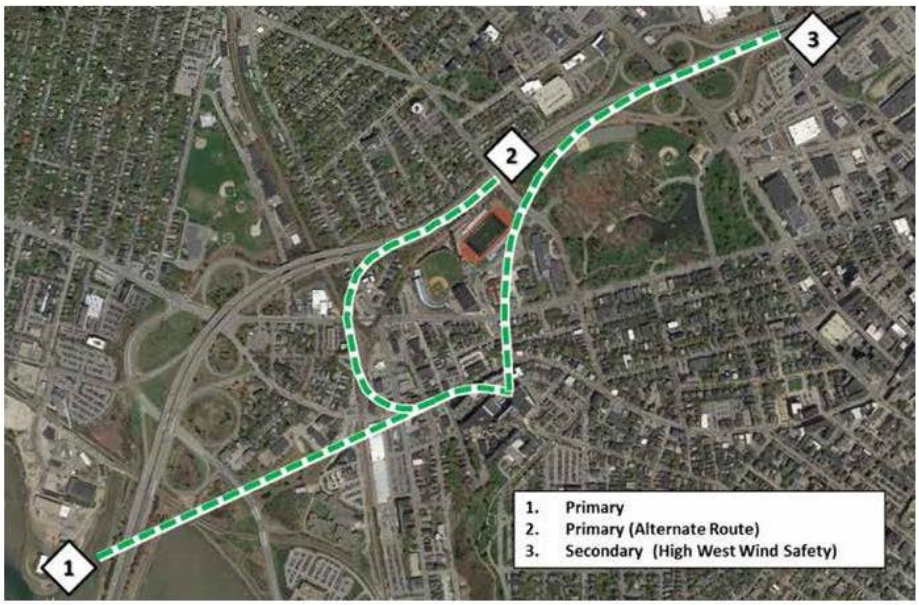
Review of helipad in context of Regulatory Framework, IDP & Zoning (Helistop Overlay Zone)

There is an existing "Single Configuration" helipad (heliport) on the top of the existing employee garage; the helipad needs to be relocated as the garage is proposed to be demolished in the near future. MMC's IDP (Att. 4, page 94) includes background information regarding the proposed relocation of the helipad to the top of the East Tower, and the objective to retain flight routes as existing. It includes the following graphic which indicates that a third route would be added for high wind situations:

The Submission includes the FAA application and supporting information (Att. WS S-5) that:

- Shows the same flight routes but does not qualify the use of the new (third) route as being secondary;
- Clarifies that the proposal is for a "Double heliport configuration" with a connecting taxiway. The primary landing area would be at the northeast corner of the East Tower which is the furthest (approximately 240 feet) from residential properties;
- Indicates that the number of landings per month could rise over the next 5 years from 250 per month to 750 per month.

Fig.4.5 Proposed Flight Routes for the new MMC Helipad



NOTE: Path #3 is new and will only be used under high wind conditions if required by the Federal Aviation Administration.

The Helistop Ordinance requires:

(a) Helistops which have more than five landings per month:
(1) All such helistops must comply with all applicable Federal Aviation Association regulations, including those for marking of landing areas.
(2) All take-off, landing and parking areas at such a helistop site shall be surfaced with grass or with a dust-proof material.
(3) Each landing pad shall be set back at least two hundred (200) feet from any residence, school or church. Each landing pad shall be set back at least fifty (50) feet from any commercial or industrial structure. All setbacks shall be measured from the edge of the landing pad.
(4) The area in which a landing pad is located shall be enclosed by a fence or other barrier of not less than three (3) feet in height or shall be secured by a locked gate, as approved by the fire department.
(5) All such helistops shall be subject to review under article V of this chapter.

The Regulatory Framework does not require MMC to meet provisions (3) and (4) - it is understood that they relate to the fact that the secondary landing area is less than 200 feet from a few residential properties (appears to be about 80 feet) and that fencing is not practicable, although this is not discussed in the IDP.

Staff request further information should be submitted regarding the sound impacts of the proposed helipad. Although the applicant has submitted a *Heliport Noise Study* (Att WS S-6), further clarity is requested as to the scale and nature of the sound impacts compared to the existing situation.

VI. STAFF REVIEW – SITE PLAN

The following comments cover relevant items that are not already addressed above. Comments relate to the East Tower and Visitor Garage proposals as the proposals for the Central Utility Plant have not been outlined in detail except in the CMP.

Transportation Standards:

- *Impact on Surrounding Street Systems*
  The vertical expansion of the East Tower is to allow for the conversion of double-occupancy rooms elsewhere into single rooms and replacing the patient beds in the 64 single bed rooms being added. Thus the number of hospital beds remains unchanged.

  The vertical expansion proposals have been reviewed by the City's consultant Traffic Engineer Tom Errico and he comments:
  This proposed project is not expected to increase traffic volumes and thus at completion will not have a significant impact on traffic conditions. I would note that a Traffic Movement Permit will be required in conjunction with the Congress Street Medical Office Building where additional employees are programmed. The TMP will require a comprehensive Traffic Impact Study. (Att 1)

***Environmental Quality*:**

- *Water Quality/ Stormwater Management/Erosion Control* - this is still under review

Public Infrastructure and Community Safety

- *Public Safety & Fire Prevention* - this is still under review

- *Availability and Adequate Capacity of Public Utilities* - Letters from the utilities confirming capacity should be submitted as part of the final submission.

Site Design

- *Exterior Lighting* - Further information is required regarding any exterior building mounted lighting or revised exterior lighting
- *HVAC and Mechanical Equipment* - the applicant has indicated this information is not yet available and a condition of approval may be appropriate

- *Signage and Wayfinding*- Staff are concerned about the pedestrian access/routes and associated wayfinding along Congress Street and would request further consideration be given to that issue in conjunction with addressing the street activation.

Construction Management Plan

The applicant has submitted Construction Management Plan (prepared by Turner, the contractor for this project) and an associated Traffic Evaluation of traffic and parking impacts related to the CMP for the East Tower (Atts WS I – 3 and WS S – 9B respectively).

The applicant will provide an overview at the PB Workshop. Staff requested further information and review for the proposed closure of Congress Street (weeks), particularly regarding the impacts on emergency services and on traffic flows and detour routes. The staff review of the CMP includes representatives from the Police, Fire, Parking, DPW, Traffic and Planning. The staff suggest that the CMP be a key topic for the second PB workshop.

The staff review has therefore focused on the East Tower CMP proposals that include the closure of Wescott Street and conversion of Crescent and Ellsworth to two-way operation. The City's Consultant Traffic Engineering reviewer Tom Errico has commented (Att 1.):

The following are initial East Tower Traffic Control Plan comments:

- *The City does not support the conversion of Ellsworth Street to two-way flow between Congress Street and Crescent Street. The applicant has noted this to be acceptable. The plans should be revised to reflect this change.*
- *It is unclear if the bump out at the Crescent Street/Wescott Street intersection is to be removed. If it is to remain, vehicle turning templates should be provided for review and approval.*
- *Detailed routing and vehicle turning information for truck deliveries shall be provided for review and approval.*
- *It is my understanding that the Fire Department will be providing comments regarding concerns for Emergency Department vehicle access. (see Att 2)*
- *Specific parking information shall be provided as it relates to fully understanding current on-street parking usage, location of on-street parking prohibitions, and how existing properties parking needs will be addressed given loss of on-street spaces.*

VII. NEXT STEPS

- Provide further details regarding the Central Utility Plant proposals
- Respond to design comments and related requests for info (eg re height, street activation, site design details; integration with pedestrian network)
- Address concern about interim loss of parking and associated management
- Clarify sound impacts of the relocated helipad
- Address comments on East Tower CMP
- Submit utility letters for final submissions
- Address Planning Board comments

ATTACHMENTS

Memo Attachments

1. Initial Traffic Comments
2. Fire Department Comments on CMP
3. Preliminary Design Review Comments
4. MMC Institutional Development Plan (IDP) as approved by PB
5. MMC IOZ Regulatory Framework (Ordinance 14-282) as adopted by CC

Public comments (none received to date)

Applicants Submittal (numbering as per applicant)

WS - 1 Cover Letter
WS A Application Form
WS A -1 East Tower Data Sheet
WS A -2 Visitor Garage Data Sheet
WS B Right Title Interest
WS C State and Federal Approvals
WS D Zoning Assessment
WS E Easements
WS G Financial and Technical Ability
WS H - Boundary Survey
WS I - 3 CM Plan January 18
WS J Traffic Study
WS M City Master Plans
WS N Utilities
WS O Solid Waste
WS Q - 1 Design Review Update January 18
WS Q Design Review
WS R HVAC
WS S - 2 Bicycle Parking
WS S - 3 East Tower Code Report
WS S - 4 Visitor Garage Code Report
WS S - 5 Heliport FAA Submittal
WS S - 6 Heliport Noise Study
WS S - 7 TDM Plan
WS S - 8 Parking Demand Study
WS S - 9B CM East Tower MOT January 18
WS S-10 Project Description

Plans (numbering as per applicant)

Plan 1 Boundary Survey (8 sheets)
Plan 2I Recording Plan
Plan 2J Recording Plan
Plan 5 Site Plan
Plan 10A Visitor Garage Lighting Plan
Plan 10B Heliport Lighting Plan
Plan 11 Signage Plan
Plan 13 Shadow Analysis
Plan 14A East Tower Level 6 Floor Plan
Plan 14B East Tower Level 7 Floor Plan
Plan 14C East Tower East Elevation Janua...
Plan 14D East Tower North Elevation Jan...
Plan 14E East Tower West Elevation Janu...
Plan 14F East Tower South Elevation Janu...
Plan 14G Visitor Garage Level P8 Floor Pl...
Plan 14H Visitor Garage Level p8 Floor Pl...
Plan 14I Visitor Garage Level P10 Floor Pl...
Plan 14J Visitor Garage Level P11 Floor Pl...
Plan 14K Vistitor Garage East Elevation Ja...
Plan 14L Visitor Garage North Elevation J...
Plan 14M Visitor Garage West Elevation J...
Plan 14N Visitor Garage South Elevation J...
WS Q - 1 Design Review incl renderings1....

Memorandum

Maine Medical Center

To:	Members of the City of Portland Planning Board
From:	Jeff Sanders, Chief Operating Officer, MMC
Date:	December 15, 2017
Re:	Site Plan Application: East Tower and Visitor Garage Expansions

Maine Medical Center is pleased to submit this Level III Site Plan Application for the East Tower and Visitor Garage expansion. This is the first of three site plan applications related to MMC's Short-Term Development plan outlined in the Institutional Development Plan approved by the Planning Board on September 26, 2017.

INTRODUCTION

The East Tower and Visitor Garage Expansions represent a significant step towards modernizing the facilities at Maine Medical Center. Almost 80% of the clinical care space at MMC is over 30 years old. MMC is constantly innovating in these facilities to meet patient needs. The patient acuity at MMC is the highest in the State of Maine. MMC had an average Case Mix Index of 1.99 in 2017 while the average in the state was 1.23. These patients require advanced equipment, skilled care teams, and, most of all, private rooms.

MMC inpatient services are currently compressed into semi-private inpatient rooms. This creates a daily capacity challenge at MMC to manage the growing demand. The challenge is exacerbated by the need to close up to 60 beds per day due to patient condition, construction, or staffing. The objective of the East Tower expansion is to begin to decompress the campus by decoupling semi-private rooms and adding more private rooms.

Approximately 49% of MMC's inpatient rooms are private today. MMC's private room ratio will be almost 80% once the expansion of the East Tower and construction of the Congress building is complete. The license bed count of 637 will remain the same. These projects will significantly increase the number of private rooms at MMC and correspondingly reduce bed closures that will improve the operational efficiency and patient and care giver experience.

MMC anticipates that the East Tower and Visitor Garage expansions will be complete in the fall of 2020.

The first phase of this project also adds 225 parking spaces to the patient and family garage at MMC. This application includes a detailed parking analysis that outlines the need for more patient and visitor parking on-campus. Providing adequate parking to patients and families during their time at MMC is essential to a low-stress visit and patient and visitor experience.

PROJECTED DAILY CENSUS

The information below expands on the daily census information provided in MMC's Institutional Development Plan on pages 40-41 specifically for the purposes of the East Tower and Visitor Garage expansion site plan application.

The number of patients, visitors, and employees on MMC's Bramhall campus varies day-to-day. For the purpose of the Site Plan application for the East Tower and Visitor Garage expansions, MMC estimated the daily census for a typical week day. The estimated daily census is included in Table 1 - Estimated Number of Individuals on Campus on an Average Week Day in 2016 and 2020.

Table 1 - Estimated Number of Individuals on Campus on an Average Week Day in 2016 and 2020

Fiscal Year End (Oct-Sept)	Historic 2016	Forecast 2020	4 Year Growth	Net Add 2016-2020
Individuals on Campus on an Average Week Day				
Inpatient Discharges	99	100	1.01%	1
Inpatient Visitors	248	250	1.01%	2
Outpatient Activity	594	600	1.01%	6
Outpatient Visitors	594	600	1.01%	6
Bramhall Outpatient Clinics	153	150	-1.79%	(3)
Employees				
Shift 1	3,639	3,700	1.68%	61
Shift 2	206	210	1.86%	4
Shift 3	519	530	2.12%	11
Students				
Medical	100	105	5.00%	5
Nursing	86	90	4.65%	4
Other (PA, Pharm, etc.)	20	20	0.00%	-
Non-MFP Related Contractors	25	25	0.00%	-
Total Individuals on an Average Day	**6,282**	**6,380**	**6.65%**	**98**

The estimated net change in individuals on campus per day will be approximately 100 between 2016 and 2020. The estimated increase of 100 individuals is anticipated to be spread throughout the 24 hour per day operations at MMC. However, outpatients, visitors, and the majority of shift 1 employees will likely be on campus between 7:00 AM and 6:00 PM.

Approximately 5% of the estimated increase can be directly attributed to the East Tower and Visitor expansion. This is the result of the estimated number of beds per day that MMC will be able to keep open as a result of the 64 private universal rooms in the East Tower Expansion. The rest of the increase is estimated as a result of growing demand for MMC services and the expected efficiencies gained on the Bramhall campus and at other MMC care locations and pending decisions about vacated spaces at Bramhall.

HEALTHY COMMUNITIES

MMC is in the process of developing a community grant program that will make $30,000 available annually. The program is already undertaking its first project in the Bramhall Square Park. There is a process underway to redesign the park which will improve the quality of life in the neighborhood.

MMC has initiated discussions with the City of Portland and a Community Housing Development Organization to establish a Health Neighborhoods program.

CONCLUSION

We are excited about these projects and the enhancements they will provide our patients, visitors and care teams. This project will improve MMC's ability to meet the needs of patients in our community by de-coupling semi-private rooms and providing adequate parking for patients and families. We look forward to reviewing the Site Plan Application for the East Tower and Visitor Garage Expansions.

Level III – Preliminary and Final Site Plans
Development Review Application
Portland, Maine

Planning and Urban Development Department
Planning Division

Portland's Planning and Urban Development Department coordinates the development review process for site plan, subdivision and other applications under the City's Land Use Code. Attached is the application form for a Level III: Preliminary or Final Site Plan. Please note that Portland has delegated review from the State of Maine for reviews under the Site Location of Development Act, Chapter 500 Stormwater Permits, and Traffic Movement Permits.

Level III: Site Plan Development includes:

- New structures with a total floor area of 10,000 sq. ft. or more except in Industrial Zones.
- New structures with a total floor area of 20,000 sq. ft. or more in Industrial Zones.
- New temporary or permanent parking area(s) or paving of existing unpaved parking areas for more than 75 vehicles.
- Building addition(s) with a total floor area of 10,000 sq. ft. or more (cumulatively within a 3 year period) except in Industrial Zones.
- Building addition(s) with a total floor area of 20,000 sq. ft. or more in Industrial Zones.
- A change in the use of a total floor area of 20,000 sq. ft. or more in any existing building (cumulatively within a 3 year period).
- Multiple family development (3 or more dwelling units) or the addition of any additional dwelling unit if subject to subdivision review.
- Any new major or minor auto business in the B-2 or B-5 Zone, or the construction of any new major or minor auto business greater than 10,000 sq. ft. of building area in any other permitted zone.
- Correctional prerelease facilities.
- Park improvements: New structures greater than 10,000 sq. ft. and/or facilities encompassing 20,000 sq. ft. or more (excludes rehabilitation or replacement of existing facilities); new nighttime outdoor lighting of sports, athletic or recreation facilities not previously illuminated.
- Land disturbance of 3 acres or more (includes stripping, grading, grubbing, filling or excavation).

Portland's development review process and requirements are outlined in the Land Use Code (Chapter 14), Design Manual and Technical Manual.

Planning Division
Fourth Floor, City Hall
389 Congress Street
(207) 874-8719
planning@portlandmaine.gov

Office Hours
Monday thru Friday
8:00 a.m. – 4:30 p.m.

I. Project Information (Please enter n/a on those fields that are not applicable)

Project Name:	Maine Medical Center East Tower / Visitor Garage Vertical Expansions
Proposed Development Address:	22 Bramhall Street
Project Description:	Add 2 floors to East Tower/ Relocate Heliport to East Tower /Add 3 levels to garage
Chart/Block/Lot:	053D007 / 054H001/ 064C001
Preliminary Plan	No
Final Plan	Yes

II. Contact Information (Please enter n/a on those fields that are not applicable)

APPLICANT

Name:	Maine Medical Center : Attn : Alexander Green
Business Name:	Maine Medical Center
Address:	22 Bramhall Street
City/State:	Portland, Maine
Zip Code:	04102
Work #:	207-662-3689
Home #:	
Cell #:	
Fax #:	
E-mail:	AGreen@mmc.org

OWNER

Name:	Same as Applicant
Address:	
City/State:	
Zip Code:	
Work #:	
Home #:	
Cell #:	
Fax #:	
E-mail:	

AGENT/REPRESENTATIVE

Name:	William Conway, Sebago Technics
Address:	75 John Roberts Road
City/State:	South Portland , Maine
Zip Code:	04106
Work #:	207-200-2055
Home #:	
Cell #:	
Fax #:	
E-mail:	wconway@sebagotechnics.com

BILLING (to whom invoices will be forwarded to)

Name:	Maine Medical Center / Attn : Alexander Green
Address:	
City/State:	
Zip Code:	
Work #:	
Home #:	
Cell #:	
Fax #:	
E-mail:	

ENGINEER

Name:	Sebago Technics
Address:	
City/State:	
Zip Code:	
Work #:	
Home #:	
Cell #:	
Fax #:	
E-mail:	

SURVEYOR

Name:	Sebago Technics
Address:	
City/State:	
Zip Code:	
Work #:	
Home #:	
Cell #:	
Fax #:	
E-mail:	

ARCHITECT

Name:	Perkins + Will
Address:	225 Franklin Street Suite 1100
City/State:	Boston, Massachussetts
Zip Code:	02110
Work #:	617-478-0300
Home #:	
Cell #:	
Fax #:	
E-mail:	Jeffrey.Keilman@perkinswill.com

ATTORNEY

Name:	Maine Health Corporate Counsel : Attn : Penelope St. Louis
Address:	110 Free Street
City/State:	Portland, Maine
Zip Code:	04101
Work #:	207-661-7157
Home #:	
Cell #:	
Fax #:	
E-mail:	STLOUP@mmc.org

DESIGNATED PERSON(S) FOR UPLOADING INTO e-PLAN

Name:	William Conway
E-mail:	wconway@sebagotechnics.com
Name:	Jeffrey Keilman
E-mail:	Jeffrey.Keilman@perkinswill.com
Name:	
E-mail:	

III. APPLICATION FEES

LEVEL III DEVELOPMENT (check applicable review)

☐	Less than 50,000 sq. ft.	$750.00
☐	50,000 – 100,000 sq. ft.	$1,000.00
☑	100,000 – 200,000 sq. ft.	$2,000.00
☐	200,000 – 300,000 sq. ft.	$3,000.00
☐	Over 300,000 sq. ft.	$5,000.00
☐	Parking lots over 100 spaces	$1,000.00
☐	After-the-fact Review	$1,000.00 + applicable application fee above

PLAN AMENDMENTS (check applicable review)

☐	Planning Staff Review	$250.00
☑	Planning Board Review	$500.00

OTHER REVIEWS (check applicable review)

☐	Traffic Movement	$1,500.00
☐	Stormwater Quality	$250.00
☐	Subdivision	$500.00 + applicable fee for lots/units below
	# of Subdivision Lots/Units [ ] x $25.00 each	$
☐	Site Location	$3,500.00 + applicable fee for lots/units below
	# of Site Location Lots/Units [ ] x $200.00 each	$
☐	Change of Use	
☐	Flood Plain	
☐	Shoreland	
☑	Design Review	
☐	Housing Replacement	
☐	Historic Preservation	
TOTAL APPLICATION FEE DUE:		$ 2,500.00

IV. FEES ASSESSED AND INVOICED SEPARATELY

- Notices to abutters (receipt of application, workshop and public hearing meetings) ($.75 each)
- Legal Ad in the Newspaper (% of total ad)
- Planning Review ($52.00 hour)
- Legal Review ($75.00 hour)
- Third Party Review (all outside reviews or analysis, eg. Traffic/Peer Engineer, are the responsibility of the applicant and will be assessed and billed separately)

V. PROJECT DATA (Please enter n/a on those fields that are not applicable)

TOTAL AREA OF SITE	12.52 Acres	sq. ft.
PROPOSED DISTURBED AREA OF THE SITE	0	sq. ft.
If the proposed disturbance is greater than one acre, then the applicant shall apply for a Maine Construction General Permit (MCGP) with DEP and a Stormwater Management Permit, Chapter 500, with the City of Portland.		
IMPERVIOUS SURFACE AREA		
Impervious Area (Total Existing)	415,220	sq. ft.
Impervious Area (Total Proposed)	0	sq. ft.
Building Ground Floor Area and Total Floor		
Building Footprint (Total Existing)	56,144	sq. ft.
Building Footprint (Total Proposed)	0	sq. ft.
Building Floor Area (Total Existing)	352,350	sq. ft.
Building Floor Area (Total Proposed)	137,961	sq. ft.
ZONING		
Existing	IOZ	
Proposed, if applicable	IOZ	
LAND USE		
Existing	Hospital	
Proposed	Hospital	
RESIDENTIAL, IF APPLICABLE		
# of Residential Units (Total Existing)	N/A	
# of Residential Units (Total Proposed)	N/A	
# of Lots (Total Proposed)	N/A	
# of Affordable Housing Units (Total Proposed)	N/A	
PROPOSED BEDROOM MIX		
# of Efficiency Units (Total Proposed)	N/A	
# of One-Bedroom Units (Total Proposed)	N/A	
# of Two-Bedroom Units (Total Proposed)	N/A	
# of Three-Bedroom Units (Total Proposed)	N/A	
PARKING SPACES		
# of Parking Spaces (Total Existing)	2328	
# of Parking Spaces (Total Proposed)	225	
# of Handicapped Spaces (Total Proposed)	6	
BICYCLE PARKING SPACES		
# of Bicycle Spaces (Total Existing)	193	
# of Bicycle Spaces (Total Proposed)	0	
ESTIMATED COST OF THE PROJECT	$ 70,000,000.00	

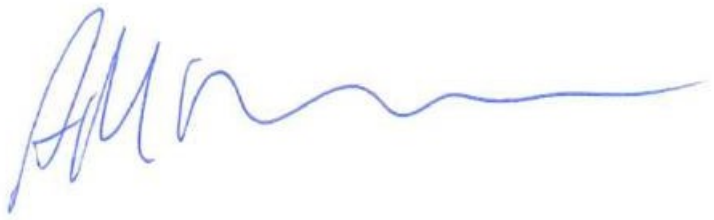
VI. APPLICANT SIGNATURE

By digitally signing the attached document(s), you are signifying your understanding this is a legal document and your electronic signature is considered a ***legal signature*** per Maine state law.

I hereby certify that I am the Owner of record of the named property, or that the owner of record authorizes the proposed work and that I have been authorized by the owner to make this application as his/her authorized agent. I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in this application is issued, I certify that the Planning Authority and Code Enforcement's authorized representative shall have the authority to enter all areas covered by this permit at any reasonable hour to enforce the provisions of the codes applicable to this permit.

This application is for a Level III Site Plan review. It is not a permit to begin construction. An approved site plan, a Performance Guarantee, Inspection Fee, Building Permit, and associated fees will be required prior to construction. Other Federal, State or local permits may be required prior to construction, which are the responsibility of the applicant to obtain.

Signature of Applicant:	ALEXANDER M. GREEN, DIR. PLANNING, MMC
Date:	12/12/2017



PRELIMINARY PLAN (Optional) - Level III Site Plan			
Applicant Checklist	Planner Checklist	# of Copies	**GENERAL WRITTEN SUBMISSIONS CHECKLIST**
		1	Completed Application form
		1	Application fees
		1	Written description of project
		1	Evidence of right, title and interest
		1	Evidence of state and/or federal approvals, if applicable
		1	Written assessment of proposed project's compliance with applicable zoning requirements
		1	Summary of existing and/or proposed easement, covenants, public or private rights-of-way, or other burdens on the site
		1	Written requests for waivers from site plan or technical standards, if applicable.
		1	Evidence of financial and technical capacity
		1	Traffic Analysis (may be preliminary, in nature, during the preliminary plan phase)
Applicant Checklist	Planner Checklist	# of Copies	**SITE PLAN SUBMISSIONS CHECKLIST**
		1	Boundary Survey meeting the requirements of Section 13 of the City of Portland's Technical Manual
		1	**Preliminary Site Plan including the following: (information provided may be preliminary in nature during preliminary plan phase)**
		Proposed grading and contours;	
		Existing structures with distances from property line;	
		Proposed site layout and dimensions for all proposed structures (including piers, docks or wharves in Shoreland Zone), paved areas, and pedestrian and vehicle access ways;	
		Preliminary design of proposed stormwater management system in accordance with Section 5 of the Technical Manual (note that Portland has a separate applicability section);	
		Preliminary infrastructure improvements;	
		Preliminary Landscape Plan in accordance with Section 4 of the Technical Manual;	
		Location of significant natural features (including wetlands, ponds, watercourses, floodplains, significant wildlife habitats and fisheries or other important natural features) located on the site as defined in Section 14-526 (b) (1);	
		Proposed buffers and preservation measures for significant natural features, as defined in Section 14-526 (b) (1);	
		Location , dimensions and ownership of easements, public or private rights of way, both existing and proposed;	
		Exterior building elevations.	

FINAL PLAN - Level III Site Plan			
Applicant Checklist	Planner Checklist	# of Copies	**GENERAL WRITTEN SUBMISSIONS CHECKLIST (* If applicant chooses to submit a Preliminary Plan, then the * items were submitted for that phase and only updates are required)**
x		1	* Completed Application form
x		1	* Application fees
x		1	* Written description of project
x		1	* Evidence of right, title and interest
x		1	* Evidence of state and/or federal permits
x		1	* Written assessment of proposed project's specific compliance with applicable Zoning requirements
x		1	* Summary of existing and/or proposed easements, covenants, public or private rights-of-way, or other burdens on the site
x		1	* Evidence of financial and technical capacity
x		1	Construction Management Plan
N/A		1	A traffic study and other applicable transportation plans in accordance with Section 1 of the technical Manual, where applicable.
N/A		1	Written summary of significant natural features located on the site (Section 14-526 (b) (a))
x		1	Stormwater management plan and stormwater calculations
x		1	Written summary of project's consistency with related city master plans
x		1	Evidence of utility capacity to serve
x		1	Written summary of solid waste generation and proposed management of solid waste
x		1	A code summary referencing NFPA 1 and all Fire Department technical standards
x		1	Where applicable, an assessment of the development's consistency with any applicable design standards contained in Section 14-526 and in City of Portland Design Manual
x		1	Manufacturer's verification that all proposed HVAC and manufacturing equipment meets applicable state and federal emissions requirements.

Applicant Checklist	Planner Checklist	# of Copies	**SITE PLAN SUBMISSIONS CHECKLIST** **(* If applicant chooses to submit a Preliminary Plan, then the * items were submitted for that phase and only updates are required)**
x		1	* Boundary Survey meeting the requirements of Section 13 of the City of Portland's Technical Manual
x		1	**Final Site Plans including the following:**
x		Existing and proposed structures, as applicable, and distance from property line (including location of proposed piers, docks or wharves if in Shoreland Zone);	
x		Existing and proposed structures on parcels abutting site;	
N/A		All streets and intersections adjacent to the site and any proposed geometric modifications to those streets or intersections;	
x		Location, dimensions and materials of all existing and proposed driveways, vehicle and pedestrian access ways, and bicycle access ways, with corresponding curb lines;	
N/A		Engineered construction specifications and cross-sectional drawings for all proposed driveways, paved areas, sidewalks;	
N/A		Location and dimensions of all proposed loading areas including turning templates for applicable design delivery vehicles;	
N/A		Existing and proposed public transit infrastructure with applicable dimensions and engineering specifications;	
x		Location of existing and proposed vehicle and bicycle parking spaces with applicable dimensional and engineering information;	
N/A		Location of all snow storage areas and/or a snow removal plan;	
x		A traffic control plan as detailed in Section 1 of the Technical Manual;	
N/A		Proposed buffers and preservation measures for significant natural features, where applicable, as defined in Section 14-526(b)(1);	
N/A		Location and proposed alteration to any watercourse;	
N/A		A delineation of wetlands boundaries prepared by a qualified professional as detailed in Section 8 of the Technical Manual;	
N/A		Proposed buffers and preservation measures for wetlands;	
N/A		Existing soil conditions and location of test pits and test borings;	
N/A		Existing vegetation to be preserved, proposed site landscaping, screening and proposed street trees, as applicable;	
N/A		A stormwater management and drainage plan, in accordance with Section 5 of the Technical Manual;	
N/A		Grading plan;	
N/A		Ground water protection measures;	
N/A		Existing and proposed sewer mains and connections;	

- Continued on next page -

N/A		Location of all existing and proposed fire hydrants and a life safety plan in accordance with Section 3 of the Technical Manual;
N/A		Location, sizing, and directional flows of all existing and proposed utilities within the project site and on all abutting streets;
N/A		Location and dimensions of off-premises public or publicly accessible infrastructure immediately adjacent to the site;
N/A		Location and size of all on site solid waste receptacles, including on site storage containers for recyclable materials for any commercial or industrial property;
X		Plans showing the location, ground floor area, floor plans and grade elevations for all buildings;
X		A shadow analysis as described in Section 11 of the Technical Manual, if applicable;
N/A		A note on the plan identifying the Historic Preservation designation and a copy of the Application for Certificate of Appropriateness, if applicable, as specified in Section Article IX, the Historic Preservation Ordinance;
X		Location and dimensions of all existing and proposed HVAC and mechanical equipment and all proposed screening, where applicable;
X		An exterior lighting plan in accordance with Section 12 of the Technical Manual;
N?A		A signage plan showing the location, dimensions, height and setback of all existing and proposed signs;
X		Location, dimensions and ownership of easements, public or private rights of way, both existing and proposed.

V. EAST TOWER PROJECT DATA (Please enter n/a on those fields that are not applicable)

TOTAL AREA OF SITE	12.52 Acrres	sq. ft.
PROPOSED DISTURBED AREA OF THE SITE	0	sq. ft.
If the proposed disturbance is greater than one acre, then the applicant shall apply for a Maine Construction General Permit (MCGP) with DEP and a Stormwater Management Permit, Chapter 500, with the City of Portland.		
IMPERVIOUS SURFACE AREA		
Impervious Area (Total Existing)	415,220	sq. ft.
Impervious Area (Total Proposed)	0	sq. ft.
Building Ground Floor Area and Total Floor		
Building Footprint (Total Existing)	30,470	sq. ft.
Building Footprint (Total Proposed)	0	sq. ft.
Building Floor Area (Total Existing)	152,350	sq. ft.
Building Floor Area (Total Proposed)	60,940	sq. ft.
ZONING		
Existing	IOZ	
Proposed, if applicable	IOZ	
LAND USE		
Existing	Hospital	
Proposed	Hospital	
RESIDENTIAL, IF APPLICABLE		
# of Residential Units (Total Existing)		
# of Residential Units (Total Proposed)		
# of Lots (Total Proposed)		
# of Affordable Housing Units (Total Proposed)		
PROPOSED BEDROOM MIX		
# of Efficiency Units (Total Proposed)		
# of One-Bedroom Units (Total Proposed)		
# of Two-Bedroom Units (Total Proposed)		
# of Three-Bedroom Units (Total Proposed)		
PARKING SPACES		
# of Parking Spaces (Total Existing)	2328	
# of Parking Spaces (Total Proposed)	225	
# of Handicapped Spaces (Total Proposed)	6	
BICYCLE PARKING SPACES		
# of Bicycle Spaces (Total Existing)	193	
# of Bicycle Spaces (Total Proposed)	0	
ESTIMATED COST OF THE PROJECT	$TBD	

VISITOR GARAGE

V. PROJECT DATA (Please enter n/a on those fields that are not applicable)

TOTAL AREA OF SITE	12.52 Acres	sq. ft.
PROPOSED DISTURBED AREA OF THE SITE	0	sq. ft.
If the proposed disturbance is greater than one acre, then the applicant shall apply for a Maine Construction General Permit (MCGP) with DEP and a Stormwater Management Permit, Chapter 500, with the City of Portland.		
IMPERVIOUS SURFACE AREA		
Impervious Area (Total Existing)	415,220	sq. ft.
Impervious Area (Total Proposed)	0	sq. ft.
Building Ground Floor Area and Total Floor		
Building Footprint (Total Existing)	25,674	sq. ft.
Building Footprint (Total Proposed)	0	sq. ft.
Building Floor Area (Total Existing)	200,000	sq. ft.
Building Floor Area (Total Proposed)	77,021	sq. ft.
ZONING		
Existing	IOZ	
Proposed, if applicable	IOZ	
LAND USE		
Existing	Hospital Parking Garage	
Proposed	Hospital Parking Garage	
RESIDENTIAL, IF APPLICABLE		
# of Residential Units (Total Existing)		
# of Residential Units (Total Proposed)		
# of Lots (Total Proposed)		
# of Affordable Housing Units (Total Proposed)		
PROPOSED BEDROOM MIX		
# of Efficiency Units (Total Proposed)		
# of One-Bedroom Units (Total Proposed)		
# of Two-Bedroom Units (Total Proposed)		
# of Three-Bedroom Units (Total Proposed)		
PARKING SPACES		
# of Parking Spaces (Total Existing)	2328	
# of Parking Spaces (Total Proposed)	225	
# of Handicapped Spaces (Total Proposed)	6	
BICYCLE PARKING SPACES		
# of Bicycle Spaces (Total Existing)	193	
# of Bicycle Spaces (Total Proposed)	0	
ESTIMATED COST OF THE PROJECT	$ TBD	

296

Know all Men by these Presents, That

I William H. Bailey of Portland in the State of Maine

in consideration of the Sum of Two Hundred and fifty Dollars paid by The Maine General Hospital, a Corporation established by law at Portland the receipt whereof I do hereby acknowledge, do hereby give, grant, bargain, sell and convey unto the said Maine General Hospital heirs and assigns forever,

Bailey to Maine General Hospital

U. S. I. R. 50 cents W. H. B. June 6. 1870.

a certain lot of land situated on the Northwestern slope of Bramballs Hill in Portland, the same being lot numbered nine, on a plan made by Howe and Osgood September 1863 recorded in the Cumberland Registry of Deeds in Plan Book number two page 36. The said plan is of a tract of land extending from the rear of the State Arsenal lot to Congress street. The lot hereby conveyed is about forty feet in breadth and about sixty feet in length on the Southwest side of an unopened street laid down on said plan; the same conveyed to me by Moody F. Walker Oct. 14. 1863. Subject to the location of said street over any part of said lot, subject also to a mortgage for $137.50 given to Moody F. Walker which mortgage with all unpaid interest thereon, the present grantee is to assume and discharge.

To Have and to Hold the aforegranted and bargained Premises, with all the privileges and appurtenances thereof, to the said Maine General Hospital heirs and assigns, to their use and behoof forever. And I do covenant with the said Grantee heirs and assigns, that I am lawfully seized in fee of the Premises; that they are free of all incumbrances; that I have good right to sell and convey the same to the said Grantee to hold as aforesaid; and that I will and my heirs, shall and will warrant and defend the same to the said Grantee heirs and assigns forever, against the lawful claims and demands of all persons.

In Witness Whereof, I the said Grantor and Elvira W. my wife ~~of the said~~ in testimony of her relinquishment of her right of dower in the above described premises, have hereunto set our hand and seal this sixth day of June in the year of our Lord one thousand eight hundred and seventy.

~~Signed, Sealed and Delivered~~ in presence of

P. Barnes to W. H. B. — William H. Bailey. Seal.

Joseph S. Bailey to E. W. B. — Elvira W. Bailey. Seal.

State of Maine. Cumberland, ss. June 6th 1870. Personally appeared the above-named William H. Bailey and acknowledged the above instrument to be his free act and deed. Before me,

P. Barnes Justice of the Peace.

Received June 6. 1870, at 12 o'clock 54 m., P. M., and recorded according to the original.

Attest, Eben Leach Register.

Know all Men by these Presents, That

I, Hugh Carney of Portland in the State of Maine

Book 377 Page 297

in consideration of the sum of Five Hundred Dollars paid by The Maine General Hospital, a Corporation established by law at Portland aforesaid the receipt whereof I do hereby acknowledge, do hereby give, grant, bargain, sell and convey unto the said Maine General Hospital ~~heirs~~ and assigns forever,

Carney to Maine General Hospital

U. S. I. R. 50 Cents No. 6. June 6. '70

a certain parcel of land situated on the North-western slope of Bramhall hill in Portland, bounded on the East by the State Arsenal lot and on the North by land of the City; the same conveyed to me by Moody F. Walker Oct. 14, 1863, in two lots about forty feet in width by about sixty feet in length, which are numbered two and four on a plan of the same and adjoining lands made by Howe and Osgood Sept. 1863, which is recorded, under date of January 21, 1864 in Plan Book number two page 36 of the Cumberland Registry of Deeds. Subject to the location of Ash street over any part of said lots.

To Have and to Hold the aforegranted and bargained Premises, with all the privileges and appurtenances thereof, to the said Maine General Hospital ~~heirs~~ and assigns, to their use and behoof forever. And I do covenant with the said Grantee ~~heirs~~ and assigns, that I am lawfully seized in fee of the Premises; that they are free of all incumbrances; that I have good right to sell and convey the same to the said Grantee to hold as aforesaid; and that I and my heirs, shall and will warrant and defend the same to the said Grantee ~~heirs~~ and assigns forever, against the lawful claims and demands of all persons.

In Witness Whereof, I the said Grantor and Bridgett D. my wife ~~of the said~~ in testimony of her relinquishment of her right of dower in the above described premises, have hereunto set our hand and seal this sixth day of June in the year of our Lord one thousand eight hundred and seventy.

Signed, Sealed and Delivered in presence of

P. Barnes to No. 6.
Witnessed by Edward N. Bates

Hugh his × mark Carney Seal.
Bridgett Carney Seal.

State of Maine
Cumberland, ss. June 6th 1870. Personally appeared the above-named Hugh Carney and acknowledged the above instrument to be his free act and deed. Before me,

P. Barnes Justice of the Peace.

Received June 6 1870, at 12 o'clock 54 m., P. M., and recorded according to the original.

Attest, Eben Leach Register.

State of Maine, Cumberland ss. Portland May 19th 1870.
Then personally appeared the abovenamed Sarah M. Bridges and acknowledged the foregoing instrument to be her free act and ded.

Before me, George R Davis, Justice of the Peace

Received May 19. 1870 at 5 h. 20 m. P. Me. and recorded according to the original.

Attest. Eben Leach Register

Agreement of Joseph S. Bailey with Maine Hospital

Agreement made the 27th day of April 1870 by Joseph S Bailey of Portland for the conveyance of certain land to the Maine General Hospital.

For a valuable consideration the said Bailey agrees to convey by deed of warranty to the Maine General Hospital, upon the conditions hereinafter named, a certain parcel of land situated on the slope of Bramhall's Hill in Portland, being the western part of a parcel of about two acres extending from the Arsenal ground to Congress street, formerly owned by M. F. Walker and others, described as divided into lots on a plan made by Kent and Osgood in 1863 through which two acre parcel a street called Oak street has recently been laid out, and being all of said two acre parcel, except the ten lots nearest the Arsenal and except the part of the street adjoining the ten lots. The conveyance hereby agreed to be made is to include the fee of the land covered by the new street west of the ten lots, but subject to the location of the street.

This agreement is to be in force for the term of forty days from and after this date.

The conditions upon which the conveyance is to be made, are, that the Hospital shall within the said forty days pay to the said Bailey, or to his written order, the sum of two thousand dollars, upon which payment the ded is to be made and delivered, and shall therefore make and deliver to the said Bailey or to his written appointment, its two several negotiable promissory notes, one for two thousand dollars payable in two years from the date of the deed, and one for one thousand dollars payable in three years from the same date, both with interest half yearly at the rate of seven and one half per cent. per annum, with liberty to pay not less than one thousand dollars on said notes at any time before maturity, together with a mortgage of the premises to secure the same, and shall assume and pay according to its tenor a mortgage now subsisting

on a part of said premises, for one thousand dollars, given by said Bailey in 1866 in six years, subject to which mortgage this agreement is made, interest accrued on said mortgage to the date of this conveyance to be paid by said Bailey.

In witness whereof, the said Bailey has hereunto set his hand and seal the day and year first above written.

U. S. Inter. Revenue 5 cts. J. S. B. Apl. 27. 1870.	Witness, P. Barnes	Joseph S. Bailey. Seal.

State of Maine. Cumberland ss. On this 21st day of May 1870, personally appeared Joseph S. Bailey and acknowledged the foregoing instrument by him subscribed to be his free act and deed.

Before me, P. Barnes, Justice of the Peace.

Received May 21, 1870 at 4h. 10m. P.M. and recorded according to the original.

Attest: Eben Leach Register

U. S. I. R. $2.00 H. T. L. May 21. 1870.	Know all men by these presents that I, Horatio T. Libby of Portland in the County of Cumberland and State of Maine, in consideration of Two Thousand Dollars paid by John Lindsey of Standish in the County of Cumberland and State of Maine,	Libby to Lindsey

the receipt whereof is hereby acknowledged, do hereby give, grant, bargain, sell and convey unto the said John Lindsey, a certain lot of land and the buildings thereon situated on the Southwesterly side of Chestnut Street in said Portland and bounded beginning at the Northerly corner of land of Benjamin Tukey formerly Leonard Crosse's land and running thence Northwesterly on said street thirty five feet; thence Southwesterly at right angles with said street sixtynine feet to a stake or stones; thence Southeasterly on a line parallel with said street thirtyfive feet to a stake or stones; thence at right angles with the last line by Mrs. A. Hay's land and said Tukey's land sixtynine feet to the bound begun at containing about two thousand and four hundred feet; being a part of the land conveyed to me by Miriam Libby sals by deed dated January 18th 1854, and recorded in Cumberland Registry of Deeds Book 252, Page 27. Subject to a mortgage to the City of Portland on which is now due about two thousand dollars.

Portland May 7th 1874.
This mortgage having been paid and fully satisfied, is hereby cancelled and discharged.
John Lindsey
Witness

To have and to hold the above granted premises

their hands and seals this twentieth day of October A. D. 1870.



Richard D. Rice {President of Maine Central Railroad Company

Countersigned by Joshua Nye, Treas. of Maine Central R. R. Co.

William L. Putnam Seal
Artemas Libbey Seal.
James T. Patten. Seal.

Cumberland ss. Oct. 20, 1870. Then personally appeared Richard D. Rice, President of the Maine Central Railroad Company and acknowledged the foregoing instrument to be the free act and deed of said Corporation, before me,

Josiah H. Drummond Justice of the Peace.

Received Nov. 2, 1870 at 2 h. 30 m. P. M. and recorded according to the original.

Attest: Eben Leach Register

City of Portland to Me. Gen. Hospital

Whereas the City Council of the City of Portland, upon the petition of the Maine General Hospital, praying that the City would grant to the Corporation certain lands for the purpose of enlarging the building site of the Hospital, and rendering the same more commodious and useful for the objects thereof, by concurrent order of the two Branches, passed by the same respectively, on the 23d and 24th days of May 1870, and approved by the Mayor on the 31st day of the same month, ordered, that the prayer of the petition be granted, and that a deed in furtherance thereof be executed and delivered for the conveyance prayed for.

Now, know all men by these presents that the City of Portland, in pursuance of the foregoing order, and in consideration of Ten Dollars paid by the Grantee hereinafter named, the receipt whereof is hereby acknowledged, doth hereby give, grant, bargain, sell and convey to the Maine General Hospital, a Corporation established by law at Portland aforesaid, a certain parcel of land, belonging to the City, situated on the slope of Bramhall's Hill, bounded on

the Northeast by a line, as now fenced, in continuation of the Northeast side line of the Maine State Arsenal lot, and on the Southwest by lands of Joseph S. Bailey and others, and extending Westward, between those limits, from the Arsenal lot to Congress street.

Also another parcel of land belonging to the City, situated on the Southwest side of the Arsenal lot and of the lands of Bailey and others, having a front on a line in continuation of the Northwest side line of Arsenal street as far as to the Northeast side line of a contemplated street, and extending Westwardly from Arsenal street between the contemplated street on the South and the Arsenal lot and Bailey land on the North to Congress street.

The said contemplated street is laid down and designated by the name of Gilman street on a Plan made by J. F. Chappell, Engineer, May 21, 1870, to which Plan, verified as required by the Order of the City Council, by the signature of the City Treasurer, reference is made for more exact ascertainment of the position and courses of said street.

This conveyance is made upon the condition that the lands hereby granted and conveyed shall be held for the purposes of the Hospital, as a part of its building site and grounds; and that whenever the same shall cease to be so used, they shall revert to the City.

Also upon the further condition, that if the Hospital shall acquire a title to the lands of Bailey and others above mentioned, and the contemplated street shall, at any time, thereafter be laid out and opened across the same, as described on said Plan, no damages or compensation shall be claimed by the Hospital therefor.

To have and to hold the premises, with the privileges and appurtenances thereof, to the said Maine General Hospital, to its use and behoof forever, subject to the conditions aforesaid.

In witness whereof, these presents are subscribed and sealed, in behalf of the City, by Henry W. Kenney, City Treasurer, duly authorized by the Order aforesaid, this fourth day of June in the year of our Lord

one thousand eight hundred and seventy.
Signed, sealed and
delivered in presence of } Henry W. Kersey
Benj. Kingsbury Jr. City Treasurer.



State of Maine.
Cumberland ss. On this sixth day of August 1870, personally appeared Henry W. Kersey and acknowledged the foregoing instrument by him subscribed to be the deed of the City of Portland.
Before me,
Benj. Kingsbury Jr. Justice of the Peace.

Received Nov. 14, 1870 at 1h. P.M. and recorded according to the original.
Attest: Eben Leach Register

2
P. & O. R. R. Co
to
Davis et als

U. S. I. R. $800.00 P. & O. R. R. Co By S. J. A. Pres. Nov. 1, 1870

Know all men by these presents, that the Portland and Ogdensburg Railroad Company, a corporation established by the Legislature of the State of Maine, and authorized and empowered by the Legislature of New Hampshire to construct and extend its Railroad across said State of New Hampshire, subject to the laws thereof relating to Railroads, and having its principal office for the transaction of business at Portland in the County of Cumberland and State of Maine, for the purpose of effecting the several trusts and securities hereinafter set forth, created and declared, designed to enable and provide for the more speedy construction and equipment of the Railroad of said Company, and in consideration of One Dollar paid by the Grantees and Trustees hereinafter named, doth hereby give, grant, bargain, sell and convey to Woodbury Davis, Samuel E. Spring, and Weston F. Milliken, all of Portland aforesaid, Gentlemen, their survivors and successors as hereinafter designated, all that part of the Railroad of said Company extending and to be extended from the terminus in Portland, in the State of Maine to Bartlett in the State of New Hampshire, located and to be located within said limits, called the Portland and Ogdensburg Railroad, including all the rights of way and lands taken and

Discharge Book 102 Page 65

Book 382
Page 450

Know all Men by these Presents, That

I Phinehas Barnes of Portland, in the County of Cumberland, State of Maine

in consideration of Four Thousand and Seventy one 97/100 Dollars paid by

The Maine General Hospital, a corporation established by the Laws of said State

the receipt whereof I do hereby acknowledge, do hereby remise, release, bargain, sell and convey, and forever quit claim unto the said Maine General Hospital, its successors

~~heirs~~ and assigns forever, all my right, title and interest in and to Twenty several lots of land situated on the Northwestern slope of Bramhall Hill in said Portland described and numbered on a plan of a tract of about two acres, extending from the Maine State Arsenal Grounds, to Congress Street which plan was made in September 1863, by Howe and Osgood, and is recorded in the Cumberland Registry of Deeds, in Plan Book, number two, page thirty six - the lots hereby conveyed being numbered one, three, five, seven, eight, ten, eleven, twelve, thirteen, fourteen, fifteen, sixteen, seventeen, eighteen, nineteen, twenty, twenty one, twenty two, twenty three, and twenty four. 1. 3. 5. 7. 8. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22, 23 & 24. together with all my right title, and interest in and to the land adjoining any of said lots, embraced within the location of Noble Street, as laid out by the City the last year: The design of this Deed being to discharge liens mentioned in Deeds to said Barnes from Moody F. Walker & wife dated 6 June 1870, recorded in said Registry, Book 377, page 302 & from Joseph S. Bailey dated 6 June 1870, recorded in said Regis. by Book 377, page 301, the mortgage obligations of said Barnes mentioned in said Deeds, having been discharged, by said Hospital.

Barnes
to
Maine G Hospital

U. S. I. R.
I. 4. 50.
P. B.
July 18/71.

To Have and to Hold the same, together with all the privileges and appurtenances thereunto belonging, to them the said Corporation, its successors

~~heirs~~ and assigns forever. And I do covenant with the said Corporation its successors

~~heirs~~ and assigns, that I will warrant and forever defend the premises to them the said Corporation its successors

~~heirs~~ and assigns forever, against the lawful claims and demands of all persons, claiming by, through, or under me.

In Witness Whereof, I the said Phinehas Barnes, and Ann B. Butler wife of the said Barnes, in testimony of her relinquishment of her right of Dower in the above described Premises

have hereunto set my hand and seal this Eighth day of July in the year of our Lord one thousand eight hundred and seventy one.

Signed, Sealed and Delivered in presence of
Wilfred Barnes to P. B.
Wilfred Barnes to A. B. B.

P. Barnes. Seal.
Ann B. Barnes. Seal.

State of Maine
Cumberland, ss. 8th July 1871. Personally appeared the above-named Phineas Barnes and acknowledged the above instrument to be his free act and deed. Before me,

James T. McCobb. Justice of the Peace.

Received July 11 1871, at 11 o'clock 21 m., A. M., and recorded according to the original.

Attest, Eben Leach Register.

with interest, and all cost and expenses, including all sums paid by said Grantee or assigns for insurance of the premises and for taxes: paying the surplus, if any, to the said Grantors, or their assigns: and such sale shall forever bar the said Grantors, and all persons claiming under them from all right and interest in the premises, at law or in equity. It being mutually agreed that the said Grantee or assigns may purchase at said sale, and that no other purchaser shall be answerable for the application of the purchase money.

In witness whereof, we the said Grantors, Emily F. Bailey and Benjamin H. Bailey have hereunto set our hands and seals this thirteenth day of January in the year of our Lord eighteen hundred and seventy one.

Signed, sealed, and delivered in presence of Benj. Kingsbury Jr. — Emily F. Bailey. Seal — Benj H. Bailey. Seal

State of Maine.
Cumberland ss. Portland, January 13, 1871. Then personally appeared the abovenamed Benjamin H. Bailey and Emily F. Bailey and acknowledged the foregoing instrument to be their deed.

Before me,
Benj. Kingsbury Jr. Justice of the Peace.

Received Jan. 14, 1871 at 12 h. 29 m. P. M. and recorded according to the original.
Attest: Eben Leach Register

State of Maine
to
Maine General Hospital

State of Maine.

Resolves in favor of the Maine General Hospital.

Resolved, That all the right, title and interest of this State in and to the lot of land, not including the buildings thereon, situated on Bramhalls Hills, in the City of Portland and County of Cumberland, being the present site of the State Arsenal, is hereby granted to the Maine General Hospital, a corporation established by act of the Legislature, passed February twenty-fourth, one thousand eight hundred and sixtyeight, to have and to hold to

said corporation for the purpose of erecting and maintaining thereon its hospital buildings; and when such land ceases to be so used, it shall revert to the State. But this grant shall not take effect until it is shown to the satisfaction of the Governor that said Corporation has raised by responsible private subscriptions or donations the sum of Twenty Thousand Dollars; nor until the Governor has certified on a copy of this resolve certified by the Secretary of State, that the aforenamed condition precedent has been complied with; but when that is done, the grant shall take effect; and the recording of such certified copy, with the Governor's certificate thereon, in the Registry of Deeds in the County of Cumberland, shall be sufficient record evidence thereof.

Resolved That when said Corporation has raised, received into its treasury and actually expended towards the construction of its hospital buildings on said lot, the sum of Thirty thousand dollars, and this fact is shown to the satisfaction of the Governor, he may draw his warrants on the Treasurer of State for the sum of Ten thousand dollars in favor of said Corporation and payable to its Treasurer; and when said Corporation has so raised, received into its Treasury and expended in the construction of its hospital buildings the sum of Ten thousand dollars more, or Fifty thousand dollars in all, including the Ten thousand from the State, and this fact is shown to the satisfaction of the Governor, he shall draw his warrants on the Treasurer of State for the sum of Ten thousand dollars more in favor of said Corporation and payable to its Treasurer; and the sum of Twenty thousand dollars is hereby appropriated to carry into effect the purposes of this Resolve, to be paid from any money in the Treasury not otherwise appropriated.

In the House of Representatives March 18, 1870.

Read and passed finally.

Reuben Foster Speaker

In Senate March 18" 1870

Read and passed finally.

Wm. H. Bolster President.

March 19th. 1870. Approved. Joshua L. Chamberlain, Governor.

State of Maine

Office of Secretary of State,

Augusta, Dec. 15. 1870

I hereby certify that the foregoing is a true copy of the original as deposited in this Office.

Franklin M. Drew.

Secretary of State.

I, Joshua L. Chamberlain Governor of Maine in compliance with the terms of the Resolve of which the foregoing is a copy certified by the Secretary of State, hereby certify that it has been shown to my satisfaction that the Maine General Hospital the corporation within named has raised by responsible private subscriptions and donations the sum of twenty thousand dollars.

In witness whereof I have hereunto set my hand this sixteenth day of December A. D. 1870.

In presence of
F. L. Chamberlain
Charlotte M. Packard

Joshua L. Chamberlain
Governor of Maine.

Received Jan. 16. 1871 at 2h. 44m. P. M. and recorded according to the original.

Attest: Eben Leach Register

U. S. I. R. Fifty cts. N. H. K. Jan. 13. 1871

Kneeland to Kneeland

Know all men by these presents, that I, Wm. M. Kneeland of Stoneham, Mass. in consideration of Four Hundred Fifty Dollars to me paid by Seth Kneeland of Harrison, County of Cumberland, State of Maine, the receipt whereof is hereby acknowledged, do hereby sell, remise, release, and forever quitclaim unto the said Seth Kneeland all my right, title and interest in and to a certain farm or parcel of real estate described as follows, to wit, the same deeded to me by the said Seth Kneeland by his deed; said deed dated Jany. fourth 4. 1869, said deed recorded Book 364 Page 288, being the same farm Seth Kneeland now lives on in Harrison all taxes excepted.

To have and to hold the above released premises, with all the privileges and appurtenances to the same belonging, to the said Seth, his heirs and assigns, to their use and behoof forever. And I the said

Know all Men by these Presents, That

I, Bartholomew Wren of Portland, in the county of Cumberland, State of Maine

in consideration of five hundred dollars paid by

The Maine General Hospital, a corporation doing its business in said Portland

the receipt whereof I do hereby acknowledge, do hereby give, grant, bargain, sell and convey unto the said Maine General Hospital, its successors its and their heirs and assigns forever, a certain lot of land on the easterly side of (what is or lately was) Ash Street, in said Portland, being sixty five feet in length, & running back from the line of said Ash Street & forty feet in width, being the same lot indicated as number six (No. 6) on a certain plan of land surveyed for Moody F. Walker September 23, 1863, by Howe & Osgood Civil Engineers, which plan is placed on file in the office of the Registry of Deeds for Cumberland county for the purpose of reference in the matter of conveyances that have been or may be made by said Moody F. Walker of the lots of land specified in said plan. The same property conveyed to me by said Moody F. Walker by deed dated the 14th October 1863 recorded in said Registry Book 323 page 199.

Wren, To Maine Gen. Hospital

U.S.I.R.
$0.50
B. W.
Sept. 15.
1871.

To Have and to Hold the aforegranted and bargained Premises, with all the privileges and appurtenances thereof, to the said Corporation, its successors, its & their heirs and assigns, to their use and behoof forever. And I do covenant with the said Corporation its successors its & their heirs and assigns, that I am lawfully seized in fee of the Premises; that they are free of all incumbrances; that I have good right to sell and convey the same to the said Corporation to hold as aforesaid; and that I and my heirs, shall and will warrant and defend the same to the said Grantee, its successors, its & their heirs and assigns forever, against the lawful claims and demands of all persons.

In Witness Whereof, I the said Bartholomew Wren and Margaret wife of the said Bartholomew Wren in testimony of her relinquishment of her right of dower in the above described premises, have hereunto set our hands and seals this twenty eighth day of August in the year of our Lord one thousand eight hundred and Seventy one

Signed, Sealed and Delivered in presence of

James T. McCobb — Bartholomew Wren — Seal

Witness — Margrett her + mark Wren — Seal

Michael White

Cumberland, ss. 15 September 1871 Personally appeared the above-named Bartholomew Wren and acknowledged the above instrument to be his free act and deed. Before me,

James T. McCobb Justice of the Peace.

Received Sept. 18 1871, at 4 o'clock 17m. P.M., and recorded according to the original.

Attest, Register.

Book 408
Page 457

Know all Men by these Presents, That

The City of Portland, a corporation in the County of Cumberland, State of Maine, in consideration of One Dollar & other considerations paid by The Maine General Hospital, a corporation in said State & County & City,

the receipt whereof We do hereby acknowledge, do hereby remise, release, bargain, sell, and convey, and forever QUIT-CLAIM unto the said Maine General Hospital, its successors ~~heirs~~ and assigns forever, all our right, title, and interest in and to a lot of land, on Portland the slope of "Bramhalls Hill", in said city, To. being the land which lies between the M. General land owned by said Hospital & Gilman Hospital Street & Arsenal Street extended westerly & southerly, bounded: Beginning at the southwest corner of a lot of land conveyed to said Hospital by said city in 1870, thence southwesterly on the northerly line of Arsenal Street produced 138 feet, more or less, to Gilman Street, thence northerly by east line of Gilman Street 653 feet, more or less, to Bailey's land, thence southeasterly by Bailey's land 71 feet, more or less, to land of said Hospital, thence by said Hospital land 544 feet, more or less to point of beginning: Provided, That the Powder House now on said lot be allowed to remain, without expense to the city until such time as the city shall provide some other house for powder, or remove this one from the lot.

To Have and to Hold the same, together with all the privileges and appurtenances thereunto belonging, to the said Grantees, their successors and assigns, their heirs & assigns forever. ~~And do covenant with the said heirs and assigns, that will warrant and defend the premises to the said heirs and assigns forever, against the lawful claims and demands of all persons, claiming by, through, or under~~

In Witness Whereof, We the said Grantors, by Henry W. Hersey City Treasurer, authorized thereto by vote of the City Council of said City, approved the 2 March instant have hereunto set our hand and seal this sixth day of March in the year of our Lord one thousand eight hundred and seventy-five.

Signed, Sealed, and Delivered in presence of

3 printed words erased & 1 interlined before execution.

S. B. Beckett.

City of Portland
by H. W. Hersey, Treas.

State of Maine.

Cumberland, ss. March ---, 1874. Personally appeared the above-named Henry W. Hersey and acknowledged the above instrument to be his free act and deed, & the free act & deed of said city.

Before me S. B. Beckett, Justice of the Peace.

Received March 19, 1875, at 9 o'clock, 45 m., A.M., and recorded according to the original.

Attest, Henry C. Houston Register.

Know all Men by these Presents, That

I, Margaret E. L. Sherman, of Norwalk, in the County of Fairfield and State of Connecticut,

in consideration of one dollar and other valuable consideration, paid by Maine General Hospital, a corporation organized and existing under the laws of the State of Maine, and located at Portland, in the County of Cumberland and State of Maine the receipt whereof I do hereby acknowledge, do hereby give, grant, bargain, sell and convey unto the said Maine General Hospital, its successors and assigns forever, a certain lot or parcel of land, with the buildings thereon, situated on the northwesterly side of Arsenal Street in said Portland, bounded and described as follows: Beginning at a point on said northwesterly side of Arsenal Street where the northeasterly side line of land of said Maine General Hospital, formerly known as the Arsenal Lot, adjoins the lot hereby conveyed; thence running northeasterly by said Arsenal Street forty (40) feet to a point; and from these two points extending northwesterly, adjoining said land of Maine General Hospital and keeping a width of forty (40) feet, one hundred (100) feet more or less to Ellsworth Street.

Meaning and intending hereby to convey the same premises conveyed to William H. Bigelow by John B. Brown by deed dated March 30, 1863, recorded in Cumberland Registry of Deeds, Book 317, page 321, my title to the same having been acquired as devisee under the will of said William H. Bigelow, extract from which is recorded in said Registry of Deeds, Book 627, page 231, in which will I am designated as Margaret Eva Lena Taylor, and by deed of Joshua L. Taylor to me dated January 11, 1897, recorded in said Registry of Deeds, Book 640, page 282.

Said premises are conveyed subject to a mortgage to Portland Savings Bank upon which there is due the principal sum of $1,650, which the grantee hereby assumes and agrees to pay as a part of the consideration hereof.

To Have and to Hold the aforegranted and bargained premises, with all the privileges and appurtenances thereof, to the said Maine General Hospital, its successors ~~heirs~~ and assigns, to its and their use and behoof forever. And I do covenant with the said grantee, its successors ~~heirs~~ and assigns, that I am lawfully seized in fee of the premises; that they are free of all incumbrances; except said mortgage; that I have good right to sell and convey the same to the said grantee to hold as aforesaid; and that I and my heirs, shall and will warrant and defend the same to the said Grantee, its successors ~~heirs~~ and assigns forever, against the lawful claims and demands of all persons. except as aforesaid.

In Witness Whereof, I, the said Margaret E. L. Sherman, and I, John C. Sherman, husband of the said Margaret E. L. Sherman joining in this deed as grantor, and relinquishing and conveying my right by descent and all other rights in the above described premises, have hereunto set our hand s and seal s this third day of December in the year of our Lord one thousand nine hundred and twenty-six.

Signed, Sealed and Delivered in presence of

John F. Dana to M.E.L.S.
Geo. Davis, C. G. Hanson } as to J.C.S.

Margaret E. L. Sherman Seal.
John C. Sherman Seal.

State of Maine, CUMBERLAND, ss. December 3, 1926. Personally appeared the above named Margaret E. L. Sherman and acknowledged the above instrument to be her free act and deed.

Before me, John F. Dana, *Justice of the Peace.*

Received December 4, 1926, at 9 o'clock - m. A. M., and recorded according to the original.

Know all Men by these Presents, That

I, Emma W. Hill of Portland in the county of Cumberland and State of Maine,

in consideration of one dollar and other valuable considerations, paid by Maine General Hospital, a corporation existing by law, with an established place of business in said Portland, the receipt whereof I do hereby acknowledge, do hereby give, grant, bargain, sell and convey unto the said Maine General Hospital,its successors and assigns forever, a certain lot or parcel of land, with the buildings thereon, situated in said Portland, and bounded and described as follows: Beginning at the intersection of the northerly side line of Arsenal street and the westerly side line of a passageway extending from Arsenal street to Ellsworth street;thence north 20° west sixty-one and five tenths (61.5) feet by the westerly side line of said passageway to a point;thence south 70°west about thirty-four and three tenths (34.3) feet to land formerly of Nathan Moses; thence southerly by said Moses land sixty-seven (67) feet to a point on the northerly side of Arsenal street;thence north 60° 58' east by the northerly side line of Arsenal street thirty-four (34) feet,more or less, to the point of beginning.

Together with the rights of the grantor in a twelve (12) foot passageway.

Meaning and intending to hereby convey the same premises conveyed to Everett L. Hill by Milcah M. Gwynn,by deed dated February 2,1920, recorded in Cumberland Registry of Deeds,Book 1042, page 256, and the same conveyed to this grantor by said Everett L. Hill by deed dated October 15,1924, recorded in Cumberland Registry of Deeds,Book 1168, page 351.

To Have and to Hold the aforegranted and bargained premises, with all the privileges and appurtenances thereof, to the said Maine General Hospital,its successors ~~heirs~~ and assigns, to its and their use and behoof forever. And I do covenant with the said Grantee,its successors ~~heirs~~ and assigns, that I am lawfully seized in fee of the premises; that they are free of all incumbrances; that I have good right to sell and convey the same to the said Grantee to hold as aforesaid; and that I and my heirs, shall and will warrant and defend the same to the said Grantee,its successors ~~heirs~~ and assigns forever, against the lawful claims and demands of all persons.

In Witness Whereof, the said Emma W. Hill and Everett L. Hill,husband of the said Emma W. Hill,joining in this deed as grantor, and relinquishing and conveying his rights by descent and all other rights in the above described premises have hereunto set our hand s and seals this sixteenth day of December in the year of our Lord one thousand nine hundred and twenty-seven.

Signed, Sealed and Delivered in presence of

John B. Kehoe to both

Emma W. Hill Seal.
Everett L. Hill Seal.

State of Maine, CUMBERLAND, ss. December 16, 1927. Personally appeared the above named Emma W. Hill and acknowledged the above instrument to be her free act and deed.

Before me, John B. Kehoe, *Justice of the Peace.*

Received December 16, 1927, at 11 o'clock 10 m. A. M., and recorded according to the original.

Know all Men by these Presents, That

I, Harriet L. Stevens of Portland in the County of Cumberland and State of Maine,

in consideration of one ($1.00) dollar and other valuable considerations, paid by Maine General Hospital, a corporation organized and existing under the laws of said State of Maine, the receipt whereof I do hereby acknowledge, do hereby give, grant, bargain, sell and convey unto the said Maine General Hospital,its successors and assigns forever, a certain lot or parcel of land, with the buildings thereon,situated in said Portland, bounded and described as follows: Beginning on the westerly side of a twelve (12) foot passageway leading from Arsenal Street to Ellsworth Street at a point sixty-one and five-tenths (61.5) feet distant from the intersection of the northerly side line of Arsenal Street with the westerly side line of said passage-way; thence south seventy (70°) degrees west,thirty-four and three-tenths (34.3) feet,more or less, to land formerly of Nathan Moses;thence northerly by said Moses land thirty-three (33) feet, more or less, to the southerly side line of Ellsworth Street;thence easterly along the southerly side line of Ellsworth Street thirty-four (34) feet, more or less, to its intersection with the westerly side line of said passageway;thence southerly along the westerly side line of said passageway thirty-eight and five-tenths (38.5) feet, more or less, to the point of beginning.

The above described premises are in the northerly portion of the premises conveyed to Shailer G. Cushing by Seth C. Gordon by his warranty deed dated September 21, 1907, and recorded in Cumberland County Registry of Deeds,Book 814,page 37.

Being the same premises conveyed to me under the name of Hattie L. Stevens by Perley W. Stevens by warranty deed dated December 24, 1912, and recorded in said Registry of Deeds, Book 906,page 161.

To Have and to Hold the aforegranted and bargained premises, with all the privileges and appurtenances thereof, to the said Maine General Hospital,its successors ~~heirs~~ and assigns, to their use and behoof forever. And I do covenant with the said Grantee,its successors ~~heirs~~ and assigns, that I am lawfully seized in fee of the premises; that they are free of all encumbrances; that I have good right to sell and convey the same to the said Grantee to hold as aforesaid; and that I and my heirs, shall and will warrant and defend the same to the said Grantee,its successors ~~heirs~~ and assigns forever, against the lawful claims and demands of all persons.

In Witness Whereof, I, the said Harriet L. Stevens, and I, Perley W. Stevens,husband of the said Harriet L. Stevens,joining in this deed as Grantor, and relinquishing and conveying my right by descent and all other rights in the above described premises have hereunto set our hands and seals this nineteenth day of February in the year of our Lord one thousand nine hundred and twenty-eight.

Signed, Sealed and Delivered in presence of

R. E. Snow to both

Harriet L. Stevens Seal.

Perley W. Stevens Seal.

State of Maine, CUMBERLAND, ss. February 19, 1928. Personally appeared the above named Harriet L. Stevens and acknowledged the above instrument to be her free act and deed.

Before me, Reuben E. Snow, *Justice of the Peace.*

Received March 20, 1928, at 2 o'clock30 m. P. M., and recorded according to the original.

Book 1290
Page 192

Know all Men by these Presents, That

I, Eunice M. Chase (formerly Eunice Margaret Graham) of Portland, in the County of Cumberland and State of Maine,

in consideration of One dollar ($1.00) and other valuable considerations, paid by Maine General Hospital,a corporation organized and existing under the laws of said State of Maine, and located at said Portland,
the receipt whereof I do hereby acknowledge, do hereby give, grant, bargain, sell and convey unto the said

Maine General Hospital,its successors and assigns forever, a certain lot or parcel of land with the buildings thereon,situated on the westerly side of a thirty foot passage way leading Northerly from Ellsworth Street,in the City of Portland, State of Maine, and now known as Charles Street,and bounded and described as follows,namely;

Beginning in the westerly side line of said Charles Street at the northeasterly corner of land now or formerly of Charles A. Donnell,thence northerly, by said Charles Street,thirty feet,thence westerly,on a line parallel with the northerly line of said Donnell's land seventy-four and two-tenths (74 2/10) feet to the Arsenal Lot,so called, now owned by said Maine General Hospital;thence southerly by said Arsenal Lot,thirty feet to said Donnell's land;thence easterly by said Donnell's land seventy-four and two tenths (74 2/10) feet to the point of beginning.

Being the same premises conveyed to me under the name of Eunice Margaret Graham Chase by William Graham by warranty deed dated July 1,1919,recorded in Cumberland Registry of Deeds,Book 1042,page 471.

Also a certain other lot or parcel of land with the buildings thereon situated in said Portland on the westerly side of Charles Street, and bounded and described as follows,to wit:

Beginning on the westerly side line of said Charles Street at a point distant seventy-three (73) feet northerly from the northeasterly corner of land now or formerly of Wiggins;thence northerly by said Charles Street forty-seven (47) feet to a stake; and from these two points extending back westerly,at right angles with said Charles Street and keeping said width of forty-seven (47) feet,about seventy-four and two-tenths (74.2) feet to the "Arsenal Lot" so called, now owned by said Maine General Hospital; and being the same premises conveyed to Mary Rich Graham,deceased,by Charles A. Donnell,by his deed dated July 1, 1893, recorded in the Cumberland Registry of Deeds,Book 604,page 124.

My title to said premises was acquired as an heir-at-law of said Mary Rich Graham, and by warranty deed from William Graham and Paul G. Graham to me under the name of Eunice Margaret Graham,dated August 2,1912,recorded in said Registry of Deeds,Book 898,page 83.

To Have and to Hold the aforegranted and bargained premises, with all the privileges and appurtenances thereof, to the said Maine General Hospital,its successors ~~heirs~~ and assigns, to its and their use and behoof forever. And I do covenant with the said grantee, its successors ~~heirs~~ and assigns, that I am lawfully seized in fee of the premises; that they are free of all incumbrances; that I have good right to sell and convey the same to the said grantee to hold as aforesaid; and that I and my heirs, shall and will warrant and defend the same to the said Grantee,its successors ~~heirs~~ and assigns forever, against the lawful claims and demands of all persons.

In Witness Whereof, I, the said Eunice M. Chase,and I, Harold B. Chase,husband of the said Eunice M. Chase joining in this deed as Grantor, and relinquishing and conveying my right by descent and all other rights in the above described premises have hereunto set our hands and seals this twentieth day of April in the year of our Lord one thousand nine hundred and twenty-eight.

Signed, Sealed and Delivered in presence of

John F. Dana to both

Eunice M. Chase Seal
Harold B. Chase Seal

State of Maine, CUMBERLAND, ss. April 20, 1928. Personally appeared the above named Eunice M. Chase and acknowledged the above instrument to be her free act and deed.

Before me, John F. Dana, *Justice of the Peace.*

Received April 20, 1928, at 10 o'clock 50 m. A. M., and recorded according to the original.

Know all Men by these Presents, That

Book 1296
Page 351

I, Elizabeth Naylor, of Portland, in the County of Cumberland and State of Maine,

in consideration of one dollar and other valuable consideration, paid by Maine General Hospital, a corporation organized and existing under the laws of said State of Maine, and located at said Portland, the receipt whereof I do hereby acknowledge, do hereby give, grant, bargain, sell and convey unto the said Maine General Hospital,its successors and assigns forever, a certain lot or parcel of land, with the buildings thereon,situated in said Portland, on the northerly side of Ellsworth Street and westerly side of Charles Street,bounded and described as follows: Beginning at the corner formed by the intersection of the westerly side of Charles Street and the northerly side of Ellsworth Street, and running westerly by said Ellsworth Street to land conveyed by William R. Naylor to Samuel W. Joy by deed dated November 3,1905, and recorded in Cumberland County Registry of Deeds,Book 776,page 200;thence northerly by said Joy land to land now or formerly of Levi J. Jones;thence easterly by said Jones land to said Charles Street;thence southerly by said Charles Street to the point of beginning.

Being the same premises conveyed to William R. Naylor by John B. Brown by deed dated February 20,1872, recorded in Cumberland County Registry of Deeds,Book 393, page 105, excepting therefrom the portion thereof conveyed by William R. Naylor to Samuel W. Joy by deed aforesaid. My title to said premises having been acquired as devisee under the will of William R. Naylor, extract from which is recorded in said Registry of Deeds,Book 783,page 307.

Also hereby conveying any right,title and interest I may have in said Ellsworth Street.

Taxes for the year 1928 are to be prorated between the grantor and grantee.

To Have and to Hold the aforegranted and bargained premises, with all the privileges and appurtenances thereof, to the said Maine General Hospital,its successors ~~heirs~~ and assigns, to its and their use and behoof forever. And I do covenant with the said Grantee,its successors ~~heirs~~ and assigns, that I am lawfully seized in fee of the premises; that they are free of all incumbrances; that I have good right to sell and convey the same to the said Grantee to hold as aforesaid; and that I and my heirs, shall and will warrant and defend the same to the said Grantee,its successors ~~heirs~~ and assigns forever, against the lawful claims and demands of all persons.

In Witness Whereof, I, the said Elizabeth Naylor, being unmarried,

have hereunto set my hand and seal this 3rd day of July in the year of our Lord one thousand nine hundred and twenty-eight.

Signed, Sealed and Delivered in presence of

Nathan W. Thompson

Elizabeth Naylor Seal

State of Maine, CUMBERLAND, ss. July 3, 1928. Personally appeared the above named Elizabeth Naylor and acknowledged the above instrument to be her free act and deed.

Before me, Nathan W. Thompson, *Justice of the Peace.*

Received July 7, 1928, at 10 o'clock45 m. A. M., and recorded according to the original.

Know all Men by these Presents, That

Book 1296
Page 352

I, Samuel W. Joy, of Portland, in the County of Cumberland and State of Maine, in consideration of one dollar and other valuable considerations, paid by Maine General Hospital, a corporation organized and existing under the laws of said State of Maine, and located at said Portland, the receipt whereof I do hereby acknowledge, do hereby give, grant, bargain, sell and convey unto the said Maine General Hospital, its successors and assigns forever, a certain lot or parcel of land, with the buildings thereon, situated on the northerly side of Ellsworth Street in said Portland, being numbered forty-three (43) on said Street, and bounded and described as follows: Beginning at a point thirty-two (32) feet westerly from the intersection of the northerly side line of said Ellsworth Street with the westerly side line of Charles Street; thence westerly by said Ellsworth Street forty-four (44) feet to the Arsenal lot, so called, now owned by the Maine General Hospital; thence northerly by said Arsenal or Hospital lot eighty-seven (87) feet to land now or formerly of Levi J. Jones; thence easterly thirty (30) feet to land now or formerly of William R. Naylor; thence southerly by said Naylor land eighty-seven (87) feet more or less to the first bound.

Being the same premises conveyed to me by William R. Naylor by deed dated November 3, 1905, recorded in Cumberland County Registry of Deeds, Book 776, page 200.

Also hereby conveying any right, title and interest I may have in and to said Ellsworth Street.

To Have and to Hold the aforegranted and bargained premises, with all the privileges and appurtenances thereof, to the said Maine General Hospital, its successors ~~heirs~~ and assigns, to its and their use and behoof forever. And I do covenant with the said Grantee, its successors ~~heirs~~ and assigns, that I am lawfully seized in fee of the premises; that they are free of all incumbrances; that I have good right to sell and convey the same to the said Grantee to hold as aforesaid; and that I and my heirs, shall and will warrant and defend the same to the said Grantee, its successors ~~heirs~~ and assigns forever, against the lawful claims and demands of all persons.

In Witness Whereof, I, the said Samuel W. Joy, having no wife, have hereunto set my hand and seal this seventh day of July in the year of our Lord one thousand nine hundred and twenty-eight.

Signed, Sealed and Delivered in presence of

John F. Dana

Saml W. Joy Seal

State of Maine, CUMBERLAND, ss. July 7, 1928. Personally appeared the above named Samuel W. Joy and acknowledged the above instrument to be his free act and deed.

Before me, John F. Dana, *Justice of the Peace.*

Received July 7, 1928, at 10 o'clock 46 m. A. M., and recorded according to the original.

IN WITNESS WHEREOF, the said Lessor has hereunto set his hand and seal on the day and year first above written.

Signed, Sealed and Delivered in Presence of

It is further understood that no liquor, beer, or cigarette advertising shall be displayed on any structure that might be erected.

JOHN DONNELLY & SONS -------

WEST SCARBORO M.E.CHURCH -------

By A. W. Hodgman, Treas.

State of Maine. County of Cumberland,ss. March 31, 1939.

Personally appeared the above named Lessor and acknowledged the above instrument to be his free act and deed.

Before me, F. H. Tewksbury Justice of the Peace

Received March 31, 1939, at 3h 40m P. M., and recorded according to the original

---

Canal Nat'l.Bk. of Port. Tr. & to Maine General Hospital Deed

KNOW ALL MEN BY THESE PRESENTS, That

WHEREAS, The Canal National Bank of Portland as Trustee having filed its Bill of Complaint against Vaughan Hall, Incorporated and Harry M. Verrill, Conservator of Casco Mercantile Trust Company dated May 20, 1938, praying for foreclosure of a certain mortgage indenture on property described in said Bill of Complaint, said mortgage indenture being dated as of the fifteenth day of September, 1925, and recorded in the office of the Registry of Deeds for Cumberland County in Book 1219 at Page 41, the Supreme Judicial Court within and for the County of Cumberland in proceedings numbered 5830 on the docket of said Court entered its decree of foreclosure and order of sale therein decreeing and ordering the sale of the property described in said mortgage and hereinafter described, and

WHEREAS, it was, among other things, ordered, adjudged and decreed by said decree of foreclosure that said sale should be made by and under the direction of Raymond J. Callahan who was thereby appointed Special Master for that purpose and who was thereby directed to make and conduct said sale and to execute a deed of conveyance of the property sold to the purchaser thereof upon an order of Court confirming such sale and upon payment or settlement of the purchase price as therein provided, and that such sale be made in the County Court House in the City of Portland, Maine, on a day and at an hour as fixed by said decree of said Supreme Judicial Court and that notice of the time, place and terms of said sale describing briefly the property to be sold and referring to said decree should be published at least once a week for three successive weeks prior to said sale in a newspaper of general circulation published in Portland, Maine, and that upon confirmation of the sale by the Court and upon payment by any purchaser of the purchase price of the property purchased by him in accordance with the decrees of said Court the Special Master should execute a deed conveying, assigning and transferring to such purchaser the property sold to him, and

WHEREAS, the Supreme Judicial Court, pursuant to said decree, duly fixed the time for said sale as February 15, 1939, at ten o'clock in the forenoon and on said date the Special Master, pursuant to the provisions of said decree dated January 17, 1939, and pursuant to order of Court dated February 15, 1939, adjourned said sale from time to time in accordance with orders and decrees of said Court until March 28, 1939, at the time and place ordered by said decree of Court dated January 17, 1939, and orders and decrees subsequent thereto and said Special Master made due advertisement of said sale in the manner described in said decree dated January 17, 1939, and posted all of said notices as required by the orders of Court made subsequent thereto and the Special Master did at the time and place and in the manner and subject to the conditions of said decree and orders of Court subsequent thereto fairly strike off and sell said property to Maine General Hospital, a corporation duly organized and existing under the laws of the State of Maine and having a usual place of business at Portland, in the County of Cumberland and State of Maine, and

WHEREAS, The Canal National Bank of Portland thereafter duly presented to the Court for confirmation the bid so received by said Special Master and the said Special Master duly made a report of said sale to said Court, and a decree of confirmation and a certain decree amending said decree of foreclosure and sale were made and entered therein on the thirty-first day of March, 1939, confirming said bid, report and sale, and making said sale subject to taxes levied against said premises or any part thereof which are or may be chargeable upon said property and directing the Special Master, upon payment of the purchase price in the manner prescribed by said decree of confirmation, to execute and deliver to said purchaser a deed or other instrument conveying, assigning and transferring to said purchaser said property so sold as aforesaid, and

WHEREAS, said Supreme Judicial Court, in accordance with said decree of confirmation, by a decree made and entered herein on the thirty-first day of March, 1939, approved the form of this deed as required by said decree of confirmation dated March 31, 1939, and

WHEREAS, said sale has been conducted and made in all respects in accordance with law and with the provisions of said decrees and order of sale;

NOW, THEREFORE, I, the said Raymond J. Callahan, in my capacity as Special Master and in consideration of these presents and of one dollar and other valuable considerations paid by Maine General Hospital, receipt whereof is hereby acknowledged, do hereby remise, release, bargain, sell and convey and quitclaim unto the said Maine General Hospital, a corporation organized and existing under the laws of the State of Maine, its successors or assigns, all the right, title and interest which said Vaughan Hall, Incorporated and/or Harry M. Verrill, Conservator of Casco Mercantile Trust Company, and all persons claiming under it or him has or have in and to the following described real estate situated in Portland, in the County of Cumberland and State of Maine, and all future rents and profits thereof arising

therefrom, subject, however, to the equity of redemption as provided in the Statutes of the State of Maine and subject also to the terms and conditions set forth in the decree of the Supreme Judicial Court dated January 17, 1939, and certain decrees dated March 31, 1939, and to any other decree which may be hereafter made which relates to the property hereby conveyed, together with the rights and privileges pertaining to said property subject to the conditions described in the decrees of the Supreme Judicial Court dated January 17, 1939, and March 31, 1939, and any unpaid taxes, but subject, however, at all times to the exceptions and provisions particularly described and set forth in the various decrees of said Supreme Judicial Court heretofore made and any that may be hereafter made during the period of redemption:

A certain lot or parcel of land with the buildings thereon situated in said Portland, and bounded and described as follows:- Beginning on the westerly side of Vaughan Street at the southeasterly corner of land now or formerly of the Portland Water District; thence southerly on Vaughan Street sixty (60) feet, more or less, to land now or formerly of John W.Deering; thence westerly by said Deering land one hundred and forty (140) feet, more or less, to land now or formerly of Portland School for Medical Instruction; thence northerly by land of said Portland School for Medical Instruction sixty (60) feet, more or less, to said land of said Portland Water District; thence easterly by said land of said Portland Water District one hundred and forty (140) feet, more or less, to the point of beginning; said lot containing eighty-four hundred (8400) square feet, more or less. Being the same premises conveyed to Vaughan Hall, Incorporated, by Ralph N. Bryant by his warranty deed dated December 19, 1913, and recorded in Cumberland County Registry of Deeds, in Book 927, Page 26.

For title to the above described premises reference is also hereby made to a certain mortgage indenture dated September 15, 1925, securing the First Mortgage Sinking Fund 5 1/2% Gold Bonds of Vaughan Hall Incorporated, said mortgage indenture being by and between said Vaughan Hall, Incorporated and The Canal National Bank of Portland, said mortgage indenture being recorded in Cumberland County Registry of Deeds in Book 1219, Page 41.

TO HAVE AND TO HOLD and possess and enjoy said property and every part and parcel thereof free from all claims, rights, interests whatsoever in or to the same by or of the said Vaughan Hall, Incorporated, its successors and assigns, or of Harry M. Verrill as Conservator of Casco Mercantile Trust Company and by or of the creditors of the Receiver appointed by the Supreme Judicial Court in the equity proceedings hereinbefore referred to, or by or of the stockholders of said Vaughan Hall, Incorporated, and by or of all persons claiming by, through or under them or any of them, including the said Receiver of said Vaughan Hall, Incorporated, and by or of all the parties to said cause hereinbefore described, but subject, however, to any and all taxes levied against said premises or any part thereof which are or may be chargeable upon said property or premises or any portion thereof prior to the

U.S.I.R. $31.50 R.J.C. 3/31/39

lien of the mortgage foreclosed in said proceedings and subject to the right of redemption of said property granted by the Statutes of the State of Maine and subject to the terms and conditions of all decrees of said Supreme Judicial Court made and entered in the cause herein referred to and to any other decree which may be hereinafter entered by said Court which relates or pertains to the property herein conveyed.

IN WITNESS WHEREOF, Raymond J. Callahan, as Special Master, has hereunto set his hand and seal this thirty-first day of March, 1939.

Signed, Sealed and Delivered in Presence of

Porter Thompson — Raymond J. Callahan Seal
Special Master

State of Maine. Cumberland,ss. March 31, 1939.

Personally appeared Raymond J. Callahan and acknowledged the foregoing instrument to be his free act and deed and his free act and deed in his said capacity.

Before me, Porter Thompson Justice of the Peace

APPROVED:

Guy H. Sturgis

Justice Supreme Judicial Court

Received March 31, 1939, at 4h -m P. M., and recorded according to the original

---

Casco Mer. Tr. Co., Cons. of to Maine General Hospital Deed

WHEREAS, Harry M. Verrill of Portland, in the County of Cumberland and State of Maine, was appointed Permanent Conservator of Casco Mercantile Trust Company, a banking corporation organized and existing under the laws of the State of Maine and located at said Portland, by decree of the Supreme Judicial Court in Equity in and for the County of Cumberland and State of Maine, dated April 14, 1933, in an action in equity commenced by Sanger N. Annis against Casco Mercantile Trust Company in said Court by Bill in Equity dated March 18, 1933, and

WHEREAS, upon petition of Harry M. Verrill, Conservator as aforesaid, dated March 29, 1939, a decree issued out of said Court authorizing said Conservator to sell to Maine General Hospital, a corporation organized and existing under the laws of the State of Maine and located at said Portland, all the right, title and interest of said Casco Mercantile Trust Company in and to the following described real estate, which said decree is dated March 31, 1939, and

WHEREAS, said Conservator has sold, pursuant to the terms of said decree, to said Maine General Hospital all the right, title and interest of said Casco Mercantile Trust Company in and to the real estate hereinafter described.

NOW, THEREFORE, KNOW ALL MEN BY THESE PRESENTS, That I, the said Harry M. Verrill, by virtue of the power and authority in me vested as aforesaid, and in my capacity as Conservator of Casco Mercantile Trust Company, and in consideration of one dollar and other valuable consideration, paid by Maine General Hospital, receipt whereof is hereby acknowledged, do hereby remise, release, bargain, sell, convey and quitclaim unto the said Maine General Hospital, its successors and assigns, all the

Know all Men by these Presents, That

Book 2127
Page 269

I, John T. Lennon of Portland in the County of Cumberland and State of Maine

in consideration of one dollar and other valuable considerations paid by Maine Medical Center, a corporation organized and existing under the Laws of the State of Maine and located at said Portland

the receipt whereof I do hereby acknowledge, do hereby, give, grant, bargain, sell and convey unto the said Maine Medical Center, its successors and assigns forever, certain lots or parcels of land with the buildings thereon situated in said Portland and bounded and described as follows:

First:

Beginning on the northerly side of Bramhall Street at the southwesterly corner of land now or formerly of Thomas H. Pratt, running thence westerly by said Bramhall Street fifty (50) feet to land now or formerly of Sophia M. Knight, and from these two points extending northerly towards Arsenal Street, holding to said width of fifty feet, and adjoining said Pratt premises on one side and said Knight premises on the other for a distance of sixty (60) feet to land now or formerly of Edward T. Burrowes. The said lot is the southerly portion of the premises conveyed to Albert B. Cole, Frank H. Cole and Warren W. Cole by Nettie E. Pierce by deed dated September 26, 1911 and recorded in the Registry of Deeds for said County of Cumberland in Book 882, Page 188. Said premises are numbered thirty (30) on said Bramhall Street.

Second:

A certain lot of land with the buildings thereon on the southerly side of Arsenal Street in said Portland bounded and described as follows:

Commencing at a point on the Westerly line of land of Maude E. Pratt at a point sixty (60) feet northerly from the northerly side of Bramhall Street, thence westerly on a line parallel with and sixty (60) feet from said Bramhall Street, fifty (50) feet, more or less, to land of Sophia M. Knight; thence northerly from these two points keeping a width of fifty (50) feet and bounded on the West by land of said Knight and on the East by land of said Pratt and George H. Fletcher, forty-nine (49) feet, more or less, to said Arsenal Street.

Being the same property conveyed to me by Harriet B. Foster by her warranty deed dated February 24, 1945 and recorded in the Cumberland County Registy of Deeds in Book 1771 Page 131.

Also conveying all my right, title and interest in and to Arsenal Street, recently abandoned by the City of Portland.

To Have and to Hold the aforegranted and bargained premises, with all the privileges and appurtenances thereof, to the said Maine Medical Center, its successors and assigns, to its and their use and behoof forever. And I do covenant with the said Grantee, its successors ~~heirs~~ and assigns, that I am lawfully seized in fee of the premises; that they are free of all incumbrances; that I have good right to sell and convey the same to the said Grantee to hold as aforesaid; and that I and my heirs, shall and will warrant and defend the same to the said Grantee, its successors and assigns ~~heirs and assigns~~ forever, against the lawful claims and demands of all persons.

U.S.I.R. $16.50 J.T.L. 5/5/53

In Witness Whereof, I the said John T. Lennon and Ann C. Lennon wife of the said John T. Lennon joining in this deed as Grantor, and relinquishing and conveying my right by descent and all other rights in the above described premises,

have hereunto set our hand_ and seal_ this fifth day of May in the year of our Lord one thousand nine hundred and fifty-three.

Signed, Sealed and Delivered in presence of

John J. Devine to both

John T. Lennon Seal
Ann C. Lennon Seal

State of Maine, CUMBERLAND, ss. May 5, 1953. Personally appeared the above named John T. Lennon and acknowledged the foregoing instrument to be his free act and deed.

Before me, John J. Devine, Justice of the Peace

Received May 5, 19 53, at 2 o'clock 30 m. P. M., and recorded according to the original.

Know all Men by these Presents, That

I, Donald D. McPhee of Portland in the County of Cumberland and State of Maine,

in consideration of one dollar ($1) and other valuable considerations paid by Maine Medical Center, a corporation duly organized and existing under the laws of the State of Maine and located at Portland in said County and State the receipt whereof I do hereby acknowledge, do hereby, give, grant, bargain, sell and convey unto the said Maine Medical Center, its successors and Assigns forever, the following described property:

A certain lot or parcel of land with the buildings thereon situated in said Portland and being the premises conveyed to me by Hope K. Fletcher by deed dated November 22, 1946 and recorded in Cumberland County Registry of Deeds in Book 1848, Page 160, in which deed said premises are described as follows:

Beginning at the Northeast corner of Sophia T. Jones lot, so-called, on Arsenal Street; thence Northeasterly on Arsenal Street fifty (50) feet to land of one Raymond; thence Southeasterly by line of Raymond forty-eight (48) feet, more or less, to land of one Haskell; thence Southwesterly along line of said Haskell land thirteen (13) feet and two (2) inches to a point; thence Northwesterly parallel to land of said Raymond three (3) feet to a point; thence Southwesterly along the line of said Haskell land thirty-six (36) feet, more or less, to land of said Jones; thence Northwesterly forty-six (46) feet, more or less to point of beginning.

Also conveying all my interest in and to said Arsenal Street, recently abandoned by the City of Portland.

U.S.I.R.
$14.30
D.D.McP.
5/9/53

To Have and to Hold the aforegranted and bargained premises, with all the privileges and appurtenances thereof, to the said Maine Medical Center, its successors and Assigns, to its and their use and behoof forever. And I do covenant with the said Grantee, its successors heirs and assigns, that I am lawfully seized in fee of the premises; that they are free of all incumbrances: that I have good right to sell and convey the same to the said Grantee to hold as aforesaid; and that I and my heirs, shall and will warrant and defend the same to the said Grantee, its successors heirs and assigns forever, against the lawful claims and demands of all persons.

In Witness Whereof, I the said Donald D. McPhee and I, Lorraine J. McPhee wife of the said Donald D. McPhee joining in this deed as Grantor, and relinquishing and conveying my rights by descent and all other rights in the above described premises, have hereunto set our hand s and seal s this 9th day of May in the year of our Lord one thousand nine hundred and fifty-three.

Signed, Sealed and Delivered in presence of

Edward F. Dana
to both

Donald D. McPhee Seal
Lorraine J. McPhee Seal

State of Maine, Cumberland, ss. May 9, 1953. Personally appeared the above named Donald D. McPhee and acknowledged the above instrument to be his free act and deed.

Before me, Edward F. Dana, Justice of the Peace

Received May 9, 1953, at 9 o'clock 37 m. A.M., and recorded according to the original. ,p

Know all Men by these Presents, That

Book 2127
Page 443

I, Hazel B. Therio of Portland in the County of Cumberland and State of Maine

in consideration of One Dollar and other valuable considerations paid by Maine Medical Center, a corporation duly organized and existing under the Laws of the State of Maine and located at said Portland
the receipt whereof I do hereby acknowledge, do hereby, give, grant, bargain, sell and convey unto the said Maine Medical Center, its successors and Assigns forever, the following described property:

A certain lot or parcel of land with the buildings thereon situated on the Westerly side of Bramhall Street in said Portland, being more particularly described in deed from Hazel E. Skillings to the Grantor, dated September 18, 1945 and recorded in Cumberland County Registry of Deeds in Book 1790, Page 500, in which deed said premises are described as follows:

A certain lot or parcel of land, with the buildings thereon situated in said City of Portland, on the Northwesterly side of Bramhall Street, bounded and described as follows: Beginning at the most easterly corner of land now or formerly of Sophia P. Jones; thence Northeasterly on said Bramhall Street fifty (50) feet to land now or formerly of one Raymond; thence Northwesterly by said Raymond land fifty-nine (59) feet; thence Southwesterly thirteen (13) feet two (2) inches, more or less, to a fence; thence Northwesterly by the line of the division fence three (3) feet two (2) inches; thence Southwesterly by said fence thirty-six (36) feet five (5) inches, more or less, to said Jones land; thence Southeasterly by said Jones land sixty-two (62) feet two (2) inches to the point begun at.

Also, all my right, title and interest in and to Arsenal Street recently abandoned by the City of Portland.

U.S.I.R.
$9.90
H.B.T.
5/16/53

To Have and to Hold the aforegranted and bargained premises, with all ~~the~~ privileges and appurtenances thereof, to the said Maine Medical Center, its successors and Assigns, to its and their use and behoof forever. And I do covenant with the said Grantee, its successors and Assigns ~~heirs and assigns~~, that I am lawfully seized in fee of the premises; that they are free of all incumbrances; that I have good right to sell and convey the same to the said Grantee to hold as aforesaid; and that I and my heirs, shall and will warrant and defend the same to the said Grantee, its successors and heirs and assigns forever, against the lawful claims and demands of all persons.

In Witness Whereof, I the said Hazel B. Therio, being unmarried, have hereunto set my hand and seal this 16th day of May in the year of our Lord one thousand nine hundred and fifty-three.

Signed, Sealed and Delivered in presence of

Edward F. Dana — Hazel B. Therio — Seal

State of Maine, CUMBERLAND, ss. May 16, 1953 Personally appeared the above named Hazel B. Therio and acknowledged the above instrument to be her free act and deed.

Before me, Edward F. Dana Justice of the Peace

m Received May 16 19 53, at 10 o'clock 35 m. A. M., and recorded according to the original.

Know all Men by these Presents, That

We, Albert N. Tardif and M. Louise Tardif, both of Portland, County of Cumberland, State of Maine

in consideration of one dollar ($1.00) and other valuable considerations paid by Maine Medical Center, a Corporation established by law at said Portland

the receipt whereof we do hereby acknowledge, do hereby, give, grant, bargain, sell and convey unto the said Maine Medical Center its successors and Assigns forever, the following described property:

A certain lot or parcel of land with the buildings thereon situated on the northerly side of Bramhall Street in said Portland which was conveyed to the grantors by Wilhelmina M. Mantine, by deed dated September 16, 1935 and recorded in Cumberland County Registry of Deeds in Book 1478, Page 294 and therein described as follows: Beginning on the northerly side of Bramhall Street at the easterly corner of land formerly of James Miller; thence northeasterly by Bramhall Street twenty-one and seven twentieths (21 7/20) feet to a stake; thence northwesterly about one hundred eleven (111) feet to a point in the southerly side of Arsenal Street; thence southwesterly by Arsenal Street twenty-two and three quarters (22 3/4) feet to said Miller's land; thence southeasterly by said Miller's land one hundred eleven and four tenths (111 4/10) feet to the point of beginning.

Also all our right title and interest in and to Arsenal Street recently abandoned by the City of Portland.

U.S.I.R. $16.50 A.N.T.Et 6/11/53

To Have and to Hold the aforegranted and bargained premises, with all ~~the~~ privileges and appurtenances thereof, to the said Maine Medical Center, its successors and Assigns, to its and their use and behoof forever. And we do covenant with the said Grantee, its successors and Assigns, ~~heirs and assigns~~, that we are lawfully seized in fee of the premises; that they are free of all incumbrances: that we have good right to sell and convey the same to the said Grantee to hold as aforesaid; and that we and our heirs, shall and will warrant and defend the same to the said Grantee, its successors and Assigns ~~heirs and assigns~~ forever, against the lawful claims and demands of all persons.

In Witness Whereof, We the said Albert N. Tardif and M. Louise Tardif, the said Grantors, being Husband and Wife each joining in this deed as Grantors, and each relinquishing and conveying our respective rights by descent and all other rights in the above described premises, have hereunto set our hands and seals this 11th day of June in the year of our Lord one thousand nine hundred and fifty-three.

Signed, Sealed and Delivered in presence of

Edward F. Dana — Albert N. Tardif — Seal

to both — M. Louise Tardif — Seal

State of Maine, CUMBERLAND, ss. June 11, 1953 Personally appeared the above named Albert N. Tardif and M. Louise Tardif and acknowledged the above instrument to be their free act and deed.

Before me, Edward F. Dana Justice of the Peace

Received June 12 1953, at 11 o'clock 5 m. A. M., and recorded according to the original.

Know all Men by these Presents, That

We, Fred A. Patterson and Ella H. Whidden both of Derry in the County of Rockingham and State of New Hampshire, Ruby E. McKenzie of Raymond in said County and State and Alzo F. Patterson of Portland in the County of Cumberland and State of Maine

Book 2133
Page 311

in consideration of One dollar ($1.00) and other valuable considerations paid by Maine Medical Center, a Corporation organized and existing under the laws of Maine and located at said Portland,
the receipt whereof we do hereby acknowledge, do hereby, give, grant, bargain, sell and convey unto the said Maine Medical Center, its Successors and Assigns forever, the following described property:

A certain lot or parcel of land with the buildings thereon, situated in said Portland on the northerly side of Bramhall Street and bounded and described as follows:

Beginning on the northerly side of Bramhall Street at the southwesterly corner of land formerly of Frederick A. Carle; thence running westerly by said Bramhall Street twenty-five (25) feet to a stake or point, and from these two points extending northerly adjoining said Carle land, keeping a width of twenty-five (25) feet, to Arsenal Street, being the premises conveyed to Daniel W. Patterson by Maria M. Jose by deed dated September 12, 1921 and recorded in Cumberland County Registry of Deeds in Book 1085, Page 228.

The said Daniel W. Patterson died intestate on September 3, 1952 leaving no widow and as his sole heirs-at-law, the Grantors herein.

The Grantee as part of the consideration hereof assumes and agrees to pay the taxes for the taxable year of 1953.

Also conveying all our right, title and interest in and to Arsenal Street recently abandoned by the City of Portland, Maine.

U.S.I.R.
$13.20
A.F.P.Et
5/20/53

To Have and to Hold the aforegranted and bargained premises, with all ~~the~~ privileges and appurtenances thereof, to the said Maine Medical Center, its Successors and Assigns to its and their use and behoof forever. And we do covenant with the said Grantee, its Successors and Assigns, ~~heirs and assigns~~, that we are lawfully seized in fee of the premises; that they are free of all incumbrances; except as aforesaid.

that we have good right to sell and convey the same to the said Grantee to hold as aforesaid; and that we and our heirs, shall and will warrant and defend the same to the said Grantee, its Successors and Assigns ~~heirs and assigns~~ forever, against the lawful claims and demands of all persons.

In Witness Whereof, We the said Fred A.Patterson and Chrystine I.Patterson,wife of the said Fred A.Patterson;Ella H.Whidden and Charles F.Whidden,husband of the said Ella H.Whidden;Ruby E.McKenzie and Elmer W.McKenzie,husband of the said Ruby E.McKenzie,and Alzo F.Patterson and Bessie E.Patterson,wife of the said Alzo F.Patterson joining in this deed as Grantors,and relinquishing and conveying our rights by descent and all other rights in the above described premises, have hereunto set our hands and seals this twentieth day of May in the year of our Lord one thousand nine hundred and fifty-three.

Signed, Sealed and Delivered in presence of

R.E. Jensen
R.E. Jensen
Carmela Chase
Carmela Chase
Arthur K. Smith
Arthur K. Smith
P. J. Campbell
P. J. Campbell

Alzo F.Patterson Seal
Bessie E. Patterson Seal
Fred A. Patterson Seal
Chrystine I. Patterson Seal
Ella H. Whidden Seal
Charles F. Whidden Seal
Ruby E. MacKenzie Seal
Elmer MacKenzie Seal

State of Maine. CUMBERLAND, ss. May 20, 1953 Personally appeared the above named Alzo F. Patterson and acknowledged the above instrument to be his free act and deed.

Before me, Raymond E. Jensen Justice of the Peace

Received June 12 1953, at 11 o'clock 5 m. A.M., and recorded according to the original.

Know all Men by these Presents, That

Book 2133
Page 317

We, Leola J. Noyes and William H. Noyes, Jr., both of Portland, County of Cumberland, State of Maine,

in consideration of one dollar ($1.00) and other valuable considerations paid by Maine Medical Center, a Corporation established by law in said Portland

the receipt whereof we do hereby acknowledge, do hereby, give, grant, bargain, sell and convey unto the said Maine Medical Center, its successors and Assigns forever, the following described property:

A certain lot or parcel of land with the buildings thereon situated in said Portland between Bramhall and Arsenal Streets adjoining land formerly belonging to Sophia P. Jones and conveyed to us by Maud L. Pillsbury by deed dated October 2, 1951, recorded in Cumberland County Registry of Deeds in Book 2060, Page 419, and therein bounded and described as follows: Beginning on the northerly side of Bramhall Street at the southwesterly corner of said Jones land; thence running westerly by said Bramhall Street twenty-five (25) feet to a stake and from these two points extending northerly adjoining said Jones land keeping a width of twenty-five (25) feet, a distance of sixty-eight feet and two incles (68' 2"), which distances are marked by stakes and which stakes are twenty-six (26) feet distant from the southerly boundary line of Arsenal Street.

U.S.I.R. $11.00 L.J.N.Et 6/12/53

To Have and to Hold the aforegranted and bargained premises, with all ~~the~~ privileges and appurtenances thereof, to the said Maine Medical Center, its successors and Assigns, to its and their use and behoof forever. And we do covenant with the said Grantee, its successors and Assigns, ~~heirs and assigns~~, that we are lawfully seized in fee of the premises; that they are free of all incumbrances; that we have good right to sell and convey the same to the said Grantee to hold as aforesaid; and that we and our heirs, shall and will warrant and defend the same to the said Grantee, its successors and Assigns ~~heirs and assigns~~ forever, against the lawful claims and demands of all persons.

In Witness Whereof, We, the said Leola J. Noyes and William H. Noyes, Jr., the said grantors, both being unmarried

have hereunto set our hand s and seals this 12th day of June in the year of our Lord one thousand nine hundred and fifty-three.

Signed, Sealed and Delivered in presence of

Edward F. Dana	Leola J. Noyes	Seal
to both	William H. Noyes, Jr.	Seal

State of Maine, CUMBERLAND, ss. June 12, 1953 Personally appeared the above named Leola J. Noyes and William H. Noyes, Jr. and acknowledged the above instrument to be their free act and deed.

Before me, Edward F. Dana Justice of the Peace

Received June 12 19 53, at 1 o'clock 44 m. P. M., and recorded according to the original.

Know all Men by these Presents, That

Maine Medical Center a corporation organized and existing under the laws of the State of Maine and located at Portland in the County of Cumberland and State of Maine

in consideration of One Dollar and other valuable considerations paid by Maine General Hospital, a corporation organized and existing under the laws of the State of Maine and located at said Portland
the receipt whereof it does hereby acknowledge, does hereby, give, grant, bargain, sell and convey unto the said Maine General Hospital, its successors and assigns forever, a certain lot or parcel of land with the buildings thereon, situated in said City of Portland, between Bramhall and Arsenal Streets, adjoining land formerly owned by John W. Yeaton, and bounded and described as follows:

Beginning in the northerly line of Bramhall Street at the southeasterly corner of said Yeaton land; thence running easterly by Bramhall Street forty (40) feet and from these two points extending northerly, adjoining said Yeaton land, and keeping said width of forty (40) feet to Arsenal Street, being the same premises described in deed of J. B. Brown to Leon M. Bowdoin in 1867 by deed recorded in Cumberland County Registry of Deeds, Book 351, Page 340.

Being the same premises conveyed to this Grantor by Frederick W. McCarthy by deed dated June 30, 1953 and recorded in said Registry of Deeds in Book 2140, Page 92.

U.S.I.R.
$33.55
M.M.C.
8/18/53

To Have and to Hold the aforegranted and bargained premises, with all the privileges and appurtenances thereof, to the said Maine General Hospital, its successors and assigns, to its and their use and behoof forever. And the said Grantor Corporation does hereby covenant with the said Grantee, its successors and assigns,

~~heirs and assigns~~, that it is lawfully seized in fee of the premises; that they are free of all incumbrances:

that it has ~~have~~ good right to sell and convey the same to the said Grantee to hold as aforesaid; and that it and its successors ~~heirs~~, shall and will warrant and defend the same to the said Grantee, its successors and assigns

~~heirs and assigns~~ forever, against the lawful claims and demands of all persons.

In Witness Whereof, the said Maine Medical Center has caused this instrument to be sealed with its corporate seal and signed in its corporate name by Phillips M. Payson, its President, thereunto duly authorized,

~~hand and seal~~ this 18th day of August ~~have hereunto set~~ in the ~~year of our Lord~~ one thousand nine hundred and fifty-three.

Signed, Sealed and Delivered in presence of

Edward F. Dana

MAINE MEDICAL CENTER
CORPORATE SEAL
By Phillips M. Payson
President.

State of Maine, County of CUMBERLAND, ss. August 18, 1953.

Then Personally appeared the above named Phillips M. Payson, President of said Grantor Corporation as aforesaid, and acknowledged the foregoing instrument to be his free act and deed, in his said capacity, and the free act and deed of said corporation.

Before me, Edward F. Dana, Justice of the Peace.

Received August 19, 1953, at 1 o'clock 40 m.P. M., and recorded according to the original.

Know all Men by these Presents, That

Book 2147
Page 110

I, Henry H. Grant of Portland, in the County of Cumberland and State of Maine,

in consideration of one dollar and other valuable consideration paid by Maine Medical Center, a corporation organized and existing under the laws of the State of Maine and located at said Portland,

the receipt whereof I do hereby acknowledge, do hereby, give, grant, bargain, sell and convey unto the said Maine Medical Center, its Successors and assigns forever, a certain lot or parcel of land with the buildings thereon situated between Bramhall and Arsenal Streets in said Portland, adjoining land now or formerly belonging to Sophia P. Jones, and more particularly bounded and described as follows:

Beginning on the northerly side line of said Bramhall Street, at the southwesterly corner of said Jones' land; thence westerly by said Bramhall Street, twenty-five (25) feet to a stake and from these two points extending northerly adjoining said Jones land, keeping the width of twenty-five (25) feet, to Arsenal Street.

Excepting and reserving however, a certain lot or parcel of land with the buildings thereon out of the aforesaid property, a conveyance by Westprom Realty Company to Maud L. and Janice M. Pillsbury by deed dated January 23, 1946 and recorded in Cumberland County Registry of Deeds in Book 1803, Page 444, to which reference may be had.

Meaning and intending to convey a parcel of land at the rear of 26 Bramhall Street, which parcel of land is approximately 26'x25' and contains a garage thereon.

Being the same premises conveyed to me by Westprom Realty Company by their warranty deed dated April 11, 1951 and recorded in said Registry of Deeds in Book 2040, Page 192.

U.S.I.R.
$3.30
H.H.G.
9/4/53

To Have and to Hold the aforegranted and bargained premises, with all the privileges and appurtenances thereof, to the said Maine Medical Center, its Successors and assigns, to its and their use and behoof forever. And I do covenant with the said Grantee, its Successors and assigns, ~~heirs and assigns~~, that I am lawfully seized in fee of the premises; that they are free of all incumbrances; that I have good right to sell and convey the same to the said Grantee to hold as aforesaid; and that I and my heirs, shall and will warrant and defend the same to the said Grantee, its Successors and assigns ~~heirs and assigns~~ forever, against the lawful claims and demands of all persons.

In Witness Whereof, I, the said Henry H. Grant and I, Gladys H. Grant, wife of the said Henry H. Grant joining in this deed as Grantor, and relinquishing and conveying my right by descent and all other rights in the above described premises, have hereunto set our hands and seals this 4th day of September in the year of our Lord one thousand nine hundred and fifty-three.

Signed, Sealed and Delivered in presence of

H. Edwin Gee

Henry H. Grant Seal
Gladys H. Grant Seal

State of Maine, CUMBERLAND, ss. September 4, 1953. Personally appeared the above named Henry H. Grant and acknowledged the above instrument to be his free act and deed.

Before me, H. Edwin Gee, Notary Public, Notarial Seal, My Commission Expires June 29, 1956

Received September 9, 1953, at 9 o'clock 50 m. A. M., and recorded according to the original. p/

Know all Men by these Presents, That

I, James S. Bell of Portland, County of Cumberland and State of Maine, Executor under the Will of Ethel B. Bell, deceased, late of Portland.

having on the 24th day of November A. D. 19 53, obtained License from the Honorable Nathaniel M. Haskell Judge of Probate, within and for the County of Cumberland and State of Maine, to sell and convey at private sale the Real Estate hereinafter described of the said Ethel B. Bell for the sum of

Eleven thousand seven hundred fifty ($11750.00) dollars

the same being an advantageous offer therefor, and having agreeably to the order and decree of said Court, given due notice upon the petition for license to make such sale, and having given the bond required by law, by virtue of the power and authority with which I am as aforesaid vested, and in consideration of the aforesaid sum of Eleven thousand seven hundred fifty ($11750.00) dollars, to me paid by Maine Medical Center, a corporation duly organized and existing by law with an office and place of business at Portland, said County and State. the receipt whereof I do hereby acknowledge, have given, granted, and sold, and by these Presents do Give, Grant, Sell and Convey to the said Maine Medical Center, its Successors ~~Heirs~~ and Assigns forever, the following described Real Estate, viz.:

A certain lot or parcel of land with the buildings thereon, situated on Arsenal and Brackett Streets in said Portland, bounded and described as follows:

Beginning at the southwesterly side of said Brackett Street at the northwesterly corner of a lot of land conveyed by Mary J. Raymond to George E. Raymond by deed dated November 3, 1897, and recorded in the Cumberland County Registry of Deeds in Book 657, Page 411; thence southwesterly by said last named lot forty seven (47) feet; thence northwesterly and at right angles with the last described course to said Arsenal Street; thence northeasterly by said Arsenal Street to said Brackett Street; thence southeasterly by said Brackett Street to the point of beginning.

Excepting and reserving from the southeasterly portion of said above described premises so much thereof, as was described and conveyed in a certain deed from Ella C. Gardner to Gemma A. Applebee et al., said deed being dated November 27, 1935 and recorded in the Cumberland County Registry of Deeds, Book 1485, Page 206, and subject also to such easements and rights as were therein granted to said Gemma A. Applebee et al; by said deed above referred to.

Being the same premises conveyed to Kathryn Ireland by deed of Mary Dyer dated August twenty eighth, A. D. 1950 recorded in said Registry of Deeds for the County of Cumberland in Book 2014, Page 62.

Being the same premises conveyed to Sarah Friedman by deed of Kathryn Ireland which deed is recorded in the Cumberland County Registry of Deeds in Book 2051, Page 193.

Being the same premises conveyed to Ethel B. Bell by Sarah Friedman which deed is recorded in said Registry of Deeds.

U.S.I.R. $13.20 E.B.B. Est. 11/25/53

To Have and to Hold the same, with all the privileges and appurtenances to the same belonging, in manner as aforesaid, to the said Maine Medical Center, its Successors ~~Heirs~~ and Assigns forever.

And I the said James S. Bell in my said capacity do Covenant to and with the said Maine Medical Center, its Successors ~~Heirs~~ and Assigns, that I have in all things observed the rules and directions of law relative to the selling of said Estate, and have good right and lawful authority to sell and convey the same in manner aforesaid.

In Witness Whereof, I hereunto set my hand and seal in my said capacity, this 25th day of November in the year of our Lord one thousand nine hundred and fifty three

Signed, Sealed and Delivered in presence of

Morris Greenberg

Estate of Ethel B Bell
James S. Bell
Executor

Seal

State of Maine, Cumberland, ss. November 25, 1953. Personally appeared the above named James S. Bell and acknowledged the ~~above~~ foregoing instrument to be his free act and deed, in said capacity.

Before me, Morris Greenberg Justice of the Peace

Received November 25 19 53, at 4 o'clock 56m., P. M., and recorded according to the original.

e/

(102)

Know All Men by these Presents,

That MAINE GENERAL HOSPITAL ~~Company~~

a corporation organized and existing under the laws of the State of Maine and located at Portland in the County of Cumberland and State of Maine

in consideration of One Dollar ($1.00) and other valuable considerations (being less than $100)

paid by MAINE MEDICAL CENTER; a corporation organized and existing under the laws of the State of Maine and located at Portland in the County of Cumberland and State of Maine

Maine General Hospital

to

Maine Medical Center

War

the receipt whereof it does hereby acknowledge, does hereby give, grant, bargain, sell and convey, unto the said Maine Medical Center

its successors ~~heirs~~ and assigns forever,

a certain lot or parcel of land being a portion of Arsenal Street discontinued by the City of Portland and a small portion of land of the Grantor adjoining said discontinued land in the City of Portland, County of Cumberland and State of Maine, bounded and described as follows:

Beginning at a point in the center line of discontinued Arsenal Street at its easterly extremity; thence northwesterly by said easterly extremity of discontinued Arsenal Street thirty (30) feet to land of the Grantor; thence southwesterly by land of the Grantor, being the northerly sideline of the former location of Arsenal Street and at right angles to the last described course about thirty (30) feet to the easterly face of the new Maine Medical Center building; thence northwesterly at about right angles to the last described course and by the easterly face of said new building about five (5) feet to a corner of said building; thence southwesterly by the northerly face of said new building and by a line between said new building and the old building, said old building being known as the pavilion and again by the northerly face of said new building about forty-five (45) feet to a corner of said new building; thence southeasterly by the face of said new building at about right angles to the last described course about five (5) feet to the former location of the northerly sideline of said Arsenal Street; thence southwesterly by other land of the Grantor being the northerly sideline of the former location of Arsenal Street and at about right angles to the last described course and ten (10) feet to a point; thence southeasterly at right angles to the last described course thirty (30) feet to the center line of the former location of said Arsenal Street; thence northeasterly by said center line and passing through said aforementioned new building about eighty-five (85) feet to the point of beginning.

22 **To have and to hold** the aforegranted and bargained premises with all the privileges and appurtenances thereof to the said Maine Medical Center, its successors ~~heirs~~ and assigns, to its and their use and behoof forever.

And the said Grantor Corporation does hereby COVENANT with the said Grantee, its successors ~~heirs~~ and assigns, that it is lawfully seized in fee of the premises, that they are free of all incumbrances;

that it has good right to sell and convey the same to the said Grantee to hold as aforesaid; and that it and its successors, shall and will WARRANT AND DEFEND the same to the said Grantee, its successors ~~heirs~~ and assigns forever, against the lawful claims and demands of all persons.

In Witness Whereof, the said Maine General Hospital ~~Company~~ has caused this instrument to be sealed with its corporate seal and signed in its corporate name by Phillips M. Payson, its Treasurer, thereunto duly authorized, this 9th day of July in the year one thousand nine hundred and fifty-six.

Signed, Sealed and Delivered in presence of

Edward T. Dana

MAINE GENERAL HOSPITAL

~~Company~~

By Phillips M. Payson

Treasurer.



State of Maine.

County of Cumberland ss. July 9, 19 56

Then personally appeared the above named

Phillips M. Payson, Treasurer of said Grantor 23
Corporation as aforesaid, and acknowledged the foregoing instrument to be his free act and deed in his said capacity, and the free act and deed of said corporation.

Before me,

Edward F. Haun Justice of the Peace.

REGISTRY OF DEEDS, CUMBERLAND COUNTY, MAINE JUL 10 1956
Received at 4 H 5 M P M, and recorded in
BOOK 2301 PAGE 21 Robert N. Carter Register

Know All Men by These Presents.

That M. S. Hancock, Inc.

M S Hancock Inc to Gordon --- War

a Corporation organized and existing under the laws of the State of Maine and located at Casco in the County of Cumberland and State of Maine in consideration of one dollar and other valuable consideration

paid by Benjamin H. Gordon of New Britain in the County of Hartford and State of Connecticut the receipt whereof it does hereby acknowledge, does hereby give, grant, bargain, sell and convey unto the said Benjamin H. Gordon, his

heirs and assigns forever, ~~a certain lot or parcel of land~~

Three certain lots or parcels of land situate in said Casco and on the southerly shore of Coffee Pond, so-known, the lots herein conveyed being Lot #13, Lot #14 and Lot #15 and delineated on a certain plan entitled "Coffee Pond Pines, Part II" as recorded in the Cumberland County Registry of Deeds, Plan Book 44, Page 40, together with a right of user in common with others who may have been or who may hereafter be granted a similar right in and to the road or right of way leading to said lots from Route #11, so-known, said road being delineated on said plan.

It shall be a condition of this conveyance and the Grantee, for himself and his heirs, administrators, executors or assigns, agrees that no dwelling shall be erected or constructed on any of said lots unless the same shall equal or exceed the sum of $1500.00 to build exclusive, however, of any necessary outbuildings or garages.

(24)

Know all Men by these Presents,

161

That the CITY OF PORTLAND, a body politic and corporate, located in the County of Cumberland and State of Maine,

Portland City of

to

Maine General Hospital

Q C

~~a corporation organized and existing under the laws of the State of~~ ~~and located at~~ ~~in the County of~~ ~~and State of~~

in consideration of One ($1.00) Dollar and other valuable considerations, the total of which is less than One hundred ($100.00) Dollars

paid by Maine General Hospital, a corporation organized and existing under the laws of the State of Maine and located at Portland in the County of Cumberland and State of Maine,

the receipt whereof it does hereby acknowledge, does hereby **remise, release, bargain, sell and convey,** and forever **quit-claim** unto the said

Maine General Hospital, its successors

~~heirs~~ and assigns forever,

A certain lot or parcel of land situated in said Portland and bounded and described as follows:

Beginning at the point of intersection of the Northwesterly side line of Ellsworth Street extended in a Southwesterly direction and the Southwesterly side line of Charles Street; thence Southwesterly along a continuation of the Northwesterly side line of Ellsworth Street extended, a distance of thirty-eight (38) feet, more or less, to a point; thence in a Southeasterly direction parallel to and fifty (50) feet measured perpendicularly Southwesterly of the Northeasterly side line of Charles Street Extension, so-called, a distance of one hundred fifty-five (155) feet, more or less, to the Northerly terminus of Brackett Street as established and renamed by the City Council of the City of Portland; thence Northeasterly along the line terminating said Brackett Street a distance of thirty-eight (38) feet, more or less, to the point of intersection formed by the above-mentioned line and the Southwesterly side line of Charles Street Extension, so-called; thence Northerly along the Southwesterly side line of Charles Street Extension, so-called, a distance of one hundred fifty-five (155) feet, more or less, to the point of beginning.

Being the same premises conveyed to the Grantor by warranty deed of the Grantee dated April 9, 1954, recorded in Cumberland County Registry of Deeds in Book 2173, Page 412.

162

To have and to hold the same, together with all the privileges and appurtenances thereunto belonging, to it the said

Maine General Hospital, its successors

~~Heirs~~ and Assigns forever.

And the said Grantor Corporation does **covenant** with the said

Maine General Hospital, its successors

~~Heirs~~ and Assigns, that it will **Warrant** and **Forever Defend** the said premises to it the said Grantee , its successors ~~Heirs~~ and Assigns forever, against the lawful claims and demands of all persons claiming by, through, or under it.

In Witness Whereof, the said CITY OF PORTLAND has caused this instrument to be sealed with its corporate seal and signed in its corporate name by Edwin T. Simmons, Acting City Treasurer ~~xxxxx~~ thereunto duly authorized, this Fifteenth day of August in the year one thousand nine hundred and fifty-six.

Signed, Sealed and Delivered in presence of

M. Jane King

CITY OF PORTLAND

By Edwin T. Simmons
Acting City Treasurer

(CORPORATE SEAL)

REGISTRY OF DEEDS, CUMBERLAND COUNTY, MAINE AUG 21 1956
Received at 1 H — M and recorded in
BOOK 2308 PAGE 161
Register

State of Maine, Cumberland ss. August 15, 1956.

Personally appeared the above named Edwin T. Simmons, Acting City Treasurer of said Grantor Corporation as aforesaid, and acknowledged the foregoing instrument to be his free act and deed in his said capacity, and the free act and deed of said corporation.

Before me

Justice of the Peace

Know all Men by these Presents, That

223

We, Albert E. Doak and Amelia Doak, both of Portland, County of Cumberland and State of Maine,

in consideration of one dollar and other valuable considerations paid by MAINE GENERAL HOSPITAL, a corporation organized and existing under the laws of the State of Maine, and having its principal place of business at said Portland,

the receipt whereof we do hereby acknowledge, do hereby give, grant, bargain, sell and convey unto the said MAINE GENERAL HOSPITAL, its successors and assigns, forever,

A certain lot or parcel of land with the buildings thereon, situated on the westerly side of Charles Street in said Portland, bounded and described as follows: Beginning at a fence post standing on the westerly side line of Charles Street and distant northerly seventy-three and eighty-four hundredths (73.84) feet from the northwesterly corner of Ellsworth and Charles Streets; thence northerly by said Charles Street forty (40) feet to land now or formerly of Frank Abbott; thence westerly by said Abbott's land seventy-four and fifty-six hundredths (74.56) feet to land of the said grantee; thence by land of said grantee southerly forty (40) feet to land now or formerly of W. R. Naylor; thence easterly by said Naylor's land seventy-four and forty-two hundredths (74.42) feet to the point of beginning.

Being the same premises conveyed to these grantors by Henry T. Orlando by deed dated May 29, 1951, and recorded in Cumberland County Registry of Deeds in Book 2044, Page 288.

The grantee corporation herein assumes and agrees to pay the 1957 real estate taxes as part consideration for this transfer.

Doak & to Maine General Hospital -- War

To Have and to Hold the aforegranted and bargained premises, with all the privileges and appurtenances thereof, to the said MAINE GENERAL HOSPITAL, its successors

and assigns, to its and their use and behoof forever. And we do covenant with the said Grantee, its successors and assigns, that we are lawfully seized in fee of the premises; that they are free of all incumbrances; except as aforesaid; that we have good right to sell and convey the same to the said Grantee to hold as aforesaid; and that we and our heirs and assigns shall and will warrant and defend the same to the said Grantee, its successors and assigns forever, against the lawful claims and demands of all persons.

In Witness Whereof, we, the said Albert E. Doak and Amelia Doak, husband and wife,

joining in this deed as Grantors, and relinquishing and conveying our rights by descent and all other rights in the above described premises, have hereunto set our hands and seals this third day of May in the year of our Lord one thousand nine hundred and fifty-seven.

Signed, Sealed and Delivered in presence of

Edward B. Berry
to both

Albert E Doak
Amelia Doak

State of Maine, Cumberland ss. May 3, 1957.

Personally appeared the above named Albert E. Doak

and acknowledged the foregoing instrument to be his free act and deed.

Before me, Edward B. Berry
NOTARY PUBLIC.



$6.05

STATE OF MAINE, CUMBERLAND COUNTY, SS. REGISTRY OF DEEDS

Received MAY 3 1957 at 2 o'clock 35 m. P. M., and recorded in BOOK 2349 PAGE 229 Attest: Martha H. S. Daley Register's Clerk

Book 2619
Page 499

Know All Men by These Presents,

That We, Henry H. Grant and Gladys H. Grant, both of Portland in the County of Cumberland and State of Maine,

Grant & to Maine Medical Center -- War

in consideration of one ($1.00) dollar and other valuable considerations

paid by Maine Medical Center, a corporation duly organized and existing under the laws of the State of Maine and located at said Portland,

the receipt whereof we **do hereby acknowledge, do hereby give, grant, bargain, sell and convey unto the said** Maine Medical Center, its successors

heirs and assigns forever, a certain lot or parcel of land with the buildings thereon, situated in Portland in the County of Cumberland and State of Maine, on the northwesterly side of Bramhall Street, bounded and described as follows:

Commencing at the southwesterly corner of land, now or formerly, of James Miller and Charlotte Johnson on Bramhall Street; thence northwesterly by land of said James Miller and Charlotte Johnson, sixty (60) feet to land formerly of William J. Knowlton; thence southwesterly along said Knowlton land, parallel with said street, fifty-five (55) feet to a corner of land formerly of William J. Knowlton; thence parallel with first mentioned line sixty (60) feet, more or less, to said street; thence northeasterly by said street fifty-five (55) feet to the place of beginning.

Being the same premises conveyed to us by Russell Fanning by deed recorded in Cumberland County Registry of Deeds in Book 1833, Page 415, and are conveyed subject to the conditions contained in said deed.

The Grantee herein, as part of the consideration hereof, assumes and agrees to pay taxes for the taxable year 1961.



500

500

To have and to hold the aforegranted and bargained premises with all the privileges and appurtenances thereof, to the said

Maine Medical Center, its successors

heirs and assigns, to its and their use and behoof forever.

And we do covenant with the said Grantee, its successors and assigns, that we are lawfully seized in fee of the premises, that they are free of all incumbrances;

that we have good right to sell and convey the same to the said Grantee to hold as aforesaid; and that we and our heirs shall and will Warrant and Defend the same to the said Grantee, its successors and assigns forever, against the lawful claims and demands of all persons.

In Witness Whereof, We the said Henry H. Grant

and Gladys H. Grant, being husband and

wife

joining in this deed as Grantors, and relinquishing and conveying all right by descent and all other rights in the above described premises, have hereunto set our hands and seals this thirty-first day of July in the year of our Lord one thousand nine hundred and sixty-one.

Signed, Sealed and Delivered
in presence of

Josephine G. Wall — Henry H. Grant
R. E. Jensen — Gladys H. Grant

State of Maine. Cumberland, ss. July 31, 1961.

Personally appeared the above named Henry H. Grant

and acknowledged the foregoing instrument to be his free act and deed.

Before me,

Raymond E. Jensen
Justice of the Peace
Notary Public

AUG 4 1961
REGISTRY OF DEEDS, CUMBERLAND COUNTY, MAINE
Received at 10 H 28 M A M, and recorded in
BOOK 2619 PAGE 499 Lowell P. Hyson Register

Book 2685
Page 369

Know All Men by These Presents,

That Sewall M. Hobson, 2nd, of Portland, County of Cumberland and State of Maine

in consideration of one dollar and other valuable consideration

paid by Maine Medical Center, a corporation duly organized and existing under the laws of the State of Maine with its principal office in said Portland

the receipt whereof I do hereby acknowledge, do hereby give, grant, bargain, sell and convey unto the said Maine Medical Center, its successors and assigns forever, a certain lot or parcel of land with the buildings thereon, situated on the northwesterly side of Bramhall Street in the City of Portland, County of Cumberland and State of Maine, bounded and described as follows:

Beginning at the intersection of the northwesterly side line of Bramhall Street with the easterly side line of Western Promenade; thence northeasterly by Bramhall Street One Hundred Four and one-tenth (104.1) feet to the southerly corner of land conveyed by John W. Yeaton to William J. Knowlton, by deed dated April 4, 1885, and recorded in Cumberland County Registry of Deeds, in Book 517, Page 386; thence northwesterly at right angles with Bramhall Street and by said Knowlton land Sixty (60) feet to the southeasterly side line of land conveyed by John W. Yeaton to William J. Knowlton by deed dated June 6, 1882, and recorded in said Registry of Deeds, in Book 488, Page 204; thence southwesterly by said Knowlton land Forty-one and seven tenths (41.7) feet to the easterly side line of Western Promenade at a point Seventy-seven and five tenths (77.5) feet southerly thereon from the southeasterly side line of Arsenal Street; thence southerly by Western Promenade Eighty-six and seventy-eight hundredths (86.78) feet to the point of beginning.

For Grantors title reference is made to the will of Annie H. Dana, and abstract of which is recorded in said Registry of Deeds, in Book 2423, Page 273, and to a certain deed from Saint Germain Foundation et als. dated February 1, 1960, and recorded in said Registry of Deeds in Book 2526, Page 80.

To have and to hold the aforegranted and bargained premises with all the privileges and appurtenances thereof, to the said Maine Medical Center, its successors

~~heirs~~ and assigns, to it and their use and behoof forever.

And I do covenant with the said Grantee, its ~~heirs~~ successors and assigns, that I am lawfully seized in fee of the premises, that they are free of all incumbrances;

that I have good right to sell and convey the same to the said Grantee to hold as aforesaid; and that I and any heirs shall and will Warrant and Defend the same to the said Grantee, its ~~heirs~~ successors and assigns forever, against the lawful claims and demands of all persons.

In Witness Whereof. We the said Sewall M. Hobson, 2nd

and Anne S. Hobson

wife of the said Sewall M. Hobson, 2nd

joining in this deed as Grantor, and relinquishing and conveying her right by descent and all other rights in the above described premises, have hereunto set our hands and seals this Tenth day of July in the year of our Lord one thousand nine hundred and sixty-two.

Signed, Sealed and Delivered
in presence of

Gerald S Cope
to both

Sewall M. Hobson, 2nd
Anne S. Hobson



State of Maine. Cumberland ss. July 10th 1962.

Personally appeared the above named Sewall M. Hobson, 2nd

and acknowledged the foregoing instrument to be his free act and deed.

Before me, Gerald S Cope
Justice of the Peace
~~Notary Public~~

JUL 10 1962
REGISTRY OF DEEDS, CUMBERLAND COUNTY, MAINE
Received at 11 H 51 M A. M, and recorded in
BOOK 2685 PAGE 369 Sewall M. Hobson Register

Book 2901
Page 326

326 (106)

Know all Men by these Presents,

That I, VINCENT C. NEWTON of Portland in the County of Cumberland and State of Maine

Newton

to

Maine General Hospital

-

War

in consideration of One Dollar ($1.00) and other valuable considerations

paid by MAINE GENERAL HOSPITAL, a corporation organized and existing under the laws of Maine and located at Portland in the County of Cumberland and State of Maine,

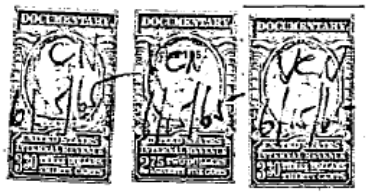
the receipt whereof I do hereby acknowledge, do hereby

give, grant, bargain, sell and convey, unto the said Maine General Hospital,

its successors ~~heirs~~ and assigns forever,

a certain lot or parcel of land with the buildings thereon situated on the westerly side of Charles Street in said Portland, bounded and described as follows:

Beginning on the westerly side line of said Charles Street at the northeasterly corner of land formerly of John M. Jones, now of Maine General Hospital; thence running northerly by said street thirty-eight (38) feet to land formerly occupied by one Graham, now owned by Maine General Hospital; and from these two points extending back westerly at right angles from said street keeping the width of thirty-eight (38) feet and bounded southerly by said Jones land and northerly by said Graham land about seventy-four and two tenths (74.2) feet to the Arsenal Lot, so-called, now of Maine General Hospital; being the same premises conveyed to me by Charles H. Abbott et al by deed dated February 10, 1944, recorded in Cumberland County Registry of Deeds in Book 1737, Page 278.



327

To Have and to Hold the aforegranted and bargained premises with all the privileges and appurtenances thereof to the said Maine General Hospital, its successors ~~heirs~~ and assigns, to its and their use and behoof forever.

And I do COVENANT with the said Grantee, its successors ~~heirs~~ and assigns, that I am lawfully seized in fee of the premises that they are free of all encumbrances:

that I have good right to sell and convey the same to the said Grantee to hold as aforesaid; and that I and my heirs shall its successors and will WARRANT and DEFEND the same to the said Grantee, ~~heirs~~ and assigns forever, against the lawful claims and demands of all persons.

In Witness Whereof, I the said Vincent C. Newton, being unmarried

~~and~~

~~wife~~ ~~of the said~~

~~joining in this deed as Grantor, and releasing and conveying~~ ~~right by descent and all other right in the above described~~ ~~premises~~ have hereunto set my hand and seal this 15th day of June in the year of our Lord one thousand nine hundred and sixty-five.

Signed, Sealed and Delivered in presence of

Edward J. McGoldrick — Vincent C. Newton (L.S.)

State of Maine, Cumberland } ss. June 15, 1965.

Personally appeared the above named Vincent C. Newton and acknowledged the above instrument to be his free act and deed.

Before me, Edward J. McGoldrick
Notary Public ~~Justice of the Peace~~.

EDWARD J. McGOLDRICK NOTARY PUBLIC MAINE
MY COMMISSION EXPIRES OCTOBER 8, 1971

STATE OF MAINE
CUMBERLAND, ss. REGISTRY OF DEEDS
Received at 1 H. 36 M. P. M. on JUN 15 1965 and recorded in
Book 2901 Page 326 Attest
Edward J. McGoldrick Register

(154)
EXECUTOR'S AND TRUSTEE'S DEED.
[WHEN THE WILL AUTHORIZES A SALE.]

927

Know all Men by these Presents,

That I, HELEN M. GRIFFIN

of Portland in the county of Cumberland

sole acting executor of the last will and testament

of Mary Davis late of Portland

deceased, testate, by virtue of the authority to me given by

the said Mary Davis in her last will and

testament, in my capacity of executor as afore-

said, and in consideration of One Dollar ($1.00) and other

valuable considerations

to me paid by MAINE MEDICAL CENTER, a corporation organized under the laws of Maine and situated in Portland

the receipt whereof is hereby ac-

knowledged, do hereby sell and convey unto the said Maine Medical Center, its successors and assigns, the following described real estate, which was

the property of the said Mary Davis.

A certain lot or parcel of land with the buildings thereon situated in Portland on the northerly side of Brackett Street, bounded and described as follows:

Beginning at the intersection of the northerly side of Brackett Street with the westerly side of Russell Street; thence running northeasterly by Russell Street thirty-seven (37) feet, more or less, to land formerly owned by Hobart W. Richardson; thence running northwesterly by said Richardson land seventy-four (74) feet, more or less, to land formerly owned or occupied by W. S. Dunn; thence southwesterly by the line of said Dunn's land forty-one (41) feet, more or less, to a lane; thence southeasterly by said lane forty-one (41) feet, more or less, to Brackett Street; thence easterly by Brackett Street thirty-seven (37) feet, more or less, to the point of beginning.

Being the same premises conveyed to Mary Davis by Harry E. Davis by deed dated March 18, 1915, recorded in Cumberland County Registry of Deeds in Book 945, Page 109.

Reference is made to Will of said Mary Davis, abstract of which is recorded in said Registry of Deeds in Book 3025, Page 28.

Davis Est

to

Maine Medical Center

Exec

928

To have and to hold the above-granted premises unto the said Maine Medical Center, its successors ~~and~~ and assigns forever. And I the said Helen M. Griffin, in my said capacity, do hereby covenant to and with the said Maine Medical Center, its successors ~~and~~ and assigns, that I am the lawful executor of the last will and testament of the said Mary Davis ; that I have power under said will to sell as aforesaid; and that in making this conveyance, I have in all respects, acted in pursuance of the authority granted in and by the said last will and testament.



In Witness Whereof, I the said Helen M. Griffin in my said capacity of executor as aforesaid have hereunto set my hand and seal . this 31st day of March in the year of our Lord one thousand nine hundred and sixty-six.

Signed, Sealed and Delivered in presence of

Helen M. Griffin

March 31 1966.

State of Maine, Cumberland } ss.

Then personally appeared the above named Helen M. Griffin and acknowledged the above instrument to be her free act and deed in her said capacity.

Before me,

Justice of the Peace.

MAR 31 1966
REGISTRY OF DEEDS, CUMBERLAND COUNTY, MAINE
Received at 9 H 55 M, and recorded in
BOOK 2957 PAGE 927 Register

2081

722

Know all Men by these Presents,

J B Brown & Sons to Maine Medical Center

Q C

That J. B. BROWN & SONS, a corporation organized and existing under the laws of the State of Maine, and located at Portland in the County of Cumberland and State of Maine in consideration of one dollar and other valuable considerations, being less than $100.00 paid by MAINE MEDICAL CENTER, a corporation organized and existing under the laws of the State of Maine, and located at said Portland, the receipt whereof it does hereby acknowledge, does hereby remise, release, bargain, sell and convey, and forever quit-claim unto the said MAINE MEDICAL CENTER, its successors and assigns forever,

All its right, title and interest in a strip of land, in the City of Portland, County of Cumberland and State of Maine, said strip being that portion of Charles Street lying between Brackett Street and Ellsworth Street bounded as follows: Beginning at a point on the southeasterly line of Ellsworth Street distant southwesterly One Hundred Sixty-three and seven tenths (163.7) feet from a point in said street line Fifty-seven (57) feet at right angles from a stone monument on three feet offset at the northwest corner of Ellsworth and Wescott Streets; thence running southeasterly making an included angle with the northwesterly direction of Ellsworth Street of One Hundred and One degrees and Twenty minutes (101° 20') a distance of One Hundred and Sixteen (116) feet, more or less, to the northerly line of Brackett Street near Arsenal Street. Said strip is Thirteen (13) feet wide and lies on the southerly side of the above described line.

To Have and to Hold the same, together with all the privileges and appurtenances thereunto belonging, to the said MAINE MEDICAL CENTER, its successors ~~heirs~~ and assigns forever.

In Witness Whereof, the said J. B. BROWN & SONS has caused this instrument to be sealed with its corporate seal and signed in its corporate name by , its thereunto duly authorized, this 4th day of May in the year of our Lord one thousand nine hundred and sixty-six.

Signed, Sealed and Delivered in presence of

Ruth M. Dunn
to Lac & PHC

J. B. BROWN & SONS

By Lyman A. Cousens Jr. Treas.
Philip G. Clifford Director
(Corporate Seal)

May 4 1966

State of Maine, Cumberland ss. 19 66.

Personally appeared the above named Lyman A. Cousens Jr. & Philip G. Clifford of said Grantor Corporation, as aforesaid, and acknowledged the foregoing instrument to be his free act and deed, in his said capacity, and the free act and deed of said corporation.

Before me, Nellie H. Foster NOTARY PUBLIC. ~~JUSTICE OF THE PEACE.~~

STATE OF MAINE, CUMBERLAND COUNTY, SS. REGISTRY OF DEEDS

Received MAY 4 1966 at 3 o'clock 17 m. P. M., and recorded in BOOK 2955 PAGE 722 Attest: Samuel R. Thompson Register.

Book 2988
Page 139

Know all Men by these Presents, That

We, FRANK S. NEUTS and DELLA J. NEUTS, both of Portland, in the County of Cumberland and State of Maine

in consideration of one dollar and other valuable consideration s paid by JOHN P. CONSTANTINE and CHARLENE M. CONSTANTINE, both of said Portland

the receipt whereof we do hereby acknowledge, do hereby give, grant, bargain, sell and convey unto the said

JOHN P. CONSTANTINE and CHARLENE M. CONSTANTINE, as joint tenants and not as tenants in common, their heirs and assigns forever.

A certain lot or parcel of land, with the buildings thereon, situated on Charles Street, in the City of Portland, County of Cumberland and State of Maine, bounded and described as follows:

Beginning on the westerly side of Charles Street at the northerly corner of land formerly owned by C. B. Saunders; thence westerly by said Saunders northerly line seventy-five (75) feet, more or less, to land of the Maine General Hospital; thence northerly by line of said Hospital land thirty-six (36) feet to a point; thence easterly on a line parallel with Saunders northerly line seventy-five (75) feet, more or less, to the westerly side line of Charles Street; thence southerly by said Charles Street thirty-six (36) feet to the point begun at.

Being the same premises conveyed to us by Maine General Hospital by deed dated January 30, 1962 and recorded in Cumberland County Registry of Deeds in Book 2657, Page 19.

This conveyance is made subject, however, to the common passageway established by agreement between Maine General Hospital and Clarence D. Read, et al, dated October 29, 1954 and recorded in said Registry of Deeds in Book 2203, Page 413.

To Have and to Hold the aforegranted and bargained premises, with all the privileges and appurtenances thereof, to the said JOHN P. CONSTANTINE and CHARLENE M. CONSTANTINE, as joint tenants and not as tenants in common, their

heirs and assigns, to them and their use and behoof forever. And we do covenant with the said Grantees, their heirs and assigns, that we are lawfully seized in fee of the premises; that they are free of all incumbrances, except as aforesaid, that we ha ve good right to sell and convey the same to the said Grantees to hold as aforesaid; and that we and our heirs and assigns shall and will warrant and defend the same to the said Grantees, their except as aforesaid. heirs and assigns forever, against the lawful claims and demands of all persons,

In Witness Whereof, we, the said FRANK S. NEUTS and DELLA J. NEUTS, being husband and wife,

joining in this deed as Grantors, and relinquishing and conveying our/ respective rights by descent and all other rights in the above described premises, have hereunto set our hands and seals this second day of March in the year of our Lord one thousand nine hundred and sixty-seven.

Signed, Sealed and Delivered in presence of

Frank S. Neuts

Della J. Neuts

State of Maine, Cumberland, ss. March 2, 1967.

Personally appeared the above named Frank S. Neuts and Della J. Neuts

and acknowledged the foregoing instrument to be their free act and deed.

Before me, Notary Public. ~~Justice of the Peace.~~

STATE OF MAINE, CUMBERLAND COUNTY, SS. REGISTRY OF DEEDS

Received MAR 3 1967 at 11 o'clock 8 m. A M., and recorded in BOOK 2988 PAGE 139 Attest: Register.

2238

KNOW ALL MEN BY THESE PRESENTS

THAT OLD COLONY TRUST COMPANY a Corporation located in Boston, County of Suffolk and Commonwealth of Massachusetts, sole surviving Trustee under a Trust Agreement created by ALICE A. BURKITT late of Portland and dated March 30, 1961 by virtue of the authority to it given by said Trust Agreement in its capacity of Trustee as aforesaid, and in consideration of One Dollar ($1.00) and other valuable considerations to it paid by MAINE MEDICAL CENTER of Portland, Maine, the receipt whereof is hereby acknowledged, does hereby sell and convey unto the said Maine Medical Center its successors and assigns forever, the following described real estate, which was the property of Alice A. Burkitt late of Portland, situated in said Portland, Maine and bounded as follows:

a certain lot or parcel of land with the buildings thereon, situated in said Portland, bounded and described as follows: Beginning at a point on the easterly side of Western Promenade, which point is eighty-five (85) feet from the intersection of the northeasterly side line of said Promenade with the northwesterly side line of Bramhall Street; thence northerly by the line of said Promenade seventy-seven and five tenths (77.5) feet, more or less, to Arsenal Street; thence northeasterly by said Arsenal Street seventy-four and one tenths (74.1) feet, more or less, to land now or formerly of William J. Miller et al; thence southeasterly at right angles to Arsenal Street by said Miller land fifty-five and five tenths (55.5) feet, more or less, to land formerly of Hiram Knowlton; thence southwesterly parallel with said Arsenal Street one hundred and twenty-seven (127) feet, more or less, to the Western Promenade and point of beginning, containing fifty-six hundred (5600) square feet more or less.

Also another parcel of land adjoining the above described lot, and bounded and described as follows: Commencing at a point on the northwesterly side of Bramhall Street, which point is the northeasterly corner of land of Frederick C. Hussey et al, and ninety-eight and two tenths (98.2) feet, more or less, from the intersection of said northwesterly side line of Bramhall Street with the easterly side line of the Western Promenade; thence northeasterly on said Bramhall Street thirty-three and five tenths (33.5) feet to a point and land formerly of Hiram Knowlton, and from these two points extending northwesterly keeping a width of thirty-three and five

tenths (33.5) feet a distance of sixty (60) feet to the first parcel herein conveyed, containing two thousand and ten (2010) square feet.

Meaning and intending to convey and hereby conveying the real estate acquired by Alice A. Burkitt by Warranty Deed of Good Will Home Association dated December 11, 1930 recorded in the Cumberland County Registry of Deeds Book 1361, page 373; said real estate having been devised to the Grantor as Trustee by the Will of Alice A. Burkitt duly probated in the Cumberland County Probate Court.

TO HAVE AND TO HOLD the above-granted premises unto the said Maine Medical Center its successors and assigns forever. And the said Old Colony Trust Company in its said capacity does hereby covenant to and with the said Maine Medical Center its successors and assigns that it is the sole surviving Trustee under said Trust Agreement; that it has power under said Trust Agreement to sell as aforesaid; and that in making this conveyance it has in all respects acted in pursuance of the authority granted in and by said Trust Agreement.

IN WITNESS WHEREOF, the said Old Colony Trust Company in its said capacity as Trustee as aforesaid has caused this instrument to be signed in its corporate name and sealed with its corporate seal by S. Vincent its ~~Trust Officer~~ Vice President thereunto duly authorized this 4th day of February 1969.

Witness:

James E. Manahan Jr

OLD COLONY TRUST COMPANY

By S. Vincent

Its ~~Trust Officer~~ Vice President

COMMONWEALTH OF MASSACHUSETTS
SUFFOLK, SS.

February 4, 1969.

Then personally appeared the above-named S. Vincent who made oath that the foregoing instrument was his free act and deed and the free act and deed of the Grantor corporation in its said capacity as Trustee as aforesaid.

Before me,

Mary F. Archoska

Notary Public

Mary F. Archoska
NOTARY PUBLIC
My commission expires May 28, 1971

CERTIFICATE OF TRUSTEE

I, JAMES R. KINGSBURY of Newton Massachusetts, Trust Officer of Old Colony Trust Company of Boston, Massachusetts, hereby certify that Old Colony Trust Company became a Co-Trustee of a certain Revocable Inter Vivos Trust created by ALICE A. BURKITT with said Old Colony Trust Company and NORMAN A. BURKITT as Co-Trustees under a Trust Agreement dated March 30, 1961;

That Norman A. Burkitt is deceased and the Old Colony Trust Company is now acting as sole surviving Trustee;

That said Trust is no longer revocable inasmuch as the Settlor who reserved the power of revocation has since died;

That among the powers given to the Trustees is the following:

> "The Trustees, in addition to and not in limitation of all common law and statutory authority, shall have power, as to any real or personal property in the trust fund or any part thereof, to mortgage, to lease with or without option to purchase and although for a term extending beyond the termination of the trust, to sell in whole or in part at public or at private sale without approval of any court and without liability upon any person dealing with the Trustees to see to the application of any money or other property delivered to them; . . ."

Dated at Boston, Massachusetts, this 4TH day of February 1969.

James R. Kingsbury

COMMONWEALTH OF MASSACHUSETTS
SUFFOLK, SS.

February 4, 1969.

Personally appeared the above named James R. Kingsbury and made oath to the truth of the foregoing certificate by him subscribed.

Before me,

Mary F. Archoska
Notary Public

Mary F. Archoska
NOTARY PUBLIC
My commission expires May 28, 1971

FEB 17 1969
REGISTRY OF DEEDS, CUMBERLAND COUNTY, MAINE
Received at 11 H 35 A.M., and recorded in
BOOK 3075 PAGE 669 Seward R. Kingsbury Register

No. 116

Know All Men by these Presents.

That I, CLARA G. READ, of Portland, in the County of Cumberland and State of Maine,

in consideration of one dollar and other valuable considerations

paid by MAINE MEDICAL CENTER, a Maine corporation having a place of business in said Portland, in said County and State,

the receipt whereof I do hereby acknowledge, do hereby give, grant, bargain, sell and convey, unto the said Maine Medical Center,

its Successors ~~Heirs~~ and Assigns forever,

the following described property:

A certain lot or parcel of land, with the buildings thereon, situated on the southwesterly side of Charles Street in said Portland, bounded and described as follows:

Beginning on said southwesterly side of Charles Street at a point thirty (30) feet northwesterly by said Street from the northeasterly corner of land formerly of Charles A. Donnell; thence northwesterly by said Street thirty (30) feet; thence southwesterly parallel with the line of said Donnell land seventy-four and two-tenths (74.2) feet to land formerly known as the Arsenal property; thence southeasterly by said Arsenal lot thirty (30) feet; thence northeasterly parallel with said Donnell land seventy-four and two-tenths (74.2) feet to the point of beginning.

Being the same premises conveyed to this Grantor and Clarence D. Read, as joint tenants, by Grace R. Loomis by deed dated September 1, 1948 and recorded in Cumberland County Registry of Deeds in Book 1926, Page 336. The said Clarence D. Read having deceased and his estate is of record in the Registry of Probate for Cumberland County, Maine.

The Grantor herein shall have the right to occupy the premises hereby conveyed until September 15, 1969.

STATE OF MAINE
REAL ESTATE TRANSFER TAX
JUL 23'69
Bureau of Taxation
$13.75

To have and to hold the aforegranted and bargained premises, with all privileges and appurtenances thereof to the said Maine Medical Center, its Successors

~~Heirs~~ and Assigns, to them and their use and behoof forever.

And I do **covenant** with the said Grantee, its Successors ~~Heirs~~ and Assigns, that I am lawfully seized in fee of the premises; that they are free of all incumbrances;

that I have good right to sell and convey the same to the said Grantee to hold as aforesaid; and that I and my Heirs, shall and will **Warrant and Defend** the same to the said Grantee, its Successors

~~Heirs~~ and Assigns forever, against the lawful claims and demands of all persons.

In Witness Whereof, I, the said Clara G. Read, being a widow,

~~and~~ ~~wife of the said~~

~~joining in this deed as Grantor, and relinquishing and conveying~~

~~rights by descent and all other rights in the above~~

~~described premises,~~ have hereunto set my hand and seal this [illegible] day of July in the year of our Lord one thousand nine hundred and sixty-nine.

Signed, Sealed and Delivered in presence of

John W. Sturgis

Clara G. Read

State of Maine, CUMBERLAND } ss.

July 22, 1969.

Personally appeared the above named

CLARA G. READ

and acknowledged the above instrument to be her free act and deed.

Before me,

John W. Sturgis

Justice of the Peace

JUL 23 1969

REGISTRY OF DEEDS, CUMBERLAND COUNTY, MAINE

Received at 10 H 58 M.M., and recorded in

BOOK 3095 PAGE 34 Seward R. Thurston Register

211

No. 106

Know All Men by these Presents.

That We, WILLIAM C. GOKEY and SUZANNE E. GOKEY, both of Portland in the County of Cumberland and State of Maine

in consideration of One Dollar ($1.00) and other valuable considerations

paid by MAINE MEDICAL CENTER, a corporation organized and existing under the laws of Maine and located at Portland, County of Cumberland and State of Maine

the receipt whereof we do hereby acknowledge, do hereby give, grant, bargain, sell and convey, unto the said Maine Medical Center,

its successors ~~Heirs~~ and Assigns forever,

the following described property:

A certain lot or parcel of land with the buildings thereon situated on the southeasterly side of Ellsworth Street in said Portland, County of Cumberland and State of Maine, bounded and described as follows:

Beginning at the northeasterly corner of a lot of land on Bramhall's Hill which John B. Brown sold to one Tuttle; thence northeasterly on said Ellsworth Street forty (40) feet; thence southeasterly about seventy-four (74) feet to land formerly of Davis; thence southwesterly by said Davis's land to land formerly of said Tuttle forty (40) feet; thence northwesterly to said Ellsworth Street, the bounds begun at, seventy-four (74) feet.

Being the same premises conveyed to William C. Gokey and Suzanne E. Gokey by Thelma A. Barter, by deed dated June 19, 1968, recorded in Cumberland County Registry of Deeds in Book 3045, Page 187.

This conveyance is made subject to taxes for the year 1969 which the Grantee assumes and agrees to pay.

020136 STATE OF MAINE REAL ESTATE TRANSFER TAX REVENUE 18.15

To have and to hold the aforegranted and bargained premises, 245
with all privileges and appurtenances thereof to the said
Maine Medical Center, its successors

~~Heirs~~ and Assigns, to its and their use and behoof
forever.

And we do covenant with the said Grantee, its successors ~~Heirs~~
and Assigns, that we are lawfully seized in fee of the premises;
that they are free of all incumbrances;
that we have good right to sell and convey the same to the said
Grantee to hold as aforesaid; and that we and our Heirs, shall
and will Warrant and Defend the same to the said Grantee,
its successors
~~Heirs~~ and Assigns forever, against the lawful claims and demands
of all persons.

In Witness Whereof, we the said William C. Gokey
and Suzanne E. Gokey, being husband and wife

~~and wife of the said~~

~~joining in this deed as Grantor, and relinquishing and conveying~~
~~rights by descent and all other rights in the above~~
~~described premises~~, have hereunto set our hands and seals this
11th day of August in the year of our Lord
one thousand nine hundred and sixty-nine.

Signed, Sealed and Delivered
in presence of

Edward F. Pana

William C. Gokey
Suzanne E. Gokey

State of Maine,
Cumberland } ss.

August 11, 1969

Personally appeared the above named
William C. Gokey
and acknowledged the above instrument to be his free act and
deed.

Before me, Edward F. Pana
Justice of the Peace

AUG 11 1969
REGISTRY OF DEEDS, CUMBERLAND COUNTY, MAINE
Received at 2 H 24 M P M, and recorded in
BOOK 3097 PAGE 244 Seward R. Hayes Register

(106)

396

Know all Men by these Presents,

That JOHN P. CONSTANTINE and CHARLENE M. CONSTANTINE, both of Portland in the County of Cumberland and State of Maine

in consideration of One Dollar ($1.00) and other valuable considerations

paid by MAINE MEDICAL CENTER, a corporation organized and existing under the laws of Maine, and located at Portland, County of Cumberland and State of Maine

the receipt whereof we do hereby acknowledge, do hereby give, grant, bargain, sell and convey, unto the said Maine Medical Center, its successors ~~heirs~~ and assigns forever,

a certain lot or parcel of land, with the buildings thereon, situated on Charles Street, in the City of Portland, County of Cumberland and State of Maine, bounded and described as follows:

Beginning on the westerly side of Charles Street at the northerly corner of land formerly owned by C. B. Saunders; thence westerly by said Saunders northerly line seventy-five (75) feet, more or less, to land of the Maine General Hospital; thence northerly by line of said Hospital land thirty-six (36) feet to a point; thence easterly on a line parallel with Saunders northerly line seventy-five (75) feet, more or less, to the westerly side line of Charles Street; thence southerly by said Charles Street thirty-six (36) feet to the point begun at.

Being the same premises conveyed to us by Frank S. Neuts, by deed dated March 2, 1967, recorded in Cumberland County Registry of Deeds in Book 2988, Page 139.

This conveyance is made subject, however, to the common passageway established by agreement between Maine General Hospital and Clarence D. Read et al, dated October 29, 1954, recorded in said Registry of Deeds in Book 2203, Page 413.

STATE OF MAINE
REAL ESTATE TRANSFER TAX
Bureau of Taxation
$ 14.85

To have and to hold the aforegranted and bargained premises with all the privileges and appurtenances thereof to the said Maine Medical Center, its successors and assigns, to its and their use and behoof forever.

And we do COVENANT with the said Grantee, its successors and assigns, that we are lawfully seized in fee of the premises that they are free of all encumbrances except as aforesaid; that we have good right to sell and convey the same to the said Grantee to hold as aforesaid; and that we and our heirs shall and will WARRANT and DEFEND the same to the said Grantee, its successors and assigns forever, against the lawful claims and demands of all persons, except as aforesaid.

In Witness Whereof, we the said John P. Constantine and Charlene M. Constantine, being husband and wife,

and

wife

have hereunto set our hands and seals this 7th day of November in the year of our Lord one thousand nine hundred and sixty-nine.

Signed, Sealed and Delivered in presence of

Edward T. Long

Edward T. Long

John P. Constantine

Charlene M. Constantine

State of Maine, Cumberland } ss. 19 69.

Personally appeared the above named John P. Constantine and acknowledged the above instrument to be his free act and deed.

Before me, Edward T. Long

Justice of the Peace.

NOV 7 1969

REGISTRY OF DEEDS, CUMBERLAND COUNTY, MAINE

Received at 11 H 18 M. and recorded in BOOK 3108 PAGE 396

Edward T. Long Register ~~Notary Public~~

Book 3183
Page 576

No. 106

14804

Know All Men by these Presents,

That I, AGNES E. TWEEDIE, formerly AGNES E. BROWN, of Portland, County of Cumberland and State of Maine

in consideration of One Dollar ($1.00) and other valuable consideration

paid by MAINE MEDICAL CENTER, a corporation organized and existing under the laws of the State of Maine and having its principal place of business at Portland, County of Cumberland and State of Maine

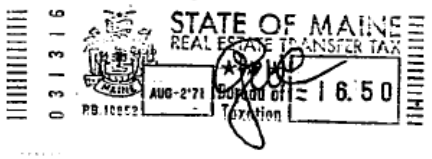
the receipt whereof I do hereby acknowledge, do hereby give, grant, bargain, sell and convey, unto the said MAINE MEDICAL CENTER,

its successors ~~Heirs~~ and Assigns forever,

the following described property: A certain lot or parcel of land, with the buildings thereon, situated in the City of Portland, County of Cumberland and State of Maine, on the corner of Brackett and Russell Streets and bounded as follows: Southwesterly by said Brackett Street; northwesterly by said Russell Street; northeasterly by land formerly of J. K. Emery and southeasterly by land now or formerly of Annie F. Chapman; containing about twenty-one hundred and fifty-one (2151) square feet.

Being the same premises conveyed to the Grantor herein and her late husband, Kenneth C. Brown, by deed dated January 22, 1962 and recorded in the Cumberland County Registry of Deeds, Book 2655, Page 344.

This conveyance is made subject to taxes for 1971 which the Grantee assumes and agrees to pay.



To have and to hold the aforegranted and bargained premises. with all privileges and appurtenances thereof to the said

MAINE MEDICAL CENTER, its successors

~~Heirs~~ and Assigns, to its and their use and behoof forever.

And I do **covenant** with the said Grantee, its ~~Heirs~~ successors and Assigns, that I am lawfully seized in fee of the premises; that they are free of all incumbrances; except as aforesaid that I have good right to sell and convey the same to the said Grantee to hold as aforesaid; and that I and my Heirs, shall and will **Warrant and Defend** the same to the said Grantee, its successors

~~Heirs~~ and Assigns forever, against the lawful claims and demands of all persons, except as aforesaid

In Witness Whereof, I the said

AGNES E. TWEEDIE, being a widow

~~and~~ ~~wife of the said~~

~~joining in this deed as Grantor, and relinquishing and conveying rights by descent and all other rights in the above described premises,~~ have hereunto set my hand and seal this day of in the year of our Lord one thousand nine hundred and seventy-one.

Signed, Sealed and Delivered in presence of

[signature] — Agnes E. Tweedie

State of Maine, Cumberland } ss.

July 30 1971

Personally appeared the above named AGNES E. TWEEDIE

and acknowledged the above instrument to be her free act and deed.

Before me, [signature]

~~Justice of the Peace~~

Notary Public

My commission expires Oct. 2, 1972

REGISTRY OF DEEDS, CUMBERLAND COUNTY, MAINE AUG 2, 1971
Received at 2 H 41 M P M, and recorded in
BOOK 3183 PAGE 576 [signature] Register

16674

Know all Men by these Presents, That

I, MARGUERITE M. BROOKS of Portland, County of Cumberland and State of Maine

in consideration of one dollar and other valuable consideration

paid by MAINE MEDICAL CENTER, a corporation organized under the laws of the State of Maine with a place of business at Portland, County of Cumberland and State of Maine,

the receipt whereof I do hereby acknowledge, do hereby give, grant, bargain, sell and convey unto the said MAINE MEDICAL CENTER, its successors and assigns forever.

A certain lot or parcel of land with the buildings thereon, situated on the southeasterly side of Ellsworth Street, in the City of Portland, County of Cumberland and State of Maine, and at present numbered forty-four (44) on said street; said lot of land being bounded and described as follows:

Beginning at the northeasterly corner of Ellsworth Street and a lane running from said Ellsworth Street to the junction of Brackett and Arsenal Streets; thence northeasterly by said Ellsworth Street, twenty-six (26) feet, more or less, to land now or formerly of Neal P. Thompson; thence southeasterly by said Thompson land, seventy-four (74) feet, more or less, to land now or formerly owned by John Russell; thence southwesterly by said Russell land, forty (40) feet, more or less, to said lane; thence northwesterly by said lane, seventy-five (75) feet, more or less, to the point begun at.

Being the same premises conveyed to me by Walter E. Mangum et al by deed dated October 15, 1957 and recorded in Cumberland County Registry of Deeds in Book 2379, Page 181.

This conveyance is made subject to taxes for 1971 which the Grantee assumes and agrees to pay.

STATE OF MAINE
REAL ESTATE TRANSFER TAX
AUG 23 '71
Bureau of Taxation
30.80
P.B. 10852

To Have and to Hold the aforegranted and bargained premises, with all the privileges and appurtenances thereof, to the said MAINE MEDICAL CENTER, its successors

~~heirs~~ and assigns, to their use and behoof forever. And I do covenant with the said Grantee, its successors ~~heirs~~ and assigns, that I am lawfully seized in fee of the premises; that they are free of all incumbrances except as aforesaid, that I have good right to sell and convey the same to the said Grantee to hold as aforesaid; and that I and my heirs and assigns shall and will warrant and defend the same to the said Grantee, its successors ~~heirs~~ and assigns forever, against the lawful claims and demands of all persons, except as aforesaid.

In Witness Whereof, I, the said MARGUERITE M. BROOKS, being single,

~~joining in this deed as Grantor, and relinquishing and conveying rights by descent and all other rights in the above described premises,~~ have hereunto set my hand and seal this 23rd day of August in the year of our Lord one thousand nine hundred and seventy-one.

Signed, Sealed and Delivered in presence of

Charles F. Oestreicher

Marguerite M. Brooks

State of Maine, Cumberland ss. August 23, 1971.

Personally appeared the above named MARGUERITE M. BROOKS

and acknowledged the foregoing instrument to be her free act and deed.

Before me, Charles F. Oestreicher ~~NOTARY PUBLIC~~ JUSTICE OF THE PEACE.

STATE OF MAINE, CUMBERLAND COUNTY, SS. *REGISTRY OF DEEDS*

Received AUG 23 1971 *at* 1 *o'clock* 40 *m.* P *M., and recorded in BOOK* 3187 *PAGE* 234 *Attest:* [signature] *Register.*

710

17489

Know all Men by these Presents, That

PORTLAND WATER DISTRICT, a quasi-municipal corporation organized and existing under the laws of the State of Maine and located at Portland in the County of Cumberland and State of Maine

in consideration of one dollar and other valuable considerations

paid by MAINE MEDICAL CENTER, a corporation organized and existing under the laws of the State of Maine and located at said Portland in said County and State

the receipt whereof it does hereby acknowledge, do es hereby remise, release, bargain, sell and convey, and forever quit-claim unto the said MAINE MEDICAL CENTER, its successors and assigns forever,

A certain lot or parcel of land situated in the City of Portland, County of Cumberland and State of Maine, bounded and described as follows:

Beginning at the intersection of the westerly side line of Vaughan Street with the southwesterly side line of Brackett Street; thence northwesterly by Brackett Street, two hundred forty-two and seventy-two hundredths (242.72) feet, more or less, to Bramhall Street; thence southwesterly by Bramhall Street, eighty-one and five hundredths (81.05) feet, more or less, to Chadwick Street; thence southerly by Chadwick Street, three hundred fifty-seven and forty-five hundredths (357.45) feet, more or less, to land of Chadwick Realty Corp.; thence by land of said Chadwick Realty Corp. and land of Maine General Hospital, two hundred eighty-eight and sixty-five hundredths (288.65) feet, more or less, to Vaughan Street; thence northerly by Vaughan Street, three hundred fifty-three and sixty-two hundredths (353.62) feet, more or less, to Brackett Street and the point of beginning. Containing 2.52 acres, more or less, and being known as the Bramhall Reservoir Lot.

A portion of the above-described premises, known as the J. & W. Warren Lot, was conveyed to the Portland Water Company by the following warranty deeds all dated May 1, 1869: deed of George Warren et al of a 1/3rd interest, recorded in Cumberland County Registry of Deeds, Book 368, Page 421; deed of John G. Warren of a 1/3rd interest, recorded in said Registry of Deeds, Book 368, Page 424; deed of Caroline Chadbourne et al of a 1/9th interest, recorded in said Registry of Deeds, Book 368, Page 423; and deed of Benjamin F. Chadbourne et al of a 2/9ths interest, recorded in said Registry of Deeds, Book 368, Page 425; and the remaining portion of said premises, known as the Payson Lot, was conveyed to said Portland Water Company by Henry M. Payson by warranty deed dated July 17, 1885, and recorded in said Registry of Deeds, Book 531, Page 32; all of said premises having been conveyed to said Portland Water District by Portland Water Company by quit-claim deed dated August 10, 1908, and recorded in said Registry of Deeds, Book 827, Page 147.

To Have and to Hold the same, together with all the privileges and appurtenances thereunto belonging, to the said

MAINE MEDICAL CENTER, its successors

~~heirs~~ and assigns forever. And it do es covenant with the said Grantee , its successors ~~heirs~~ and assigns, that it will warrant and forever defend the premises to the said Grantee , its successors ~~heirs~~ and assigns forever, against the lawful claims and demands of all persons claiming by, through, or under it.

In Witness Whereof, the said PORTLAND WATER DISTRICT has caused this instrument to be sealed with its corporate seal and signed in its corporate name by William D. Monie , its Treasurer , thereunto duly authorized,

~~Assisting in this deed as Grantor and relinquishing and conveying rights by descent and all other rights in the above described premises have hereunto set hand and seal~~ this first day of September in the year of our Lord one thousand nine hundred and seventy-one.

Signed, Sealed and Delivered in presence of

Robert B. Williamson Jr.

PORTLAND WATER DISTRICT

By William D. Monie
Its Treasurer

State of Maine, Cumberland ss. September 1, 1971.

Personally appeared the above named William D. Monie, Treasurer of said Grantor Corporation, as aforesaid

and acknowledged the foregoing instrument to be his free act and deed, in his said capacity, and the free act and deed of said corporation.

Before me, Robert B. Williamson Jr. ~~Notary Public.~~ Justice of the Peace.

STATE OF MAINE, CUMBERLAND COUNTY, SS. *REGISTRY OF DEEDS*

Received SEP 1 1971 *at* 12 *o'clock* 06 *m.* P *M., and recorded in BOOK* 3188 *PAGE* 710 *Attest:* Margaret L. Weber Deputy *Register.*

17050

209

Know All Men by These Presents,

That the CITY OF PORTLAND, a body politic and corporate,

~~[illegible]~~ located at Portland

in the County of Cumberland and State of Maine

in consideration of Thirteen Thousand Five Hundred ($13,500.00) Dollars

paid by the MAINE MEDICAL CENTER, a corporation organized and existing under the laws of the State of Maine and located at Portland in the County of Cumberland and State of Maine, whose address is 22 Bramhall Street, Portland, Maine

the receipt whereof it does hereby acknowledge, does hereby remise, release, bargain, sell and convey and Forever Quit-Claim unto the said

Maine Medical Center, its successors

~~heirs~~ and assigns forever,

a certain lot or parcel of land in the City of Portland, County of Cumberland and State of Maine, being bounded and described as follows:

Beginning at a point marking the intersection of the westerly terminus of the northerly side line of Bramhall Street and the Northerly terminus of the easterly side line of Western Promenade; thence on a course of South 61° 00' 30" West along a prolongation of the northerly side line of said Bramhall Street, a distance of eighty-six and eight hundredths (86.08) feet to a point; thence North 50° 49' 20" West, a distance of one hundred fifty-one and thirty-nine hundredths (151.39) feet to a point which point is on the southeasterly side line of Arsenal Street as it was formerly laid out; thence North 62° 24' 00" East fifty (50) feet to a point; thence North 27° 36' 00" West, a distance of forty (40) feet to a point on the northwesterly side line of Arsenal Street, as it was formerly laid out; thence North 62° 24' 00" East, a distance of two hundred seventy-two (272) feet, more or less, to a point which point is two hundred forty-eight (248) feet from the starting point hereof when measured on a course of North 16° 58' 00" East from said starting point; thence South 16° 58' 00" West, a distance of two hundred forty-eight (248) feet to said starting point.

Being a portion of the premises conveyed to the Grantor by deed of Sarah Little dated July 11, 1856, recorded in Cumberland County Registry of Deeds in Book 274, Page 6.

By acceptance of this deed, the Grantee covenants and agrees for itself, its successors and assigns:

(1) That the Grantee shall secure Planning Board review and approval of the site plan for its proposed development prior to beginning construction of any building and landscaping of the land herein conveyed.

(2) That the Grantee shall submit to the Planning Board for review and approval a grading plan within three months from the date hereof; that it will initiate actual grading work within six months from the date hereof; and that it will complete such grading work within three months from the date of completion of the proposed building.

(3) That the Grantee shall provide and forever maintain access for fire equipment satisfactory to the Fire Chief of the City of Portland to the proposed building and the remainder of the Medical Center Building Complex.

210

(4) That in the event of failure of the Grantee to complete or substantially complete the construction of the proposed building, landscaping, and grading in accordance with the approved site plan within three (3) years from the date hereof, the Grantee shall be required at the election of the Grantor, to reconvey to the Grantor all or such portion of the premises herein conveyed as the Grantor shall require for an amount which bears the same per square foot price as was paid for the premises herein conveyed.

(5) That if within a period of eight (8) years from the date hereof, the Grantee shall decide to sell any portion of the premises herein conveyed without selling all of its premises, it shall notify the Grantor in writing by registered mail directed to the City Manager of the City of Portland of its desire to sell such portion and thereupon the Grantor shall have the exclusive option for a period of sixty (60) days from the receipt of such notice to buy such portion for an amount which bears the same per square foot price as was paid for the premises herein conveyed.

(6) That the Grantee shall simultaneously with delivery of this deed to it, deliver to the Grantor at no cost to it a deed covering a parcel of land located at the intersection of the easterly side line of Gilman Street and the northwesterly side line of Arsenal Street for the purpose of providing a turn-around area serving Gilman Street.

(7) That the Grantee shall construct or cause to be constructed at no cost to the Grantor said turn-around area in accordance with specifications to be approved by the Director of Public Works of the City of Portland.

To have and to hold the same, together with all the privileges and appurtenances thereunto belonging, to it the said Maine Medical Center its successors and Assigns forever.

And the said Grantor Corporation does covenant with the said Maine Medical Center, its successors and Assigns, that it will Warrant and Forever Defend the premises to it the said Grantee, its successors and Assigns forever, against the lawful claims and demands of all persons claiming by, through, or under it.

In Witness Whereof, the said CITY OF PORTLAND has caused this instrument to be sealed with its corporate seal and signed in its corporate name by JOHN G. DePALMA, its Director of Finance thereunto duly authorized, this 4th day of August in the year one thousand nine hundred and seventy-two.

Signed, Sealed and Delivered in presence of

Patricia E. Meady

CITY OF PORTLAND

By John G. DePalma
Director of Finance

(CORPORATE SEAL)

State of Maine. CUMBERLAND ss. August 4 1972.

Personally appeared the above named JOHN G. DePALMA, Director of Finance of said Grantor Corporation as aforesaid, and acknowledged the foregoing instrument to be his free act and deed in his said capacity, and the free act and deed of said corporation.

Before me,

Patricia E. Meady
Justice of the Peace
Notary Public

AUG 4 1972
REGISTRY OF DEEDS, CUMBERLAND COUNTY, MAINE
Received at 3 H 05 M P.M. and recorded in
BOOK 3278 PAGE 209
Register

23119

115

KNOW ALL MEN BY THESE PRESENTS that STATE OF MAINE, a body corporate and politic existing by law, in consideration of One Dollar ($1.00) and other valuable considerations paid by MAINE MEDICAL CENTER, a corporation organized and existing under the laws of the State of Maine with its principal place of business in the City of Portland, County of Cumberland and State of Maine, the receipt whereof it does hereby acknowledge, does hereby RELEASE, GRANT and TRANSFER unto the said MAINE MEDICAL CENTER, its successors and assigns, all and any rights and interests in the former site of the State Arsenal situated on Bramhalls Hill, so-called, in the City of Portland, County of Cumberland and State of Maine, being all and the same premises described by Chapter 180 of the Resolves of the State of Maine, 1870, and Chapter 107 of the Resolves of the State of Maine, 1951, including any right of entry, reversion or other interest of the State of Maine in said premises reserved in the State of Maine by either of said Resolves and State of Maine does hereby waive as to said Maine Medical Center its successors and assigns any such rights which may now exist or which may in the future exist in State of Maine by virtue of said Resolves.

TO HAVE AND TO HOLD the aforegranted premises, with all privileges and appurtenances thereof to the said MAINE MEDICAL CENTER, its successors and assigns, and State of Maine does hereby covenant with said Maine Medical Center, its successors and assigns that State of Maine lawfully holds rights in said premises by virtue of said Resolves; that said rights are not encumbered; that it has good right to grant the same to Maine Medical Center as aforesaid; and that State of Maine, its successors and assigns, shall and will warrant and defend the same to Maine Medical Center, its successors and assigns forever against the lawful claims and demands of all persons; provided, nevertheless, that any and all liability of State of Maine for any damage or loss to Maine Medical Center, its successors and assigns, by virtue of any breach of the foregoing covenants and warranties shall be and hereby is limited forever to the total amount of One Dollar ($1.00).

IN WITNESS WHEREOF, Kenneth M. Curtis, Governor of the State of Maine, and Edmund C. Darey, Chairman of the Executive Council of the State of Maine, acting for and with the advice and consent of the said Executive Council given this date, have caused this instrument to be executed and sealed on behalf of the State of Maine this 6th day of September, 1972.

Witness:

Peter M. Dawbarn

Thea L. Stewart

STATE OF MAINE

By Kenneth M. Curtis
Its Governor

By Edmund C. Darey
Its Chairman - Executive Council

STATE OF MAINE
KENNEBEC, ss.

September 6, 1972

Personally appeared the above-named Kenneth M. Curtis, Governor of the State of Maine, and Edmund C. Darey, Chairman of the Executive Council of the State of Maine and acknowledged the foregoing to be their free act and deed in said capacity and the free act and deed of said State of Maine.

Before me,

Approved as to form:

Leon V. Walkley
Assistant Attorney General

Peter M. Dawbarn
~~Notary Public~~
Justice of the Peace

STATE OF MAINE

CUMBERLAND, ss. REGISTRY OF DEEDS

Received at 11 H. 16 M. A M on OCT 12 1972 and recorded in Book 3310 Page 115 Attest Loretta Murphy Register

116

23120

KNOW ALL MEN BY THESE PRESENTS, that CITY OF PORTLAND, a body corporate and politic existing by law, situated at Portland, County of Cumberland and State of Maine, in consideration of One Dollar ($1.00) and other valuable considerations paid by MAINE MEDICAL CENTER, a corporation organized and existing under the laws of the State of Maine with its principal place of business in the City of Portland, County of Cumberland and State of Maine, the receipt whereof it does hereby acknowledge, does hereby RELEASE, GRANT and TRANSFER unto the said MAINE MEDICAL CENTER, its successors and assigns, all its rights and interests in the land situated on Bramhall's Hill, so-called, in the City of Portland, County of Cumberland and State of Maine which land was conveyed by City of Portland to Maine General Hospital by deed dated June 4, 1870, which deed is duly recorded in the Cumberland County Registry of Deeds, Book 381, Pages 260, 261 and 262, to which deed reference is made for a particular description of said land, including any right of entry, possibility of reverter, reversionary or other interest of the City of Portland in said land reserved to said City in said deed and City of Portland does hereby waive as to said Maine Medical Center, its successors and assigns, said right of entry and any such other rights which may now exist or which may in the future exist in the City of Portland by virtue of said deed.

TO HAVE AND TO HOLD the aforegranted premises, with all privileges and appurtenances thereof to the said MAINE MEDICAL CENTER, its successors and assigns, and City of Portland does hereby covenant with said Maine Medical Center, its successors and assigns that City of Portland lawfully holds rights in said land by virtue of said deed of June 4, 1870; that said rights are not encumbered; that it has good right to grant the same to Maine Medical Center as aforesaid; that City of Portland, its successors and assigns, shall and will warrant and defend the same to Maine Medical Center, its successors and assigns forever against the lawful claims and demands of all persons; provided, nevertheless, that any and all liability of City of Portland for any damage or loss to Maine Medical Center, its successors and assigns, by virtue of any breach of the foregoing covenants and warranties shall be and hereby is limited forever to the total amount of One Dollar ($1.00).

IN WITNESS WHEREOF, City of Portland has caused this deed to be sealed and executed by John G. DePalma, its Director of Finance, hereunto duly authorized, this 14th day of September, 1972.

Witness:

CITY OF PORTLAND

By _____
Its Director of Finance

STATE OF MAINE
CUMBERLAND, ss.

September 14, 1972

Personally appeared the above-named John G. DePalma, Director of Finance of said City of Portland and acknowledged the foregoing to be his free act and deed in said capacity and the free act and deed of said City of Portland.

Before me,

_____
~~Justice of the Peace~~ Notary Public

OCT 12 1972
REGISTRY OF DEEDS, CUMBERLAND COUNTY, MAINE
Received at 11 H/7 M/4M, and recorded in
BOOK 3310 PAGE 116 _____ Register

Book 3995
Page 53

53

No. 106
6367

Know All Men by these Presents,

That We, LEROY E. APPLEBEE and ROBERTA M. APPLEBEE, both of Portland, in the County of Cumberland and State of Maine,

in consideration of One Dollar ($1) and other valuable considerations,

paid by MAINE MEDICAL CENTER, a Maine corporation with a place of business in Portland, in the County of Cumberland and State of Maine,

the receipt whereof we do hereby acknowledge, do hereby give, grant, bargain, sell and convey, unto the said MAINE MEDICAL CENTER, its successors

~~Heirs~~ and Assigns forever,

~~the following described property~~

See attached Exhibit A.

54

To have and to hold the aforegranted and bargained premises, with all privileges and appurtenances thereof to the said MAINE MEDICAL CENTER, its successors

~~Heirs~~ and Assigns, to it and their use and behoof forever.

And we do **covenant** with the said Grantee, its/ ~~Heirs~~ Successors and Assigns, that we are lawfully seized in fee of the premises; that they are free of all incumbrances;

that we have good right to sell and convey the same to the said Grantee to hold as aforesaid; and that we and our Heirs, shall and will **Warrant and Defend** the same to the said Grantee, its successors ~~Heirs~~ and Assigns forever, against the lawful claims and demands of all persons.

In Witness Whereof, We, the said LEROY E. APPLEBEE

and ROBERTA M. APPLEBEE, ~~wife of husband~~ husband and wife,

joining in this deed as Grantors, and relinquishing and conveying our/ mutual rights by descent and all other rights in the above described premises, have hereunto set our hands and seals this 7th day of April in the year of our Lord one thousand nine hundred and seventy-seven.

Signed, Sealed and Delivered in presence of

LEROY E. APPLEBEE

ROBERTA M. APPLEBEE

55

State of Maine,
Cumberland, } ss. April 7 1977

Personally appeared the above named LEORY E. APPLEBEE and ROBERTA M. APPLEBEE and acknowledged the above instrument to be their free act and deed.

Before me,

Justice of the Peace

EXHIBIT A

A certain lot or parcel of land with the buildings thereon, situated on Bramhall Street in the City of Portland, County of Cumberland and State of Maine, bounded and described as follows:

Beginning at a stone monument on the westerly corner of Brackett and Bramhall Streets; thence North 57° 20' West, 70.7 feet by the westerly sideline of Brackett Street; thence South 61° 07' West, 42.3 feet by the northerly sideline of a garage on the lot under description; thence South 27° 57' East, 62-1/2' feet to a point on the northerly sideline of Bramhall Street; thence North 61° 51' East, 77.5 feet by the northerly sideline of Bramhall Street to the stone monument aforesaid and point of beginning, together with the right to have the eaves of said garage which project over land of Ella C. Gardner remain as now constructed as long as said garage is maintained in its present position.

Being the same premises conveyed to Leroy E. Applebee and Roberta M. Applebee by Edna M. Sharp by deed dated September 27, 1972, and recorded in Cumberland County Registry of Deeds in Book 3303, Page 200.

APR 7 1977
REGISTRY OF DEEDS, CUMBERLAND COUNTY, MAINE
Received at 10 H 22 M A M, and recorded in
BOOK 3995 PAGE 53. Margaret L Fisher Register

319

WARRANTY DEED

15732

Know all Men by these Presents,

That JAMES H. SULLIVAN, Jr. of 26 Charles Street, Portland in the County of Cumberland and State of Maine

in consideration of One Dollar ($1.00) and other valuable considerations

paid by MAINE MEDICAL CENTER, a Maine corporation with a place of business in Portland, in the County of Cumberland and State of Maine whose mailing address is 22 Bramhall Street, Portland, Maine

the receipt whereof I do hereby acknowledge, do hereby give, grant, bargain, sell and convey unto the said Maine Medical Center, its successors

heirs and assigns forever,

A certain lot or parcel of land, with the buildings thereon, situated on the southwesterly side of Charles Street and the southeasterly side of Congress Street, in Portland, Maine, bounded and described as follows: Beginning at a point on the southwesterly side of said Charles Street at the northerly corner of land conveyed by Edward E. Proctor to Lulu M. Stickney by warranty deed dated May 16, 1890 and recorded in the Cumberland County Registry of Deeds in Book 567, Page 348; thence running southwesterly by said Stickney land a distance of seventy-five (75) feet, more or less, to land of the Maine General Hospital; thence running northwesterly by said Hospital land to the southeasterly side of Congress Street; thence running northeasterly by the southeasterly side of Congress Street seventy-five (75) feet, more or less, to land conveyed by Henry A. Sargent to Lucinda B. Proctor by warranty deed dated August 14, 1896, and recorded in said Registry of Deeds in Book 639, Page 284; thence running southeasterly by said Proctor land and by the southwesterly side line of said Charles Street to said Stickney land and the point of beginning.

Being the same premises conveyed to James H. Sullivan, Jr. by deed dated August 23, 1976 and recorded in said Registry of Deeds in Book 3936, Page 282.

320

To have and to hold the aforegranted and bargained premises, with all the privileges and appurtenances thereof, to the said Maine Medical Center, its successors ~~heirs~~ and assigns, to it and ~~his~~ its use and behoof forever.

And I do covenant with the said Grantee, its/ successors ~~heirs~~ and assigns, that I am lawfully seized in fee of the premises, that they are free of all encumbrances

that I have good right to sell and convey the same to the said Grantee to hold as aforesaid; and that I and my heirs shall and will **warrant and defend** the same to the said Grantee, its/ successors ~~heirs~~ and assigns forever, against the lawful claims and demands of all persons.

In Witness Whereof, I, the said James H. Sullivan, Jr. being unmarried ~~and~~ ~~husband/wife of the said~~ ~~joining herein and~~ relinquishing and conveying all rights by descent and all other rights in the above described premises, have hereunto set my hand and seal this 25th day of the month of May, A.D. 19 83.

Signed, Sealed and Delivered in presence of

James H. Sullivan, Jr.

State of Maine, County of Cumberland ss. 25 May, 19 83.

Then personally appeared the above named James H. Sullivan, Jr.

and acknowledged the foregoing instrument to be his free act and deed.

Before me,

~~Justice of the Peace~~ Notary Public ~~Attorney at Law~~

My Commission expires Sept. 20, 1986

MAY 26 1983

REGISTRY OF DEEDS CUMBERLAND COUNTY, MAINE
Received at 12:01 P.M., and recorded in
BOOK 6179 PAGE 319 James J. Walsh Register

0243397 BK8309PG0005

Book 8309
Page 5

QUITCLAIM DEED
With Covenant

Know all Men by these Presents,

That we, JOHN J. HAMMETT and ELIZABETH B. HAMMETT, both of Portland, County of Cumberland, Maine

in consideration of One Dollar ($1.00) and other valuable consideration

paid by MMC REALTY CORP., a Maine corporation with a place of business at 22 Bramhall Street, in the County of Cumberland, Maine

whose mailing address is 22 Bramhall Street, Portland, Maine 04102

the receipt whereof we do hereby acknowledge, do hereby remise, release, bargain, sell and convey, and forever quitclaim unto the said MMC Realty Corp., its

successors~~xxx~~ and assigns forever,

A certain lot or parcel of land, with the buildings thereon, situated on the northwesterly corner of Bramhall and Brackett Streets, in said Portland, and bounded and described as follows:

Beginning at the northwesterly corner of Brackett and Bramhall Streets; thence westerly on Brackett Street seventy-five (75) feet ten (10) inches, more or less, to land conveyed by William H. Chapman to Charles E. Graham by deed of April 29, 1920 and recorded in the Cumberland County Registry of Deeds in Book 1050, Page 213; thence northerly by land now or formerly of said Graham sixty-one (61) feet six (6) inches, more or less, to land conveyed by Alden J. Blethen to James K. Emery by deed dated April 30, 1880 and recorded in said Registry of Deeds in Book 467, Page 152; thence easterly by land now or formerly of said Emery sixty-six (66) feet six (6) inches to Bramhall Street; thence southerly by said Bramhall Street thirty (30) feet three (3) inches, more or less, to the point of beginning.

Being the same premises conveyed to the Grantors herein by Sumner J. Goffin by deed dated February 4, 1950 and recorded in said Registry of Deeds in Book 1985, Page 483.

MAINE REAL ESTATE TRANSFER TAX PAID

BK0309PG0006

To have and to hold the same, together with all the privileges and appurtenances thereunto belonging, to the said MMC Realty Corp., its successors

~~heirs~~ and assigns forever.

And we do covenant with the said Grantee, its/ successors ~~heirs~~ and assigns, that we shall and will warrant and defend the premises to the said Grantee, its/ successors ~~heirs~~ and assigns forever, against the lawful claims and demands of all persons claiming by, through, or under us.

In Witness Whereof, we, the said John J. Hammott and Elizabeth B. Hammott

~~and~~

~~husband/wife of the said~~

~~having in the Cumberland County and conveying all the hereditaments and the above described premises~~ have hereunto set our hands and seals this 31st day of the month of May, A.D. 19 88.

Signed, Sealed and Delivered in presence of

Lee D. Urban

Lee D. Urban

John J. Hammott

John J. Hammott

John J. Hammott

Elizabeth B. Hammott, By John J. Hammott as her Attorney in Fact pursuant to Power of Attorney dated August 16, 1984 and recorded herewith in the Cumberland County Registry of Deeds

State of Maine, County of Cumberland **ss.** May 31, 1988.

Then personally appeared the above named John J. Hammott

and acknowledged the foregoing instrument to be his free act and deed.

Before me,

Lee D. Urban

Notary Public
Attorney at Law

Printed Name Lee D. Urban

RECEIVED
RECORDED REGISTRY OF DEEDS
1988 JUN -1 AM 8:31
CUMBERLAND COUNTY
James J. Walsh

BK8855PG0081

MAINE REAL ESTATE TAX PAID

036413 WARRANTY DEED

KNOW ALL MEN BY THESE PRESENTS, that GILMAN STREET LAND COMPANY, a Maine corporation, and GILMAN STREET ASSOCIATES, a Maine limited partnership, for consideration paid, grant to MMC REALTY CORP., a Maine Corporation with a principal place of business in Portland, County of Cumberland, State of Maine, whose mailing address is 22 Bramhall Street, Portland, Maine 04103, with WARRANTY COVENANTS a certain lot or parcel of land, with the improvements thereon, located at 52 Gilman Street, in the City of Portland, County of Cumberland, State of Maine, all as more particularly described in Schedule A attached hereto and incorporated herein.

IN WITNESS WHEREOF, the said GILMAN STREET LAND COMPANY has caused this instrument to be sealed with its corporate seal and signed in its corporate names by William H. Webster, its President, hereunto duly authorized, this 4th day of August, 1989, and the said GILMAN STREET ASSOCIATES has caused this instrument to be signed and sealed by William H. Webster, President of its General Partner MORSE, PAYSON & NOYES PROPERTIES, hereunto duly authorized, this 4th day of August, 1989.

WITNESS:

Robert B. Patterson, Jr.

GILMAN STREET LAND COMPANY

By: _____
William H. Webster
Its President

GILMAN STREET ASSOCIATES

By: MORSE, PAYSON & NOYES PROPERTIES,
Its General Partner

Robert B. Patterson, Jr.

By: _____
William H. Webster
Its President

STATE OF MAINE
COUNTY OF CUMBERLAND, ss.

August 4, 1989

Then personally appeared before me the above named William H. Webster, President of Gilman Street Land Company, and President of Morse, Payson & Noyes Properties, and acknowledged the foregoing instrument to be his free act and deed in his said capacity, and the free act and deed of said corporations and partnership.

Before me,

Robert B. Patterson Jr.
~~Notary Public~~/Attorney at-Law

Robert B. Patterson, Jr.
Printed Name

~~My Commission Expires~~ _____

SCHEDULE A TO WARRANTY DEED

PARCEL ONE

A certain lot or parcel of land with the buildings thereon known as 52 Gilman Street, in Portland, County of Cumberland and State of Maine bounded and described as follows:

Beginning at a point on said street distant one hundred six and fifty-five one hundredths (106.55) feet northerly from the intersection of the westerly side of Gilman Street with the northerly side of A Street, and running thence northerly on said Gilman Street, thirty-seven and one half (37-1/2) feet to a point; thence westerly with an included angle of 91° 11' seventy and forty-two one hundredths (70.42) feet to a point; thence southerly and parallel to said Gilman Street, thirty-seven and one half (37-1/2) feet to land formerly of S. H. Jose, now of Gilman Street Land Company; thence easterly with an included angle of 91° 11' seventy and forty-two one hundredths (70.42) feet to the point of beginning.

PARCEL TWO

A certain lot or parcel of land with the buildings thereon, situated in said Portland, bounded and described as follows:

Beginning at a point in the Westerly side line of Gilman Street distant sixty-six (66) feet and one (1) inch South from the Southerly side line of Congress Street; thence running South by the side line of Gilman Street twenty-four (24) feet and eight (8) inches, more or less, to the Northerly line of land formerly of Winfield L. Smith, now of Gilman Street Land Company; thence by said line formerly of Smith and through the center of the partition wall between the house on said former Smith lot and the house on the lot herein described and by said line extended seventy and forty-two hundredths (70.42) feet and to land formerly of the City of Portland; thence North by said City of Portland land twenty-three (23) feet and eight (8) inches, more or less, to land conveyed by William B. Jordan to Willis B. Moulton et als, by deed dated May 14, 1897, and recorded in Cumberland County Registry of Deeds, Book 648, Page 450; thence in an easterly direction by said Moulton land seventy (70) feet and eight (8) inches to said Gilman Street and the point of beginning.

PARCEL THREE

A certain lot or parcel of land with the buildings thereon, situated on the westerly side of Gilman Street in said Portland and bounded as follows:

Beginning at a point on said westerly side of Gilman Street sixty-nine and five hundredths (69.05) feet northerly

from the northwesterly corner of Gilman and A Streets, and running thence northerly on Gilman Street thirty-seven and one-half (37-1/2) feet; thence westerly with an included angle of ninety-one degrees eleven minutes (91° 11') seventy and forty-two hundredths (70.42) feet to a stake; thence southerly with an included angle of eighty degrees forty-nine minutes (80° 49') thirty-seven and one half (37-1/2) feet; thence easterly with an included angle of ninety-one degrees eleven minutes (91° 11') seventy and forty-two hundredths (70.42) feet to the starting point. Being the southerly half of the lot conveyed to Samuel H. Jose by Charles F. Jose by deed dated December 6, 1886, and recorded in Cumberland County Registry of Deeds in Book 530, Page 255, to which reference is made. The premises herein conveyed are designated as No. 50 on said Gilman Street.

PARCEL FOUR

A certain lot or parcel of land with the buildings thereon situated on the westerly side of Gilman Street in Portland, County of Cumberland and State of Maine, the house being the southerly house in a block of two houses built on this and the adjoining lot, bounded and described as follows:

Beginning on the westerly sideline of Gilman Street ninety and seventy-eight hundredths (90.78) feet from the southerly line of Congress Street; thence southerly on line of Gilman Street fifty (50) feet to land formerly of Charles F. Jose, now of Gilman Street Land Company; thence westerly by said land formerly of Jose, seventy and forty-two hundredths (70.42) feet to land formerly of City of Portland; thence northerly by said City of Portland land fifty (50) feet; thence easterly seventy and forty-two hundredths (70.42) feet passing through the center of the division wall between said two houses to the point of beginning; containing 2520 square feet.

Meaning and intending to convey and hereby conveying the same premises which were conveyed to Gilman Street Land Company by John A. Godsoe, John E. Knowles, John T. Libby, Marvin C. Adams, Thomas A. Martin, Jr., and Vincent N. Oliviero, Trustees, by Trustees Deed dated December 28, 1984 and recorded in the Cumberland County Registry of Deeds in Book 6653, Page 290.

Subject to partition wall rights and obligations as set forth in deed from Virginia R. Buckley to Helen M. Sawyer dated May 4, 1948 and recorded in Cumberland County Registry of Deeds in Book 1912, Page 424 and in deed from Judith P. Johnson to Edgar J. Murphy and Louise M. Murphy dated August 31, 1948 and recorded in Cumberland County Registry of Deeds in Book 1926, Page 311.

RECEIVED
RECORDED REGISTRY OF DEEDS
1989 AUG -4 PM 4:02
CUMBERLAND COUNTY

056000

MAINE REAL ESTATE TAX PAID

KNOW ALL MEN BY THESE PRESENTS, That CASCO AERIE, NO. 565, FRATERNAL ORDER OF EAGLES, a/k/a CASCO AERIE FRATERNAL ORDER OF EAGLES #565, a/k/a FRATERNAL ORDER OF EAGLES CASCO AERIE NO. 565, a Maine corporation with a mailing address of 265 Valley Street, Portland, Maine 04112, and having a place of business at Portland, in the County of Cumberland and State of Maine, in consideration of $1.00 and other valuable consideration paid by MMC REALTY CORP., a Maine corporation, whose mailing address is 22 Bramhall Street, Portland, Maine 04102, the receipt whereof it does hereby acknowledge, does hereby give, grant, bargain, sell and convey unto the said MMC REALTY CORP., its successors and assigns forever, certain lots or parcels of land in the City of Portland, County of Cumberland, State of Maine, with any buildings thereon, bounded and described as follows:

261-269 Valley Street

A certain lot or parcel of land with the buildings thereon, situated in Portland and described as follows:

Beginning at a point on the North side of A Street, Portland, Maine, said point being the intersection of said North side line of A Street with the East side line of B Street, the name of which was changed to Valley Street in 1939; thence Northerly and making an included angle of Eighty-two (82) degrees Fifty-nine (59) minutes with the East direction of said North side line of A Street a distance of Two hundred eighty-five (285) feet, more or less, to a point in the South side line of Congress Street, said point being thirty-five (35) feet East along said South side line of Congress Street from its intersection with the East side line of Valley Street as now laid out and accepted; thence East along said South line of Congress Street and making an included angle of Ninety-four (94) degrees 49', a distance of forty-five (45) feet, more or less, to a point in the division line between the lot of land of the Grantor under description and land now or formerly of one Charles F. Jones; thence South along the said division line between land of the Grantor and land now or formerly of Charles F. Jones and land now or formerly of Charles C. Plummer, Ellsworth W. Stuart, Charles F. Jose, Maris M. and Charles F. Jose, Trustees, and Charles F. Jose a distance of 281.17 feet, more or less, to a point in the North side line of A Street; thence West and making an included angle of 89 degrees 57' and along the North side line of A Street a distance of Eighty (80) feet more or less to the point of beginning, containing 17,570 square feet, more or less.

Excepting therefrom a portion bounded and described as follows, to wit:

Beginning at a point on the East side line of said Valley Street One Hundred Fifty (150) feet South from the intersection of said East side line of Valley Street with the South side line of Congress Street, thence North by said East line of Valley Street One Hundred Fifty (150) feet to the South side line of Congress Street; thence East along said South side line of Congress Street making an included angle of 94 degrees 49', a distance of Forty-five (45) feet more or less, to a point in the division line between the lot of land under description and land now or formerly of one Charles F. Jones; thence South along the said division line between the land under description and the land of said Charles F. Jones and others One Hundred Fifty (150) feet, to a point; thence West 63.48 feet, to the point of beginning.

42 - 46 Gilman Street

A certain lot or parcel of land with the buildings thereon situated on the northwesterly corner of Gilman and A Streets in the City of Portland, County of Cumberland, State of Maine, and bounded and described as follows:

Beginning at the intersection of the westerly side of said Gilman Street with the northerly side of said A Street, and running thence northerly on said Gilman Street, sixty-nine and five one-hundredths (69.05) feet to land formerly of S.H. Jose; thence westerly by said S. H. Jose land, seventy and forty-two one-hundredths (70.42) feet to a stake; thence southerly and parallel with said Gilman Street seventy and forty-seven one-hundredths (70.47) feet to A Street; thence easterly by said A Street, seventy and forty-one one-hundredths (70.41) feet to the place of beginning.

268 - 270 Valley Street

A certain lot or parcel of land with the buildings thereon situated on the westerly side of Valley Street, formerly called B Street, in said Portland, bounded and described as follows:

Beginning at a point on said westerly side line of Valley Street at a point distance one hundred thirty six (136) feet northerly from the intersection of the westerly side of Valley Street and the northerly side of A Street; thence running southerly by said westerly side of Valley Street seventy-one (71) feet to a point; thence running westerly sixty (60) feet to land now or formerly of George W. Billings and Catherine A. Reed, at a point which is distant sixty-five (65) feet northerly from the northerly side line of A Street; thence running northerly by said Billings and Reed land sixty-four and seventy-six hundredths (64.76) feet to land formerly of William G. Davis and continuing northerly by said Davis land six and forty-three hundredths (6.43) feet; thence easterly approximately fifty-seven (57) feet to the point of beginning.

Being the same premises conveyed to the within grantors by the following deeds: Deed from Mid-Central Fish Company of Maine dated January 15, 1963 and recorded in Cumberland County Registry of Deeds in Book 2727, Page 347; Deed from Sebastiano Pennisi, et al dated June 25, 1963 and recorded in Cumberland County Registry of Deeds in Book 2759, Page 254; and Deed from Eugene S. Martin dated March 28, 1980 and recorded in Cumberland County Registry of Deeds in Book 4582, Page 291.

Subject to the following:

1. Taking of Valley Street as referenced in the deed from the City of Portland to the Unity Company dated October 20, 1937 and recorded in Cumberland County Registry of Deeds in Book 1527, Page 318 (261-269 Valley Street).

To have and to hold the aforegranted and bargained premises, with all the privileges and appurtenances thereof, to the said MMC REALTY CORP., its successors and assigns, to them and their use and behoof forever.

AND the said Grantor Corporation does hereby covenant with the said Grantee, its sucessors and assigns, that it is lawfully seized in fee of the premises, that they are free of all encumbrances except as aforesaid, that it has good right to sell and convey the same to the said Grantee to hold as aforesaid; and that it and its successors, shall and will warrant and defend the same to the said Grantee, its successors and assigns forever, against the lawful claims and demands of all persons.

IN WITNESS WHEREOF, the said CASCO AERIE, NO. 565, FRATERNAL ORDER OF EAGLES has caused this instrument to be sealed with its corporate seal and signed in its corporate name by Robert James, Richard Brichetto, Hilbert Welch, Reginald Conohan and Fred Darling,

its Trustees thereunto duly authorized, this 21ST day of November, A.D. 1990.

CASCO AERIE, NO. 565,
FRATERNAL ORDER OF EAGLES

Witness

By: Robert S. James
Robert James
Its Trustee

Witness

By: Richard Brichetto
Richard Brichetto
Its Trustee

Witness

By: Hilbert Welch
Hilbert Welch
Its Trustee

Witness

By: Reginald Conohan
Reginald Conohan
Its Trustee

Witness

By: Fred Darling
Fred Darling
Its Trustee

STATE OF MAINE
COUNTY OF CUMBERLAND

November 21, 1990

Then personally appeared the above named Robert James, Richard Brichetto, ~~Hilbert Welch,~~ Reginald Conohan and ~~Fred Darling,~~ Trustees of said Grantor Corporation as aforesaid, and acknowledged the foregoing instrument to be their free act and deed in their said capacity, and the free act and deed of said Corporation.

Before me,

Attorney at Law
Notary Public
SHERRIE LYNN FONTAINE
NOTARY PUBLIC, MAINE
MY COMMISSION EXPIRES NOVEMBER 19, 1996

Printed Name

SEAL

RECEIVED
REGISTRY OF DEEDS
90 NOV 21 PM 3:54
CUMBERLAND COUNTY

Instr 47527 Bk 9722 Pg 45

47527

DEED OF SALE BY PERSONAL REPRESENTATIVE
(Testate)
Maine Statutory Short Form

Book 9722
Page 45

Know all Men by these Presents,

That Thomas F. Kane, Jr.

of Scarborough, County of Cumberland, State of Maine,

duly appointed and acting personal representative of the estate of Edna Faye Kane,

deceased (testate), as shown by the probate records of the County of Cumberland, Maine,

(and having given notice to each person succeeding to an interest in the real property described below at least ten (10) days prior to the sale) ~~(and not having given notice to each person succeeding to an interest in the real property described below at least ten (10) days prior to the sale, such notice not being required under the terms of the decedent's will)~~, by the power conferred by the Probate Code, and every other power, for consideration paid, grants to Maine Medical Center* of Portland,

*a nonprofit corporation organized and existing under the laws of the State of Maine

County of Cumberland, State of Maine,

whose mailing address is 22 Bramhall Street, Portland, ME 04102,

the real property in Portland, County of Cumberland,

State of Maine, described as follows:

A certain lot or parcel of land with the buildings thereon, situated in said Portland on the southeasterly side of Ellsworth Street, bounded and described as follows: -viz;-Beginning on the said southeasterly side of Ellsworth Street at land now or formerly of S.F. Haggett; thence southeasterly by said Haggett's land seventy-five (75) feet, more or less, to land now or formerly of J.T. Walton; thence southwesterly by said Walton's land and land now or formerly of N. Waterhouse eighty (80) feet, more or less, to land now or formerly of N.P. Thompson; thence northwesterly by said Thompson's land seventy-five (75) feet, more or less, to said Ellsworth Street; thence northeasterly by said Ellsworth Street to point begun at. Containing five thousand eight hundred forty (5,840) square feet, more or less. Said lot is numbered 34-36 and 38 as shown upon valuation plan of the City of Portland.

Being the same premises conveyed to Edna F. Kane by May Porter by her Warranty Deed, dated April 3, 1940 and recorded in Cumberland County Registry of Deeds in Book 1603, Page 134.

MAINE REAL ESTATE TAX PAID

Instr 47527 Bk 9722 Pg 46

Witness my hand and seal this 20th day of September, 19 91.

Signed, Sealed and Delivered in presence of

Samuel J. Shatz

Personal Representative of the Estate of Edna Faye Kane

Thomas F. Kane, Jr.

Samuel J. Shatz

Thomas F. Kane, Jr.

State of Maine, County of Cumberland **ss.** September 20, 19 91

Then personally appeared the above named Thomas F. Kane, Jr.

in his said capacity and acknowledged the foregoing instrument to be his free act and deed.

Before me,

Samuel J. Shatz

Samuel J. Shatz
Justice of the Peace
~~Notary Public~~
Attorney at Law

Recorded
Cumberland County
Registry of Deeds
09/20/91 03:59:12PM
Robert P. Titcomb
Register

54881

WARRANTY DEED
(Maine Statutory Short Form)

KNOW ALL BY THESE PRESENTS, that I, **William H. Leschey, Jr.**, whose mailing address is 930 Congress Street, Portland, ME 04102, for consideration paid, GRANT to **MMC Realty Corp.**, a Maine corporation with an established place of business at and mailing address of 22 Bramhall Street, Portland, Maine 04102, with WARRANTY covenants, the land in Portland, County of Cumberland, State of Maine, which is more particularly described as follows:

A certain lot or parcel of land, with any buildings or improvements that may be thereon, situated on the southerly side of Congress Street, bounded and described as follows: BEGINNING on the southerly sideline of Congress Street at its intersection with the westerly sideline of Gilman Street; thence southerly by the westerly sideline of Gilman Street, sixty-six feet, one inch (66' 1") to the northeasterly corner of land now or formerly of Helen M. Sawyer; thence westerly by said Sawyer land seventy feet, eight inches (70' 8") to the easterly sideline of land now or formerly of Schwartz Bros. Inc.; thence northerly by said Schwartz Bros. Inc. land, sixty-two feet, one inch (62' 1") to the southerly sideline of Congress Street; thence easterly by the southerly sideline of Congress Street, seventy feet, eight inches (70' 8") to the point of beginning.

Being the same premises conveyed to the Grantor herein by deed of Edythe D. Field, dated May 11, 1987, and recorded in the Cumberland County Registry of Deeds in Book 7784, Page 182.

MAINE REAL ESTATE TAX PAID

WITNESS my hand and seal this 1st day of SEPTEMBER, 1994.

SIGNED, SEALED AND DELIVERED
in the presence of:

William H. Leschey, Jr.

STATE OF MAINE
COUNTY OF CUMBERLAND, ss SEPTEMBER 1, 1994

Then personally appeared the above-named William H. Leschey, Jr. and acknowledged the foregoing instrument to be his free act and deed.

Before me,

~~Notary Public~~/Attorney at Law
Printed Name: CHRISTOPHER J.W. COGGESHALL

RECEIVED
RECORDED REGISTRY OF DEEDS
94 SEP -1 PM 3:05
CUMBERLAND COUNTY
John B O'Brien

BEL/4078/AAO/DE

MAINE MEDICAL CENTER LEVEL III SITE PLAN APPLICATION
EAST TOWER / VISITOR GARAGE VERTICAL EXPANSIONS
WRITTEN SUBMISSION C STATE / FEDERAL APPROVALS

THE MAINE DEPARTMENT OF HEALTH AND HUMAN SERVICES HAS GRANTED A CERTIFICATE OF NEED APPROVAL TO MAINE MEDICAL CENTER , A COPY OF THAT APPROVAL LETTER IS ATTACHED. THE PROJECT WILL ALSO REQUIRE A MAINE STATE FIRE MARSHALL PERMIT, WHICH WILL OCCUR AFTER SITE PLAN REVIEW. FEDERAL APPROVALS ARE LIMITED TO THE FAA PERMIT FOTR THE HELIPORT, WHICH IS INCLUDED WITH WRITTEN SUBMISSION S-5 .

Department of Health and Human Services
Commissioner's Office
221 State Street
11 State House Station
Augusta, Maine 04333-0011
Tel.: (207) 287-3707; Fax: (207) 287-3005
TTY Users: Dial 711 (Maine Relay)

Paul R. LePage, Governor Ricker Hamilton, Acting Commissioner

September 26, 2017

Mr. Alexander M. Green
Director of Planning
Maine Medical Center
22 Bramhall Street
Portland, ME 04102

RE: MMC Capital Expenditures - Private Rooms and Universal Procedure Rooms

Dear Mr. Green:

This letter will serve as notification that, on this date, I have decided to **grant with conditions** a Certificate of Need (CON) that authorizes Maine Medical Center to construct universal single patient rooms and universal procedure rooms as well as other associated capital expenditures outlined in your CON application.

My approval is conditioned on the following:

- If the holder of this certificate determines it will complete the C4 floor at any time before 3 years are completed after the project is operational, the holder will inform the CONU in writing of its decision to complete construction / outfitting the C4 floor as described in the application, at least 30 days before this portion of the project commences.

- The applicant is to report improvements in quality and outcome measures for services affected by the project on an annual basis, within 90 days of its fiscal year-end, beginning with the time period when the Certificate of Need was approved until a full three years have elapsed since the date of project completion.

- The applicant is to report operating room utilization and private room utilization for facilities affected by the project on an annual basis within 90 days of its fiscal year-end beginning with the time period when the Certificate of Need was approved until a full three years have elapsed since the date of project completion.

In order for this CON to remain valid, the project must be "commenced" within two years from the date of the original approval, noted above. You must complete implementation reports on your activities as specified for this type of Project (CON Procedures Manual, Chapter 11, Sec. 3). Limited extensions may be available, if requested in a timely manner and for good cause, as explained in the Manual, Chapter 9, Sec. 3. Failure to commence the project within this 24-month period will result in expiration of the CON, unless extended, as cited above.

I am granting this CON because I have determined that the project meets the criteria set forth in the CON Act Sec. 335 (1) and the Departments regulations. The specific details of the project for which I have granted this CON are contained in the record.

Please be aware that in accordance with Section 346 of the Maine Certificate of Need Act this Certificate, as modified herein, is valid only for the stated scope, premises and facility named in the above referenced application and is not transferable or assignable.

Furthermore, it should be clearly understood that our analysis and findings regarding the need for the proposed project, as well as its financial and economic feasibility, are predicated on the application record as described in the Manual, Chapter 8, Subsection 5. Consequently, the proposal must be implemented consistent with the approval stated in this letter, as informed and clarified by the Department's analysis and findings as summarized in the following Department staff reports:

FINAL REVIEW: Briefing memo to Ricker Hamilton, Acting Commissioner, DHHS, dated September 18, 2017.

No significant changes to the project, no variations from the projected operating costs, no modifications of the terms of financing the project, and no increase in the capital expenditures to be made are permitted without the prior written approval of the Department. Any such variances may result in either the disallowance of related expenses, financial penalties or the immediate revocation of the Certificate of Need.

Please work closely with my staff in Health Care Oversight to assure this project is implemented in accordance with the provisions of this Certificate and applicable rules and regulations.

The Certificate of Need statute requires that a holder of a CON make a written report at the end of each six-month period following its issuance. Details regarding this and related requirements will be made the subject of a separate letter from Health Care Oversight.

My staff will work with you as necessary.

Sincerely,

Ricker Hamilton
Acting Commissioner

RH/klv

cc: Sarah Taylor, Director, DLC
Larry Carbonneau, Manager Health Care Oversight, DLC
Herb Downs, Director, Audit
Colin Lindley, Rate Setting
File

MAINE MEDICAL CENTER LEVEL III SITE PLAN APPLICATION
EAST TOWER / VISITOR GARAGE VERTICAL EXPANSIONS
WRITTEN SUBMISSION D Compliance with Applicable Zoning Requirements

The proposed East Tower Expansion and Visitor Garage Expansion comply with the applicable zoning requirements.
The projects are in alignment with short-term projects as approved within the approved Maine Medical Center IDP and IOZ Regulatory Framework, including maximum building heights as required by Map 4.1 in the Regulatory Framework.

MAINE MEDICAL CENTER LEVEL III SITE PLAN APPLICATION
EAST TOWER / VISITOR GARAGE VERTICAL EXPANSIONS
WRITTEN SUBMISSION E EASEMENTS

AS DEPICTED ON PLAN 2 , EXISTING CONDITIONS PLAN, A SUMMARY OF EASEMENTS IS STATED BELOW :

A. UNDERGROUND ANCHOR SYSTEM EASEMENT RESERVED BY MMC IN CONVEYANCE TO CRESCENT HEIGHTS LLC IN DEED BOOK 26288 PAGE 49.
B. UTILITY/DRAINAGE EASEMENT FOR A DRAIN/SEWER PIPE FROM THE PROPERTY NOW OF CRESCENT HEIGHTS, LLC. FORMERLY AS DESCRIBED IN DEED BOOK 1938 PAGE 248 AND 1946 PAGE 370.
C. UTILITY EASEMENT: TO NET&T NEAR THE NORTHERLY CORNER OF THE PARKING GARAGE ON CONGRESS ST. PER DEED BOOK 8573 PAGE 121.
D. CERTIFICATE OF VARIANCE APPROVAL GRANTING RELIEF FROM SECTION 14-137(7) MAXIMUM STRUCTURE HEIGHT OF 45 FEET, DATED JUNE 25, 1996, AND RECORDED IN DEED BOOK 12629 PAGE 295.
E. SITE LOCATION OF DEVELOPMENT DEPARTMENT ORDER BY MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION FOR MAINE MEDICAL CENTER, PER DEED BOOK 13919 PAGE 114.
F. UTILITY EASEMENT: MMC TO NET&T 6' X 8' NEAR GILMAN AND CONGRESS PER DEED BOOK 13027 PAGE 207.
G. AMENDMENT TO CITY CODE SEC. 14-49 (ZONING MAP AMENDMENT) RE: CONDITIONAL REZONING FOR PROPERTY IN VICINITY OF WESTERN PROMENADE/MAINE MEDICAL CENTER. DATED MAY 24, 2005 AND RECORDED IN DEED BOOK 22671 PAGE 60.

MAINE MEDICAL CENTER LEVEL III SITE PLAN APPLICATION

EAST TOWER / VISITOR GARAGE VERTICAL EXPANSIONS

WRITTEN SUBMISSION G EVIDENCE OF FINANCIAL & TECHINICAL CAPACITY

Maine Medical Center will fund the project from three different sources: equity, philanthropy, and debt. The exact proportions of funding sources are yet to be determined. MMC's financial capacity to establish and operate the project

The health care landscape has been in a state of change, particularly since the signing of the Affordable Care Act (ACA). Given the recent changes in the executive and legislative branches of the federal government and continued references to "repealing" the ACA, it is nearly impossible to anticipate the scope of future changes. Maine Medical Center's strategic financial plan assumes continued market basket increases at or near 3% annually. Additionally, the strategic financial plan assumes the following:

- Little or no increase in Medicare or Medicaid payments
- Stable payer mix
- No expansion to the Medicaid program
- Achievement of operational efficiencies based on analyses of national benchmark data
- Stable utilization of hospital services
- Continuation of provider-based billing at existing locations
- Stable levels of bad debt and charity care

Minor changes in the law or regulatory environment impacting these assumptions will likely not jeopardize the overall strategic financial plan. Substantive changes, however, will need to be monitored closely to ensure support of the project.

MMC is fully licensed and accredited, and has been providing services of this scale and scope for years.

Through multiple building projects throughout the history of the organization, MMC has demonstrated its ability to develop new and renovated facilities that meet all licensure and accreditation requirements.

The proposed project's program, and design, developed by a team of health care architects and engineers, and hospital physicians and staff, are in conformance with Guidelines for Design and Construction of Health Care Facilities, 2006 Edition, Facilities Guidelines Institute, (American Institute of Architects, Washington, DC, 2006) as required by the State of Maine Department of Health and Human Services' Division of Licensing and Regulatory Services. In addition, the guidelines for Design and Construction of Health Care Facilities, 2014 Edition, Facilities Guidelines Institute, (American Institute of Architects, Washington, DC, 2014) were also used in the proposed project's design.

MAINE MEDICAL CENTER LEVEL III SITE PLAN APPLICATION
EAST TOWER / VISITOR GARAGE VERTICAL EXPANSIONS
WRITTEN SUBMISSION H BOUNDARY SURVEY

BOUNDARY SURVEY PLANS ARE SUBMITTED AS PLAN SUBMISSIONS, PLAN NOS. 2A THROUGH 2H. THESE PLANS DEPICT THE DISCONTINUANCE OF A FORMER CITY STREET (CHARLES STREET) , AS WELL AS LAND TRANSFERS BETWEEN THE CITY AND MAINE MEDICAL CENTER.

STREET VACATION AND LAND TRANSFER PLANS ARE SUBMITTED AS PLAN SUBMISSIONS. PLAN NOS. 2I AND 2 J. ALTHOUGH THE CITY REVIEWED AND APPROVED THESE PLANS WHEN THE EAST TOWER WAS ORIGINALLY PERMITTED, THE ACTUAL TRANSFER DID NOT OCCUR. MAINE MEDICAL CENTER PROPOSES TO BRING THIS MATTER TO THE CITY'S ATTENTION AND PROCEED WITH THE ACTUAL TRANSFER CONCURRENT WITH THE CURRENT SITE PLAN REVIEW.

MAINE MEDICAL CENTER

Construction Projects at the East Tower, Visitor Garage, Central Utility Plant

Construction Management Plan

December 15, 2017

[Updated for 1/23/18 Planning Board Meeting]

Prepared for: Portland Department of Planning & Urban Development Department

Project Proponent: Colliers International

Construction Manager: Turner Construction

TABLE OF CONTENTS

CONSTRUCTION MANAGEMENT PLAN

1.0 CONSTRUCTION MANAGEMENT PLAN 4
2.0 CONSTRUCTION SCHEDULE & WORK HOURS 4
2.1 Work Hours 4
2.2 Construction Timeline 4
2.2.1 Spring 2018 to Fall 2019 4
2.3 Construction Updates Reporting 5
2.4 Construction Logistics 5
2.5 Perimeter Protection / Public Safety 6
2.6 Worker Parking & Traffic Impacts 6
2.7 Truck Routes and Volumes – Refer to Site Logistics Plans 7
3.0 Air Quality & Noise 8
3.1 Dust Control 9
3.2 Noise 9
3.3 Air Monitoring 10
4.0 Communication Strategies 11
4.1 Contacts, Distribution Lists 11
5.0 Vibration Monitoring – Not Applicable 11

MAINE MEDICAL CENTER

Construction Projects at the East Tower, Visitor Garage, Central Utility Plant

Construction Management

Plan 12.15.17

Purpose Statement

The purpose of this document is to provide the details of the first phase of construction for MMC's Master Facility phase IIB. This document outlines Turner Construction's plan for controlling impacts from noise, ground movement, truck traffic, and other construction related factors to the surrounding neighborhoods and buildings.

Maintaining normal campus operations and Public Safety are high priorities during the construction phase. This plan will be presented to the appropriate City and Neighborhood representatives. The City of Portland Planning Board will approve the final plan. It has been the goal of these programs to define the construction plan before construction begins. Turner's experience on projects with similar logistic constraints has proven that pre-planning and constant communication are necessary for a smooth efficiently run, incident free project.

It is Turner Construction's full intent to follow the guidelines set by the contract documents.

Turner Construction and its subcontractors shall schedule and conduct operations in a manner that will control the disturbance to the public in areas adjacent to the work and to occupants of buildings in the vicinity.

1.0 CONSTRUCTION MANAGEMENT PLAN

This Construction Management Plan (CMP), submitted to the Portland Department of Planning & Urban Development for approval by the City of Portland Planning Board prior to the start of construction, includes specific mitigation measures and staging plans to minimize impacts to surrounding residences and businesses. The Construction Manager and its trade contractors will be bound by the CMP.

Turner Construction Contacts:

Project Superintendent: Scott Griffin
Email: SGriffin@tcco.com / Cell - 203-943-0950

Project Manager: Adam Parys
Email: AParys@tcco.com / Cell – 617-201-0710

Project Engineer : Rick Martineau
Email: RMartineau@tcco.com / Cell – 617-438-1263

Project Director: Gregg Scholler
Email: GScholler@tcco.com / Cell – 203-219-4022

2.0 CONSTRUCTION SCHEDULE & WORK HOURS

Construction work hours will be in accordance with Section 17-18 and Section 25-129.

2.1 Work Hours

- The construction period for the project is expected to be approximately 20 months in duration.
- It is anticipated that the project is estimated to start on or about Spring 2018 and last through Fall 2019.
- Work hours will be 7AM to 7 PM Monday thru Friday.
- Workers will gather at their workplace from 6 AM to 7AM.
- Saturday work will be required on a periodic basis with hours from 7 AM to 6 PM.

2.2 Construction Timeline

2.2.1 Spring 2018 to Fall 2019

East Tower – Crescent Street

A new 60,000 SF addition is being added to the top of the East Tower. The addition consists of two new floors, level 6 and 7. On the roof is a helipad system capable of landing two helicopters. The exterior wall at Level 5 is being replaced in conjunction with

a new exterior wall for Level 6 and 7. This project is expected to start in March 2018 and complete by October 2019. (20 Months)

Visitor Garage- Congress Street

Three new floors of parking are being added to the Visitor Garage. These floors will be Level 8, 9 and 10. The added floors are precast and are being added to a garage which has been designed for this expansion. The added parking capacity is 220 cars. This project is expected to start in May 2018 and complete in November 2018. (6 Months)

Central Utility Plant – Gilman Street

The Central Utility Plant is increasing cooling capacity by adding one 2,400 ton chiller and two cooling towers. This project is expected to start in November 2018 and complete in March 2019. (5 months)

2.3 Construction Updates Reporting

The following shall be reported to Maine Medical as a part of the CMP.

- Monthly "look ahead" schedules and narrative for upcoming construction activities.
- Schedule of over-size deliveries to the site that will impact roadways
- Schedule of deliveries that will be outside the City of Portland's allowable work hours.
- Proposed schedule for utility connection or work in public roadways or sidewalks as a part of Turner work.
- Proposed off-hours or Saturday work.
- Construction activities that may impact the neighborhood in an adverse way, including noise, dust, on-street parking or work outside construction limits or times. Also, proposed options to mitigate these impacts.
- An estimate of the number of vehicles that will require off-site parking.

2.4 Construction Logistics

The proposed Logistics Plans included in the CMP are designed to isolate the construction while providing safe access for pedestrians, hospital operations, and automobiles during normal day-to-day activities and emergencies. Interaction with the public will occur mainly along Congress Street and Gilman Street. The logistics plan define the timeline of construction activities and the location of cranes, gates, access for each Phase.
Each site will be secured by an 8-foot high fence with privacy screening in accordance with the Logistics Plan.

Logistics plans on the construction sequencing for East Tower Overbuild are Slides 2 to 9.

Logistics plans on the construction sequencing for Visitor Garage Overbuild are Slides 10 to 21.

Logistics plans on the construction sequencing for Central Utility Plant cooling upgrade Slides 22 to 24.

2.5 Perimeter Protection / Public Safety

- Turner Construction will work to ensure the sidewalk protection minimizes impact to pedestrian and vehicular flow.
- The specific configuration of sidewalk protection and pedestrian access around the site will vary depending on the phase of the work being performed.
- In general, secured fencing will be used to isolate construction areas from pedestrian traffic.
- Flagmen or Police Details will be provided at all active gates when there are deliveries.
- Construction procedures will be designed to meet all OSHA safety standards for specific site construction activities.
- Subcontractors will implement and manage their own Health and Safety Program for the project.
- All Subcontractors are required to wear appropriate personal protective equipment.
- Snow removal and ice treatment will be provided on the surrounding area within the construction fence.
- Sidewalks will be cleaned of trash and debris as needed.
- If existing street lights need to be removed for the duration of the project,
- Turner Construction will provide sufficient temporary site lighting to ensure the safety of all pedestrians accessing the sidewalks around the site, including lighting at all covered pedestrian walkways, until permanent street lights are installed Light levels will be tested prior to temporary removal of site lighting.

2.6 Worker Parking & Traffic Impacts

- Turner Construction and its subcontractors shall encourage the use of public transportation by their workers.
- Jobsite personnel will be required to park at an offsite parking area and will be shuttled to the construction site.
    - Jobsite personnel will be required to park at MMC's Scarborough Campus
    - Subcontractors who violate this requirement will be fined $500 per offense
    - The following language will be included in the contracts with all subcontractors
        - *"Parking: There shall be absolutely no parking on the project site, in the Hospital Parking Garages and / or Hospital Surface Parking lots, and on street parking adjacent to the Hospital. This is including but not limited to employee vehicles, company vehicles, delivery trucks, trucks containing equipment such as welders, etc. Turner to provide remote parking location, and transportation to and from the jobsite. Any workers found in violation of this policy will be subject to permanent removal from the project and the subcontractor shall be assessed a $500*

fine per incident."

- Worker parking shall not be allowed on site except for company vehicles required to perform the work.
- Turner will qualify subcontractors' with a legitimate reason to park onsite and manage that parking within the construction fence and not impact parking in the surrounding area.
- No personal vehicles will be allowed to park at the project construction site or in the adjacent residential streets.

The number of workers required during the construction will vary by Construction Phase.

Construction Phase - March 2018 to September 2019

- Spring 2018- Fall 2018 – average workers – 40 to 50
- Fall 2018 – Spring 2019 – average workers – 70 - 90
- Spring 2019- Fall 2019 - average workers – 100

2.7 Truck Routes and Volumes – Refer to Site Logistics Plans

All street opening and occupancy in the public right of way will be in accordance with Chapter 25 of the City of Portland Land Use Code

- Truck traffic will vary throughout the construction period, depending on the activity.
- An offsite marshalling area will be utilized for large deliveries such as precast and structural steel.
- All trucks will be brought to the construction areas at MMC by experienced dedicated drivers from the marshalling lot.
- Radio and cell phones will be utilized to coordinate all trucking.
- Trucks routes must be submitted and approved by the City of Portland and the Owner before the start of construction.
- Truck idling will be held to a minimum on-site, to minimize the impact to adjacent properties..
- Turner Construction and its subcontractors shall ensure that haul routes, debris and soil removal, and staging areas are conducted in a manner that minimizes the impacts to the abutting communities,
- Wheel wash stations will be installed and maintained by Turner and its subcontractors as needed and maintained at construction site exit areas.
- Street sweeping / vacuuming of all impacted City streets and sidewalks shall be performed by Turner Construction and its subcontractors on an as-needed basis.
- Streets, sidewalks, bicycle ways or other means of travel may not be obstructed or closed without permission from the Owner and other authorities having jurisdiction. The Owner shall be notified one week in advance of any such obstructions or closures.

Construction - East Tower Overbuild – (Refer to Logistics Slides 2 thru 9)

All street opening and occupancy in the public right of way will be in accordance with Chapter 25 of the City of Portland Land Use Code

- All truck traffic will be directed to enter the site utilizing Ellsworth Street to Wescott Street. **(Refer to Logistics slide 9)**
- Turner will install way finding signage at strategic locations identifying no travel zones for construction vehicles
- All subcontractors and vendors will be provided with pamphlets indicating the appropriate truck routes to access the site.
- Trucks will be brought within the fence line.
- During crane erection a portion of Ellsworth Street and Wescott will be closed. **(Refer to logistics slide 8)**

Construction Visitor Garage Overbuild – (Refer to Logistics Slides 10-22)

All street opening and occupancy in the public right of way will be in accordance with Chapter 25 of the City of Portland Land Use Code

- All truck traffic will be directed to enter the site utilizing Congress Street.
- During an eight week period when precast erection is occuring, Congress Street will need to be closed at the location of the Visitor Garage. Detailed logistics plans are included to identify the street closure requirements**.(refer to logistics slides 16-21)**
- This street closing will be coordinated with the City of Portland.
- All subcontractors and vendors will be provided with instructions prior to their project start indicating the appropriate truck routes to access the site.

Construction - Central Utility Plant – (Refer to Logistics Slides 22-24)

All street opening and occupancy in the public right of way will be in accordance with Chapter 25 of the City of Portland Land Use Code

- All truck traffic will be directed to the Central Utility Plant utilizing a truck path from Congress Street to Gilman Street, and an exiting path from A Street. **(refer to logistics slides 23-24)**
- During a two week period when the chillers and cooling towers are installed, trucks and a crane will be set up on Gilman Street. This is expected to occur in Fall/Winter 2018.Police detail will be fulltime during this period. Gilman Street will remain open.
- Lane closing will be coordinated with the City of Portland.
- All subcontractors and vendors will be provided with instructions prior to their project start indicating the appropriate truck routes to access the site.

3.0 Air Quality & Noise

3.1 Dust Control

To reduce emission of dust and minimize impacts on the local environment, the construction contractor will adhere to a number of strictly enforced mitigation measures. These include:

- Wetting agents will be used regularly to control and suppress dust that may come from the construction materials.
- All trucks used for transportation of construction debris will be fully covered with tarps intended to keep material in the truck.
- Construction practices will be monitored to ensure that unnecessary transfers and mechanical disturbances of loose materials are minimized and to ensure that any emissions of dust are negligible.
- Street and sidewalks will be cleaned to minimize dust accumulations as needed.
- Stock piles of soils will be covered with tarps and/or poly when they are not being utilized for current site activities.

3.2 Noise

- The project will require the use of equipment that can be heard from off-site locations. This project will strive to mitigate construction noise impacts, to the extent possible.
- Increased community sound levels are an unavoidable consequence of construction activities.
- Construction will occur during the daytime hours as defined by the City of Portland Code of Ordinances (7:00 a.m. to 6:00 p.m. Monday through Friday).
- In some instances, a second shift, off hour, holiday and weekends may be required.
- When these events arise, all required permits will be obtained and notification will be posted in accordance with section 2.3
- Work shall be performed so as to prevent nuisance noise conditions that are preventable (e.g., unmaintained equipment, brake squeal, etc.).
- Turner Construction and all subcontractors shall use all reasonable efforts to implement noise reduction methods listed below to minimize construction noise emission levels. Noise reduction methods shall include, but not be limited to:

  Use of:
  - Tie to local power grid to reduce the use of on-site generators.
  - Noise-deadening / isolating surrounds around exceptionally noisy work equipment or operations
  - The maintenance of the access roadways to minimize the “bouncing” of construction vehicles within the construction site.
  - Enforcing the site logistics plan, so as to maximize to every extent possible the forward movement of construction vehicles. This will, in turn, minimize the sound of back-up alarms.

Attaching:

- Intake / exhaust mufflers, shields or shrouds
- Noise-deadening material to equipment and fencing

Maintaining:

- Equipment mufflers and lubrication
- Pre-cast decking and plates to avoid rattling
- Smooth surfaces on construction sites and public ways to prevent unnecessary noise from surface irregularities.

Minimizing

- Noise from the use of backup alarms, using measures that meet OSHA regulations. The construction logistics has been designed such that the backing-up of equipment and trucks is limited.
- Use of self-adjusting ambient-sensitive backup alarms.
- Manually adjustable alarms on low setting
- Scheduling of activities so that alarm noise is minimized

3.3 Air Monitoring

- Turner Construction and its subcontractor's shall employ dust, odor, and gas control measures to minimize the creation of airborne dusts, odors, and gases during the entire construction process. At a minimum, standard dust control techniques shall be employed where heavy equipment will be traveling, standing, or loading, such as watering down the site or utilizing dust control measures. All measures shall be taken in accordance with Turner's approved Health & Safety plan.
- Turner Construction and its subcontractors shall perform dustless street sweeping / vacuuming for all construction activities including demolition, excavation, slurry / soil mixing operations on an as needed basis.
- An air monitoring plan shall be developed by the Owner based on site contaminants of concern, particulate quantities / densities, and risk-based evaluations. The plan will be developed for off-site impacts. Turner Construction and its subcontractors will be responsible for on-site health and safety issues.
- The Owner will engage a qualified consultant to monitor for dust along the perimeter of the construction site. Results of this monitoring that indicate exceedances of air quality criteria will be immediately brought to the attention of Turner Construction. Turner and its subcontractors shall immediately address the site condition, including terminating construction activities to remedy the site conditions to the satisfaction of the Owner.
- Ductwork snorkels will be installed as required on building air intakes surrounding the job-site to minimize the amount of dust and construction vehicle gases being taken in through the air handling systems. The maintenance of the filters is by the individual building managers.

4.0 Communication Strategies

4.1 Contacts, Distribution Lists

- Turner Construction shall develop a project contact list (e-mail addresses, office and cell phone numbers), to be posted by MMC on the project web site and supplied to Maine Medical Center (MMC) for 24/7 contacts.
- Turner Construction will request similar contact lists from the neighborhood associations. (e-mail addresses, and phone numbers) of key contacts for the specific project.
- Turner Construction will set-up a project bulletin board for each Phase. These boards will be used as communication tools to the surrounding community. There will be a project website thru MMC, developed that also will communicate construction related activities to the community.
- Any last minute changes to the project schedule that may impact the neighborhood or Maine Medical Center (MMC) community will be communicated per section 2.3.
- Turner Construction will participate in the neighborhood council meetings as needed to discuss progress and issues.
- Turner shall maintain a log of all construction-related concerns, via the MMC website.
- MMC shall communicate final resolution of all complaints and concerns to the neighborhood, Maine Medical Center (MMC) community, and when appropriate, to the City of Portland.
- MMC has created an email distribution list in order to maintain open communications throughout the process and provide regular project updates. Any interested can sign up for the email on MMC's website - https://mainehealth.org/maine-medical-center/newsroom/modernization.
- MMC and Turner construction continue to explore additional methods of communication with neighboring residences and businesses.

5.0 Vibration Monitoring – Not Applicable

Maine Medical Center
MaineHealth

Construction Management Plan



[Logistics Plans and Studies]
East Towers and Visitors Garage

Turner



[East Towers] Logistics Plans and Studies

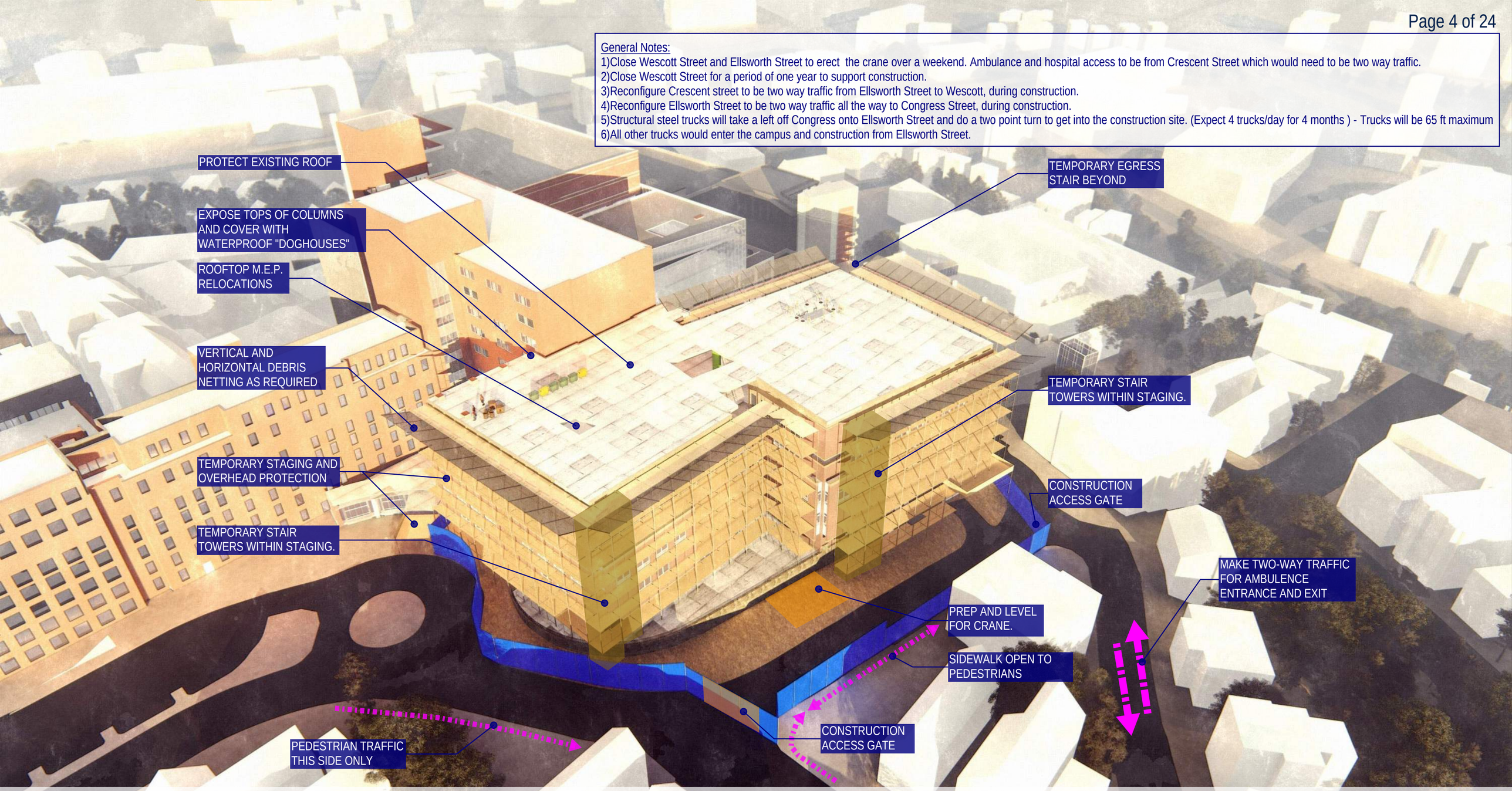
Turner



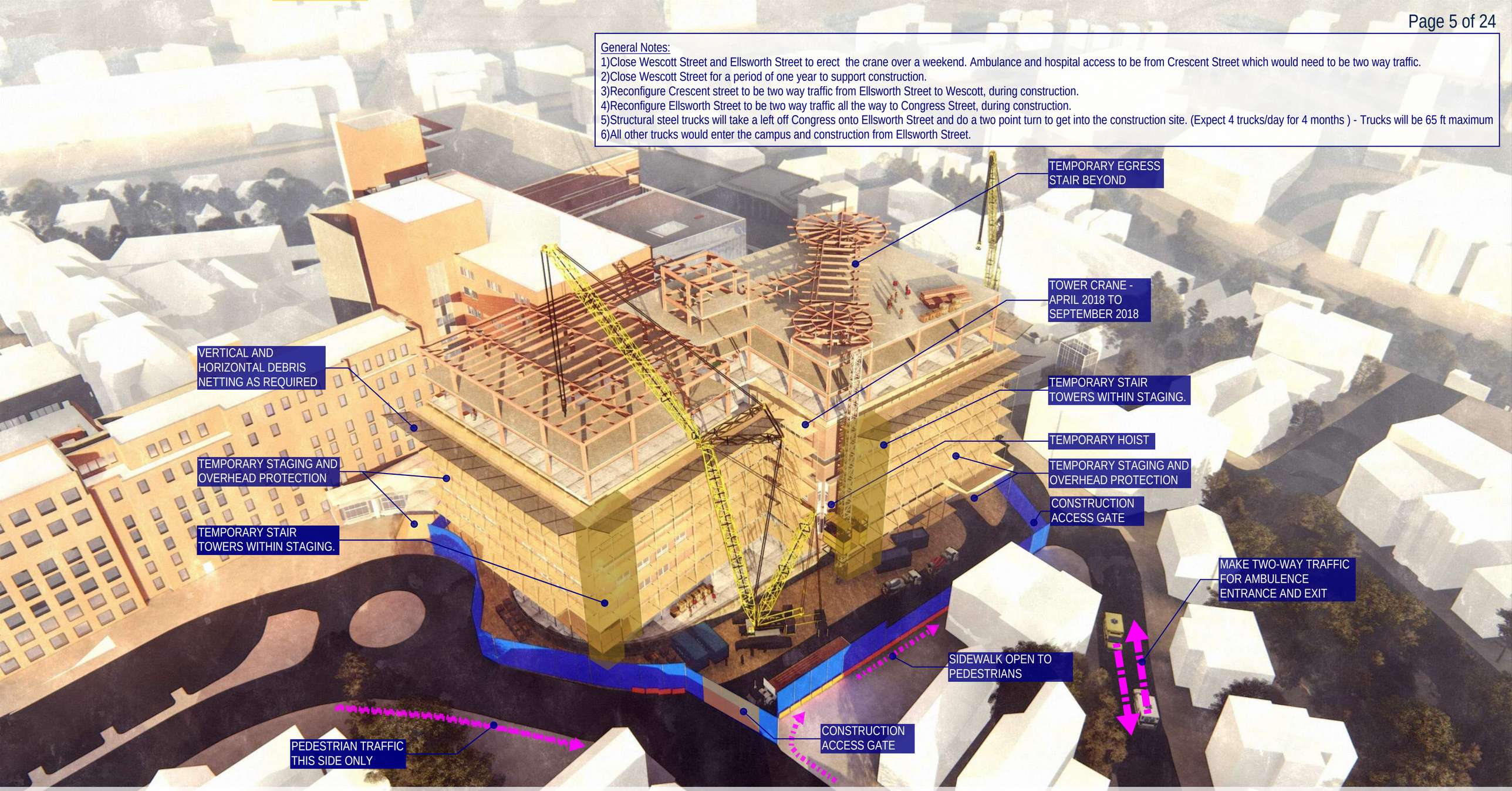
Maine Medical Center
Additions and Renovations [Logistics Plans] EAST TOWERS - EXISTING

Turner

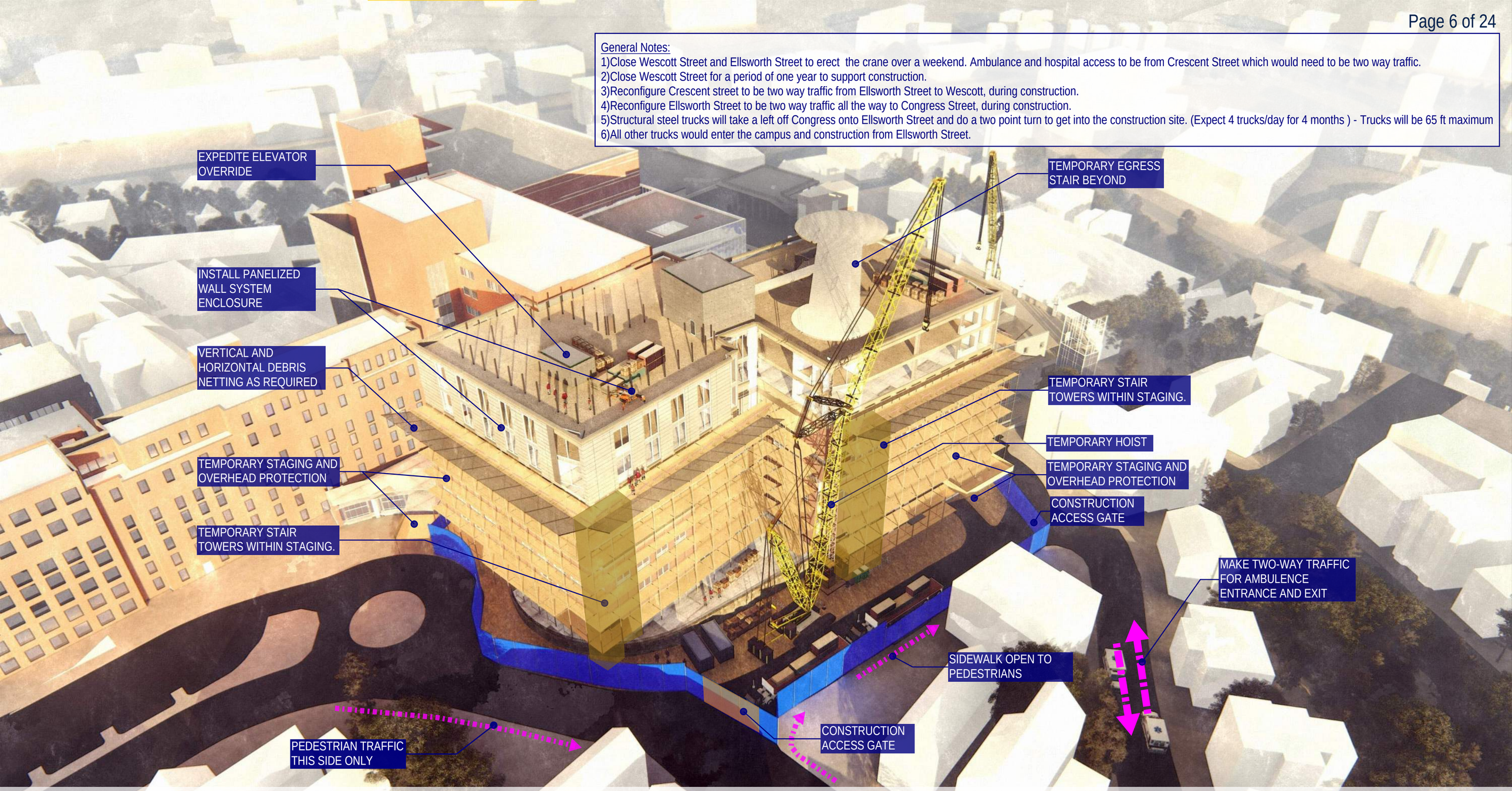
General Notes:
1)Close Wescott Street and Ellsworth Street to erect the crane over a weekend. Ambulance and hospital access to be from Crescent Street which would need to be two way traffic.
2)Close Wescott Street for a period of one year to support construction.
3)Reconfigure Crescent street to be two way traffic from Ellsworth Street to Wescott, during construction.
4)Reconfigure Ellsworth Street to be two way traffic all the way to Congress Street, during construction.
5)Structural steel trucks will take a left off Congress onto Ellsworth Street and do a two point turn to get into the construction site. (Expect 4 trucks/day for 4 months) - Trucks will be 65 ft maximum
6)All other trucks would enter the campus and construction from Ellsworth Street.



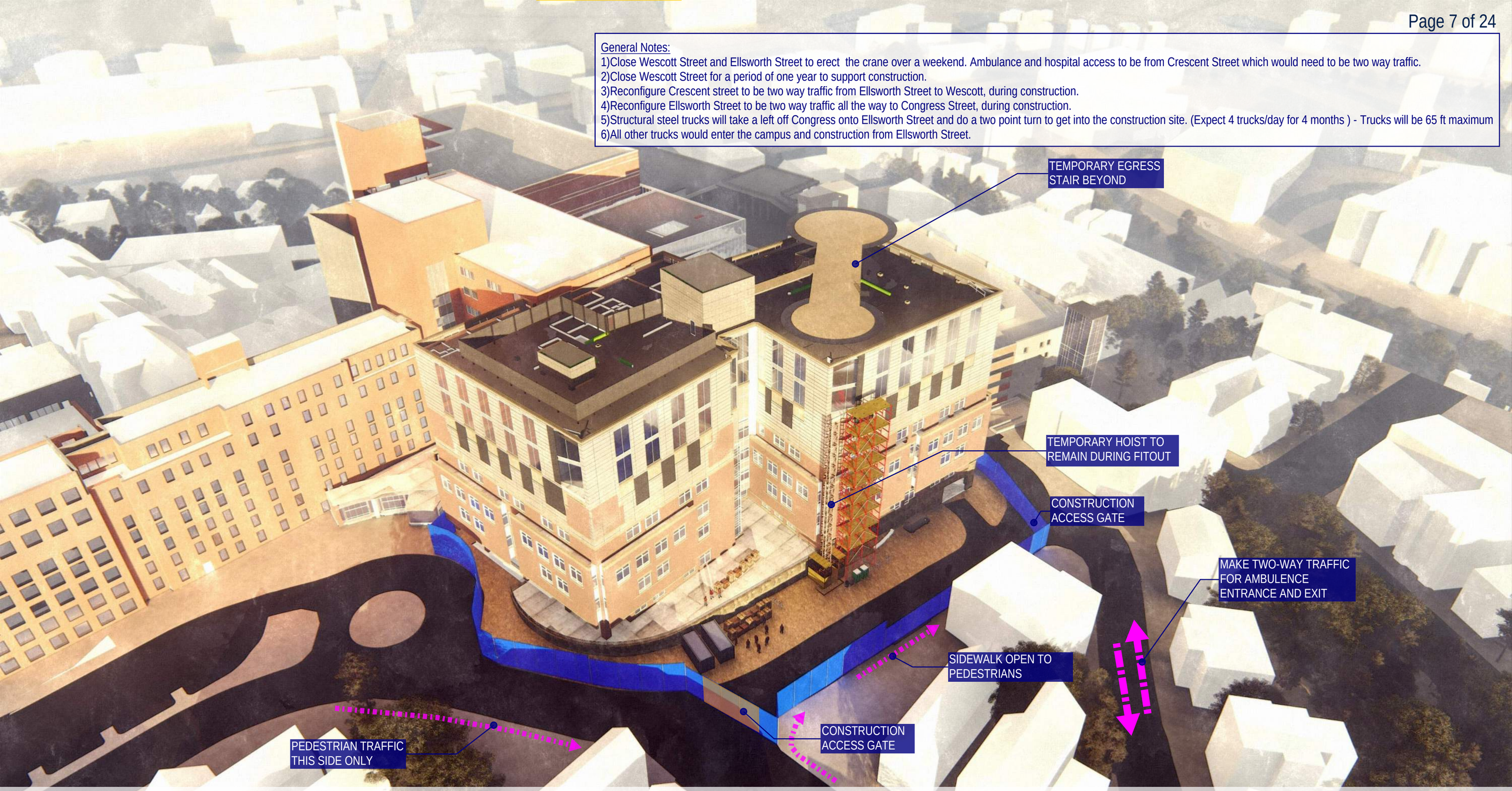
General Notes:
1)Close Wescott Street and Ellsworth Street to erect the crane over a weekend. Ambulance and hospital access to be from Crescent Street which would need to be two way traffic.
2)Close Wescott Street for a period of one year to support construction.
3)Reconfigure Crescent street to be two way traffic from Ellsworth Street to Wescott, during construction.
4)Reconfigure Ellsworth Street to be two way traffic all the way to Congress Street, during construction.
5)Structural steel trucks will take a left off Congress onto Ellsworth Street and do a two point turn to get into the construction site. (Expect 4 trucks/day for 4 months) - Trucks will be 65 ft maximum
6)All other trucks would enter the campus and construction from Ellsworth Street.

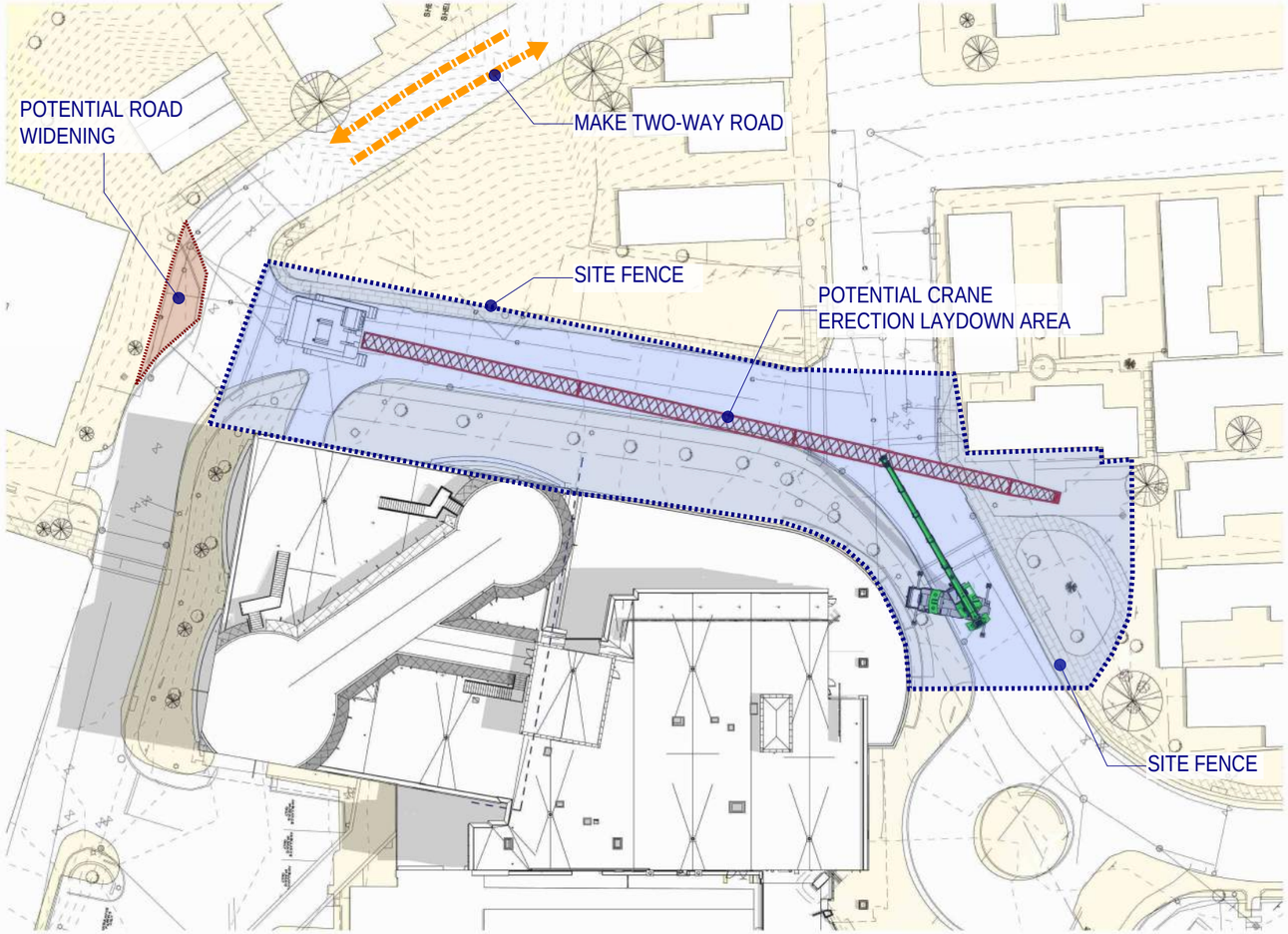


General Notes:
1)Close Wescott Street and Ellsworth Street to erect the crane over a weekend. Ambulance and hospital access to be from Crescent Street which would need to be two way traffic.
2)Close Wescott Street for a period of one year to support construction.
3)Reconfigure Crescent street to be two way traffic from Ellsworth Street to Wescott, during construction.
4)Reconfigure Ellsworth Street to be two way traffic all the way to Congress Street, during construction.
5)Structural steel trucks will take a left off Congress onto Ellsworth Street and do a two point turn to get into the construction site. (Expect 4 trucks/day for 4 months) - Trucks will be 65 ft maximum
6)All other trucks would enter the campus and construction from Ellsworth Street.

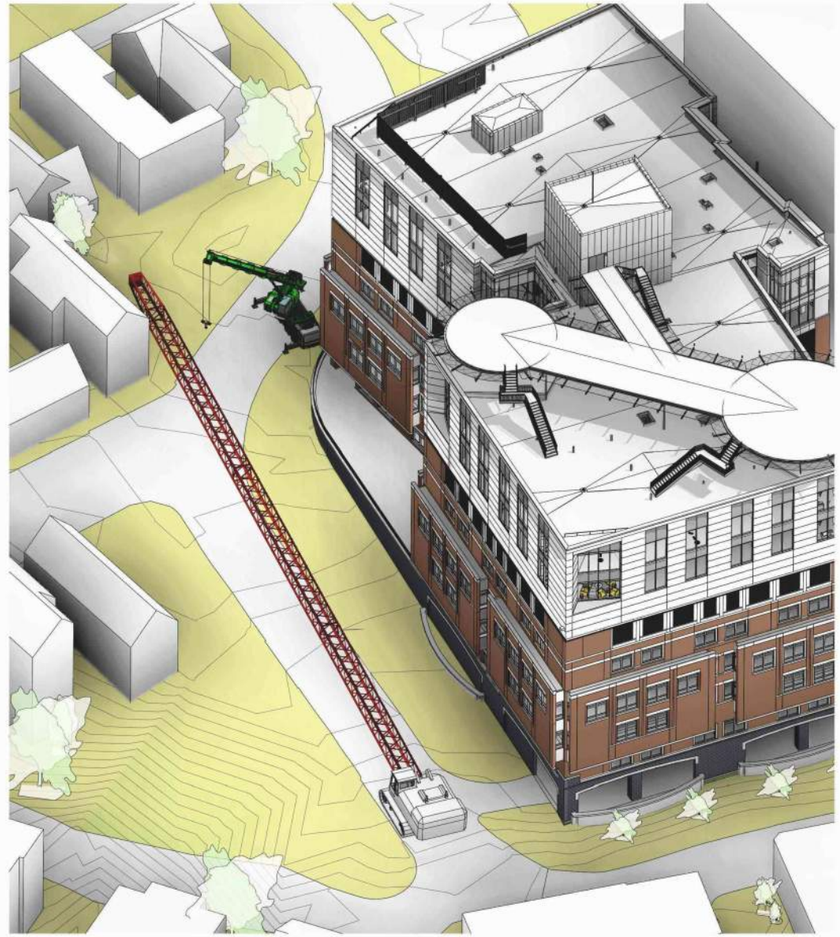


General Notes:
1)Close Wescott Street and Ellsworth Street to erect the crane over a weekend. Ambulance and hospital access to be from Crescent Street which would need to be two way traffic.
2)Close Wescott Street for a period of one year to support construction.
3)Reconfigure Crescent street to be two way traffic from Ellsworth Street to Wescott, during construction.
4)Reconfigure Ellsworth Street to be two way traffic all the way to Congress Street, during construction.
5)Structural steel trucks will take a left off Congress onto Ellsworth Street and do a two point turn to get into the construction site. (Expect 4 trucks/day for 4 months) - Trucks will be 65 ft maximum
6)All other trucks would enter the campus and construction from Ellsworth Street.



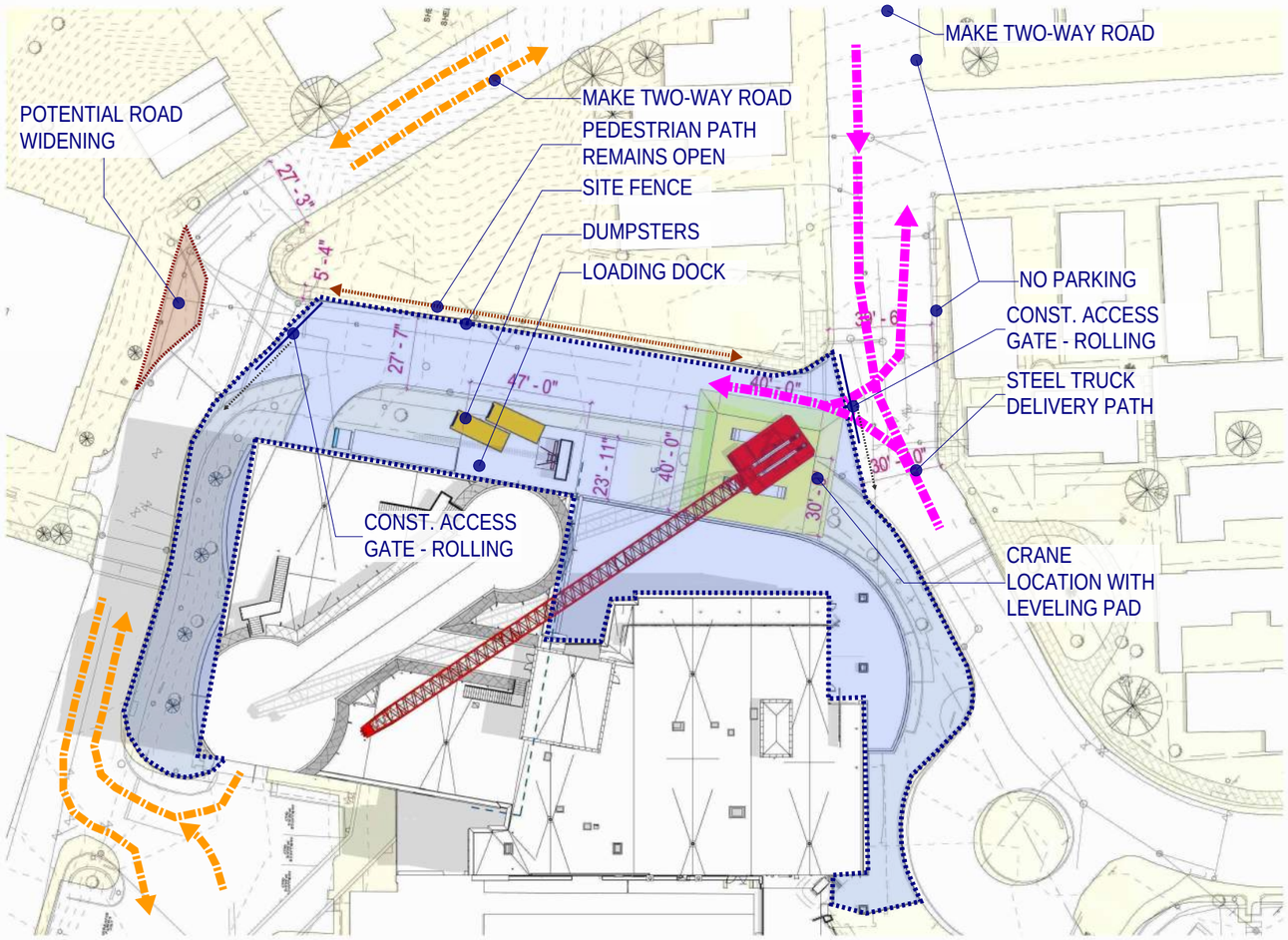


1 EAST TOWERS - CRANE LOGISTICS
3/64" = 1'-0"

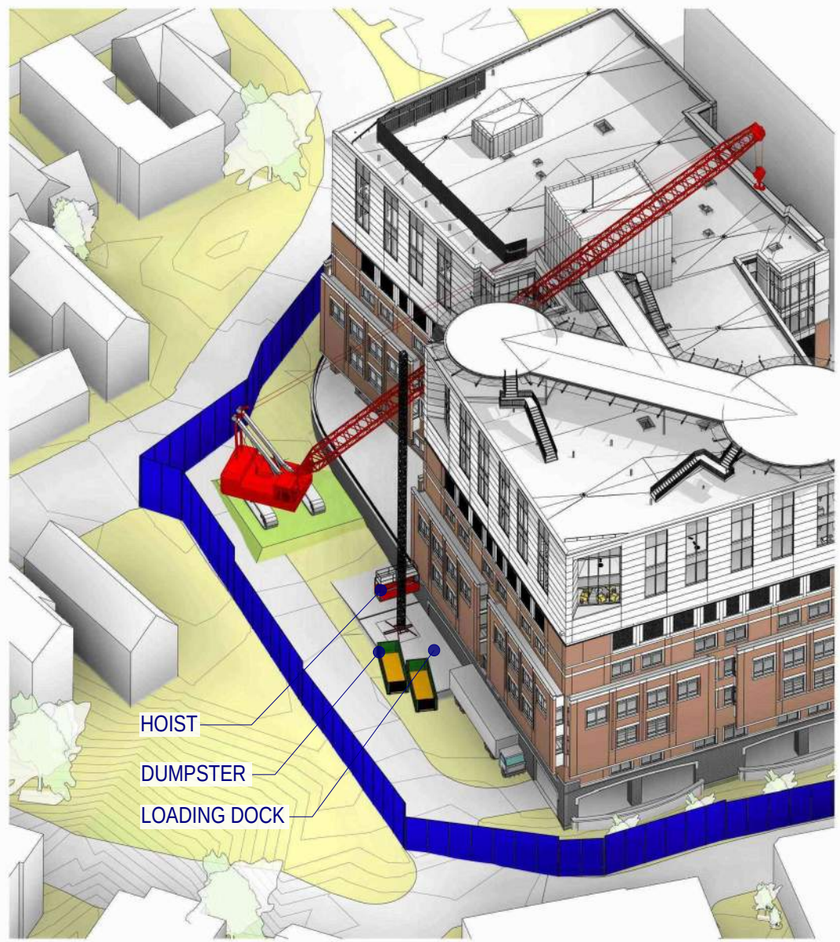


2 EAST TOWERS - CRANE LOGISTICS

General Notes:
1)Close Wescott Street and Ellsworth Street to erect the crane over a weekend. Ambulance and hospital access to be from Crescent Street which would need to be two way traffic.
2)Close Wescott Street for a period of one year to support construction.
3)Reconfigure Crescent street to be two way traffic from Ellsworth Street to Wescott, during construction.
4)Reconfigure Ellsworth Street to be two way traffic all the way to Congress Street, during construction.
5)Structural steel trucks will take a left off Congress onto Ellsworth Street and do a two point turn to get into the construction site. (Expect 4 trucks/day for 4 months)
- Trucks will be 65 ft maximum
6)All other trucks would enter the campus and construction from Ellsworth Street.



1 EAST TOWERS - CRANE LOGISTICS
3/64" = 1'-0"



2 EAST TOWERS - CRANE LOGISTICS

General Notes:
1)Close Wescott Street and Ellsworth Street to erect the crane over a weekend. Ambulance and hospital access to be from Crescent Street which would need to be two way traffic.
2)Close Wescott Street for a period of one year to support construction.
3)Reconfigure Crescent street to be two way traffic from Ellsworth Street to Wescott, during construction.
4)Reconfigure Ellsworth Street to be two way traffic all the way to Congress Street, during construction.
5)Structural steel trucks will take a left off Congress onto Ellsworth Street and do a two point turn to get into the construction site. (Expect 4 trucks/day for 4 months)
- Trucks will be 65 ft maximum
6)All other trucks would enter the campus and construction from Ellsworth Street.



[Visitors Garage] Logistics Plans and Studies

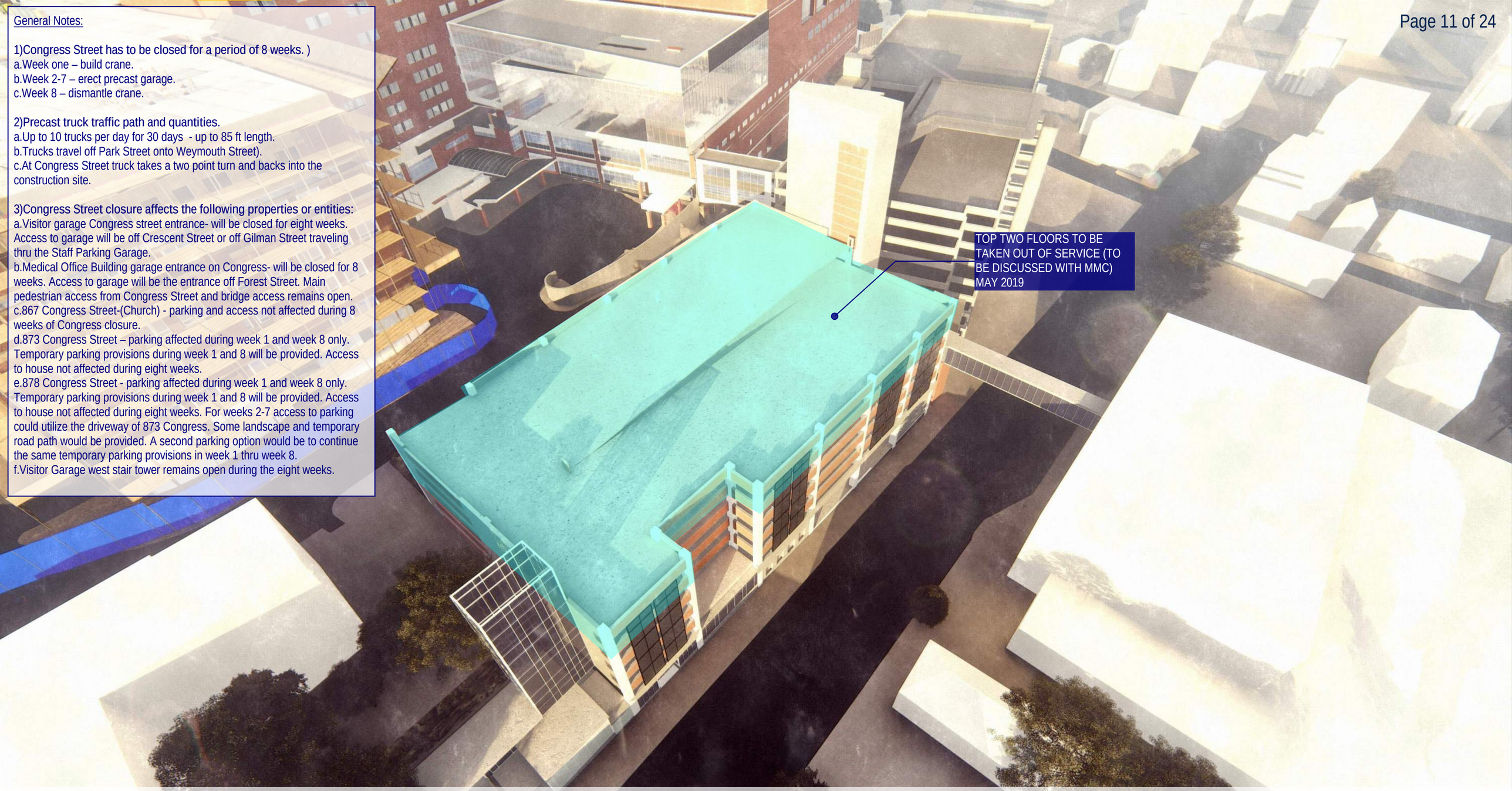
Turner

General Notes:

1)Congress Street has to be closed for a period of 8 weeks.)
a.Week one – build crane.
b.Week 2-7 – erect precast garage.
c.Week 8 – dismantle crane.

2)Precast truck traffic path and quantities.
a.Up to 10 trucks per day for 30 days - up to 85 ft length.
b.Trucks travel off Park Street onto Weymouth Street).
c.At Congress Street truck takes a two point turn and backs into the construction site.

3)Congress Street closure affects the following properties or entities:
a.Visitor garage Congress street entrance- will be closed for eight weeks. Access to garage will be off Crescent Street or off Gilman Street traveling thru the Staff Parking Garage.
b.Medical Office Building garage entrance on Congress- will be closed for 8 weeks. Access to garage will be the entrance off Forest Street. Main pedestrian access from Congress Street and bridge access remains open.
c.867 Congress Street-(Church) - parking and access not affected during 8 weeks of Congress closure.
d.873 Congress Street – parking affected during week 1 and week 8 only. Temporary parking provisions during week 1 and 8 will be provided. Access to house not affected during eight weeks.
e.878 Congress Street - parking affected during week 1 and week 8 only. Temporary parking provisions during week 1 and 8 will be provided. Access to house not affected during eight weeks. For weeks 2-7 access to parking could utilize the driveway of 873 Congress. Some landscape and temporary road path would be provided. A second parking option would be to continue the same temporary parking provisions in week 1 thru week 8.
f.Visitor Garage west stair tower remains open during the eight weeks.

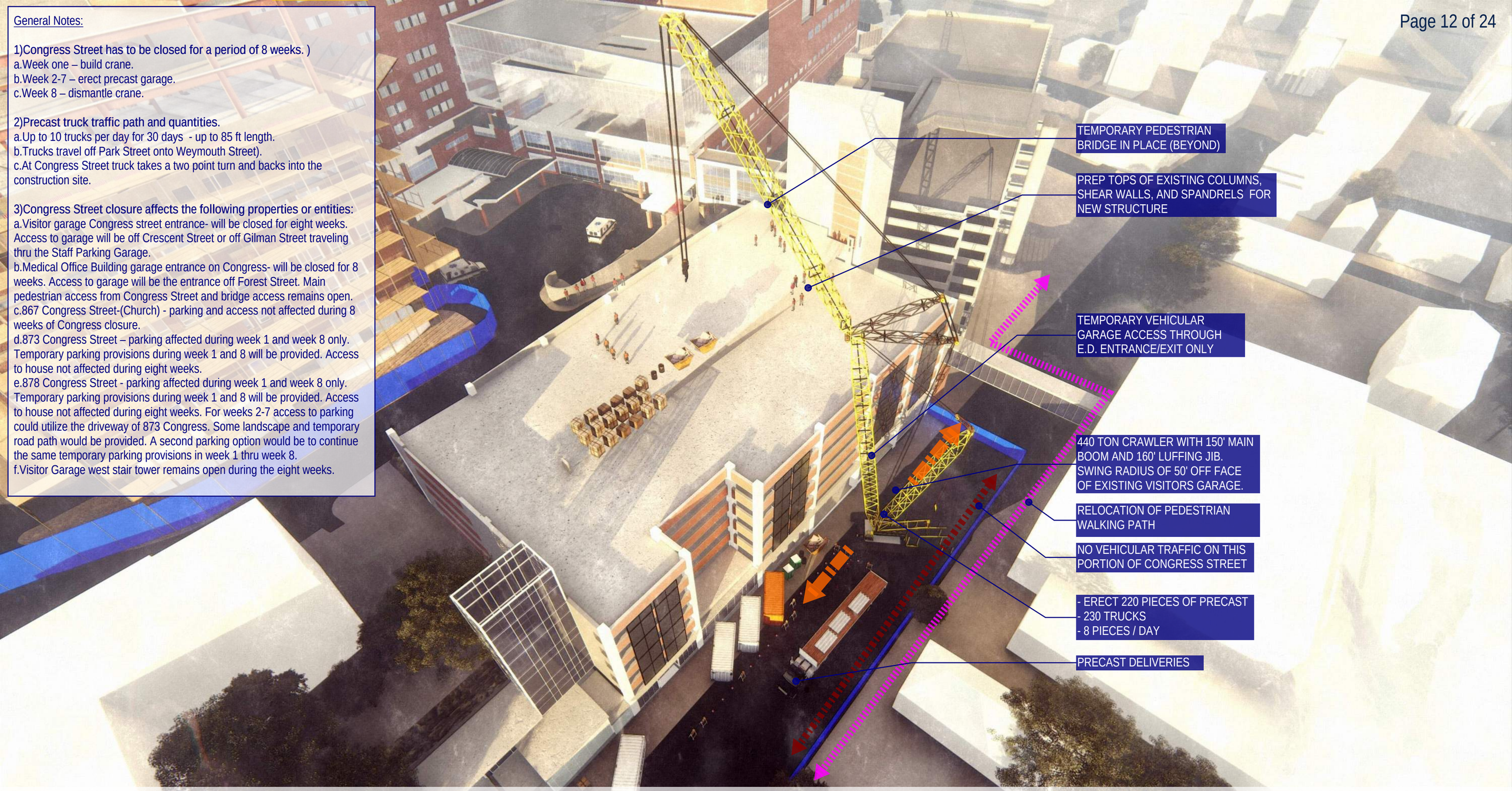


General Notes:

1)Congress Street has to be closed for a period of 8 weeks.)
a.Week one – build crane.
b.Week 2-7 – erect precast garage.
c.Week 8 – dismantle crane.

2)Precast truck traffic path and quantities.
a.Up to 10 trucks per day for 30 days - up to 85 ft length.
b.Trucks travel off Park Street onto Weymouth Street).
c.At Congress Street truck takes a two point turn and backs into the construction site.

3)Congress Street closure affects the following properties or entities:
a.Visitor garage Congress street entrance- will be closed for eight weeks. Access to garage will be off Crescent Street or off Gilman Street traveling thru the Staff Parking Garage.
b.Medical Office Building garage entrance on Congress- will be closed for 8 weeks. Access to garage will be the entrance off Forest Street. Main pedestrian access from Congress Street and bridge access remains open.
c.867 Congress Street-(Church) - parking and access not affected during 8 weeks of Congress closure.
d.873 Congress Street – parking affected during week 1 and week 8 only. Temporary parking provisions during week 1 and 8 will be provided. Access to house not affected during eight weeks.
e.878 Congress Street - parking affected during week 1 and week 8 only. Temporary parking provisions during week 1 and 8 will be provided. Access to house not affected during eight weeks. For weeks 2-7 access to parking could utilize the driveway of 873 Congress. Some landscape and temporary road path would be provided. A second parking option would be to continue the same temporary parking provisions in week 1 thru week 8.
f.Visitor Garage west stair tower remains open during the eight weeks.

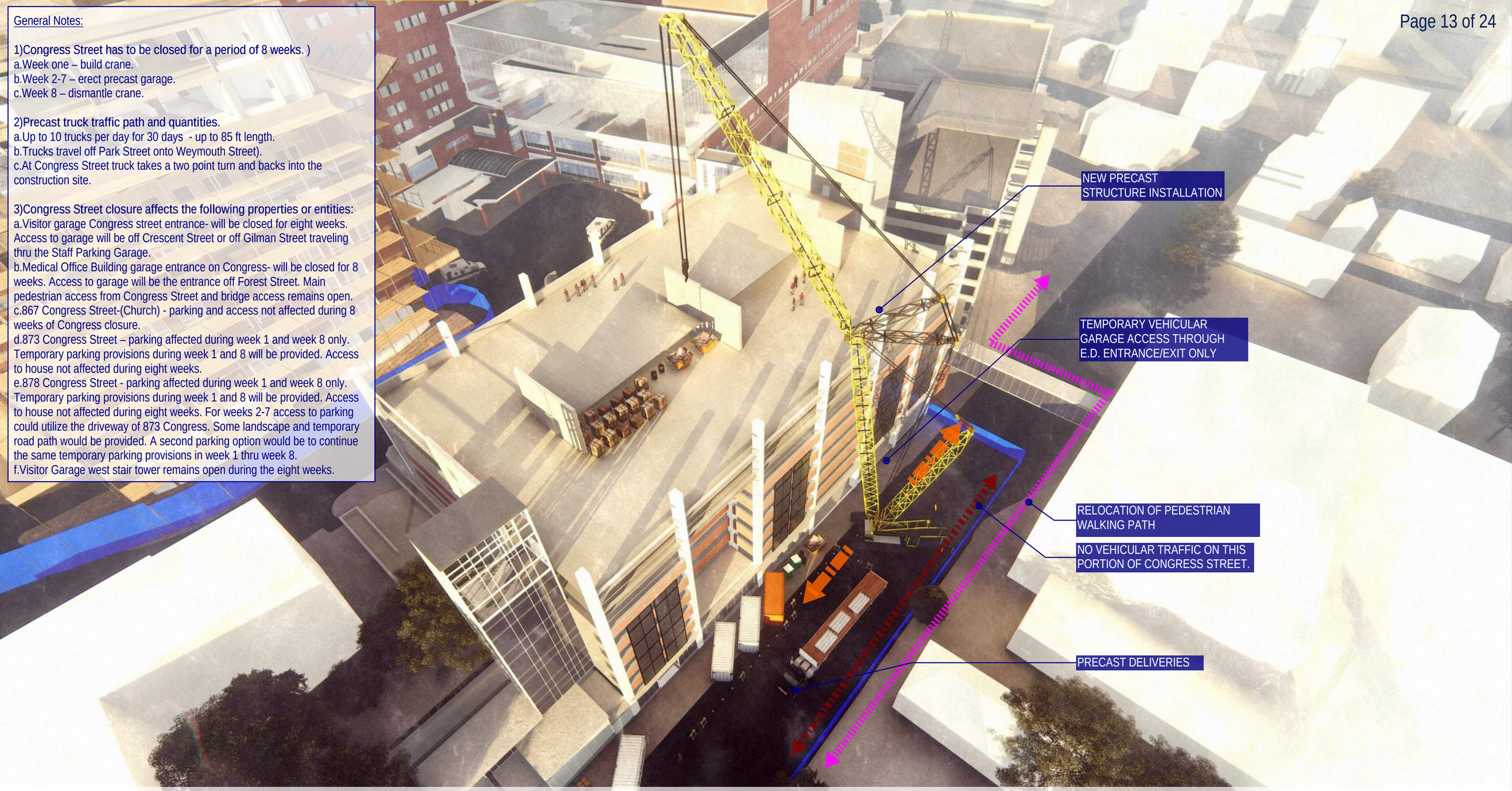


General Notes:

1)Congress Street has to be closed for a period of 8 weeks.)
a.Week one – build crane.
b.Week 2-7 – erect precast garage.
c.Week 8 – dismantle crane.

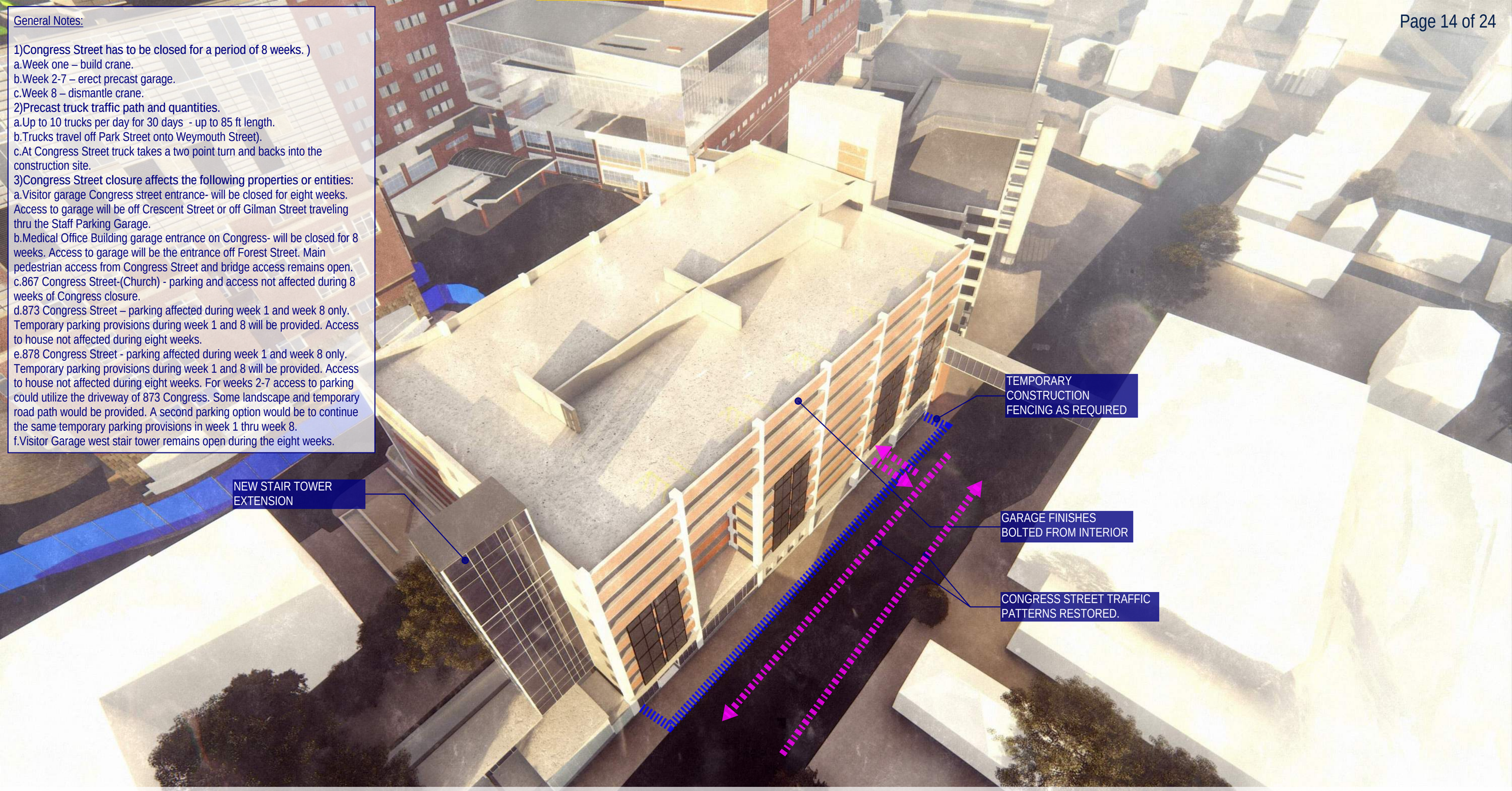
2)Precast truck traffic path and quantities.
a.Up to 10 trucks per day for 30 days - up to 85 ft length.
b.Trucks travel off Park Street onto Weymouth Street).
c.At Congress Street truck takes a two point turn and backs into the construction site.

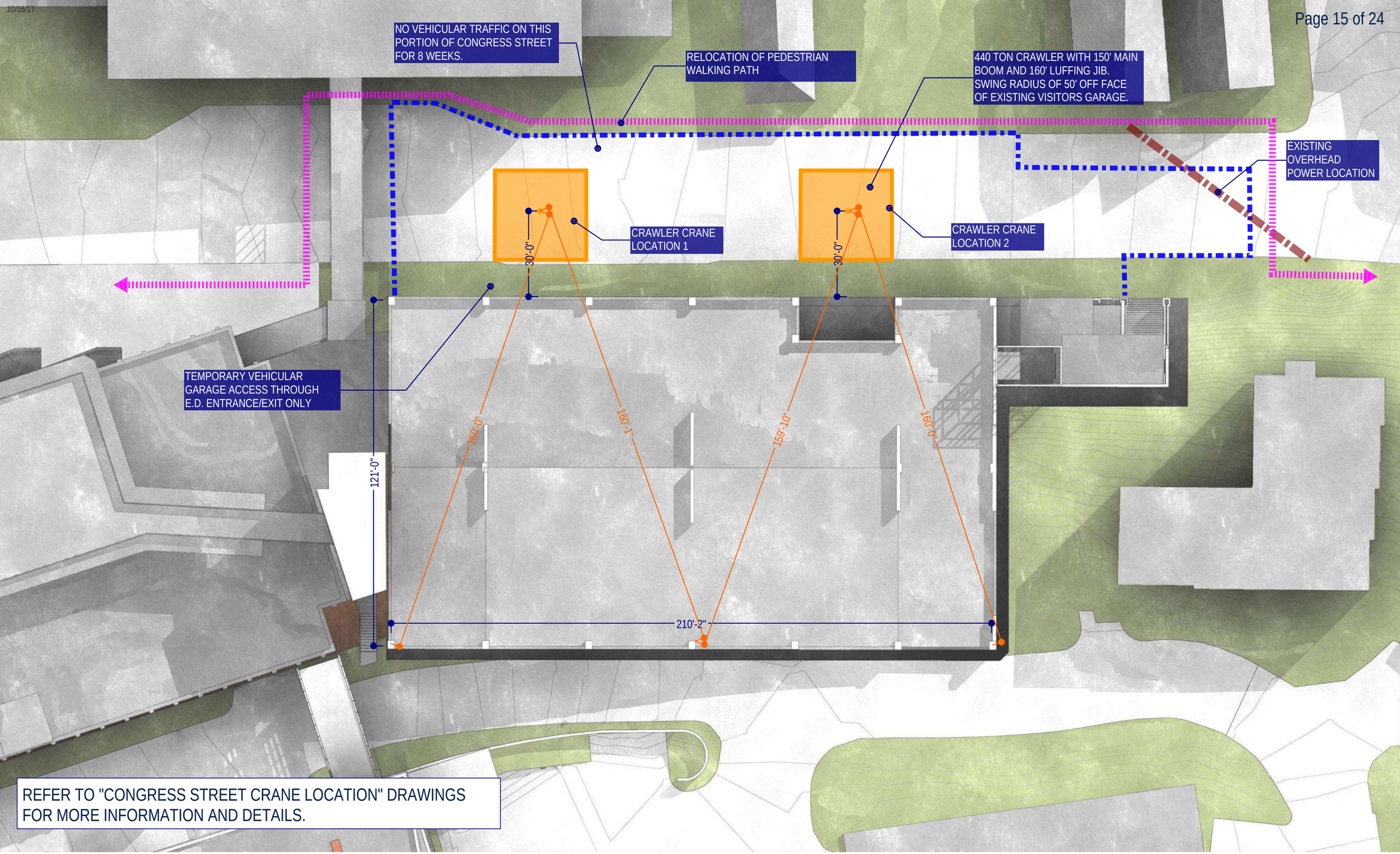
3)Congress Street closure affects the following properties or entities:
a.Visitor garage Congress street entrance- will be closed for eight weeks. Access to garage will be off Crescent Street or off Gilman Street traveling thru the Staff Parking Garage.
b.Medical Office Building garage entrance on Congress- will be closed for 8 weeks. Access to garage will be the entrance off Forest Street. Main pedestrian access from Congress Street and bridge access remains open.
c.867 Congress Street-(Church) - parking and access not affected during 8 weeks of Congress closure.
d.873 Congress Street – parking affected during week 1 and week 8 only. Temporary parking provisions during week 1 and 8 will be provided. Access to house not affected during eight weeks.
e.878 Congress Street - parking affected during week 1 and week 8 only. Temporary parking provisions during week 1 and 8 will be provided. Access to house not affected during eight weeks. For weeks 2-7 access to parking could utilize the driveway of 873 Congress. Some landscape and temporary road path would be provided. A second parking option would be to continue the same temporary parking provisions in week 1 thru week 8.
f.Visitor Garage west stair tower remains open during the eight weeks.



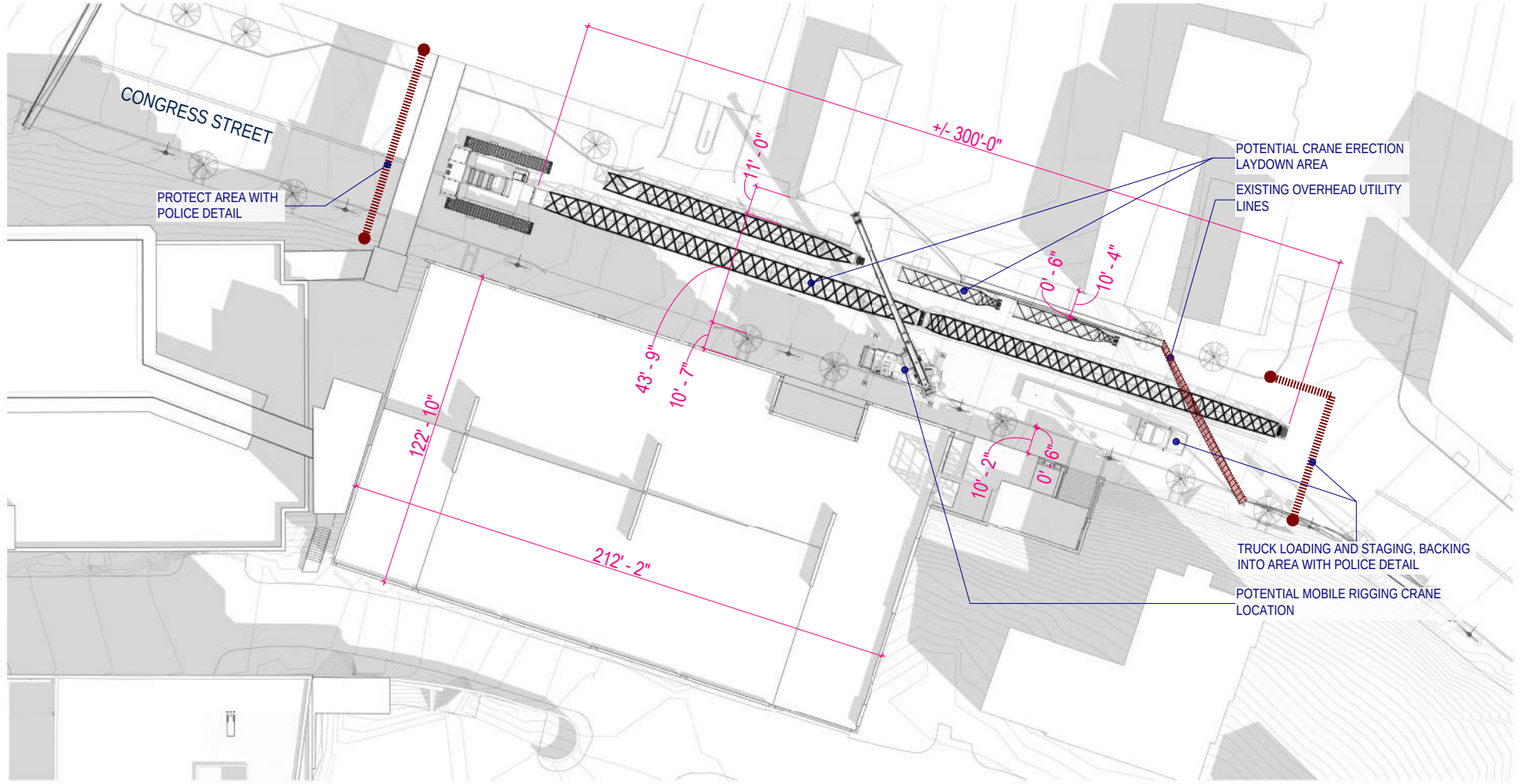
General Notes:

1)Congress Street has to be closed for a period of 8 weeks.)
a.Week one – build crane.
b.Week 2-7 – erect precast garage.
c.Week 8 – dismantle crane.
2)Precast truck traffic path and quantities.
a.Up to 10 trucks per day for 30 days - up to 85 ft length.
b.Trucks travel off Park Street onto Weymouth Street).
c.At Congress Street truck takes a two point turn and backs into the construction site.
3)Congress Street closure affects the following properties or entities:
a.Visitor garage Congress street entrance- will be closed for eight weeks. Access to garage will be off Crescent Street or off Gilman Street traveling thru the Staff Parking Garage.
b.Medical Office Building garage entrance on Congress- will be closed for 8 weeks. Access to garage will be the entrance off Forest Street. Main pedestrian access from Congress Street and bridge access remains open.
c.867 Congress Street-(Church) - parking and access not affected during 8 weeks of Congress closure.
d.873 Congress Street – parking affected during week 1 and week 8 only. Temporary parking provisions during week 1 and 8 will be provided. Access to house not affected during eight weeks.
e.878 Congress Street - parking affected during week 1 and week 8 only. Temporary parking provisions during week 1 and 8 will be provided. Access to house not affected during eight weeks. For weeks 2-7 access to parking could utilize the driveway of 873 Congress. Some landscape and temporary road path would be provided. A second parking option would be to continue the same temporary parking provisions in week 1 thru week 8.
f.Visitor Garage west stair tower remains open during the eight weeks.





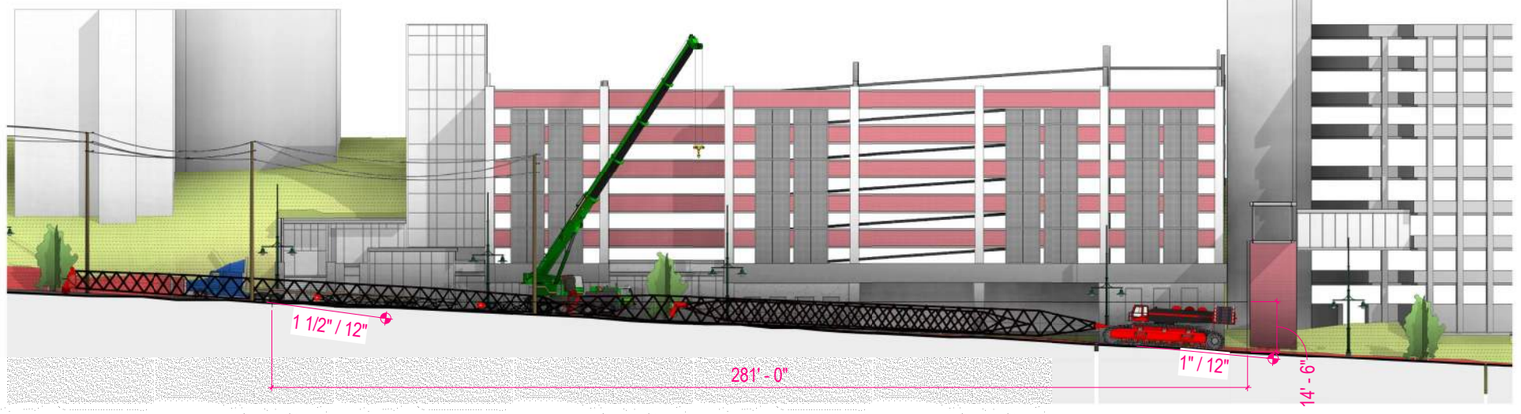
REFER TO "CONGRESS STREET CRANE LOCATION" DRAWINGS FOR MORE INFORMATION AND DETAILS.



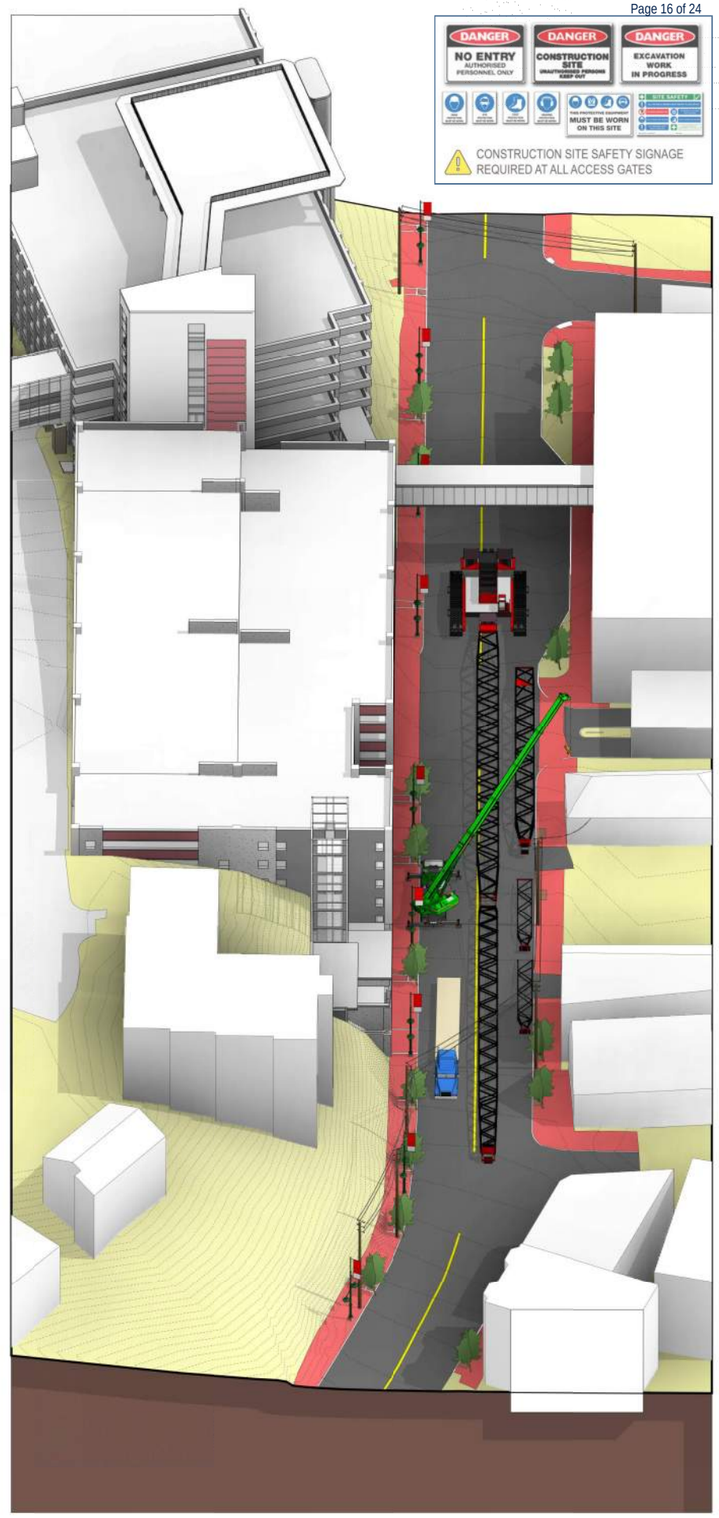
1 CONGRESS STREET - CRANE PICK PLAN
3/64" = 1'-0"

General Notes:

1)Congress Street has to be closed for a period of 8 weeks.)
a.Week one – build crane.
b.Week 2-7 – erect precast garage.
c.Week 8 – dismantle crane.
2)Precast truck traffic path and quantities.
a.Up to 10 trucks per day for 30 days - up to 85 ft length.
b.Trucks travel off Park Street onto Weymouth Street).
c.At Congress Street truck takes a two point turn and backs into the construction site.



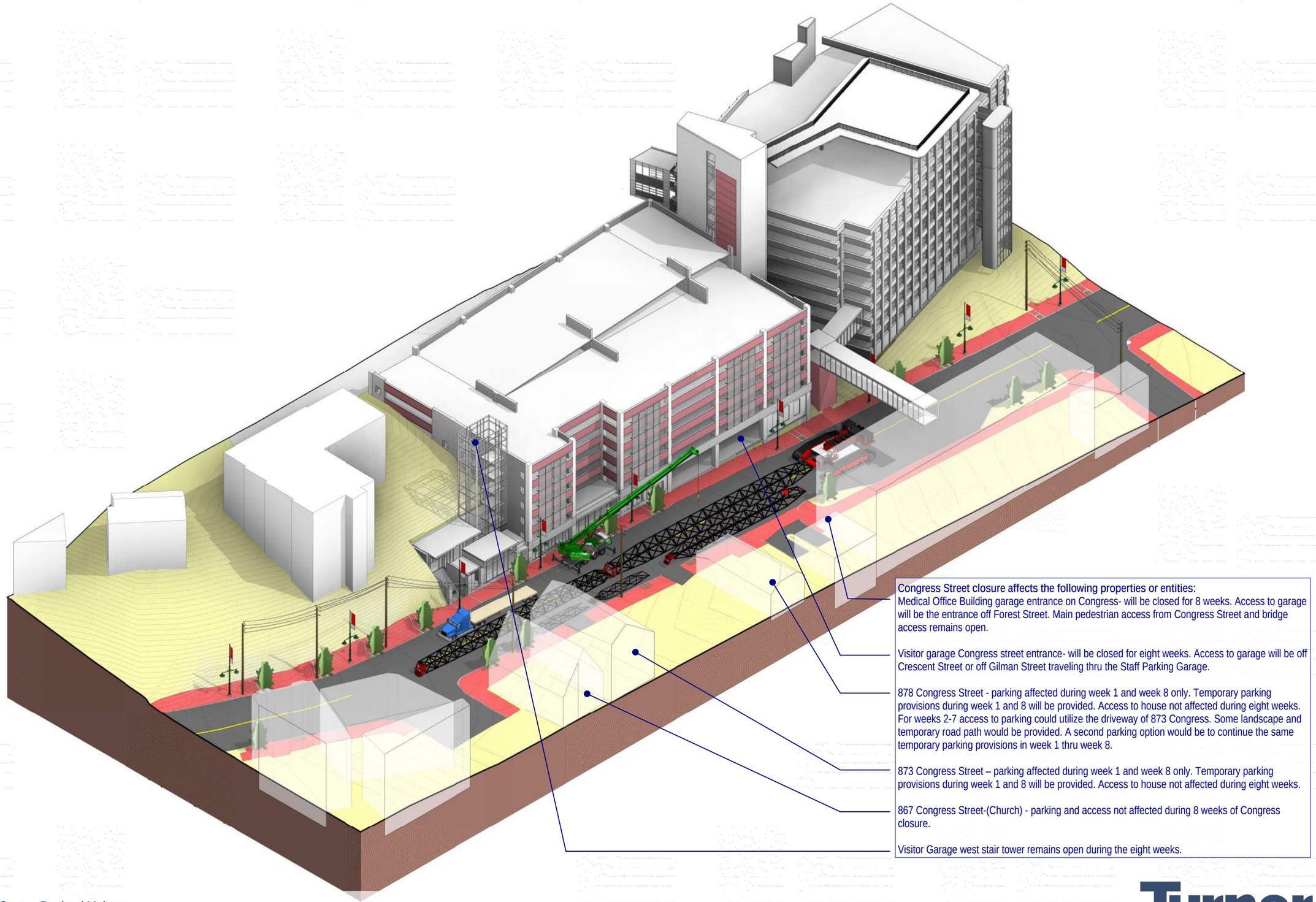
2 CONGRESS STREET - SITE SECTION
1/16" = 1'-0"



3 CONGRESS STREET - AXON VIEW

Maine Medical Center, Portland Maine
Additions and Renovations [Congress Street Crane Enabling]

Turner



Congress Street closure affects the following properties or entities:

Medical Office Building garage entrance on Congress- will be closed for 8 weeks. Access to garage will be the entrance off Forest Street. Main pedestrian access from Congress Street and bridge access remains open.

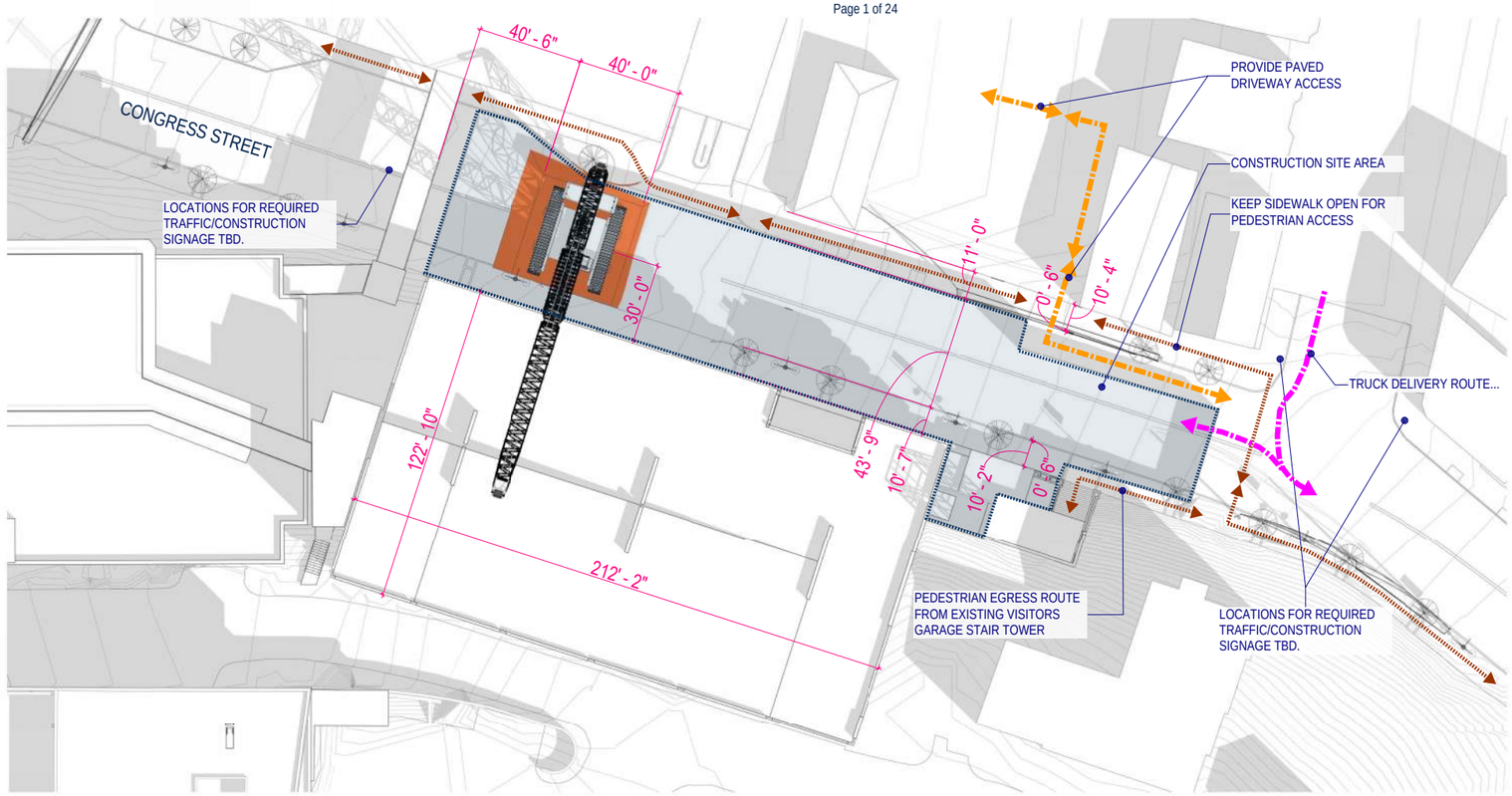
Visitor garage Congress street entrance- will be closed for eight weeks. Access to garage will be off Crescent Street or off Gilman Street traveling thru the Staff Parking Garage.

878 Congress Street - parking affected during week 1 and week 8 only. Temporary parking provisions during week 1 and 8 will be provided. Access to house not affected during eight weeks. For weeks 2-7 access to parking could utilize the driveway of 873 Congress. Some landscape and temporary road path would be provided. A second parking option would be to continue the same temporary parking provisions in week 1 thru week 8.

873 Congress Street – parking affected during week 1 and week 8 only. Temporary parking provisions during week 1 and 8 will be provided. Access to house not affected during eight weeks.

867 Congress Street-(Church) - parking and access not affected during 8 weeks of Congress closure.

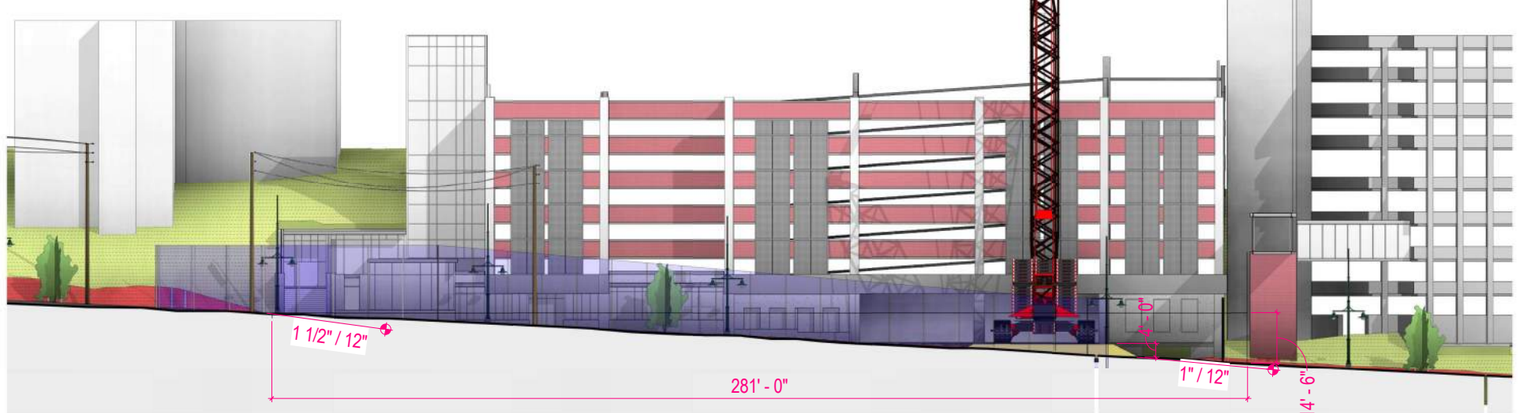
Visitor Garage west stair tower remains open during the eight weeks.



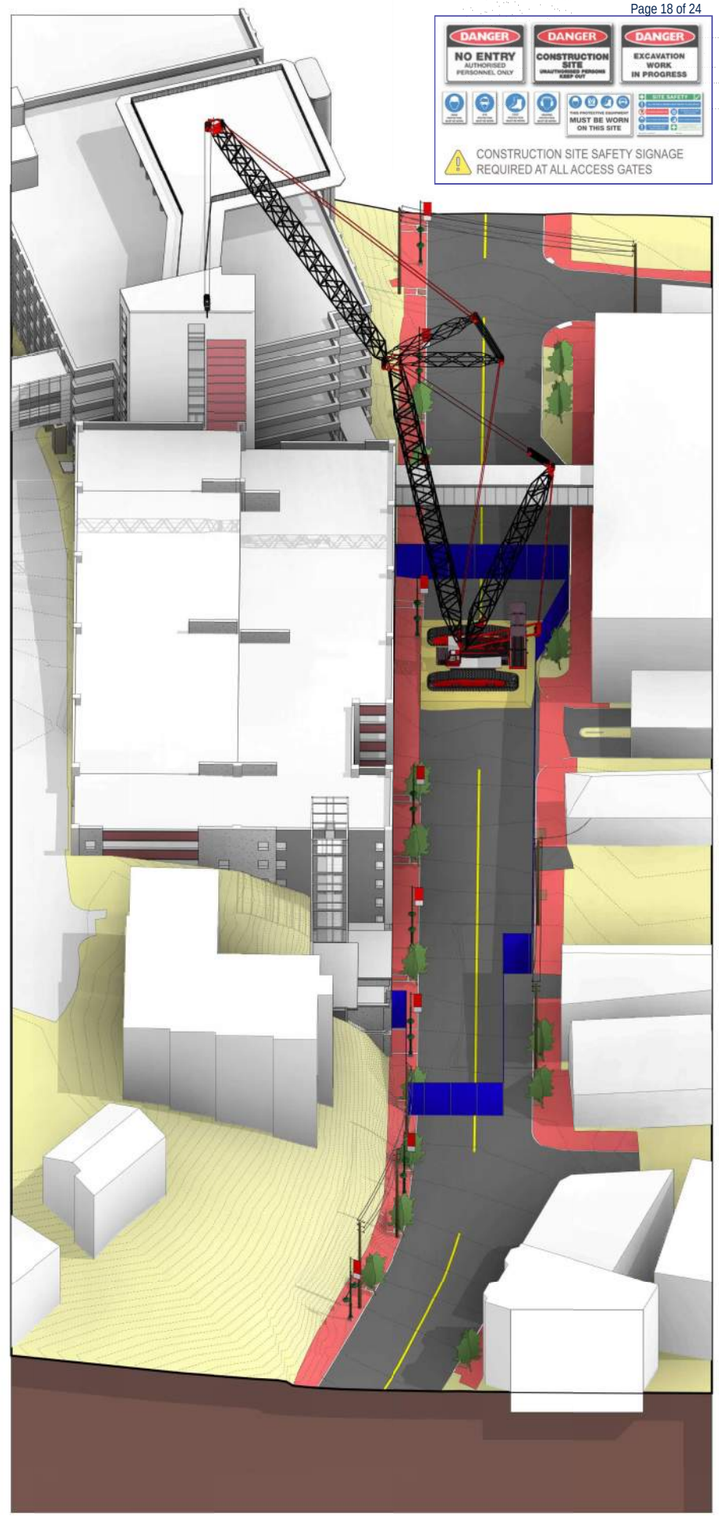
1 CONGRESS STREET - CRANE PICK PLAN
3/64" = 1'-0"

General Notes:

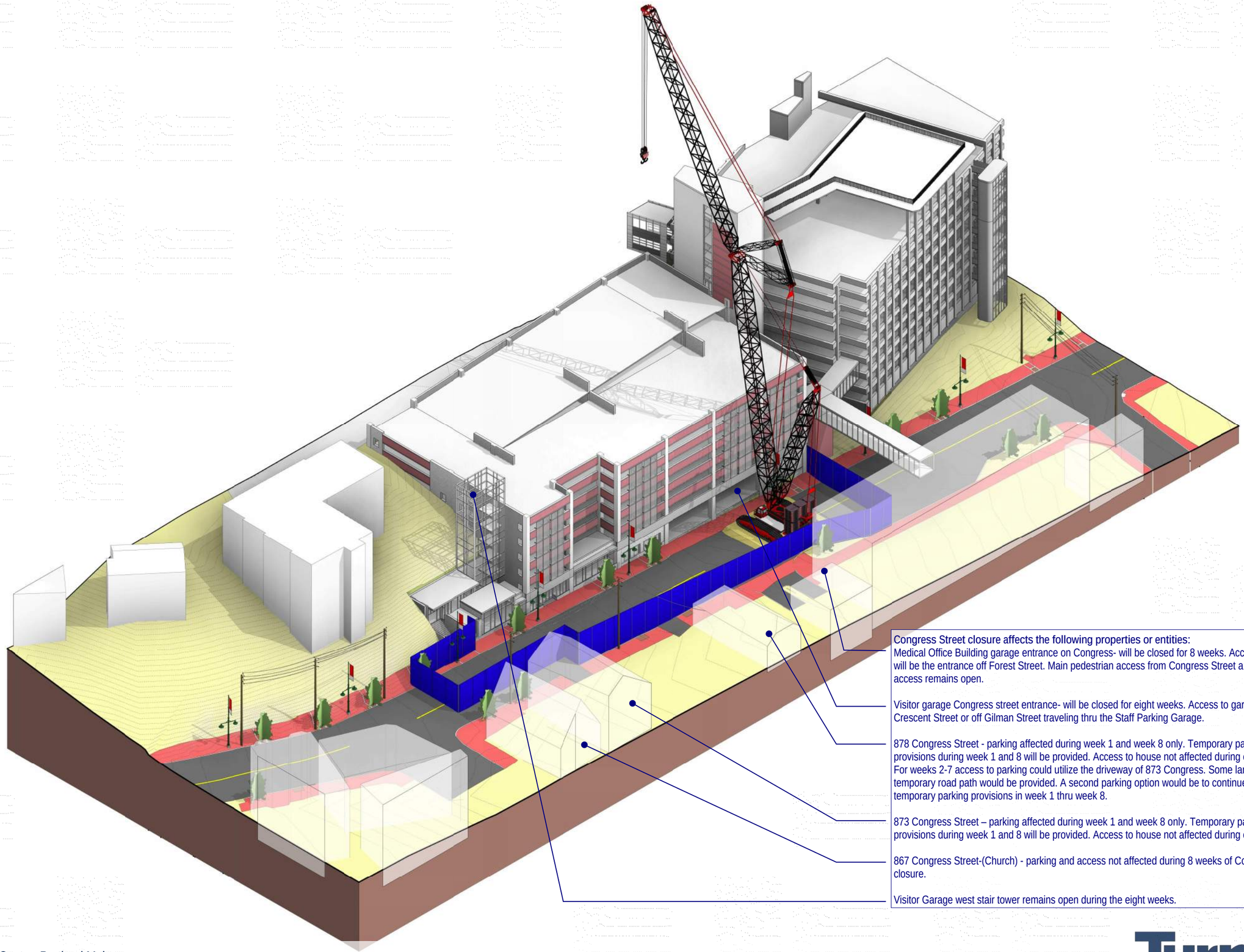
1)Congress Street has to be closed for a period of 8 weeks.)
a.Week one – build crane.
b.Week 2-7 – erect precast garage.
c.Week 8 – dismantle crane.
2)Precast truck traffic path and quantities.
a.Up to 10 trucks per day for 30 days - up to 85 ft length.
b.Trucks travel off Park Street onto Weymouth Street).
c.At Congress Street truck takes a two point turn and backs into the construction site.



2 CONGRESS STREET - SITE SECTION
1/16" = 1'-0"



3 CONGRESS STREET - AXON VIEW



Congress Street closure affects the following properties or entities:

Medical Office Building garage entrance on Congress- will be closed for 8 weeks. Access to garage will be the entrance off Forest Street. Main pedestrian access from Congress Street and bridge access remains open.

Visitor garage Congress street entrance- will be closed for eight weeks. Access to garage will be off Crescent Street or off Gilman Street traveling thru the Staff Parking Garage.

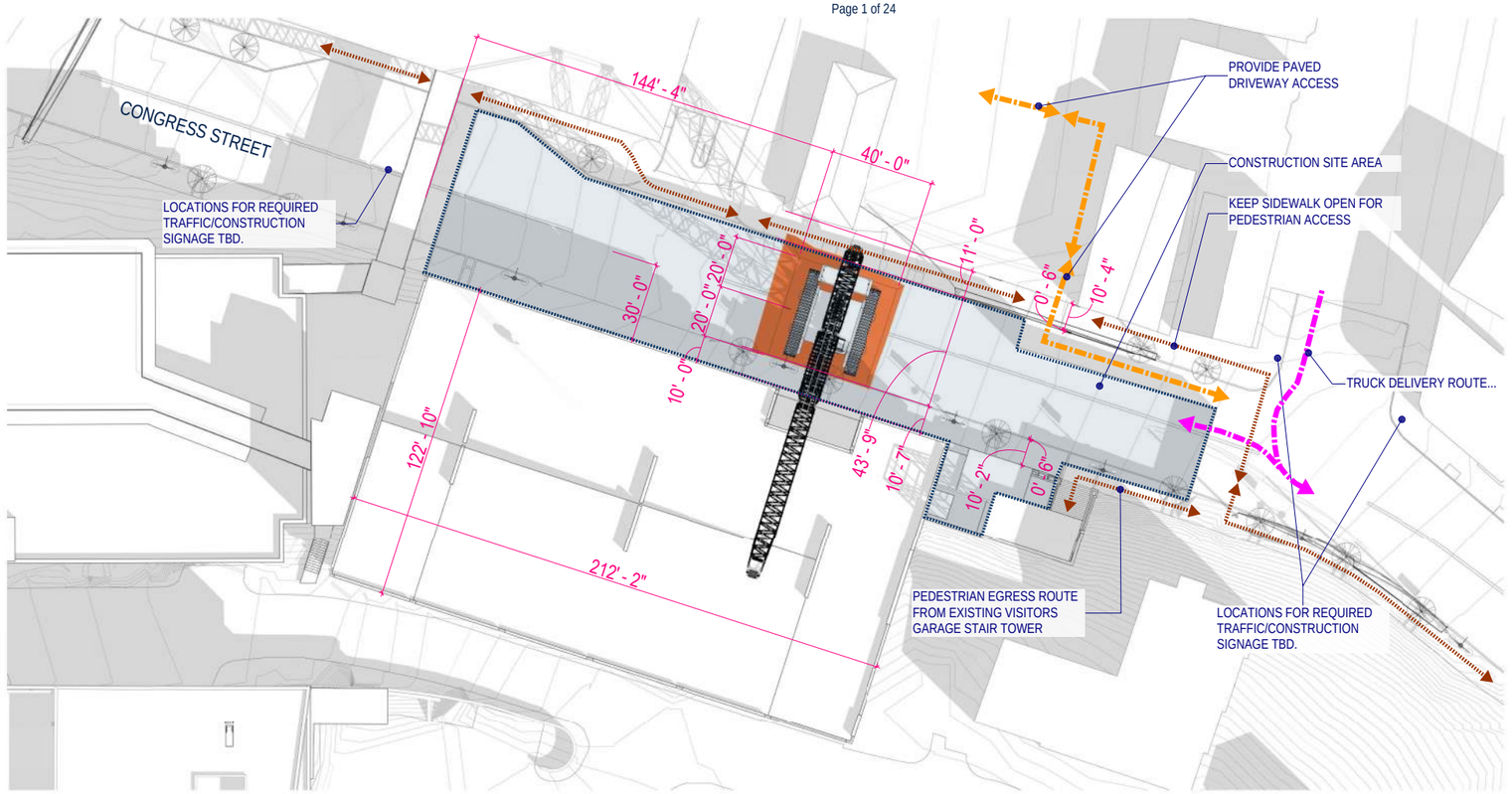
878 Congress Street - parking affected during week 1 and week 8 only. Temporary parking provisions during week 1 and 8 will be provided. Access to house not affected during eight weeks. For weeks 2-7 access to parking could utilize the driveway of 873 Congress. Some landscape and temporary road path would be provided. A second parking option would be to continue the same temporary parking provisions in week 1 thru week 8.

873 Congress Street – parking affected during week 1 and week 8 only. Temporary parking provisions during week 1 and 8 will be provided. Access to house not affected during eight weeks.

867 Congress Street-(Church) - parking and access not affected during 8 weeks of Congress closure.

Visitor Garage west stair tower remains open during the eight weeks.

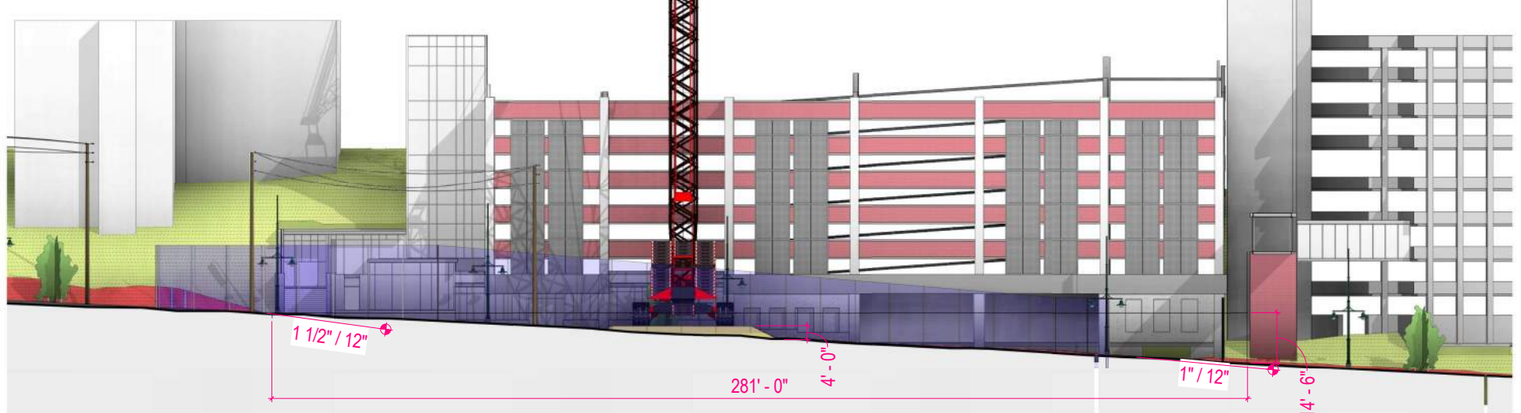
Turner



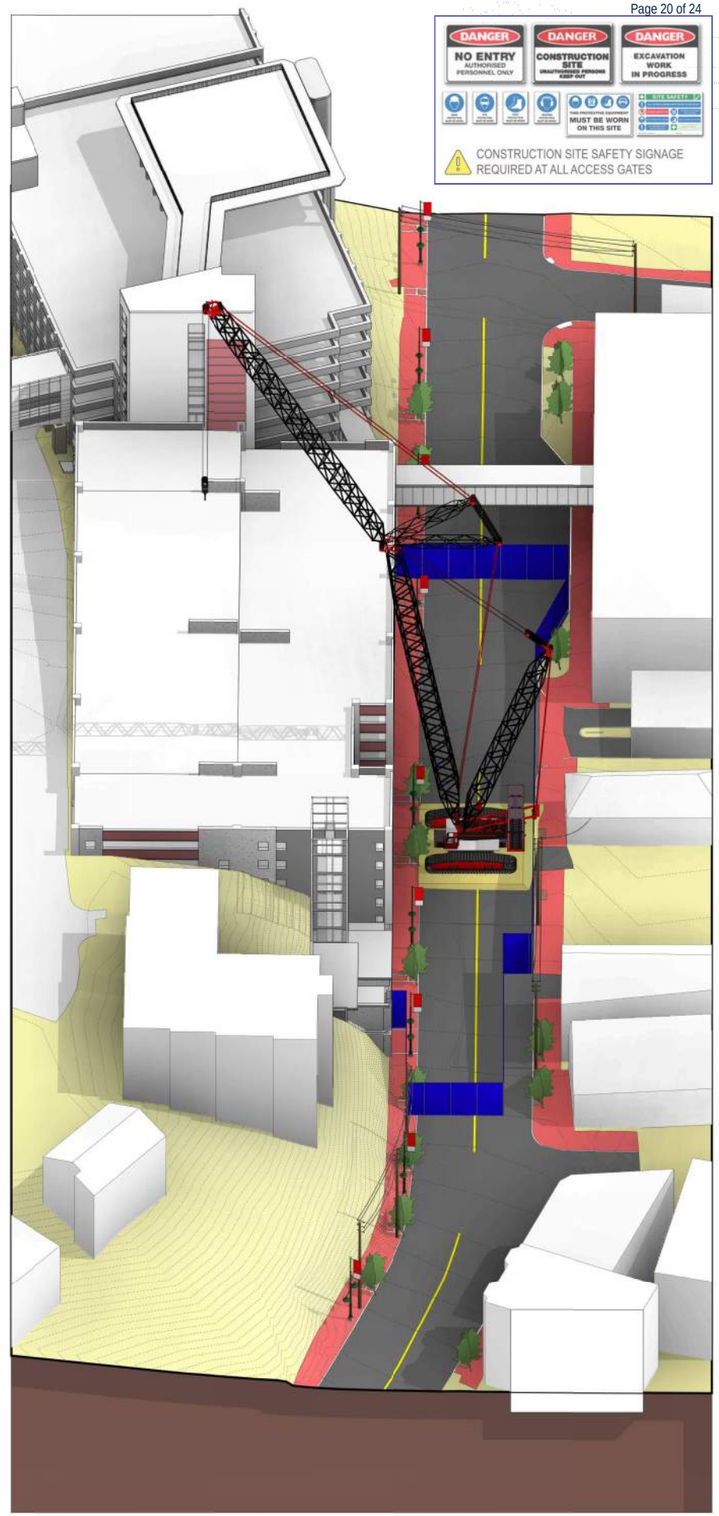
1 CONGRESS STREET - CRANE PICK PLAN
3/64" = 1'-0"

General Notes:

1)Congress Street has to be closed for a period of 8 weeks.)
a.Week one – build crane.
b.Week 2-7 – erect precast garage.
c.Week 8 – dismantle crane.
2)Precast truck traffic path and quantities.
a.Up to 10 trucks per day for 30 days - up to 85 ft length.
b.Trucks travel off Park Street onto Weymouth Street).
c.At Congress Street truck takes a two point turn and backs into the construction site.



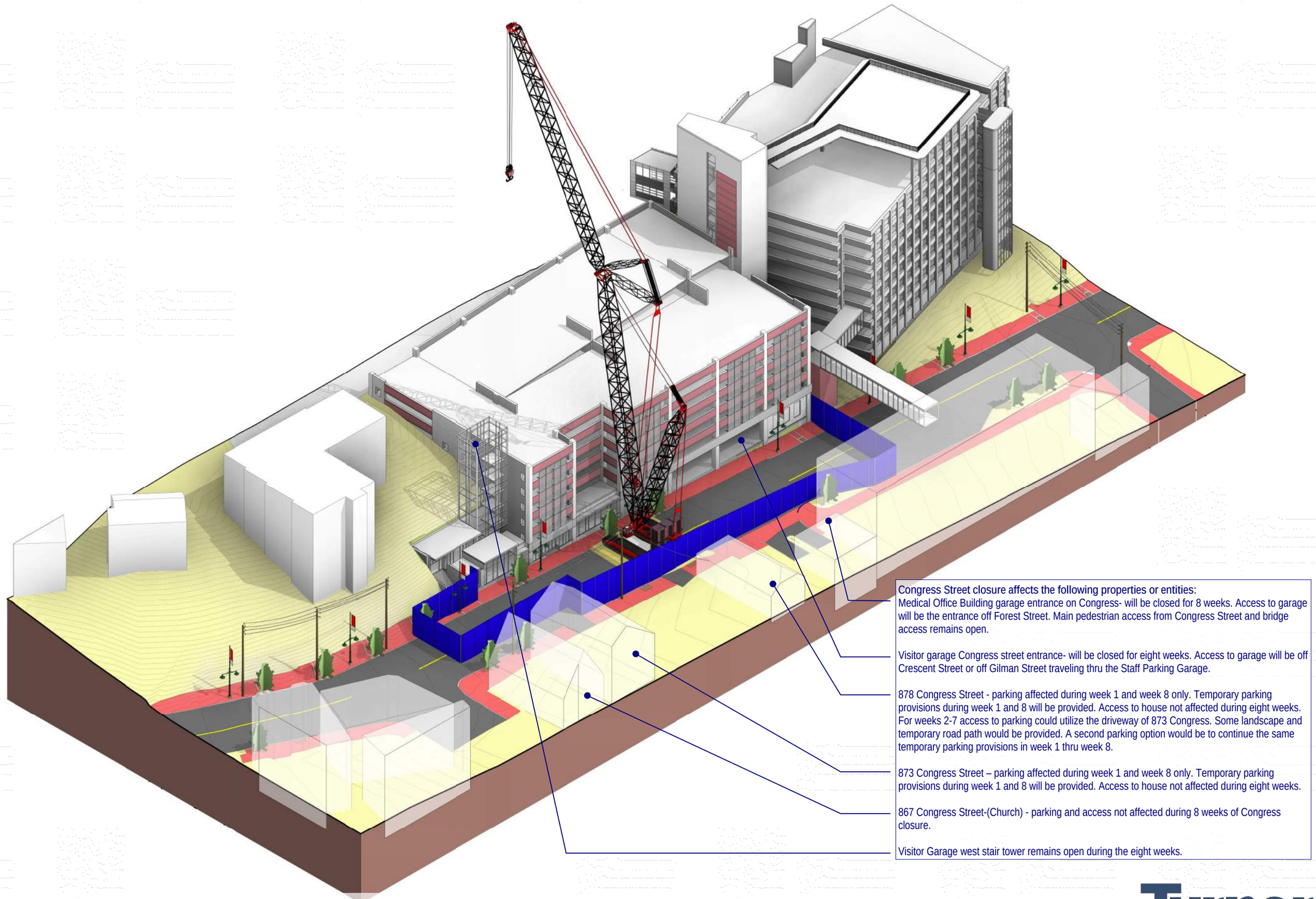
2 CONGRESS STREET - SITE SECTION
1/16" = 1'-0"



3 CONGRESS STREET - AXON VIEW

Maine Medical Center, Portland Maine
Additions and Renovations [Congress Street Crane Location 2]

Turner



Congress Street closure affects the following properties or entities:

Medical Office Building garage entrance on Congress- will be closed for 8 weeks. Access to garage will be the entrance off Forest Street. Main pedestrian access from Congress Street and bridge access remains open.

Visitor garage Congress street entrance- will be closed for eight weeks. Access to garage will be off Crescent Street or off Gilman Street traveling thru the Staff Parking Garage.

878 Congress Street - parking affected during week 1 and week 8 only. Temporary parking provisions during week 1 and 8 will be provided. Access to house not affected during eight weeks. For weeks 2-7 access to parking could utilize the driveway of 873 Congress. Some landscape and temporary road path would be provided. A second parking option would be to continue the same temporary parking provisions in week 1 thru week 8.

873 Congress Street – parking affected during week 1 and week 8 only. Temporary parking provisions during week 1 and 8 will be provided. Access to house not affected during eight weeks.

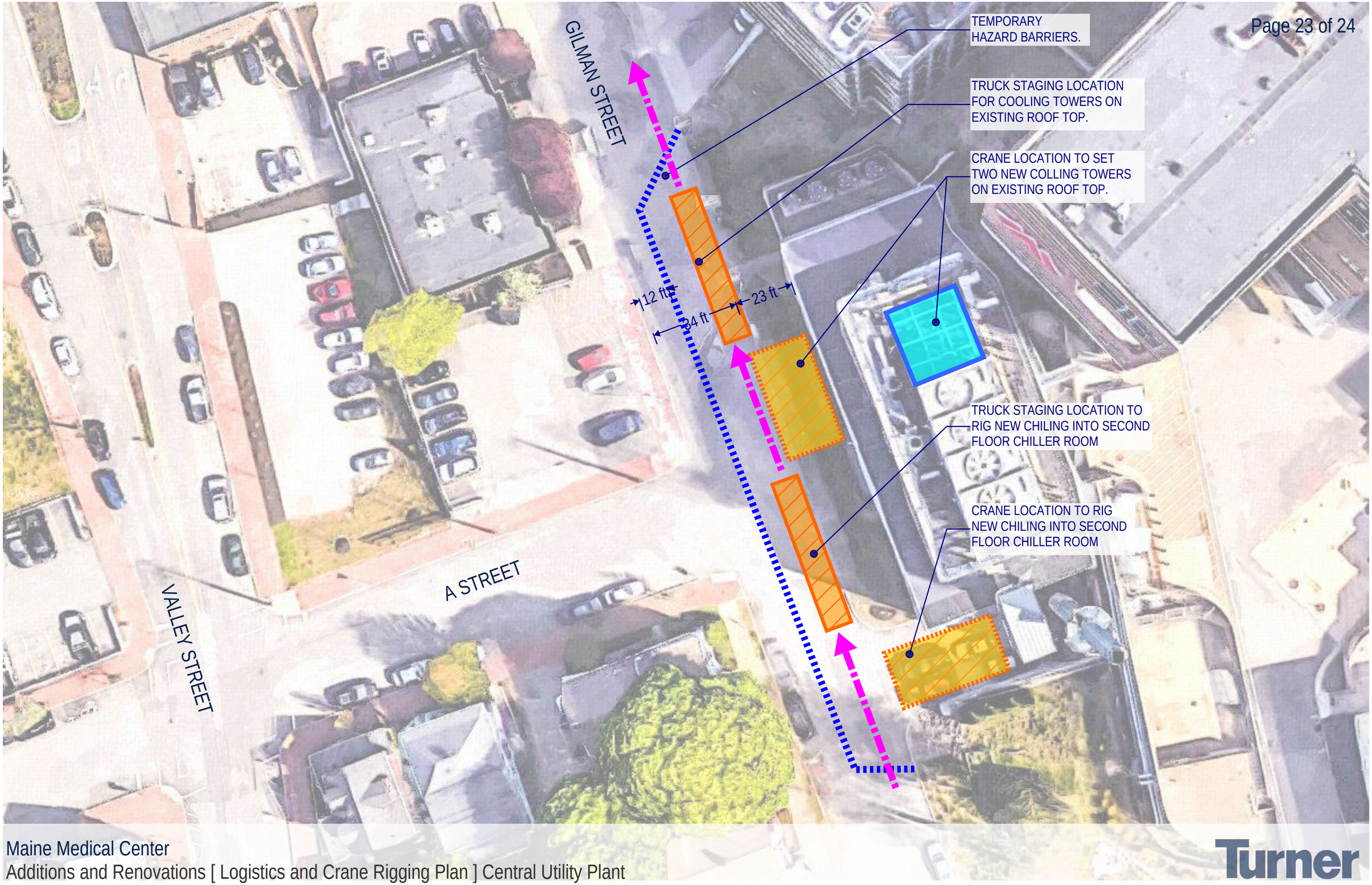
867 Congress Street-(Church) - parking and access not affected during 8 weeks of Congress closure.

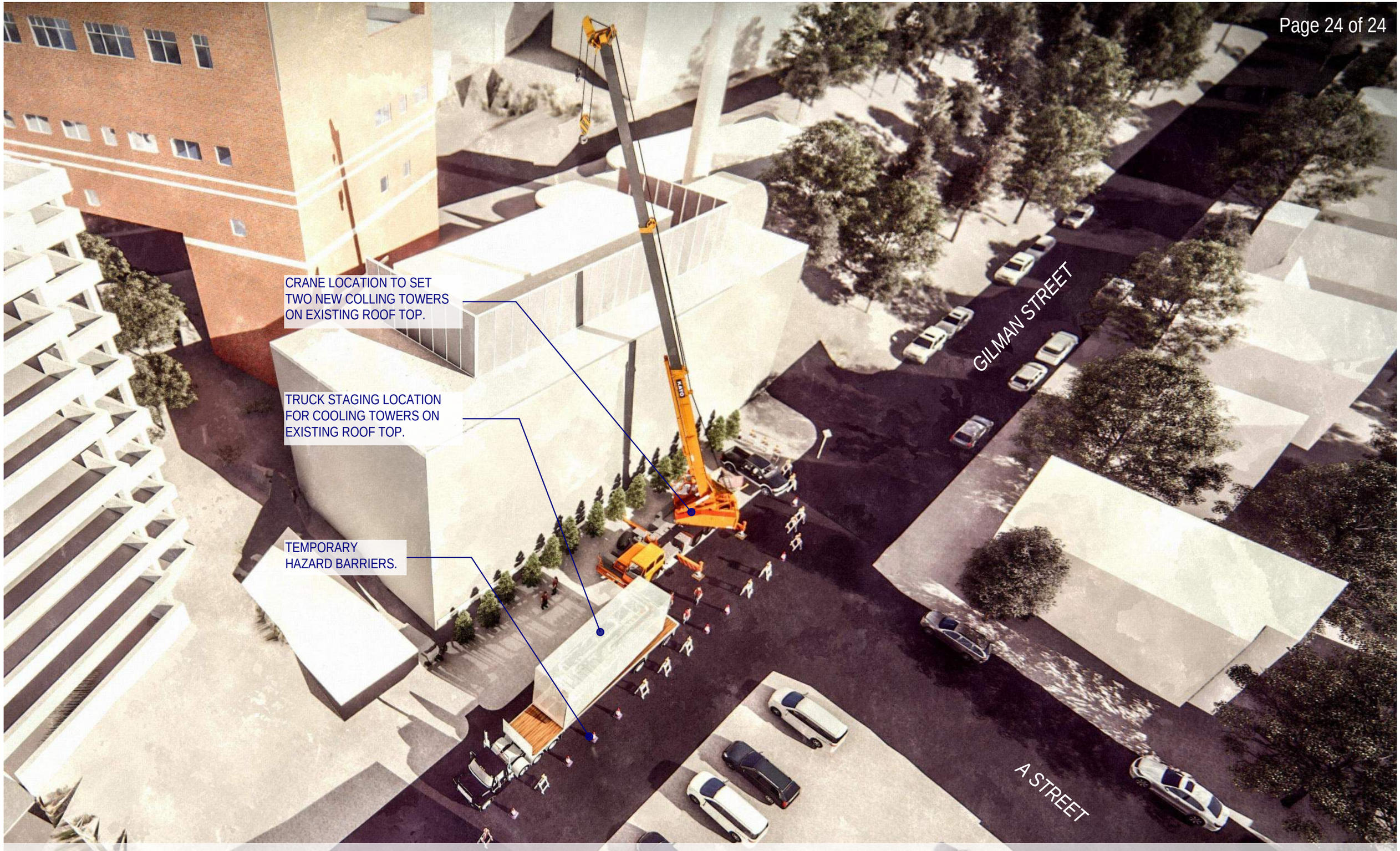
Visitor Garage west stair tower remains open during the eight weeks.



[Central Utility Plant] Logistics Plans and Studies

Turner


GILMAN STREET
A STREET
VALLEY STREET
TEMPORARY HAZARD BARRIERS.
TRUCK STAGING LOCATION FOR COOLING TOWERS ON EXISTING ROOF TOP.
CRANE LOCATION TO SET TWO NEW COLLING TOWERS ON EXISTING ROOF TOP.
12 ft
34 ft
23 ft
TRUCK STAGING LOCATION TO RIG NEW CHILING INTO SECOND FLOOR CHILLER ROOM
CRANE LOCATION TO RIG NEW CHILING INTO SECOND FLOOR CHILLER ROOM



Maine Medical Center

Additions and Renovations [Logistics and Crane Rigging Plan - Typical Both Locations] Central Utility Plant

Turner

MMC East Tower, Visitor Garage, CUP Work Estimated Schedule
Friday, January 05, 2018

ID	Task Name	Duration	Start	Finish
184	CONSTRUCTION EAST TOWER	83.3 wks	Fri 3/9/18	Mon 10/14/19
185	EAST TOWER OVERBUILD	83.3 wks	Fri 3/9/18	Mon 10/14/19
186	Enabling Work	11 wks	Fri 3/9/18	Fri 5/25/18
194	CONSTRUCTION	81.3 wks	Fri 3/23/18	Mon 10/14/19
195	Site Logistics Prep Work	68.3 wks	Fri 3/23/18	Mon 7/15/19
196	Remove Landscaping - Pave	5 wks	Fri 3/23/18	Fri 4/27/18
197	Site Fence	1 wk	Fri 4/6/18	Fri 4/13/18
198	Set up traffic barriers	1 wk	Fri 3/30/18	Fri 4/6/18
199	Install TMP Measures	1 wk	Fri 3/30/18	Fri 4/6/18
200	Wescott Street Closed	0 wks	Fri 4/6/18	Fri 4/6/18
201	Crescent Two way	0 wks	Fri 4/6/18	Fri 4/6/18
202	Wescott Street Opened	0 wks	Mon 7/15/19	Mon 7/15/19
203	Crescent Back to One Way	0 wks	Mon 7/15/19	Mon 7/15/19
204	Crane & Hoist	61.3 wks	Fri 4/6/18	Mon 6/10/19
205	Set up Mobile Crane	3 days	Thu 5/31/18	Mon 6/4/18
206	Setup Scaffold Stair Access	2 wks	Fri 4/6/18	Fri 4/20/18
207	HOIST	40 wks	Tue 9/4/18	Mon 6/10/19
208	Setup Hoist & Run	3 wks	Tue 9/4/18	Mon 9/24/18
209	Run Hoist	36 wks	Tue 9/25/18	Mon 6/3/19
210	Service Car Ready	0 wks	Mon 4/8/19	Mon 4/8/19
211	Remove Hoist	1 wk	Tue 6/4/19	Mon 6/10/19
212	Structural Steel/Concrete/SOFP	20 wks	Mon 6/4/18	Mon 10/22/18
220	Helipdad Steel Structure	36 wks	Tue 9/4/18	Mon 5/13/19
224	Exterior Wall	51 wks	Tue 7/3/18	Mon 6/24/19
283	MEP ROUGHING/CRITICAL WALLS	20 wks	Tue 10/23/18	Mon 3/11/19
303	MECHANICAL ROOFTOP	35 wks	Tue 7/3/18	Mon 3/4/19
311	EXTENSION of ELEVATORS	42 wks	Mon 10/8/18	Mon 7/29/19
328	Interior Fitout	37.4 wks	Fri 11/2/18	Mon 7/22/19
450	Helipad Structure	8 wks	Tue 5/14/19	Mon 7/8/19
454	Commissioning & Life Safety	22 wks	Tue 3/12/19	Mon 8/12/19
484	Cleaning	5 wks	Tue 7/16/19	Mon 8/19/19
487	TCO FINAL Inspections	1 wk	Tue 8/13/19	Mon 8/19/19
488	MMC OCCUPIES EAST TOWER	0 wks	Mon 8/19/19	Mon 8/19/19
489	MMC OPERATIONAL	8 wks	Tue 8/20/19	Mon 10/14/19
490	VISITOR GARAGE	53.4 wks	Fri 9/29/17	Tue 10/9/18
491	PRECONSTRUCTION	36.5 wks	Fri 9/29/17	Tue 6/12/18
492	VG Construction Documents	17 wks	Fri 9/29/17	Fri 1/26/18
496	Visitor Parking Structure-Procurement	32.5 wks	Fri 10/27/17	Tue 6/12/18
506	Visitor Garage GMP	5 wks	Fri 3/9/18	Fri 4/13/18
510	CONSTRUCTION-VISITOR PARKING GARAGE	25.3 wks	Fri 4/13/18	Tue 10/9/18
511	Project Start	0 wks	Fri 4/13/18	Fri 4/13/18
512	Logistics Setup	5.9 wks	Fri 4/13/18	Fri 5/25/18
513	Mobilize	0 wks	Fri 4/13/18	Fri 4/13/18
514	Site Logistics-fencing	1 wk	Fri 5/18/18	Fri 5/25/18
515	Establish Traffic Patterns	1 wk	Fri 5/18/18	Fri 5/25/18
516	Prep for precast connections	4 wks	Mon 4/16/18	Fri 5/11/18
517	Garage Precast Ready-210 pieces	0 wks	Fri 5/18/18	Fri 5/18/18
518	Precast Erection	17.2 wks	Fri 5/18/18	Mon 9/17/18
519	Cranes	8 wks	Fri 5/18/18	Fri 7/13/18
520	CONGRESS STREET	8 wks	Fri 5/18/18	Fri 7/13/18
521	CONGRESS STREET CLOSED	0 wks	Fri 5/18/18	Fri 5/18/18
522	Crane 1 - Congress Street -	4 days	Fri 5/25/18	Thu 5/31/18
523	Remove Congress Crane	4 days	Mon 7/9/18	Fri 7/13/18
524	Precast Erection-FROM CONGRESS	5.4 wks	Thu 5/31/18	Mon 7/9/18
525	Congress Street Precast -Level Elev 154'	5 days	Thu 5/31/18	Thu 6/7/18
526	ED Precast Level Elev 154	5 days	Thu 6/7/18	Thu 6/14/18
527	Congress Street Precast -Level Elev 164'	5 days	Thu 6/14/18	Thu 6/21/18
528	ED Precast Level Elev 164	4 days	Thu 6/21/18	Wed 6/27/18
529	Congress Street Precast -Level Elev 164'	4 days	Wed 6/27/18	Tue 7/3/18
530	ED Precast Level Elev 174	4 days	Tue 7/3/18	Mon 7/9/18
531	PRECAST DETAILING	10 wks	Mon 7/9/18	Mon 9/17/18
534	East Stair Tower	9 wks	Tue 7/3/18	Tue 9/4/18
538	TEMP BRIDGE	6 wks	Tue 7/17/18	Tue 8/28/18
541	EXTERIOR CLADDING	8 wks	Tue 7/17/18	Tue 9/11/18
542	PLUMBING	10 wks	Tue 7/17/18	Tue 9/25/18
543	ELECTRICAL	10 wks	Tue 7/17/18	Tue 9/25/18
544	FIRE ALARM	4 wks	Tue 8/28/18	Tue 9/25/18
545	MISC METALS	8 wks	Tue 7/17/18	Tue 9/11/18
546	MEP Equipment Rooms	6 wks	Tue 8/21/18	Tue 10/2/18
547	SIGNAGE	1 wk	Tue 9/25/18	Tue 10/2/18
548	TCO Garage	3 days	Tue 10/2/18	Fri 10/5/18
549	OPEN GARAGE	0 days	Tue 10/9/18	Tue 10/9/18
550				
551	CENTRAL UTILITY PLANT - CUP	66 wks	Fri 12/22/17	Fri 3/29/19
552	CUP Construction Documents	5 wks	Fri 12/22/17	Fri 1/26/18
555	CUP-Procurement	61 wks	Mon 1/29/18	Fri 3/29/19
556	Cooling Tower Award	36 wks	Mon 1/29/18	Fri 10/5/18
563	Chiller Award	37 wks	Mon 1/29/18	Fri 10/12/18
570	COOLING SEASON OVER	0 wks	Fri 11/9/18	Fri 11/9/18
571	Mechanical piping	12 wks	Mon 11/12/18	Fri 2/1/19
572	Electrical	12 wks	Mon 11/12/18	Fri 2/1/19
573	INSTALL EQUIPMENT	2 wks	Mon 1/7/19	Fri 1/18/19
574	Gilman Street Lane Closure	2 wks	Mon 1/7/19	Fri 1/18/19
575	MEP Hookups	5 wks	Mon 1/21/19	Fri 2/22/19
576	MEP startup	5 wks	Mon 2/18/19	Fri 3/22/19
577	MEP CX	3 wks	Mon 3/11/19	Fri 3/29/19



GORRILL PALMER

707 Sable Oaks Drive, Suite 30
South Portland, Maine 04106
207.772.2515

Traffic / Trip Generation Assessment
Maine Medical Center East Tower and Visitor Garage Expansions

Date: December 11, 2017
Subject: Traffic / Trip Generation Assessment
Maine Medical Center Expansion – Phase I
To: Maine Medical Center
From: Randy Dunton, Gorrill Palmer (JN 2866.01)

Gorrill Palmer (GP) has prepared this Traffic Assessment Memorandum to address traffic impacts and trip generation associated with construction of MMC's East Tower addition and Visitor Garage expansion. This Traffic Assessment is based on discussions at a pre-application meeting with the City Staff and traffic peer reviewer (Mr. Errico) on November 15, 2017 at City Hall. Details of the project and associated traffic impacts, if any, are described as follows:

East Tower Addition / Helipad

This effort includes the addition of two floors (approximately 60,000 sf) to the existing East Tower as well as relocating the helipad to the roof. The purpose of this expansion is to decompress existing patient bed density and allow for more private single patient rooms. The hospital is currently licensed for 637 beds; of which approximately 51% are semi private. As described in the IDP, on average 60 inpatient beds in semi-private rooms are unavailable each day because for some reason a patient can't share a room. It should be noted, that this decompression does not significantly increase patient volume.

Conclusion: The expansion of the East Tower will not increase trip generation to / from the hospital.

Patient / Visitor Garage Addition

This effort includes the addition of three new floors to the existing Patient / Visitor Parking Garage, an increase of approximately 225 spaces to the existing 480 space garage. This increase in parking spaces will not generate additional traffic to the adjacent roadway network and may actually reduce vehicle miles traveled on the adjacent roadway system by reducing the number of vehicles driving around looking for parking spaces.

Conclusion: The expansion to the Patient / Visitor Parking Garage will not increase trip generation to / from the immediate area and may reduce the traffic on the surrounding roadway network / neighborhoods by reducing drivers looking for parking spaces.

Future Phases

This assessment only details the traffic impacts of the projects described above. Future phases include; new six story Congress Street building and relocation of the employee parking garage to St. John Street. These future Phases will require a MaineDOT Traffic Movement Permit (TMP) and full Traffic Impact Study (TIS). Maine Medical Center has already been discussing these future phases with the City and will continue to work closely with the City through the traffic studies.

MAINE MEDICAL CENTER LEVEL III SITE PLAN APPLICATION
EAST TOWER AND VISITOR GARAGE VERTICAL EXPANSIONS
WRITTEN SUBMISSION M CONSISTENCY WITH CITY MASTER PLANS

THE PROJECT DESIGN IS GOVERNED BY THE CONDITIONS SET FORTH IN THE INSTITUTIONAL DEVELOPMENT PLAN (IDP). THE IDP, PAGE 24 , ARTICULATES COMPLIANCE WITH WITH THE CITY COMPREHENSIVE PLAN .

MAINE MEDICAL CENTER LEVEL III SITE PLAN APPLICATION
EAST TOWER / VISITOR GARAGE VERTICAL EXPANSIONS
WRITTEN SUBMISSION N UTILITIES

AS REQUIRED BY THE PORTLAND WATER DISTRICT, THE MMC MECHANICAL ENGINEER HAS POPULATED THE EXCEL SPREADSHEET PROVIDED BY BTHE WATER DISTRICT (SEE ATTACHMENT). AS STATED IN WRITTEN SUBMISSION S-1, THE EAST TOWER EXPANSION IS A DECOMPRESSION OF FACILITIES AND WILL NOT INCREASE THE NUMBER OF HOSPITAL BEDS. THERE WILL BE A SLIGHT INCREASE IN STAFF, HOWEVER , AND THE INCREASED WATER USE IS CALCULATED AS FOLLOWS :

(6) ADDITIONAL STAFF TOILETS @ (325) GPD = 1950 GPD
(2) ADDITIONAL STAFF SINKS @ (50) GPD = 100 GPD
TOTAL INCREASED WATER USE = 2050 GPD

THE VERTICAL EXPANSION WILL TIE INTO EXISTING WATER, SANITARY SEWER AND ELECTRICAL INFRASTRUCTURE, WHICH HAVE THYE CAPACITY TO SERVE THE EXPANSION.

Peak Flow Based on Fixture Count

Customer	Maine Medical Center
Street Address	22 Bramhall Street
City	Portland

Fixture		Fixture Value 60 psi		No. of Fixtures		Fixture Value
Bathtub		8	x	0	=	0
Bedpan Washers		10	x	2	=	20
Bidet		2	x	0	=	0
Dental Unit		2	x	0	=	0
Drinking Fountain - Public		2	x	0	=	0
Kitchen Sink		2.2	x	0	=	0
Lavatory		1.5	x	64	=	96
Showerhead (Shower Only)		2.5	x	64	=	160
Service Sink		4	x	2	=	8
Toilet	-Flush Valve	35	x	70	=	2450
	-Tank Type	4	x	0	=	0
Urinal	-Pedestal Flush Valve	35	x	0	=	0
	-Wall Flush Valve	16	x	0	=	0
Wash Sink (Each Set of Faucets)		4	x	8	=	32
Dishwasher		2	x	0	=	0
Washing Machine		6	x	0	=	0
Hose (50 ft. Wash Down)	-1/2 in.	5	x	0	=	0
	-5/8 in.	9	x	0	=	0
	-3/4 in.	12	x	0	=	0
Combined Fixture Value Total						2766

Customer Peak Demand From Fig. 4-2 or 4-3	400
Pressure Factor From Table 4-1	1.17

No. of Irrigation Sections (Areas of 100 sq. ft.)			0
Irrigation Factor	(1.16-Spray Systems, 0.40-Rotary Systems)		
Hose Bibs for Irrigation:			
	Size	Fixture Value	No. of Fixtures
	1/2"		
	5/8"		
	3/4"		

Total Fixed Demand (Peak Flow) 468 gpm

Table 4-1 Pressure Adjustment Factors

Working Pressure at Meter Discharge (psi)	Pressure Adjustment Factor
35	0.74
40	0.80
50	0.90
60	1.00
70	1.09
80	1.17
90	1.25
100	1.34

Adapted from AWWA Manual M22 table 4-1

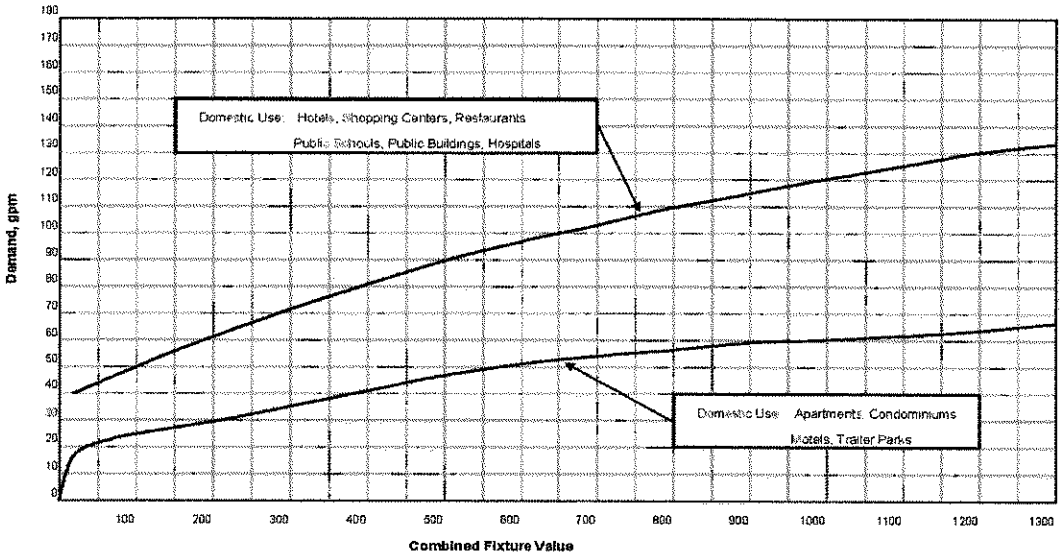


Figure 4-2 Water flow demand per fixture value - low range

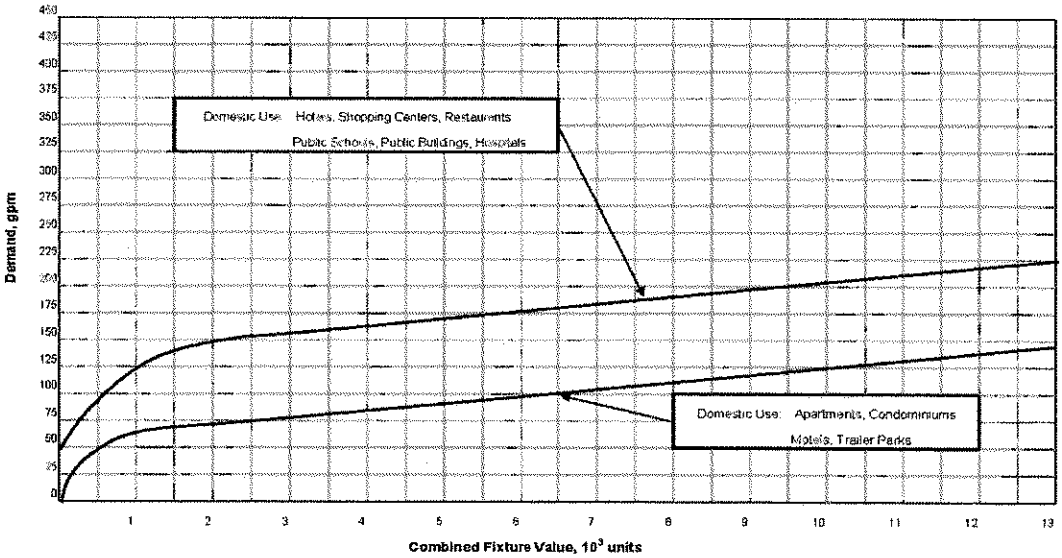


Figure 4-3 Water flow demand per fixture value - High range

MAINE MEDICAL CENTER LEVEL III SITE PLAN APPLICATION
EAST TOWER / VISITOR GARAGE VERTICAL EXPANSIONS
WRITTEN SUBMISSION O SOLID WASTE

AS STATED IN WRITTEN SUBMISSION S – 1 , THE EAST TOWER EXPANSION IS A DECOMPRESSION OF FACILITIES AND WILL NOT INCREASE THE NUMBER OF HOSPITAL BEDS. THERE WILL BE A SLIGHT INCREASE IN STAFF, HOWEVER, THE QUANTITY OF SOLID WASTE WILL NOT INCREASE SUBSTANTIALLY. MMC HAS A SOLID WASTE HANDLING CONTRACT WITH TROIANO WASTE MANAGEMENT, AND ALL DISPOSALS COMPLY WITH APPLICABLE REGULATIONS.

Maine Medical Center
MaineHealth

PERKINS+WILL

MMC East Tower Expansion – City Design Comments

To:	City of Portland Planning Department
From:	Jeffrey Keilman, Perkins+Will; Al Green, MMC
Date:	January 19, 2018
Subject:	**MMC East Tower Expansion – Phase 1 Design Narrative**
Attachments	
	Slides shared with City Staff on January 16, 2018

Campus Vision

The campus transformation of Maine Medical Center draws its inspiration from its site, history, programmatic needs and most importantly the desire to create a sense of place. Specifically, the hospital will reflect its location within Portland and the state of Maine. The goal is to preserve the historic character of the existing campus yet provide the opportunity for new design identities to develop that represent the modern delivery of healthcare and the future of Maine Medical Center.

Many key design drivers and interventions envisioned for Maine Medical Center's campus transformation balance the clinical needs of the hospital with the campus' place within the city of Portland. Included is a primary effort to improve the built environment of MMC's campus relationship with the city. This goal is balanced with the clinical needs of the patients served by MMC. Healthcare design has to start with the internal program and layout to ensure a successful and functional design. From there, the exterior design can begin to take shape and be informed by the internal concepts.

The ultimate success of the project will be to provide a positive patient and visitor experience. The creation of healing environments is an essential element to the design of the submitted projects. This is through the incorporation of nature, natural light, and the blending of interior and exterior. Access to views and light are proven to improve positive patient outcomes. Proper location and use of glass and transparency provides connections to the exterior to improve patient experience but also to further reinforce wayfinding.

The current projects submitted within this Site Plan application were developed as a continuation of existing conditions. The façade of the East Tower expansion will relate to the existing conditions and massing of the East Tower by utilizing metal panel and glass.

The internal planning strategies, critical for a clinically driven building, aimed to blend the exterior with the interior through strategic planning that enabled the interiors to be opened up to and expressed on the exterior through the large corner windows.

The East Tower Expansion is conceived as the next phase in the campus replacement and modernization that will continue to blend and blur the new and existing campus architecture. The

addition will continue to link the vision started with the Bean 2 surgical expansion and will culminate with the Congress St. addition.

Context

The East Tower and Visitor Garage expansions are extensions of existing conditions, and as such derive many of the material choices from the existing adjacent construction.

Through the design process, the team explored the impact of the structures from various viewpoints understanding the additions scale within the urban context. Multiple angles and views were analyzed by the design team in conjunction with Maine Medical Center, including long-views, which influenced the decisions of various fenestration patterns and scale. This is particularly important for the East Tower addition which is visible from many points in the city. The design responds to both the long views with the use of scale of fenestration, but also manages to respond to local context through the attention to details, and sensitivity to materials and palate from the campus and neighborhood.

Building Design

The current Site Plan submission outlines (2) projects that are expansions and extensions of existing conditions. Within this context the design process still aimed to express the internal program constraints and create a dialogue between the interior and exterior.

Design is always subjective but the process to reach the current solution was reviewed and vetted by many parties, including critical voices form Maine Medical Center but also internally to Perkins+Will with multiple peer design reviews. The Perkins+Will internal review includes international designers as well as those from across the United States. The proposed design was universally selected as the best option to meet with the campus vision and existing context.

The design team believes the response for the East Tower expansion is in line with the key elements of design outlined through the design guidelines established in MMC's Institutional Development Plan, including the attention to proportion, rhythm, and use of materials. Design iterations were studied and reviewed by multiple stakeholders, including Maine Medical Center. The proposed design was the first solution where all parties agreed that the strategy successfully unifies the existing structure with the new addition while meeting the stringent interior requirements for advanced patient care in a healthcare setting.

By maximizing and utilizing the opportunities provided by the massing and proportions, the design is unified with the existing structure, but also creates urban scale gestures recognizing the prominence within the city. In particular, the scale of multistory fenestration and use of rhythm provided by the interior program.

One key design approach was to limit the current idiosyncrasies that are on the existing East Tower building that are not represented by any of the adjacent structures on the Maine Medical campus. In particular, the pavilions, Richards, and Bean are buildings that have a minimalist approach to massing and detailing on their exterior facades. In essence, the proposed design is more compatible with the existing campus and future goals outlined within the previously approved IDP. This was achieved by

simplifying the palate of materials and utilizing the existing materials on the structure. Introduction of new materials or further reinforcing the banding would have the opposite effect of creating a larger impact of the massing within the city and the campus.

The Visitor Garage expansion will match the current rhythm and proportions of the existing garage. The street façade of the Visitor Garage is an existing condition however opportunities for activation are being considered currently.

Building Materials

The selected materials for each addition are derived from the existing materials on the building and are as follows:

- East Tower – White Aluminum Composite Panels and Glass Curtain Wall
- Visitor Garage – Precast Concrete Panels with imbedded brick

Design Constraints

As with any building addition or expansion, existing conditions and real world constraints are critical in determining the final design solution. In particular, constructability for both the East Tower and Visitor Garage were important design drivers. Capacity within the existing structure, feasibility of installation of façade systems, and schedule were considered in selecting the final design solution.

hcc: Project File
Chuck Siconolfi – P+W
Romeo Moreira – P+W
Rashid Ashraf – P+W
Adam Troidl - Colliers
Mark Harris - MMC
Walter Pochebit – MMC
Al Green – MMC
Dennis Morelli - MMC

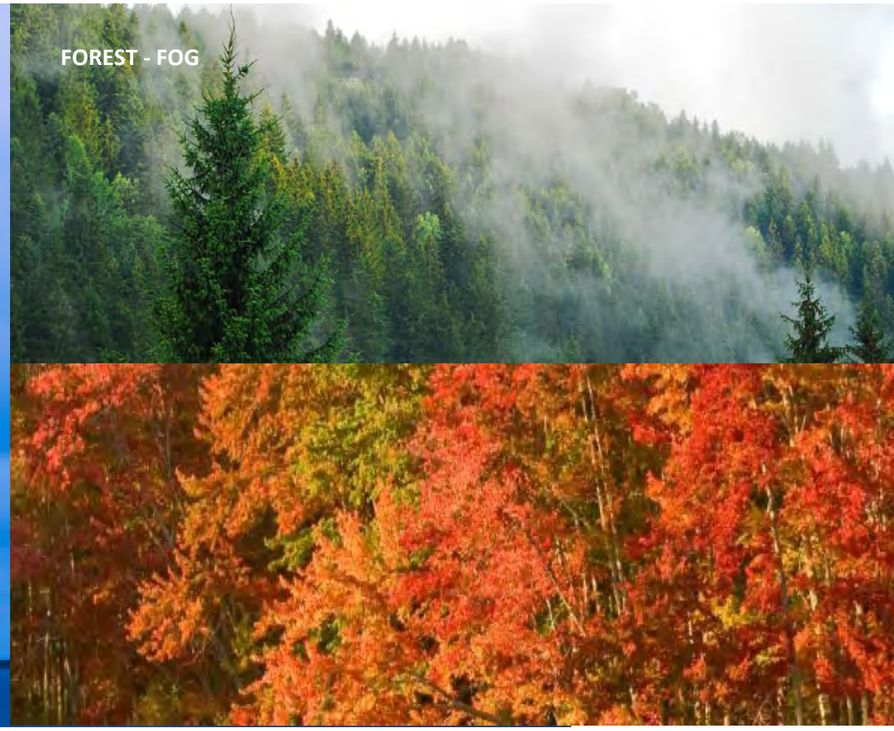
MMC SITE PLAN SUBMISSION

EAST TOWER & VISITOR GARAGE

CONCEPT DIAGRAMS







SOLID HEAVY



SOLID / LIGHT



ETHEREAL







INTEGRATION OF INSIDE AND OUTSIDE



Blurring the lines between the inside and the outside to bring the garden into the hospital.





CIRCULATION













MATERIALS INSPIRED BY MAINE









50 YEAR PALETTE

Use of natural materials take clues from nature to create a timeless environment.













50 PALETTE



Sky



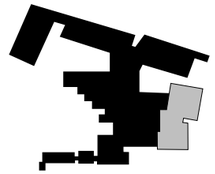
Sea



Land

COLOR OPTIONS

FLOOR PLAN



Views to White Mountains



Views to Casco Bay



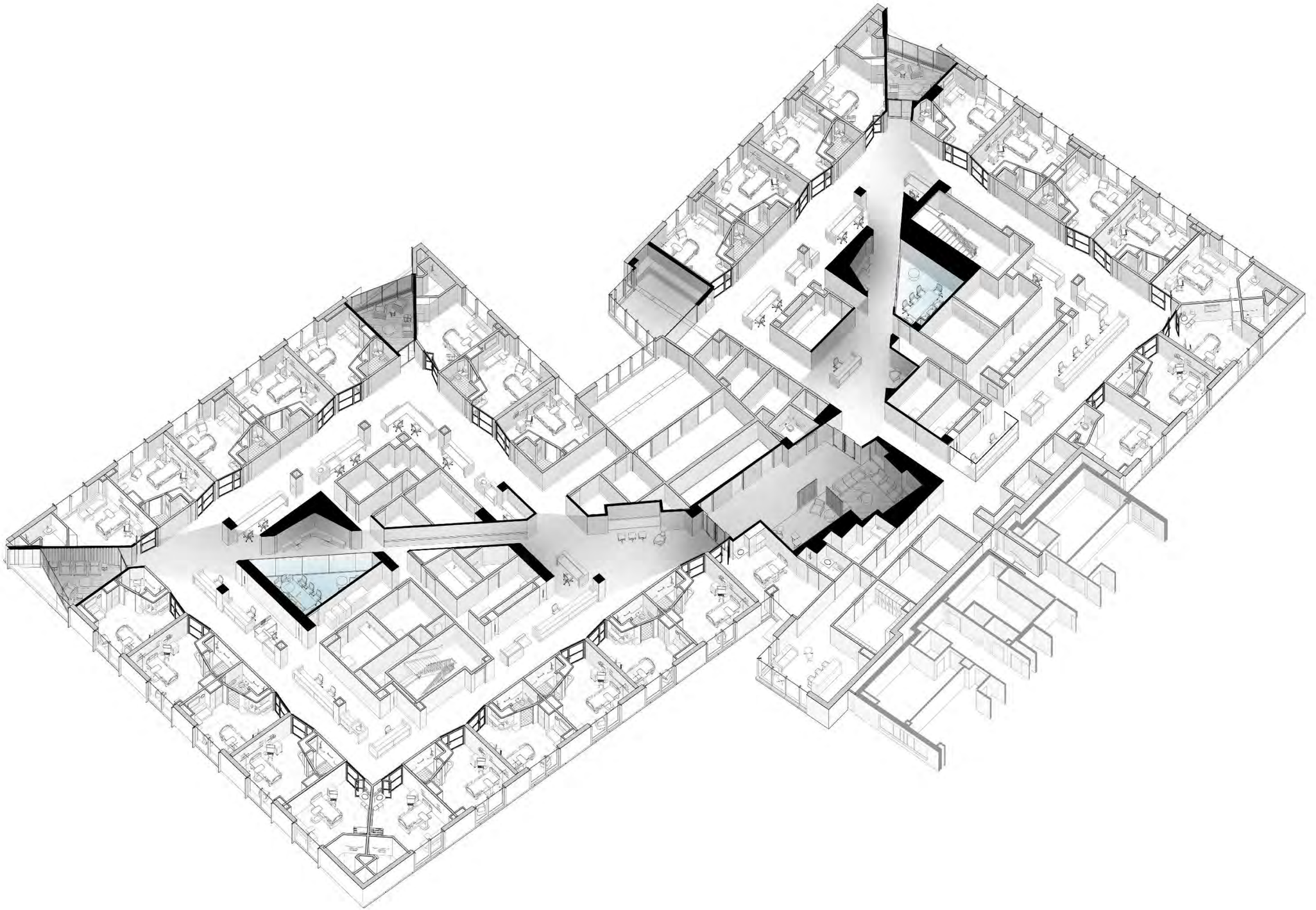
Views to Portland Water Front



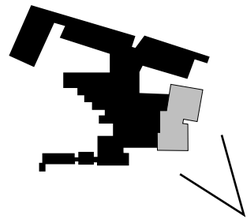


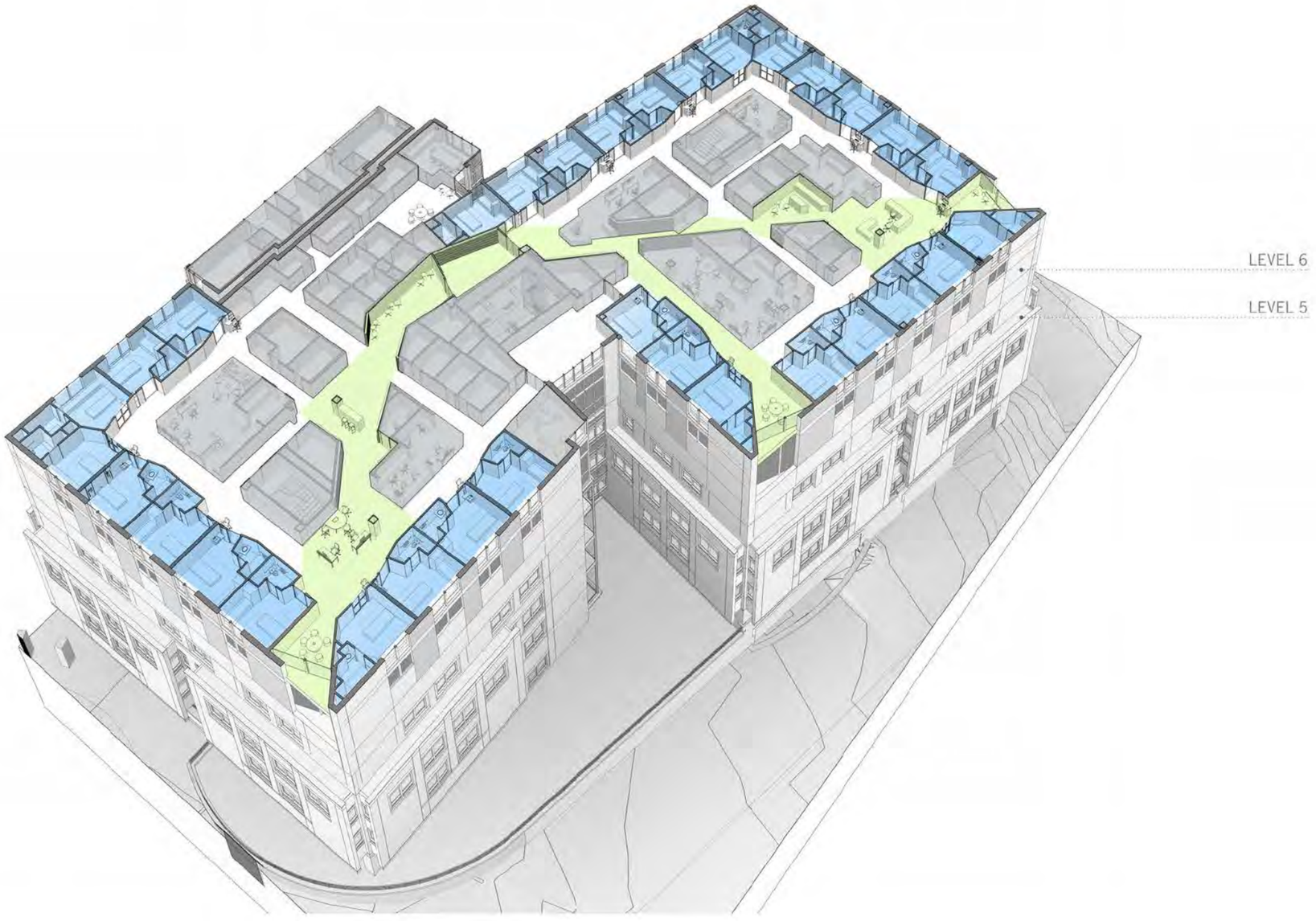
0 10 20 50

AXONOMETRIC



AXONOMETRIC



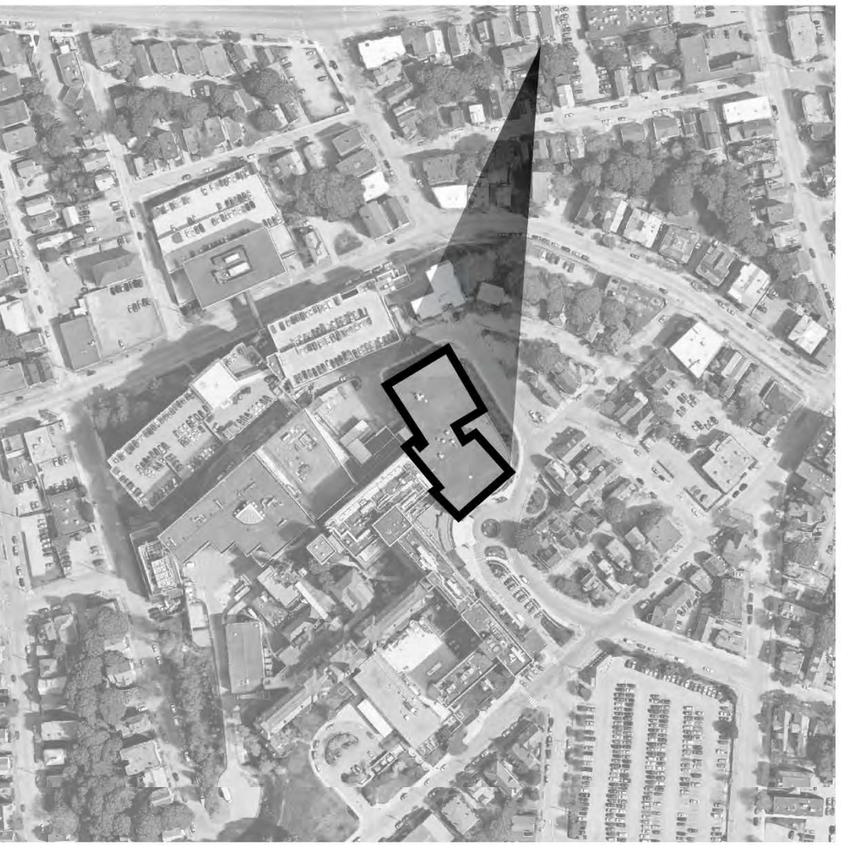


CAMPUS AERIAL





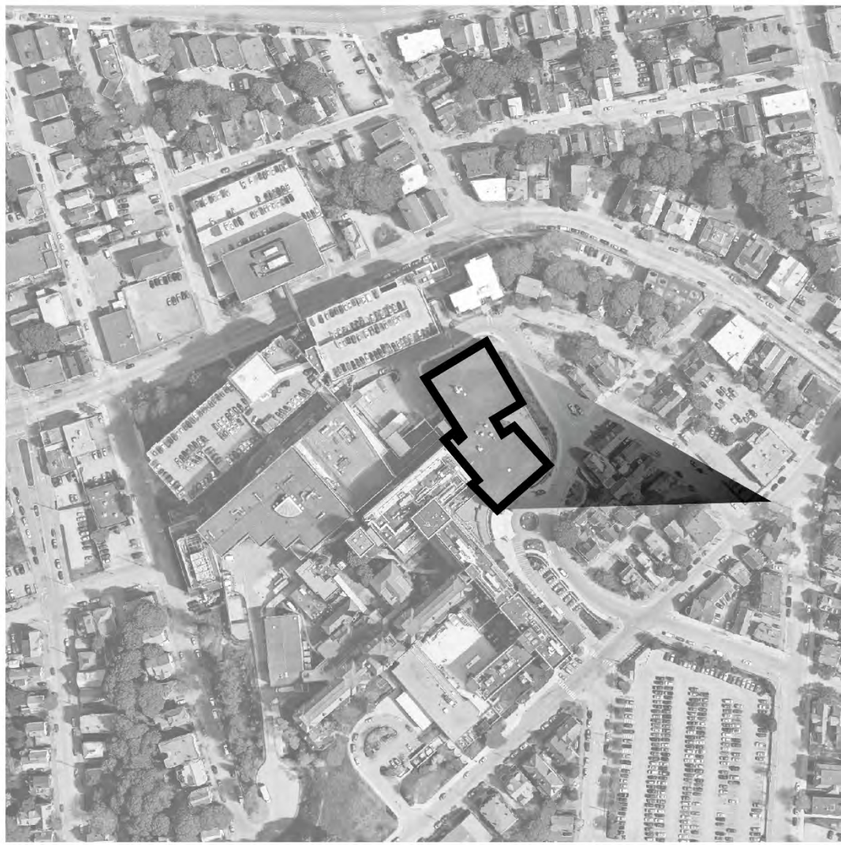




AERIAL VIEW



VIEW FROM BRAMHALL ST



VIEW FROM HILL ST


AERIAL VIEW
South West



South West





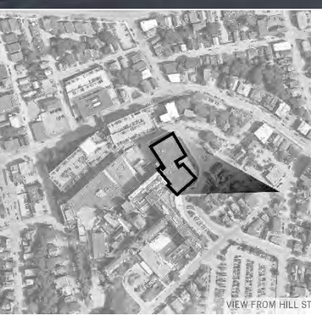




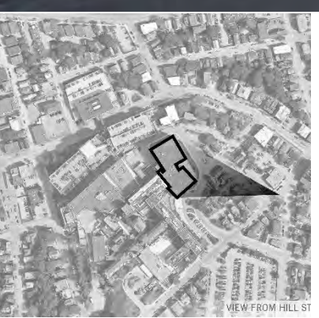
Bramhall and Chadwick Street



Bramhall and Chadwick Street

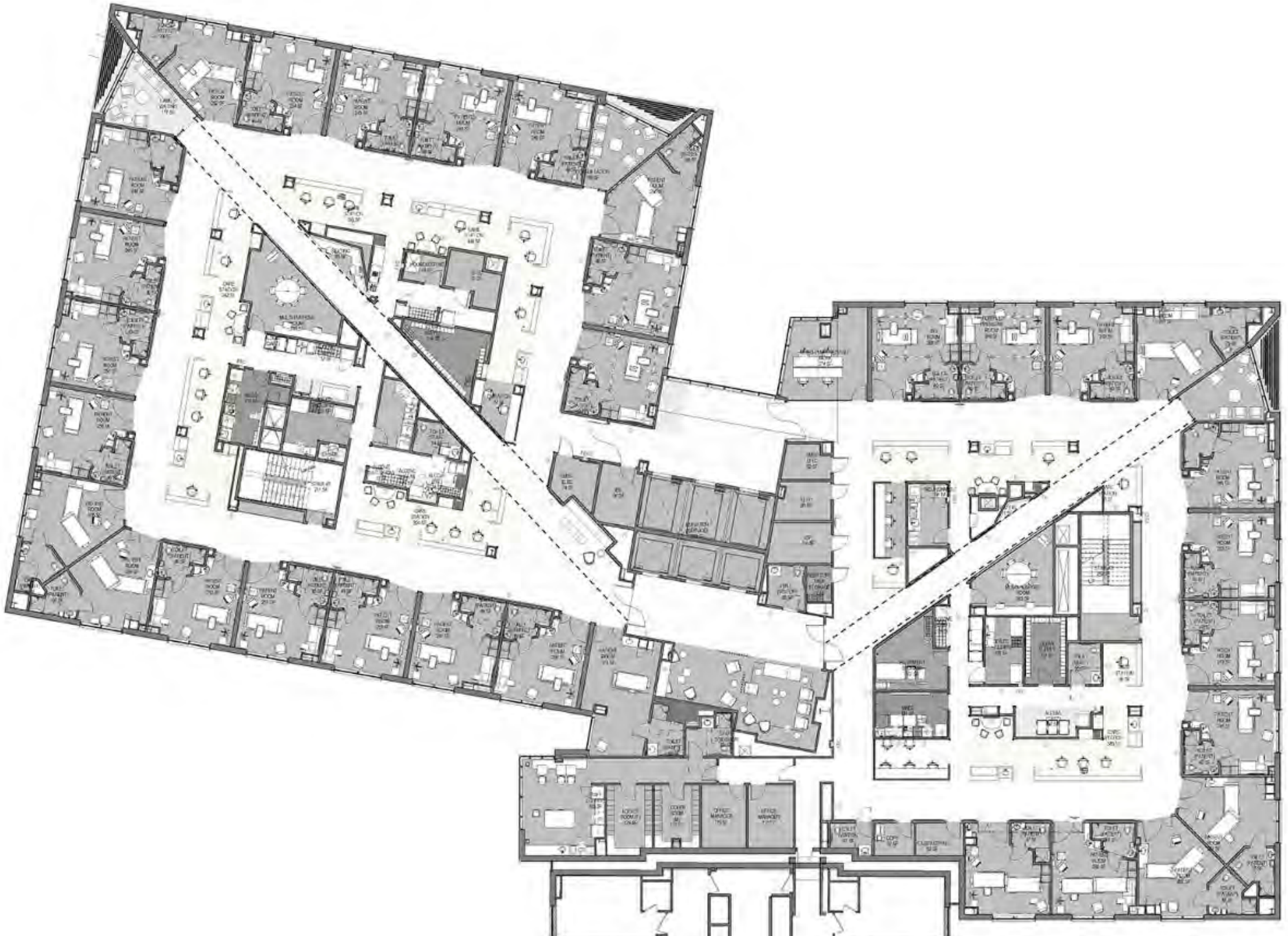


Bramhall and Hill Street



Bramhall and Hill Street

TYPICAL FLOOR PLAN



EAST ELEVATION



NORTH ELEVATION



SOUTH ELEVATION



WEST ELEVATION

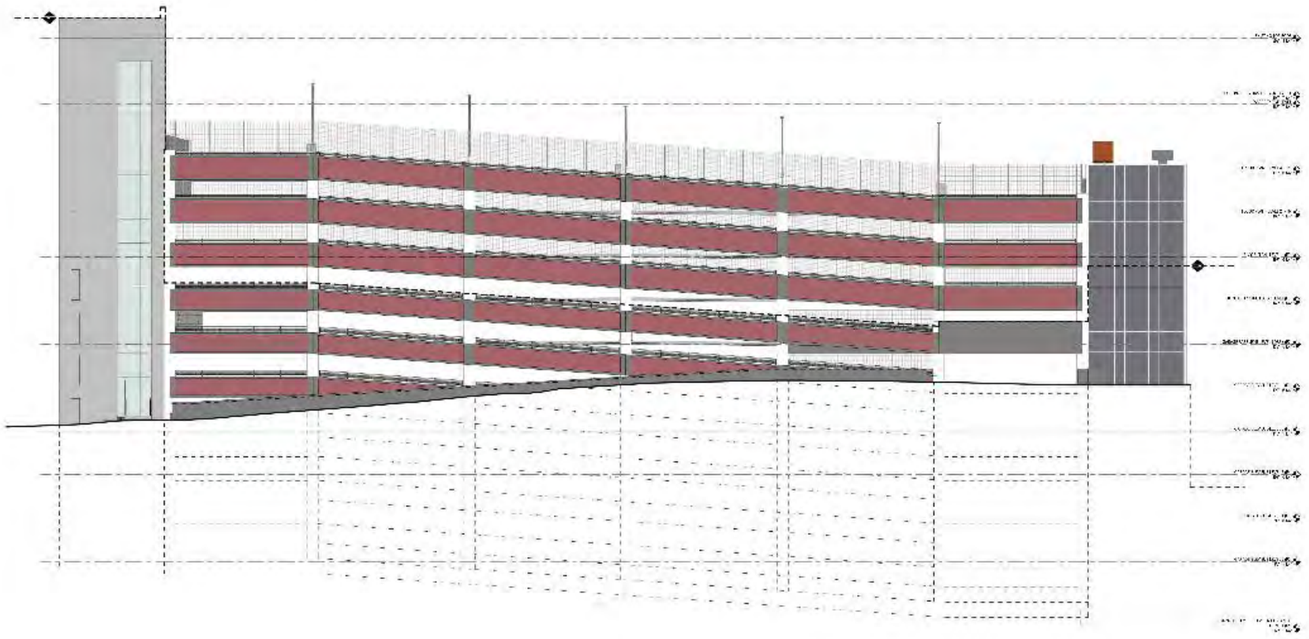


Visitor Garage Expansion

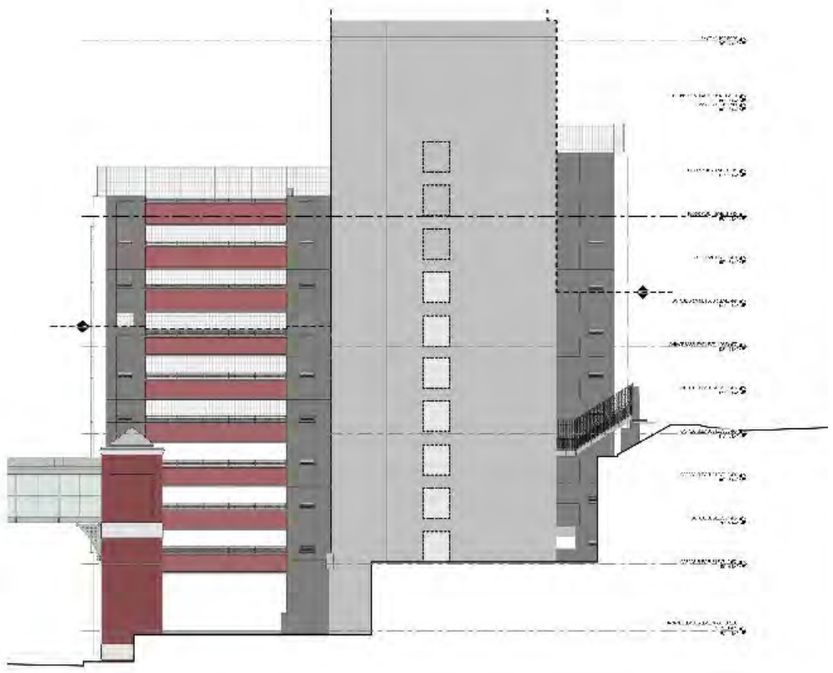
EXISTING



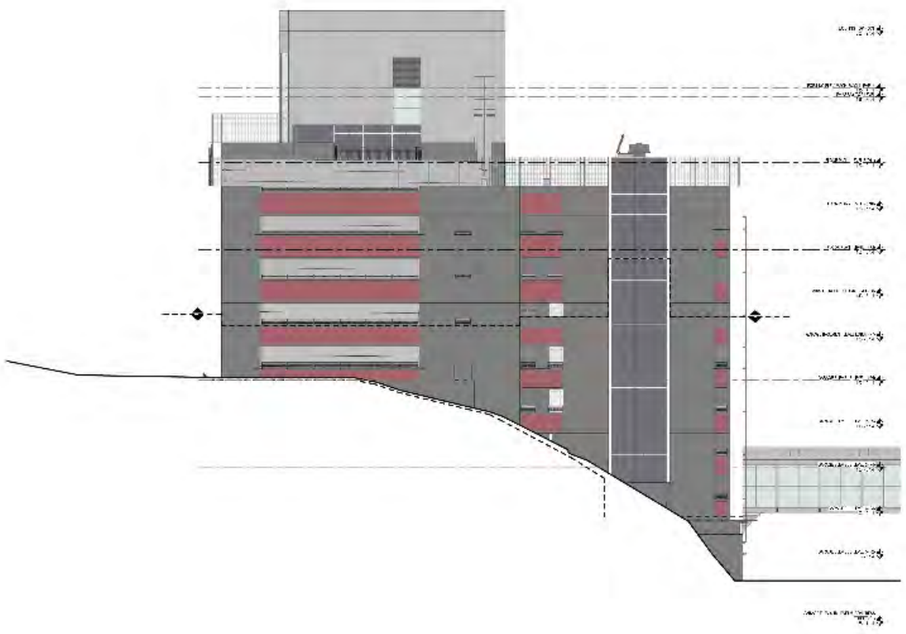
SOUTH ELEVATION



WEST ELEVATION



EAST ELEVATION



NORTH ELEVATION



APPENDIX




US-1
Hide imagery




GROVER C
EDITH C. RICHARDS
MEMORIAL
MAIN




WESCOTT ST
ELLSWORTH ST
STOP
NO PARKING ANY TIME
Maine Medical Center
EMERGENCY
Trauma Center
Parking Garage
Main Entrance
South Entrance
South Lot








Medical Center
Maine

CMAINE MEDICAL CENTER LEVEL III SITE PLAN APPLICATION
EAST TOWER / VISITOR GARAGE VERTICAL EXPANSIONS
WRITTEN SUBMISSION Q Design Review / Consistency with Design Standards per Zoning Ordinance Section 14-526

The proposed East Tower Expansion and Visitor Garage Expansion comply with the design guidelines as outlined in the approved Maine Medical Center IDP and IOZ Regulatory Framework as well as Zoning Ordinance Section 14-526.

As building expansion to existing structures, the impacts are minimal to the exiting public realm and ground plane. This includes the critical areas outlined by Zoning Ordinance such as massing, wind, mechanical systems, shadows, ad snow and ice loading since the building footprints are not modified. View corridors are preserved since the building expansions increase height of existing structures and are not adjacent to existing structures except those owned by Maine Medical Center. The projects are also not considered part of historic properties and are not located within or adjacent to a historic district.

All of these considerations were documented within the Maine Medical Center IDP and IOZ Regulatory Framework which set the basis for review of the proposed East Tower and Visitor Garage expansions.

The East Tower and Visitor Garage expansions are extensions of existing conditions. These meet the design guidelines in MMC ' s IDP.

- These designs contribute to the campus vision and organizational goals.
- The overall composition and experience of the campus was considered in the design process.
- Building entrances and the public right of way are not impacted by this project.
- The expansions are extensions of existing conditions and are therefore compatible with existing and planned character of the neighborhood.
- Façade materials will be high quality and contribute to an attractive public realm.
- The design process considered the long views. The rooftop helipad will not be screened for safety reasons.
- This project does not impact the ground floor of any existing building.

MAINE MEDICAL CENTER LEVEL III SITE PLAN APPLICATION
EAST TOWER / VISITOR GARAGE VERTICAL EXPANSIONS
WRITTEN SUBMISSION R HVAC VERIFICATION

THE APPLICANT'S CONSTRUCTION MANAGER HAS NOT YET SELECTED THE HVAC EQUIPMENT FOR THE EAST TOWER. MMC REQUESTS A CONDITION OF APPROVAL STATING THAT , PRIOR TO OBTAINING A BUILDING PERMIT, THE APPLICANT SHALL SUBMIT EVIDENCE THAT THE EQUIPMENT MEETS APPLICABLE STATE AND FEDERAL EMISSION REQUIREMENTS.

MAINE MEDICAL CENTER KEVEL III SITE PLAN APPLICATION
EAST TOWER / VISITOR GARAGE VERTICAL EXPANSIONS
WRITTEN SUBMISSION S – 2 BICYCLE PARKING

PER THE INSTITUTIONAL DEVELOPMENT PLAN (IDP) THERE ARE 2,362 VEHICLE PARKING SPACES ON THE BRAMHALL CAMPUS AND 905 CONGRESS STREET . WITH THE ADDITION OF 225 SPACES IN THE VISITOR GARAGE EXPANSION, THE NEW TOTAL SPACE COUNT IS 2587 SPACES.

REQUIRED BICYCLE PARKING :
20 BIKE SPACES FOR THE 1ST 100 VEHICLE SPACES = 20 SPACES
2587 TOTAL VEHICLE SPACES – 100 = 2,487 / 1 BIKE PER 20 VEHICLES = 124 BIKES
TOTAL REQUIRED BIKE SPACES = 20 + 124 = 144 SPACES

THE LOCATIONS OF BIKE RACKS IS DEPICTED ON PAGE 58 OF THE IDP.
PER THE IDP PAGE 72 , THERE ARE 193 BIKE SPACES ON CAMPUS.

Maine Medical Center
East Tower Expansion
Existing Building Code Report
December 8, 2017



Prepared By:

AKF Group
99 Bedford Street
2nd Floor
Boston, MA 02111
Phone: 617-737-1111
FAX: 617-737-4311

TABLE OF CONTENTS

1. APPLICABLE CODES & STANDARDS 2
2. PROPOSED SCOPE OF WORK & USE 3
3. ADDITION 3
   - 3.1 General Requirements 3
   - 3.2 Separation 3
   - 3.3 Height and Area 4
   - 3.4 Structural 4
   - 3.5 Accessibility 4
   - 3.6 Energy Conservation 4
4. HIGH-RISE BUILDING FEATURES 5
   - 4.1 Structural 5
   - 4.2 Fire Protection Systems 5
   - 4.3 Standby and Emergency Power 7
   - 4.4 Means of Egress 7
   - 4.5 Elevators 8
5. HEIGHT & AREA 9
6. TYPE OF CONSTRUCTION 9
7. FIRE AND SMOKE PROTECTED FEATURES 10
   - 7.1 Exterior Walls & Opening Protectives 10
   - 7.2 Shaft Enclosures 11
   - 7.3 Corridors 11
   - 7.4 Smoke Compartments 11
   - 7.5 Incidental Uses 12
8. INTERIOR FINISH 13
9. FIRE PROTECTION SYSTEMS 14
   - 9.1 Automatic Sprinkler System 14
   - 9.2 Fire Alarm and Detection System 14
   - 9.3 Standpipe System 14
   - 9.4 Emergency Forces Notification 14
   - 9.5 Portable Fire Extinguishers 14
   - 9.6 Electrical Systems 15
10. MEANS OF EGRESS 15

10.1 Egress Summary 15
10.2 Exit Access Travel Distance 15
10.3 Corridor Width 15
10.4 Number of Exits and Continuity 16
10.5 Doors 16
10.6 Locking Devices 17
11. ACCESSIBILITY 17
12. MECHANICAL 17
13. ENERGY CONSERVATION 17
14. PLUMBING FIXTURES 17
15. HELIPAD REQUIREMENTS 18
15.1 Landing Area Size 19
15.2 Landing Area Design & Construction 19
15.3 Fire Protection Systems 19
15.4 Means of Egress 21

INTRODUCTION

Perkins + Will has retained AKF Group LLC to prepare this existing building narrative code report for the vertical addition to East Tower on the Maine Medical Center Campus located in Portland, ME. The proposed addition will add two additional stories of patient beds as well as a penthouse and helipad on the roof.

QUICK FACTS

- Aggregate Building Area: Approximately 240,000 SF
- Project Area (Level 6 & 7): Approximately 60,000 SF
- Height: 8 stories
- Sprinkler Status: Fully sprinklered
- Standpipe System: Existing standpipe to be extended to addition
- Occupancy: Use Groups B, I-2 (Condition 2), S-1 (accessory), & S-2 (accessory)
- Construction Type: Type IA required

1. APPLICABLE CODES & STANDARDS

The State of Maine requires municipalities with more than 4,000 residents to adopt and enforce the Maine Uniform Building and Energy Code (MUBEC). The next edition of the MUBEC is expected to become effective in 2017 or early 2018. These codes are outlined below and serve as the basis for this report.

- International Building Code (IBC), 2015 Edition with ME Amendments
- International Existing Building Code (IEBC), 2015 Edition with ME Amendments
- International Energy Conservation Code (IECC), 2009 Edition with ME Amendments
- American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) Standard 62., Standard for Ventilation and Indoor Air Quality, 2013 edition

In addition to the codes identified above, the State Fire Marshal's Office promulgates the Rules of the State Fire Marshal, which adopt numerous NFPA codes and standards, including the following:

- NFPA 1, Uniform Fire Code, 2006 Edition with ME Amendments
- NFPA 13, Standard for Installation of Sprinkler Systems, 2016 Edition

The Plumbers' Examining Board promulgates the Maine Plumbing Code, which includes the following:

- International Association of Plumbing and Mechanical Officials (IAPMO), 2015 Uniform Plumbing Code (UPC), with ME amendments

The Electricians' Examining Board adopts and amends the following electrical code:

- NFPA 70, National Electrical Code, 2017 Edition

The following federal regulation also applies to the project (as referenced by the Maine Human Rights Commission – 5 M.R.S. §4594-G):

- Americans with Disabilities Act (ADA), 2010 Standards for Accessible Design

The Joint Commission also requires compliance with the following:

- NFPA 101, Life Safety Code, 2012 Edition
- NFPA 99, Health Care Facilities Code, 2012 Edition

The following design standards will also be used for the project:

- Facilities Guidelines Institute (FGI), Guidelines for Design and Construction of Hospitals and Outpatient Facilities, 2014 Edition

- ASHRAE Standard 170, Ventilation of Healthcare Facilities, 2013 edition

2. PROPOSED SCOPE OF WORK & USE

The proposed project will add two stories (Level 6 and 7) to the existing East Tower clinical building on the Maine Medical Center campus in Portland, ME. A penthouse and helipad structure will also be constructed on the new roof of the building. The use groups proposed in the addition are as follows:

Use Group B/business:	Office areas, staff lockers, conference/meeting space less than 750 SF and 50 people
Use Group I-2 (Condition 2)/healthcare:	Inpatient hospital care
Use Group S-1/ordinary hazard storage:	Linen storage (accessory)
Use Group S-2/ low hazard storage:	Storage/utility spaces (accessory)

As indicated in the list above, the Group S-1 and S-2 spaces qualify as accessory to the main Group B and I-2 occupancies because the spaces are less than 10% of the floor area (approximately 7% of the floor area).

3. ADDITION

Since the project includes an addition to the existing building, the project is subject to compliance with Chapter 11 of the IEBC, and Section 43.8 of NFPA 101 which are summarized as follows.

3.1 General Requirements

The addition must comply with the code for new construction while the existing building is permitted to remain without change, except as required by the provisions of IEBC Chapter 11 and NFPA 101 Section 43.8.1.1 for additions. An addition to an existing building cannot create or extend any nonconformity in the existing building with regard to accessibility, structural strength, fire safety, means of egress, or the capacity of MEP systems (IEBC 1101.2 and NFPA 101 Section 43.8.1.2). Any repair or alteration work taking place within the existing building must meet the applicable IEBC and NFPA 101 requirements for such alterations (IEBC 1101.3 and NFPA 101 Section 43.8.1.3).

3.2 Separation

NFPA 101 Section 43.8.1.1 requires the existing portions of the building to comply with requirements contained in NFPA 101 applicable to existing buildings. However, where the existing structure does not conform to the requirements of NFPA 101 Chapter 19 (i.e. existing healthcare occupancies), a 2-hour fire-resistance rated separation is required between the existing building and the addition (NFPA 101 Section 19.1.1.4.1). As indicated in Section 6 below, 2-hour rated floor assemblies

are required for the building. Therefore, the floor assembly will serve as this separation. As such, an evaluation of compliance with Chapter 19 has not been completed for the existing floors.

3.3 Height and Area

An addition cannot increase the height or area of an existing building beyond that permitted by the applicable provisions of IBC Chapter 5 (IEBC 1102.1 & 1102.2 and NFPA 101 Section 43.8.2). Refer to the height and area analysis in Section 5 of this report which describes compliance with height and area requirements.

3.4 Structural

While additions are required to comply with the code requirements for new construction, the Structural Engineer of Record mustperform an investigation and evaluation of the impact of the proposed addition on the existing building with respect to the following elements identified in the IEBC (1103).

- Additional gravity loads,
- Lateral-force-resisting system,
- Snow drift loads, and
- Flood hazard areas.

3.5 Accessibility

Additions to existing buildings are subject to the applicable new construction requirements of the American's with Disabilities Act Standards (ADA) and Chapter 11 of the IBC. Where the addition affects the accessibility to, or contains a primary function area, additional alterations may be required along the path of travel to the primary function area (IEBC 1105.1 and ADA 202.2).

Although the current ME building code does not adopt Chapter 11 of the IBC, the latest proposed state amendments to the 2015 IBC do adopt Chapter 11. Since the 2015 IBC, as amended by ME, will likely be applicable to the East Tower project, this report includes references to IBC Chapter 11 requirements. Refer to Section 11 of this report for further details. Note that the requirements of IBC Chapter 11 are similar to that of the ADA Standards, which apply regardless which edition of MUBEC is applicable.

3.6 Energy Conservation

Additions to existing buildings must comply with new construction provisions of the International Energy Conservation Code (IECC), without requiring the unaltered portions to comply (IEBC 1106.1).

4. HIGH-RISE BUILDING FEATURES

The proposed addition increases the height of the building such that it is considered a high-rise building (i.e. there is an occupied floor located more than 75 feet above the lowest level of fire department vehicle access)(IBC 202 and NFPA 101 Section 3.3.32.7). High-rise buildings must comply with IBC 403 and NFPA 101 Section 11.8. The applicable provisions for high-rise buildings are summarized below.

4.1 Structural

Since the building is considered Risk Category IV per IBC Table 1604.5, the structural integrity requirements of IBC 403.2.3 apply. Section 403.2.3 requires interior exit stairway and elevator hoistway wall assemblies to comply with impact classifications of ASTM C 1629/ C 1629M. Spray fire-resistant materials (SFRM) must have a minimum bond strength of 430 psf (IBC Table 403.2.4).

4.2 Fire Protection Systems

The following fire protection systems are required within the building as noted. Refer to Section 9 of this report for further details regarding fire protection systems.

Automatic Sprinkler System
An automatic sprinkler system is required throughout the building per IBC Sections 403.3 & 903.2.6 and NFPA 101 Sections 11.8.3.1 & 18.3.5.1. A secondary onsite water supply is required if the building is located in seismic design category C, D, E, or F (IBC 403.3).

Standpipe System
Class I standpipes must be provided (IBC 905.3 & 403.4.3 and NFPA 101 Section 11.8.4.1).

Fire Alarm System
A manual fire alarm system with an emergency voice/alarm communication system must be provided in accordance with IBC 907.2.13 (IBC 403.4.2 & 403.4.4 and NFPA 101 Section 11.8.4.1).

Smoke Detection System
An automatic smoke detection system must be provided in accordance with IBC 907.2.13.1 (IBC 403.4.1). See Section 9.2 of this report for additional requirements for smoke detection systems.

Emergency Responder Radio Coverage
Emergency responder radio coverage or a two-way telephone communication system must be provided (IBC 403.4.5, NFPA 1 Section 13.7.2.27.2.2, and NFPA 101 Section 11.8.4.2).

Fire Command Center

A fire command center (FCC) complying with IBC 911 must be provided in a location approved by the fire department (IBC 403.4.6 & NFPA 101 Section 11.8.6). The FCC must comply with the following requirements and contain the following features. The proposed FCC must be coordinated with the local fire official.

1. Location, layout, and features must be approved by the fire chief
2. Must be separated by 1-hr rated construction
3. Must be 200 sf with minimum dimension of 10 ft
4. Unrelated storage is prohibited in the FCC
5. Emergency voice/alarm communication system control unit
6. Fire department communications system
7. Fire detection and alarm system annunciator
8. Annunciator unit visually indicating the location of the elevators and whether they are operational
9. System indicators and controls for air distribution systems
10. Fire fighter's control panel for smoke control systems
11. Controls for unlocking interior exit stairway doors simultaneously
12. Sprinkler valve and waterflow detector display panels
13. Emergency and standby power status indicators
14. Telephone for fire department use with controlled access to the public telephone system
15. Fire pump status indicators
16. Schematic building plans
17. Building Information Card

Smoke Removal

A means of smoke removal in post-fire salvage operations must be provided in accordance with IBC 403.4.7. The means of smoke removal may be provided by natural or mechanical ventilation. Post-fire smoke purge can be achieved through natural or mechanical ventilation. Natural ventilation must consist of operable windows /panels distributed at maximum 50-foot intervals and with a total area of at

least 40 SF per 50 linear feet of perimeter. Mechanical ventilation must provide one air change every 15 minutes with return and exhaust air moved directly to the outside.

4.3 Standby and Emergency Power

Standby power must be provided for the following (IBC 403.4.8.3 and NFPA 101 Section 11.8.5.2.4):

1. Power and lighting for the FCC
2. Ventilation and automatic fire detection equipment for smokeproof enclosures
3. Elevators, including elevators provided for accessible means of egress and fire service access, where applicable
4. Mechanical equipment for smoke control systems
5. Electric fire pump
6. Jockey pump
7. Air compressor serving dry-pipe and pre-action systems

Emergency power must be provided for the following (IBC 403.4.8.4):

1. Exit signs and means of egress illumination
2. Elevator car lighting
3. Automatic fire detection systems
4. Fire alarm systems
5. Electrically powered fire pumps

Standby and emergency power must comply with IBC 2702 and 3003. In addition, standby power for elevators serving as accessible means of egress must comply with IBC 1009.4. Generator sets and fuel line piping located inside the building must be protected in accordance with IBC 403.4.8.1 and 403.4.8.2.

4.4 Means of Egress

Means of egress in high-rise buildings must comply with the additional provisions of IBC 403.5. These provisions include the following.

Remoteness

Required interior exit stairways in the high-rise portions of the building must be separated by a distance of at least 30 feet or at least one quarter of the length of the maximum overall diagonal of the building or area served (whichever is less). This separation distance is measured in a straight line between the closest points of the stairway enclosures. Where three or more interior exit stairways exist, at least two must be separated in accordance with IBC 403.5.1.

Stairway Communication System

Stairway doors other than the discharge doors are permitted to be locked from the stairway side if they can be unlocked simultaneously from the FCC (IBC 403.5.3). If stairway doors are locked, a stairway communication system must be provided on at

least every fifth floor. The communication system must connect to an approved constantly attended station (IBC 403.5.3.1).

Stairway Re-Entry

Since the stairs serve more than four stories, re-entry to other floors from inside the stairwells must be provided in accordance with NFPA 101 Sections 7.2.1.5.8 & 7.2.1.5.8.1 and the ME amendment to IBC 716.5.9.1.2 (NFPA 101 Section 18.2.2.2.9). All stair doors must release upon activation of the fire alarm system, unless selected re-entry is provided in accordance with NFPA 101 Section 7.2.1.5.8.1.

Smokeproof Enclosures

Every required exit stairway serving high-rise portions of the building must comply with the smokeproof enclosure requirements of IBC 909.20 and 1023.11 (IBC 403.5.4). The most common method for providing smokeproof enclosures in sprinklered buildings is through stair pressurization complying with IBC 909.20.5. A ventilated vestibule is not required using this method, provided that the pressure difference between the stair shaft and the balance of the building is a minimum of 0.10 inch of water and a maximum of 0.35 inch of water. The pressure difference must be measured with the stairway doors closed and under maximum anticipated conditions of stack effect and wind effect (IBC 909.20.5).

Luminous Egress Path Markings

Luminous egress path markings must be provided throughout the exit stairs in the building in accordance with IBC 1058.

4.5 Elevators

The following sections provide information regarding the elevator requirements.

Fire Service Access Elevators

A minimum of two fire service access elevators are required in buildings with an occupied floor greater than 120 feet above the lowest level of fire department vehicle access where at least two elevators are provided (IBC 403.6.1). Based on the plans provided to AKF on December 1, 2017 the highest occupied floor (i.e. Level 7) is 112 feet 4 inches above the lowest level of fire department vehicle access. Therefore, fire service access elevators are not required.

Other Elevator Lobbies

Enclosed elevator lobbies are required for all other elevators that serve high-rise levels within the building (IBC 3006.2(5)). These lobbies are required to consist of smoke partitions complying with IBC 710. Doors penetrating the enclosed elevator lobby must comply with IBC 710.5.2.2, 710.5.2.3, and 716.5.9. Ducts and air transfer openings must comply with IBC 717.5.4.1.

5. HEIGHT & AREA

The lowest level of the building (i.e. the Basement) is considered a story above grade plane because the Ground Level is more than 12 feet above ground level (IBC 202). Therefore, the building is 8 stories above grade.

High-rise buildings are permitted a reduction in the required fire-resistance ratings for building elements where sprinkler control valves are provided with supervisory initiating devices and water-flow initiating devices on each floor. Since the building is less than 420 feet in height, the fire-resistance ratings required for Type IB construction may be used while granting unlimited height and area allowances per Type IA construction (IBC 403.2.1). NFPA 101 Table 18.1.6.1 permits 8-story healthcare buildings of Type IB (222) construction.

6. TYPE OF CONSTRUCTION

The following table summarizes the required ratings for modified Type IA construction (i.e. Type IB) in accordance with IBC Table 601 and NFPA 1 Table A.12.2.1. These ratings also meet the requirements of Type IB (222) per NFPA 101.

IBC Table 601 & NFPA 101 Table A.12.2.1 Fire-Resistance Rating Requirements for Building Elements (Hours)

Element	Modified Type IA (i.e. Type IB) Rating (hours)
Primary structural frame (see Section 202) Columns Other	 3 [A] 2 [A]
Bearing walls Exterior Interior	 2[A] 2[A]
Nonbearing walls and partitions Exterior	See Table 602 discussion below.
Nonbearing walls and partitions Interior	0
Floor construction and secondary members (see Section 202)	2[A]
Roof construction and secondary members (see Section 202)	1

[A] Not less than the rating of the assemblies supported, i.e. shaft enclosures, etc.

The non-bearing exterior wall requirements for East Tower are based on the fire separation distance (FSD) of each wall. The FSD is measured perpendicularly from the face of each exterior wall to the closest interior lot line, the centerline of a street, alley, or public way, or an imaginary lot line between two buildings on the same lot. Where the FSD is greater than or equal to 30 feet, the non-bearing exterior walls do not require a fire-resistance rating.

Where Table 601 or 602 requires an exterior wall to be fire-resistance rated and the FSD is less than or equal to 10 feet, the wall must be rated for exposure to fire from both sides

(IBC 705.5). The exterior walls are required to maintain their structural stability for the duration of the time indicated by the fire-resistance rating.

IBC Table 602 Fire-Resistance Rating Requirements for Exterior Walls Based on Fire Separation Distance Type IA Construction

Fire Separation Distance = X (feet)	Group B, I-2, & S
X < 5	1
5 ≤ X < 10	1
10 ≤ X 20	1
X ≥ 20	0

Note: Unrated nonbearing exterior walls are permitted where the building is permitted to have unlimited unprotected openings (IBC Table 602, footnote (g)). See Section 7.1 for details.

Based on satellite images of the building and the site plan provided in the Visitor Garage Revit model (sent on August 7, 2017) East Tower is provided with a FSD of at least 20 feet around the entire exterior perimeter of the building. Therefore, nonbearing exterior walls are not required to be rated. It is our understanding that the East Tower, Richards, and Bean buildings are constructed as one building. Therefore, exterior wall protection is not required where the exterior walls of East Tower face either the Bean or Richards building.

7. FIRE AND SMOKE PROTECTED FEATURES

7.1 Exterior Walls & Opening Protectives

Openings in the exterior walls must comply with IBC 406.5.2 based on the FSD of each wall. The opening limitations are summarized below for Type IA construction.

IBC Table 705.8 Maximum Area of Exterior Wall Openings Based on Fire Separation Distance and Degree of Opening Protection

Fire Separation Distance (feet)	Degree of Opening Protection	Allowable Area
X < 5	Unprotected, Sprinklered	Not Permitted
5 ≤ X < 10	Unprotected, Sprinklered	10%
10 ≤ X < 15	Unprotected, Sprinklered	45%
15 ≤ X < 20	Unprotected, Sprinklered	75%
X ≥ 20	Unprotected, Sprinklered	No Limit

Based on satellite images of the building and the site plan provided in the Visitor Garage Revit model (sent on August 7, 2017) East Tower is provided with a FSD of at least 20 feet around the entire exterior perimeter of the building. Therefore, unlimited unprotected openings are permitted in the building's exterior walls. It is our understanding that the East Tower, Richards, and Bean buildings are constructed as

one building. Thus, exterior wall protection is not required where the exterior walls of East Tower face either the Bean or Richards building.

7.2 Shaft Enclosures

Vertical openings must be enclosed with shaft construction unless an alternative provision in IBC 712 and NFPA 101 Section 8.6 is met. Shafts connecting four stories or more must be enclosed with at least 2-hour fire-resistance rated construction. Shafts connecting three stories or less must be enclosed with 1-hour rated construction (IBC 713.4 and NFPA 101 Section 8.6.5).

7.3 Corridors

In Group I-2 occupancies, corridors must be continuous to exits and separated from other areas with walls that comply with the requirements for smoke partitions (IBC 407.2 & 407.3 and NFPA 101 Section 18.3.6.1). Doors within corridor walls are not required to be fire-resistance rated; however they must be self-latching, be provided with positive latching hardware, and must provide an effective barrier to limit smoke spread (IBC 407.3.1 and NFPA 101 Sections 18.3.6.2.2, 18.3.6.3.1, & 18.3.6.3.5). Note that there are some spaces that are permitted to be open to corridors as outlined below.

Waiting Areas

Waiting areas that are open to corridors must comply with the following requirements (IBC 407.2.1 and NFPA 101 Section 18.3.6.1(2)).

1. Must be constructed as required for corridors;
2. Does not contain sleeping rooms, treatment rooms, incidental uses, or hazardous uses;
3. The space is protected by an automatic fire detection system complying with IBC 907;
4. The corridor into which the space opens is protected by an automatic fire detection system that complies with IBC 907 or the smoke compartment is protected by quick-response sprinklers;
5. The space does not obstruct access to required exits;
6. The aggregate waiting area open to the corridor in each smoke compartment is no more than 600 SF.

Care Providers' Stations

Corridors may be open to spaces for care providers, supervisory staff, doctors' and nurses' charting, communications, and related clerical areas so long as such spaces are constructed as required for corridors (IBC 407.2.2).

7.4 Smoke Compartments

Level 6 and 7 must be divided into at least two smoke compartments, each with a maximum area of 22,500 SF (NFPA 101 Section 18.3.7.1). The smoke compartments must be separated by 1-hour rated smoke barriers with 20-minute opening protections

complying with IBC 709 and NFPA 101 Section 8.5 (IBC 407.5 and NFPA 101 Section 18.3.7.3).

Smoke dampers must be provided at each duct penetration of the smoke barrier unless one of the following conditions apply: (780 CMR 717.5.5 & NFPA 101 Section 18.3.7.3(2))

1. The openings in the ducts are limited to a single smoke compartment and the ducts are constructed of steel.
2. The HVAC system is fully ducted in accordance with the IMC Section 603; and the building is fully sprinklered and the sprinkler system is equipped with quick-response sprinklers in accordance with Section 903.3.2.

Travel Distance

The travel distance from the most remote point in each smoke compartment to the smoke barrier door must be a maximum of 200 feet (IBC 407.5 and NFPA 101 Section 18.3.7.1(4)).

Refuge Area

Each smoke compartment must contain a refuge area sized to accommodate the inpatient care occupants from adjacent smoke compartments. The refuge areas must be sized using a factor of 30 SF per patient. Refuge areas may consist of corridors, sleeping areas, treatment rooms, lounges, dining areas, and other low-hazard areas (IBC 407.5.1 and NFPA 101 Section 18.3.7.5.1). See the associated Life Safety Plans for illustrations of the refuge areas for each compartment.

Independent Egress

Means of egress from each smoke compartment must be arranged such that once occupants egress from a smoke compartment they are not required to return through the smoke compartment to evacuate the building (IBC 407.5.2 and NFPA 101 Section 18.2.4.4).

Horizontal Assemblies

Where horizontal assemblies support smoke barriers that are part of smoke compartments, such horizontal assemblies must be designed to resist the passage of smoke (IBC 407.5.3).

7.5 Incidental Uses

IBC Table 509 and NFPA 101 Table 8.5 prescribe requirements for the protection of several incidental uses in Group I-2/healthcare occupancies. The requirements of these tables are provided below.

Incidental Uses

Room or Area	Separation and/or Protection	Code Section
Boiler and fuel-fired heater rooms	1 hour	NFPA 101 Table 18.3.2.1
Laboratories not classified as Group H	1-hour and provide automatic sprinkler system	IBC Table 509
Laundry rooms over 100 SF	1 hour	IBC Table 509 & Section 509.4.2
Physical plant maintenance shops	1 hour	IBC Table 509 & NFPA 101 Table 18.3.2.1
Waste and linen collection rooms with containers that have an aggregate volume of 64 gallons or more	1 hour	NFPA 101 Table 18.3.2.1
Storage rooms greater than 100 SF	1 hour	IBC Table 509
Storage rooms less than 100 SF but greater than 50 SF and storing combustible material	Smoke partition	NFPA 101 Table 18.3.2.1 & Section 8.7.1.2

8. INTERIOR FINISH

The interior finishes of the walls, ceilings, and floors of the building are governed by IBC Chapter 8 and NFPA 101 Chapter 10. These chapters outline the testing requirements for the different surfaces. The required tests and finish classifications are summarized in the tables below.

Finish Characteristics

Element	Test Method	Criteria
Wall & Ceiling Finishes	ASTM E84 or UL 723	Class A = FSI 0-25; SDI 0-450
		Class B = FSI 26-75; SDI 0-450
		Class C = FSI 76-200; SDI 0-450
Floor Finish	NFPA 253	Class I = 0.45 W/cm^2 or greater
		Class II = 0.22 W/cm^2 up to 0.45 W/cm2
	DOC FF-1	Pass

Notes: FSI = flame spread index, SDI = smoke-developed index

Interior Wall and Ceiling Finish Requirements by Occupancy (Sprinklered Building)

Use Group	Walls & Ceilings			Floors	
	Exit enclosures and exit passageways	Corridors	Rooms and enclosed spaces	Exits and corridors	Other spaces
B	B	C	C	DOC FF-1	DOC FF-1
I-2	B	B	B[A]	Class II	Class II
S-1 & S-2	C	C	C	DOC FF-1	DOC FF-1

[A] Class C interior finish materials are permitted in rooms with a capacity of four persons or less.

The tables above show the required interior finish classes throughout the building based on the most restrictive requirements of IBC Table 803.11 and NFPA 101 Table A.10.2.2. All floors throughout the building must pass the DOC FF-1 "pill test".

9. FIRE PROTECTION SYSTEMS

In addition to the systems discussed in Section 4 of this report, the following fire protection requirements also apply.

9.1 Automatic Sprinkler System

Since the smoke compartments contain patient sleeping rooms, listed quick-response or listed residential sprinklers must be used (NFPA 101 Section 18.3.5.6).

9.2 Fire Alarm and Detection System

In addition to the manual fire alarm system, an automatic smoke detection system must be provided in the corridors.

9.3 Standpipe System

A standpipe system is required since the building contains an occupied floor more than 30 feet above the lowest level of fire department vehicle access. A Class I standpipe is required since the building is a high-rise building. The existing standpipe system that will be extended to the addition and a Class I hose connection will be provided (i.e. 2 ½" hose connection).

9.4 Emergency Forces Notification

The fire alarm system must transmit an alarm automatically to the municipal fire department (NFPA 101 Section 9.6.4 & 18.3.4.3.2.1).

9.5 Portable Fire Extinguishers

Portable fire extinguishers must be provided in accordance with NFPA 10 (IBC 906 and NFPA 101 Section 18.3.5.12).

9.6 Electrical Systems

The essential electrical system for electrical components, equipment, and systems must be designed and constructed in accordance with IBC Chapter 27 and NFPA 99 (IBC 407.10 and NFPA 101 Section 18.5.1.2).

10. MEANS OF EGRESS

The applicable means of egress requirements for the addition are described below.

10.1 Egress Summary

The occupant loads of the addition were calculated based on the area of the space in accordance with IBC Table 1004.1.2 and NFPA 101 Table 7.3.1.2. The exit capacity from each floor is calculated in accordance with IBC 1005.1 and NFPA 101 Table 7.3.3.1. See sheets G01-60 through G01-90 for details.

10.2 Exit Access Travel Distance

The East Tower exits are required to be arranged such that the maximum exit access travel distance does not exceed the limitations in the table below (NFPA 101 Table A.7.6).

Occupancy	With Sprinkler System (feet)
B	300
I-2	200
S	400

The maximum travel distance allowed from a Group I-2 sleeping room to an exit access door in that room is 50 feet (IBC 407.4.2 and NFPA 101 Section 18.2.6.2.3). The proposed design complies with the above requirements.

10.3 Corridor Width

Corridors must provide the following minimum clear widths (IBC 1020.2 and NFPA 101 Section 18.2.3.4 & 38.2.3.2):

- 96 inches where serving bed movement areas;
- 44 inches in other areas where the occupant load is 50 or more; and
- 36 inches in other areas where the occupant load is less than 50 people.

The exit access must be arranged such that there are no dead ends more than 20 feet in Group I-2 corridors and no more than 50 feet in corridors serving other occupancies (IBC 1020.4 and NFPA 101 Table A.7.6).

10.4 Number of Exits and Continuity

Two means of egress must be provided from individual spaces where the occupant load and/or common path of travel distance exceeds the limitations of IBC Table 1006.2.1 and NFPA 101 Section 38.2.5.3.1 & 42.2.5. The proposed design complies with the below requirements.

Spaces with One Means of Egress

Use Group	Maximum Occupant Load	Maximum Common Path of Travel Distance (ft)
B	49	100
I-2	10	75
S	29	100

In addition, habitable spaces must have an exit access door leading directly to a corridor unless an exit door is provided directly to the exterior at ground level (IBC 407.4.1 and NFPA 101 Section 18.2.5.6.1).

All spaces within each story must have access to the minimum number of independent exits from the story as required by IBC Table 1006.3.1 and NFPA 101 Section 7.4.1.2 below.

Minimum Number of Exits Per Story

Occupant Load (persons per story)	Minimum Number of Exits (per story)
1-500	2
501-1,000	3
More than 1,000	4

Where more than one means of egress is required, the exits must be separated by ⅓ of the overall diagonal distance of the space served (IBC 1007.1.1 and NFPA 101 Section 7.5.1.3.2). This separation distance is measured between the doors to Stair 1 and 2. See Section 4.4 of this report for the required separation between the closest points of the stairway enclosures.

10.5 Doors

Cross-corridor door openings in corridors required to be at least 96 inches wide must have a clear width as follows (NFPA 101 Section 18.2.3.4(6)):

- 6 feet, 11 inches for pairs of doors; and
- 41 ½ inches for a single door.

The above provisions also apply to any doors in the means of egress from the patient rooms (NFPA 101 Section 18.2.3.6). However, exit stair enclosure doors are only required to provide a minimum clear width of 32 inches (NFPA 101 Section 18.2.3.7). Doors not serving healthcare occupants must have a minimum clear width

of 32 inches (IBC 1010.1.1 and NFPA 101 Section 7.2.1.2.3.2). All doors serving an occupant load of 50 or more people must swing in the direction of egress travel (IBC 1010.1.2 and NFPA 101 Section 7.2.1.4.2).

10.6 Locking Devices

Unless complying with IBC 1010.1.9.6 and NFPA 101 Section 18.2.2.2.5, locking devices that restrict access to a care recipient's room from the corridor and that are operable only by staff from the corridor side must not restrict the means of egress from the care recipient's room (IBC 407.4.1.1 and NFPA 101 Section 18.1.3.2(1)).

11. ACCESSIBILITY

Accessibility requirements for medical facilities are provided in both the IBC and the American's with Disabilities Act Standards (ADA). All of the patient sleeping rooms must comply with ADA 805 and the requirements for Accessible units in ICC/ANSI A117.1 (ADA 223.2.2 and IBC 1107.5.4).

12. MECHANICAL

The addition must be provided with mechanical ventilation in accordance with ASHRAE 62.1, 2013 edition.

13. ENERGY CONSERVATION

Additions to existing buildings must comply with the requirements of the IECC that are applicable to new construction; however the existing, unaltered portions of the building are not required to comply with such requirements (IECC 101.4.3).

14. PLUMBING FIXTURES

The UPC requires a minimum number of plumbing fixtures based on the use of the building. Additions must comply with the requirements for new construction, without requiring the existing system to comply with such requirements. The addition cannot cause the existing system to become unsafe, insanitary or overloaded (UPC 102.4). UPC Table 422.1 requires plumbing fixtures in I-2 occupancies in accordance with the following table.

Group I-2 Use	Toilets		Lavatories (Each Sex)		Drinking Water Station, With Drain	Service Sink
	Female	Male	Female	Male		
Individual patient rooms	1 per room		1 per room		1 per 50	1 per floor
Patient Wards	1 per 8 patients		1 per 10 patients			
Waiting Rooms	1 per room		1 per room		1 per room	-
Employee Use	1: 1-15 3: 16-35 4: 36-55 Over 55, add 1 fixture for each add. 40 persons	1: 1-15 2: 16-35 3: 36-55 Over 55, add 1 fixture for each add. 40 persons	1 per 40	1 per 40	-	-

Drinking fountains are required as indicated in the table above. Water stations are permitted to be substituted for drinking fountains where food is consumed indoors. Water stations are considered to be any hard-piped fixture providing drinking water. Bottle filling stations are permitted to be substituted for up to 50% of the required drinking fountains (UPC 415.2). The UPC recommends that a drinking fountain also be provided with a bottle filling station. The table below summarizes the number of fixtures provided on Level 6 and 7 of East Tower.

Floor Level	Occupant Type	Toilets		Lavatories (Each Sex)		Max. Occupant Load Supported		
		Female	Male	Female	Male	Female	Male	Total
6	Staff	2	1	2	1	15	15	30
	Patient	1 per room		1 per room		32 patient rooms		
	Public	1	1	1	1	1 waiting room		
Floor Level	Occupant Type	Toilets		Lavatories (Each Sex)		Max. Occupant Load Supported		
		Female	Male	Female	Male	Female	Male	Total
7	Staff	2	2	2	2	15	35	30
	Patient	1 per room		1 per room		32 patient rooms		
	Public	1	1	1	1	1 waiting room		

15. HELIPAD REQUIREMENTS

The following sections summarize requirements for rooftop helipads that are applicable to the East Tower project. Note that the 2015 IBC and 2012 NFPA 101 adopt the 2011 edition of NFPA 418: Standard for Heliports. However, the Maine Fire Code adopts the 2006 NFPA 1 and 2009 NFPA 101, which adopt the 2001 and 2006 editions of NFPA 418, respectively. For the most part, the requirements of the 2011 edition are most restrictive and therefore this edition is referenced in the sections below. However, differences in the editions are noted where applicable.

15.1 Landing Area Size

The landing area for small helicopters (i.e. less than 3,500 lbs) must be a minimum of 20 feet in length and width. The landing area must be surrounded on all sides by a clear area having a minimum average width of 15 feet at roof level. The clear area must not be less than 5 feet wide at any point (IBC 412.8.1).

15.2 Landing Area Design & Construction

Helipads must be designed to withstand the loads specified in IBC 1607.6. The contiguous building roof covering located within 50 feet of the landing pad edge must have a Class A rating (NFPA 418 Section 5.4.2). The landing area must be noncombustible and nonporous and must be provided with spill confinement and drainage for flammable liquids (IBC 412.8.2). The landing pad drainage must be provided by the following (NFPA 418 Section 5.3):

1. Sloped surface between 0.5% and 2%; or
2. Passive fire protection grid surface designed and listed for fuel catchment and containment.

The drainage system must drain flammable liquids away from the primary egress path and alternate egress points serving the landing area, including exits, stairways, and structures housing exits and stairways, as well as passenger holding area(s), fire protection activation systems, hatches, and other openings not designed for drainage (IBC 412.8.2 and NFPA Section 5.3.2).

The landing area supports must also be noncombustible and the main structural support members that could be exposed to a fuel spill must have a minimum 2-hour fire resistance rating, unless the landing pad is nonporous, fuel-tight, and the drainage system prevents fuel from flowing to support members (NFPA 418 Section 5.2 & A.5.2).

The allowance provided in Section A.5.2 to use drainage in lieu of 2-hour rated structural members is not provided in the 2001 edition of NFPA 418; however it is provided in the 2006 and 2011 editions.

15.3 Fire Protection Systems

The following fire protection systems are required for the helipad:

1. Class I or III standpipe system must be extended to the roof level (IBC 905.3.6)

2. Foam fire-extinguishing system with either fixed discharge outlets or hose line(s) for use by trained personnel complying with NFPA 418 Section 5.7 and 5.8. The fixed discharge outlet system activation must be by manual pull stations at each egress point from the rooftop landing pad. An additional manual pull station must be located at an approved location inside the building from which the rooftop landing pad can be viewed (NFPA 418

Section 5.8.2). Note that video is an acceptable means of viewing per A.5.8.2.

a. H-1 heliports are permitted to be protected by two portable foam extinguishers each with a 20-A: 160-B rating in lieu of the foam fire-extinguishing system.

3. A means of communication must be provided from the roof area to notify the fire department of emergencies (NFPA 418 Section 5.9).

4. Manual pull stations connected to the fire alarm system must be provided from each designated means of egress from the roof (NFPA 418 Section 5.9).

The Maine Fire Code (Section 21.3.6.8) and the 2001 edition of NFPA 418 (Section 3.7) require a Class II standpipe connection to be provided. It is our understanding that the existing standpipe system will be extended to the roof and a foam extinguishing system will be provided for protection of the helipad. We recommend reviewing the proposed design with the fire official for further direction and approval.

Two access points for fire-fighting/rescue personnel must be provided to the heliport. The access points must be located at least 90 degrees from each other as measured from the center of the landing pad (NFPA 418 Section 4.4.1). Based on the plans provided to AKF on December 1, 2017, the helipad complies with this requirement (access points are approximately 92 degrees apart).

At least one portable fire extinguisher must be provided for each takeoff and landing area, parking area, and fuel storage area. The type of fire extinguisher is based on the size of the helicopter per NFPA 418 Table 9.2 below.

Table 9.2 Minimum Required Ratings of Portable Fire Extinguishers for Heliport Categories

Heliport Category	Helicopter Overall Length (including tail boom and rotors)	Minimum Rating
H-1	Less than 50 feet	4A:80B
H-2	50 feet up to but not including 80 feet	10A:120B
H-3	80 feet up to but not including 120 feet	30A:240B

Based on the memo provided by HeliExperts International LLC, dated June 16, 2017, the heliport is considered an H-2 category. Therefore the minimum fire extinguisher rating is 10A:120B. A fire extinguisher will be located inside the elevator vestibule such that the extinguisher is no further than 50 feet from the edge of the heliport final approach and takeoff (FATO) area.

15.4 Means of Egress

At least two means of egress that lead to a public way must be provided from the landing pad (NFPA 418 Section 4.8 & 5.5; and IBC 412.8.3). The egress points from the landing pad must be located at least 90 degrees from each other as measured from the center of the pad, and must be separated by a minimum of 30 feet. No two egress points may be located on the same side of the landing pad. Means of egress from the landing pad must not obstruct flight operations (NFPA 418 Section 5.5). The means of egress path on the roof level must be illuminated when the helipad/roof is occupied (IBC 1008.1).

AKF

1655 North Fort Myer Drive
Suite 200
Arlington, VA 22209
T: 703.351.7686

99 Bedford Street
2nd Floor
Boston, MA 02111
T: 617.737.1111

Higuera No. 35 P.B.
Coyoacan
Mexico, D.F. 04000
T: 52.555.659.4573

Quinto Retorno Circuito Osa
Mentor No.8
1Ery 2Do Piso, Reserva Territorial
Cholula, Puebla CP 72810
T: 52.22.210.3378

100 South 5th Street
Suite 2060
Minneapolis, MN 55402
T: 612.354.2442

One Liberty Plaza
165 Broadway, 22nd Floor
New York, NY 10006
T: 212.354.5656

1500 Walnut Street
Suite 1400
Philadelphia, PA 19102
T: 215.735.7290

2768 Superior Drive NW
Suite 200
Rochester, MN 55904
T: 507.208.4488

700 Alexander Park
Suite 204
Princeton, NJ 08540
T: 609.750.9590

750 East Main Street
Suite 501
Stamford, CT 06902
T: 203.323.4333

www.akfgroup.com

Maine Medical Center
Visitor Garage Expansion
Existing Building Code Report
September 28, 2017



Prepared By:

AKF Group
99 Bedford Street
2nd Floor
Boston, MA 02111
Phone: 617-737-1111
FAX: 617-737-4311

TABLE OF CONTENTS

1. APPLICABLE CODES & STANDARDS 2
2. PROPOSED SCOPE OF WORK & USE 2
3. ADDITION 2
   - 3.1 IEBC Requirements 2
   - 3.2 NFPA 101 Requirements 3
4. HIGH-RISE BUILDING FEATURES 4
5. OPEN PARKING GARAGE REQUIREMENTS 4
   - 5.1 Exterior Openings 4
   - 5.2 Construction Type 5
   - 5.3 Vertical Clearance 5
   - 5.4 Vehicle Barrier System 5
   - 5.5 Prohibited Uses 5
6. HEIGHT & AREA 6
7. TYPE OF CONSTRUCTION 6
8. FIRE AND SMOKE PROTECTED FEATURES 7
   - 8.1 Exterior Walls & Opening Protectives 7
   - 8.2 Shaft Enclosures 8
   - 8.3 Fire Wall 8
9. INTERIOR FINISH 9
10. FIRE PROTECTION SYSTEMS 9
    - 10.1 Automatic Sprinkler System 9
    - 10.2 Manual Fire Alarm System 9
    - 10.3 Standpipe System 10
11. MEANS OF EGRESS 10
    - 11.1 Egress Summary 10
    - 11.2 Exit Access Travel Distance 10
    - 11.3 Dead Ends 10
    - 11.4 Number of Exits and Continuity 10
    - 11.5 Doors 11
12. ACCESSIBILITY 11
    - 12.1 Accessible Route 11
    - 12.2 Accessible Entrances 11

12.3Parking....12
13. STRUCTURAL....12
14. MECHANICAL....12
15. ENERGY CONSERVATION....13

INTRODUCTION

Perkins + Will has retained AKF Group LLC to prepare this existing building narrative code report for the vertical addition to the Visitor Garage on the Maine Medical Center Campus located in Portland, ME. The proposed addition will add three tiers to the existing garage to create a total ten-tier structure. The roof of the structure will also include parking. The existing garage is consistent with Type IIA construction.

QUICK FACTS

- Approximately 266,000 SF
- 10 tiers
- Not sprinklered
- Existing dry-type standpipe system
- Use Group S-2

1. APPLICABLE CODES & STANDARDS

The State of Maine requires municipalities with more than 4,000 residents to adopt and enforce the Maine Uniform Building and Energy Code (MUBEC). The next edition of the MUBEC is expected to become effective in 2017. Therefore, the following codes are likely applicable to the Maine Medical Center (MMC) Visitor Garage project.

- International Building Code (IBC), 2015 Edition with ME Amendments
- International Existing Building Code (IEBC), 2015 Edition with ME Amendments
- International Energy Conservation Code (IECC), 2009 Edition with ME Amendments
- American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) Standard 62., Standard for Ventilation and Indoor Air Quality, 2013 edition

In addition to those codes identified above, the State Fire Marshal's Office promulgates the Rules of the State Fire Marshal, which adopt numerous NFPA codes and standards, including the following:

- NFPA 1, Uniform Fire Code, 2006 Edition with ME Amendments
- NFPA 13, Standard for Installation of Sprinkler Systems, 2016 Edition
- NFPA 101, Life Safety Code, 2009 Edition with ME Amendments

The following federal regulation also applies to the project:

- Americans with Disabilities Act (ADA), 2010 Standards for Accessible Design

2. PROPOSED SCOPE OF WORK & USE

The proposed project will add three tiers of parking to the existing Visitor Garage creating a ten-tier parking structure, with parking also provided on the roof of the garage. The existing garage is consistent with Type IIA construction (i.e. noncombustible, 1-hour rated). The existing and proposed use group within the garage is Group S-2.

3. ADDITION

The project includes an addition to the existing building and is therefore subject to compliance with Chapter 11 of the IEBC, and Section 43.8 of NFPA 101 which are summarized as follows.

3.1 IEBC Requirements

The addition must comply with the code for new construction while the existing building is permitted to remain without change, except as required by the provisions of IEBC Chapter 10 for additions (IEBC 1101.1). An addition to an existing building

cannot create or extend any nonconformity in the existing building with regard to accessibility, structural strength, fire safety, means of egress, or the capacity of MEP systems (IEBC 1101.2). Any repair or alteration work taking place within the existing building to which the addition is being made must meet the applicable IEBC requirements for repairs, Level 1, 2, or 3 alterations, and/or change of occupancy as appropriate in Chapters 5, 6, 7, 8, and 9, respectively (IEBC 1101.3).

Height and Area

An addition cannot increase the height or area of an existing building beyond that permitted by the applicable provisions of Chapter 5 in the code for new construction (IEBC 1102.1 and 1102.2). However, the infilling of floor openings and nonoccupiable appendages such as elevator and exit stair shafts are permitted even if it results in a building area that exceeds that permitted by the applicable provisions of Chapter 5 in the code for new construction (IEBC 1102.2 exception).

Structural

While additions are required to comply with the code requirements for new construction, the Structural Engineer of Record will need to perform an investigation and evaluation of the impact of the proposed addition on the existing building with respect to the following elements identified in the IEBC (1103).

- Additional gravity loads,
- Lateral-force-resisting system,
- Snow drift loads, and
- Flood hazard areas.

Accessibility

Additions to existing buildings are subject to the applicable new construction requirements of the ADA Standards. Where the addition affects the accessibility to, or contains a primary function area, the requirements of ADA Standards 202.4 are applicable.

Energy Conservation

Additions to existing buildings must comply with new construction provisions of the International Energy Conservation Code (IECC) (IEBC 1106.1).

3.2 NFPA 101 Requirements

Additions must comply with NFPA 101 requirements applicable to new construction. The existing portions of the building must comply with the requirements of NFPA 101 applicable to existing buildings (NFPA 101 Section 43.8.1.1). An addition cannot create or extend a nonconformity with regard to fire safety or means of egress in the existing portion of the building (NFPA 101 Section 43.8.1.2). Repair, renovation, alteration, or reconstruction work within the existing building must comply with NFPA 101 Sections 43.3, 43.4, 43.5, and 43.6, as applicable (NFPA 101 Section 43.8.1.3).

Building Height

The addition must not increase the height of the existing building beyond that permitted for new construction (NFPA 101 Section 43.8.2).

Fire Protection

Where there is no approved separation between the existing building and the addition, and the combined areas are required to be protected by an automatic sprinkler system per the provisions for new construction, such system must be provided (NFPA 101 Section 43.8.3). Sprinklers are not required in open parking garages and therefore this section does not apply.

4. HIGH-RISE BUILDING FEATURES

The proposed parking garage is considered a high-rise building since there is an occupied floor located more than 75 feet above the lowest level of fire department vehicle access (IBC 202 and NFPA 101 Section 3.3.32.7). High-rise buildings must comply with IBC 403 and NFPA 101 Section 11.8; however, Exception 2 to IBC 403.1 and NFPA Section 42.8.4 exempt open parking garages from the high-rise requirements of IBC 406.5 and NFPA 101 Section 3.3.254.6. This exempts the building from requirements such as automatic sprinkler system, smokeproof enclosures, smoke detection, voice/alarm communication system, fire command center, standby and emergency power, fire service access elevator, etc. Open parking garage requirements are identified in the next section.

5. OPEN PARKING GARAGE REQUIREMENTS

The following sections outline the requirements for open parking garages in the IBC and NFPA 101.

5.1 Exterior Openings

The area of the exterior wall openings on each tier must be at least 20% of the total perimeter wall area for that tier. The aggregate length of the openings must be at least 40% of the perimeter of the tier, unless the openings are uniformly distributed over two opposing sides of the building (IBC 406.5.2). Where openings are provided below grade, a horizontal clear space must be provided adjacent to the below-grade openings. The width of this clear space must be at least 1.5 times the depth of the space (i.e. grade to the bottom of the lowest required opening) (IBC 406.5.2.1).

In addition, NFPA 101 Section 3.3.254.6 requires open parking structures to have an exterior wall opening area of at least 1.4 SF for each linear foot of exterior perimeter. The openings must be distributed over at least 40% of the building perimeter or uniformly over two opposing sides of the building.

There is an existing retaining wall adjacent to the south and east sides of the building. The retaining wall is approximately 1 foot from the exterior wall of the existing parking garage. This wall therefore obstructs some exterior openings on the south and east sides of the existing garage. As a result, Sub-Level 6 and Sub-Level 5 do not meet the 20% openness requirement of IBC 406.5.2. However, all levels of the garage meet

the openness requirements of NFPA 101 Section 3.3.254.6 (i.e. 1.4 SF/LF and 40% distribution).

The existing garage openings are an existing nonconforming condition per IBC provisions, but the openings comply with the openness criteria of NFPA 101. The proposed addition does not extend the nonconformity since the openings in the existing portion of the garage and the location of the existing retaining wall will not be altered as part of the proposed renovations. Therefore, the existing garage will continue to be treated as an open parking garage since it was originally approved and constructed as such. The three new tiers of the garage will comply with the openness criteria of both the IBC and NFPA 101. Therefore the work is in compliance with IEBC 1101.2 and NFPA 101 Section 43.8.1.2. See sheet G02-01 for further details.

5.2 Construction Type

Open parking garages must be constructed of Type I, II, or IV construction (IBC 406.5.1). It is our understanding that the existing garage is consistent with Type IIA construction and that the addition will be Type IIA construction as well.

5.3 Vertical Clearance

The clear height of each floor level must be at least 7 feet (IBC 406.4.1). However, a vertical clearance of at least 8 feet, 2 inches must be provided for where van access is required per ADA 208.2.4 (ADA 502.5).

It is our understanding that there are structural requirements that require a 10'-6" floor to floor height throughout the garage. However, when the original garage was constructed, this requirement only called for 10'-0" floor to floor. Since the stair and elevator core was constructed for future growth, the design team plans to seek a variance to provide 10'-0" floor to floor on the new tiers to align with the floor levels in the stair and elevator core.

5.4 Vehicle Barrier System

A vehicle barrier system of at least 2 feet, 9 inches in height is required at the end of drive lanes and parking spaces where the vertical distance to the ground or surface directly below exceeds 1 foot (780 CMR 406.4.3).

5.5 Prohibited Uses

The following uses or activities are not permitted in an open parking garage (IBC 406.5.11):

a. Vehicle repair work
b. Parking of buses, trucks, and similar vehicles
c. Partial of complete closing of required openings in exterior walls by tarpaulins or any other means
d. Dispensing of fuel

6. HEIGHT & AREA

Open parking garages are permitted to comply with the height and area provisions of IBC 406.5.4 where the garage is used exclusively for the parking or storage of private motor vehicles, with no other uses in the building (IBC 406.5.4.1). Per IBC Table 406.5.4, Type IIA open parking structures must comply with the following requirements.

Height & Area Summary
Open Parking Structure in Type IIA Construction

Element	Proposed	Allowed	Status
Maximum Area Per Tier (SF)	26,633	50,000	✓
Aggregate Area (SF)	266,015	500,0000	✓
Height (in tiers)	10	10	✓

As can be seen in the table above, the building and proposed addition comply with the height and area limits for open parking garages in Type IIA construction. See Appendix A for further details.

There is an existing unfinished space on Sub-Level 6 of the garage. Clarification on the intended use of this space and the existing separation is needed. A fire-rated separation is needed if the use of the space is unrelated to the parking garage (i.e. retail). Note that in order to use the height and area provisions of IBC 406.5.4, the garage can only be used for the parking and storage of private motor vehicles.

7. TYPE OF CONSTRUCTION

The following table summarizes the required ratings for Type IIA (Type 111) construction in accordance with IBC Table 601 and NFPA 1 Table A.12.2.1.

IBC Table 601 & NFPA 101 Table A.12.2.1 Fire-Resistance Rating Requirements for Building Elements (Hours)

Element	Type IIA (Type 111) Rating (hours)
Primary structural frame (see Section 202)	1[A]
Bearing walls Exterior Interior	 1[A] 1[A]
Nonbearing walls and partitions Exterior	See Table 602 discussion in Section 8.1.
Nonbearing walls and partitions Interior	0
Floor construction and secondary members (see Section 202)	1[A]
Roof construction and secondary members (see Section 202)	1

[A] Not less than the rating of the assemblies supported, i.e. shaft enclosures, etc.

8. FIRE AND SMOKE PROTECTED FEATURES

8.1 Exterior Walls & Opening Protectives

The non-bearing exterior wall requirements for the garage are based on the fire separation distance (FSD) of each wall. The FSD is measured perpendicularly from the face of each exterior wall to the closest interior lot line, the centerline of a street, alley, or public way, or an imaginary lot line between two buildings on the same lot. Where the FSD is greater than or equal to 10 feet, the non-bearing exterior walls do not require a fire-resistance rating.

Where Table 601 or 602 requires an exterior wall to be fire-resistance rated and the FSD is less than or equal to 10 feet, the wall must be rated for exposure to fire from both sides (IBC 705.5). The exterior walls are required to maintain their structural stability for the duration of the time indicated by the fire-resistance rating.

IBC Table 602 Fire-Resistance Rating Requirements for Exterior Walls Based on Fire Separation Distance
Type IIA Construction – Open Parking

Fire Separation Distance = X (feet)	Group S-2
X < 5	1
5 ≤ X < 10	1
10 ≤ X	0

While the garage is required to meet the openness criteria of IBC 406.5.2, the code also requires evaluation of the FSD of each exterior wall in relation to allowed openings. Note that the open area in each wall is unlimited when the FSD is 10 feet or greater. The opening limitations are summarized below for an open parking garage in Type IIA construction.

IBC Table 705.8 Maximum Area of Exterior Wall Openings Based on Fire Separation Distance and Degree of Opening Protection

Fire Separation Distance (feet)	Degree of Opening Protection	Allowable Area
X < 5	Unprotected, Nonsprinklered	Not Permitted
5 ≤ X < 10	Unprotected, Nonsprinklered	10%
10 ≤ X	Unprotected, Nonsprinklered	No Limit[A]

[A] The area of openings in an open parking structure with a FSD of 10 feet or greater is not limited.

Based on AKF's measurement of the site plan, the garage is provided with at least 10 feet of FSD around the entire perimeter. Therefore, unrated nonbearing exterior walls and unlimited unprotected openings are permitted. Note that an imaginary lot line must be placed between the new Congress Street building and the Visitor Garage.

Based on the existing garage openings on the west exterior wall, the imaginary lot line must be placed at least 10 feet from the exterior walls of the garage. This will affect the required rating for the exterior wall of the adjacent Congress Street Building.

8.2 Shaft Enclosures

Vertical openings in open parking garages are not required to be enclosed, including stairways used for egress purposes (IBC 406.5.9 & 1019.3(6) and NFPA 101 Section 42.8.2.2.3.2 & 42.8.3.1.2).

8.3 Fire Wall

It is our understanding that a fire wall will be provided between the west stair tower and the Congress Street development. Direct access will be provided through this fire wall from the Visitor Garage to the Congress Street building.

The fire wall must comply with the requirements of IBC 706 and must have sufficient structural stability under fire conditions to allow collapse of construction on either side without collapse of the wall for 3 hours. This fire resistance rating is based on the hospital use (i.e. Group I-2) in the Congress Street building (IBC Table 706.4).

Openings
Individual openings in the fire wall cannot exceed 156 SF and the aggregate width of openings cannot exceed 25% of the length of the wall at each floor level (IBC 706.8). Per IBC Table 716.5, fire walls having a required assembly rating of 3 hours also require 3-hour fire doors. Doors must be latching and self- or automatic-closing (IBC 716.5.9).

Horizontal Continuity
Fire walls must be continuous from exterior wall to exterior wall and must extend at least 18 inches beyond the exterior surface of exterior walls (IBC 706.5). However, there are exceptions permitting the fire wall to terminate at the interior surface of the exterior sheathing or siding. Where the fire wall intersects exterior walls and form an angle less than 180 degrees, the exterior walls must have a 1-hour fire-resistance rating with ¾-hour opening protectives for a horizontal distance of 4 feet, or must be rated based on an imaginary lot line drawn between buildings (IBC 706.5.1).

Fire walls must extend to the outer edge of horizontal projecting elements such as balconies, roof overhangs, canopies, marquees, and similar projections that are within 4 feet of the fire wall (IBC 706.5.2). Note however there are some exceptions to this requirement where the exterior wall behind the projecting element is rated. The applicability of the exceptions depends on whether the projection contains concealed spaces.

Vertical Continuity
Fire walls must have vertical continuity such that they extend from the foundation to a termination point at least 30 inches above both adjacent roofs (IBC 706.6). However, there are exceptions to this section, including exceptions for stepped buildings and where both buildings are provided with at least Class B roof coverings.

9. INTERIOR FINISH

The interior finishes of the walls, ceilings, and floors of the building are governed by IBC Chapter 8 and NFPA 101 Chapter 10. These chapters outline the testing requirements for the different surfaces. The required tests and finish classifications are summarized in the tables below.

Finish Characteristics

Element	Test Method	Criteria
Wall & Ceiling Finishes	ASTM E84 or UL 723	Class A = FSI 0-25; SDI 0-450
		Class B = FSI 26-75; SDI 0-450
		Class C = FSI 76-200; SDI 0-450
Floor Finish	NFPA 253	Class I = 0.45 W/cm^2 or greater
		Class II = 0.22 W/cm^2 up to 0.45 W/cm2
	DOC FF-1	Pass

Notes:
FSI = flame spread index
SDI = smoke-developed index

Interior Wall and Ceiling Finish Requirements by Occupancy (Nonsprinklered Building)

Use Group	Walls & Ceilings			Floors	
	Exit enclosures and exit passageways	Corridors	Rooms and enclosed spaces	Exits and corridors	Other spaces
S-2	B	B	C	Class II & DOC FF-1[A]	DOC FF-1

[A] Requirements for corridors are applicable to spaces open to corridors.

The tables above show the required interior finish classes throughout the building based on the most restrictive requirements of IBC Table 803.11 and NFPA 101 Table A.10.2.2. All floors throughout the building must pass the DOC FF-1 "pill test".

10. FIRE PROTECTION SYSTEMS

10.1 Automatic Sprinkler System

An automatic sprinkler system is not required in open parking garages (IBC 903.2 and NFPA 101 Section 42.8.3.5).

10.2 Manual Fire Alarm System

Open parking garages are not required to be equipped with a manual fire alarm system (IBC 907.2 and NFPA 101 Section 42.8.3.4.1.3); however, the existing manual fire alarm system will be maintained and extended to the addition.

10.3 Standpipe System

A standpipe system is required in the parking garage since there is a floor level more than 30 feet above the lowest level of fire department vehicle access (IBC 905.3.1). Class I manual dry standpipes are permitted in open parking garages that are subject to freezing temperatures. The hose connections must be located as required for Class II standpipes per IBC 905.5 (IBC 905.3.1(3)). The existing garage is provided with a dry-type standpipe system. This system will be extended to the addition.

11. MEANS OF EGRESS

The applicable means of egress requirements for new construction are described below.

11.1 Egress Summary

The occupant loads throughout the building are calculated in accordance with IBC Table 1004.1.2 and NFPA 101 Table 7.3.1.2. The capacities of the exits are calculated in accordance with IBC 1005.1 and NFPA 101 Table 7.3.3.1. See sheet G01-01 and G01-02 for detailed egress calculations.

11.2 Exit Access Travel Distance

The exits in the new portions of the parking garage are required to be arranged such that the maximum exit access travel distance is 300 feet. Exit access travel distance is permitted to be measured to an exit door of an enclosed stair or to the closest riser of an unenclosed stairway (IBC 1017.3 and NFPA 101 Table 42.8.2.6.1, Note (2)). Based on AKF's measurement of the proposed floor plans, the exit access travel distance in the garage is within the limit described above.

Note that the exit access travel distance on Sub-Level 6 was measured to the vehicle exit. Although there is not a designated pedestrian path, the existing vehicle exit is marked by exit signage and appears to be serving as a means of egress from Sub-Level 6. This an existing condition that is not being altered by the proposed addition. Therefore, the condition is permitted to remain. We recommend adding a striped pedestrian path should future alterations to the garage facilitate such work.

11.3 Dead Ends

Where more than one exit or exit access doorway is required, the exit access much be arranged such that there are no dead ends in corridors more than 50 feet (IBC 1020.4(2) and NFPA 101 Section 42.8.2.5.2).

11.4 Number of Exits and Continuity

Two means of egress must be provided from individual spaces where the occupant load and/or common path of travel distance exceeds the limitations of IBC Table 1006.2.1 and NFPA 101 Section 42.8.2.5.1.

Spaces with One Means of Egress

Use Group	Maximum Occupant Load	Maximum Common Path of Travel Distance (ft)
S-2	29	50

All spaces within each story must have access to the minimum number of independent exits from the story as required by IBC Table 1006.3.1 and NFPA 101 Section 7.4.1.2 below.

As discussed in Section 11.2 above, the existing vehicle exits are serving as part of the means of egress from Sub-Level 6. Since this existing condition is not being altered by the proposed addition, it is permitted to remain. We recommend adding a striped pedestrian path should future alterations to the garage facilitate such work. Occupants on Sub-Level 6 also have access to the garage stairs on Sub-Level 5.

IBC Table 1021.1 Minimum Number of Exits Per Story

Occupant Load (persons per story)	Minimum Number of Exits (per story)
1-500	2
501-1,000	3
More than 1,000	4

Where more than one means of egress is required, the exits must be separated by ½ of the overall diagonal distance of the space served (IBC 1007.1.1 and NFPA 101 Section 7.5.1.3.2).

11.5 Doors

A minimum clear width of 32 inches is required for doors in accordance with IBC 1010.1.1 and NFPA 101 Section 7.2.1.2.3.2. All doors serving an occupant load of 50 or more people must swing in the direction of egress travel (IBC 1010.1.2 and NFPA 101 Section 7.2.1.4.2).

12. ACCESSIBILITY

The accessibility requirements applicable to new construction apply to the addition (IEBC 1105.1). This includes the following requirements.

12.1 Accessible Route

At least one accessible route must be provided throughout the building and must connect each accessible story (ADA 206.2).

12.2 Accessible Entrances

At least 60% of public entrances must be accessible. Where direct access from parking structures to buildings or facility entrances are provided, such access must be accessible (ADA 206.4.1). In addition, where direct access is provided for

pedestrians from a parking structure to a building entrance, each direct access to the building must be accessible (ADA 206.4.2).

12.3 Parking

Accessible parking spaces must be provided in accordance with the following table (ADA 208.2).

Table 208.2 – Accessible Parking Spaces

Total Parking Spaces Provided	Minimum Number of Accessible Spaces
1-25	1
26-50	2
51-75	3
76-100	4
101-150	5
151-200	6
201-300	7
301-400	8
401-500	9
501-1,000	2% of total
1,001 and over	20 plus 1 for each 100 over 1,000

In addition to the accessible spaces required above, van accessible spaces must be provided at a rate of one for every six accessible spaces, but no less than one (ADA 208.2.4). Accessible parking spaces must be provided on the shortest accessible route to an accessible building entrance, or accessible pedestrian entrance to the parking facility. Where buildings have multiple accessible entrances with adjacent parking, the accessible spaces must be dispersed and located near the accessible entrances; however van accessible spaces are permitted to be grouped on one level (ADA 208.3).

Based on the plans provided to AKF on August 7, 2017, the garage appears to be provided with approximately 713 spaces. Therefore at least 15 accessible spaces, 3 of which are van accessible, must be provided. Based on the proposed plans, approximately 20 accessible spaces are being provided. Although none of the spaces are labeled as being van-accessible, it appears as though at least 3 van accessible spaces are provided based on the width of the parking spaces.

13. STRUCTURAL

This review does not include an analysis of structural requirements. Alterations to existing structural elements and the introduction of new structural loads must be reviewed with the structural engineer.

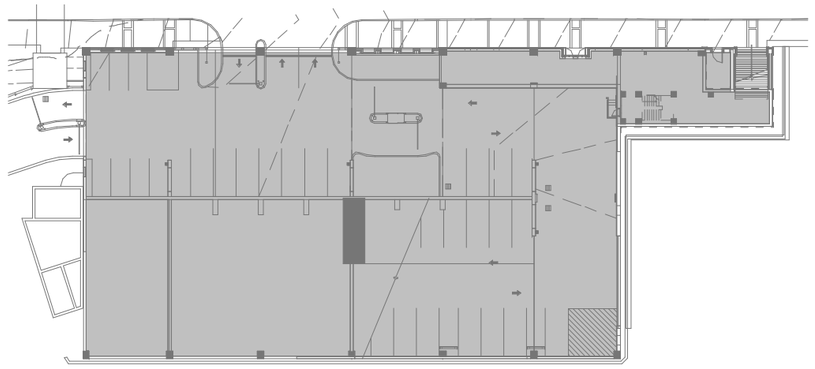
14. MECHANICAL

Open parking garages are not required to be provided with mechanical ventilation (IBC 406.5.10).

15. ENERGY CONSERVATION

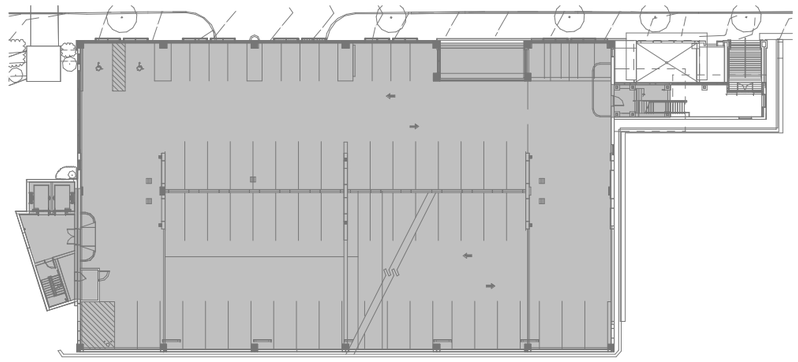
Additions to existing buildings must comply with the requirements of the IECC that are applicable to new construction; however the existing, unaltered portions of the building are not required to comply with such requirements. Additions must comply with IECC C402, C403, and C404 or ASHRAE 90.1 – 2013 (IECC C502.1).

APPENDIX A – HEIGHT AND AREA ANALYSIS



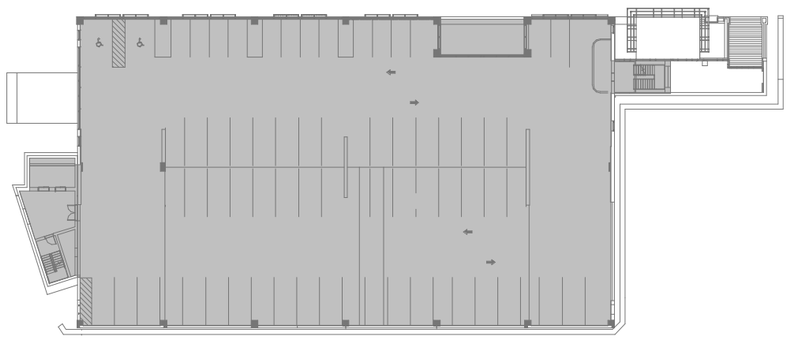
1 SUB-LEVEL 6 = 26,633 SF

SCALE: 1" = 60'-0"



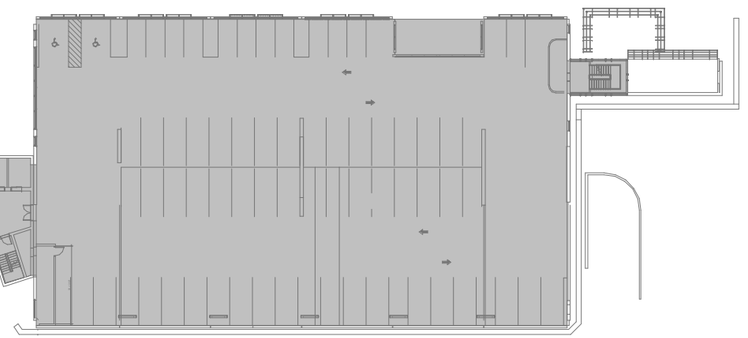
2 SUB-LEVEL 5 = 26,598 SF

SCALE: 1" = 60'-0"



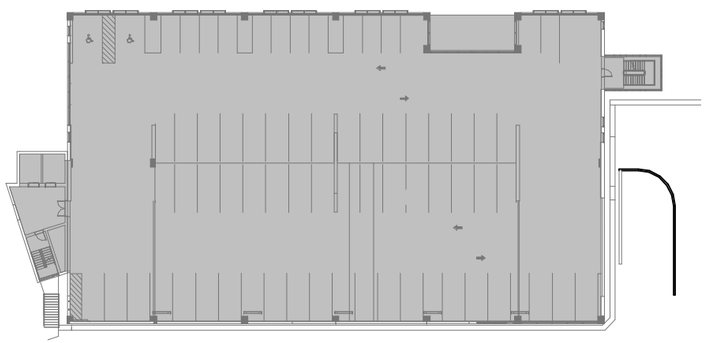
3 SUB-LEVEL 4 = 26,598 SF

SCALE: 1" = 60'-0"



4 SUB-LEVEL 3 = 26,598 SF

SCALE: 1" = 60'-0"



5 SUB-LEVEL 2 = 26,598 SF

SCALE: 1" = 60'-0"

HEIGHT & AREA SUMMARY

OPEN PARKING STRUCTURE IN TYPE IIA CONSTRUCTION

ELEMENT	PROPOSED	ALLOWED	STATUS
MAXIMUM AREA PER TIER (SF)	26,633	50,000	✓
AGGREGATE AREA (SF)	266,015	500,000	✓
HEIGHT (IN TIERS)	10	10	✓

AKF

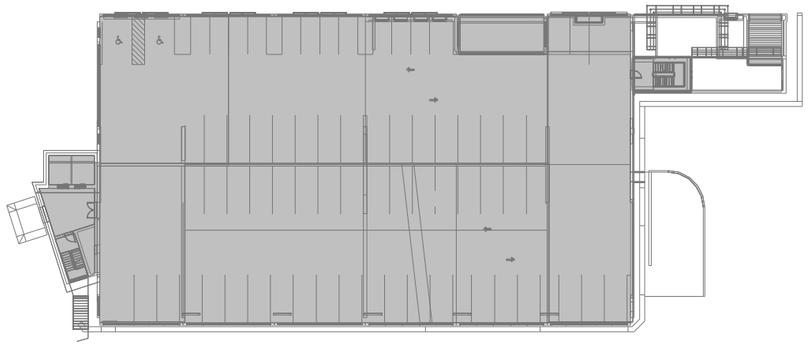
PROJECT: MMC - VISITOR GARAGE EXPANSION

TITLE: HEIGHT & AREA ANALYSIS - S6 THROUGH S2

PROJECT No.: B150311-000 DATE: 09/28/2017 CHKD BY: CMA

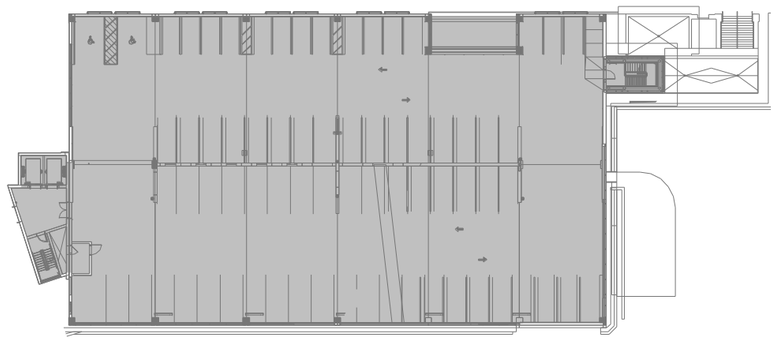
SKETCH No.: HA.001

SCALE: 1" = 60'-0"



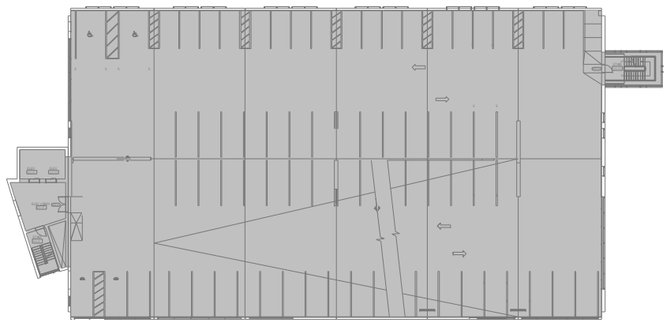
6 SUB-LEVEL 1 = 26,598 SF

SCALE: 1" = 60'-0"



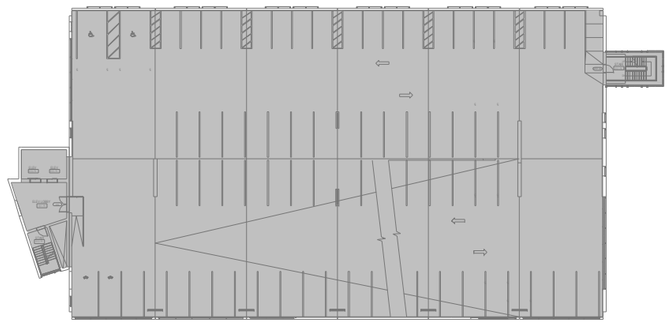
7 BASEMENT = 26,598 SF

SCALE: 1" = 60'-0"



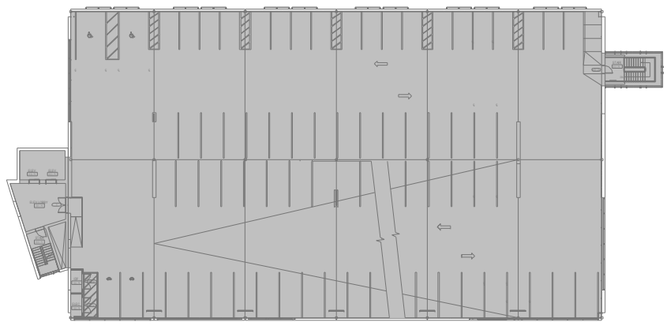
8 GROUND = 26,598 SF

SCALE: 1" = 60'-0"



9 LEVEL 1 = 26,598 SF

SCALE: 1" = 60'-0"



10 LEVEL 2 = 26,598 SF

SCALE: 1" = 60'-0"

HEIGHT & AREA SUMMARY

OPEN PARKING STRUCTURE IN TYPE IIA CONSTRUCTION

ELEMENT	PROPOSED	ALLOWED	STATUS
MAXIMUM AREA PER TIER (SF)	26,633	50,000	✓
AGGREGATE AREA (SF)	266,015	500,000	✓
HEIGHT (IN TIERS)	10	10	✓

AKF

PROJECT: MMC - VISITOR GARAGE EXPANSION

TITLE: HEIGHT & AREA ANALYSIS - S1 THROUGH LEVEL 2

PROJECT No.: B150311-000 DATE: 09/28/2017 CHKD BY: CMA

SKETCH No.: HA.002

SCALE: 1" = 60'-0"

AKF

1655 North Fort Myer Drive
Suite 200
Arlington, VA 22209
T: 703.351.7686

99 Bedford Street
2nd Floor
Boston, MA 02111
T: 617.737.1111

Higuera No. 35 P.B.
Coyoacan
Mexico, D.F. 04000
T: 52.555.659.4573

Quinto Retorno Circuito Osa
Mentor No.8
1Ery 2Do Piso, Reserva Territorial
Cholula, Puebla CP 72810
T: 52.22.210.3378

100 South 5th Street
Suite 2060
Minneapolis, MN 55402
T: 612.354.2442

One Liberty Plaza
165 Broadway, 22nd Floor
New York, NY 10006
T: 212.354.5656

1500 Walnut Street
Suite 1400
Philadelphia, PA 19102
T: 215.735.7290

2768 Superior Drive NW
Suite 200
Rochester, MN 55904
T: 507.208.4488

700 Alexander Park
Suite 204
Princeton, NJ 08540
T: 609.750.9590

750 East Main Street
Suite 501
Stamford, CT 06902
T: 203.323.4333

www.akfgroup.com

U.S. Department of Transportation
Federal Aviation Administration

OMB CONTROL NUMBER: 2120-0036
EXPIRATION DATE: 4/30/2017

NOTICE FOR CONSTRUCTION, ALTERATION AND DEACTIVATION OF AIRPORTS

A. Airport Owner ☑ Check if this is also the Property Owner

1. Name and Address ☑ Check if this is the Airport's Physical Address

Maine Medical Center
22 Bramhall Street
Portland, ME 04102

2. Phone: (732) 870-8883
3. Email: info@heliexp.com

B. Airport Manager (Complete if different than the Airport Owner)

1. Name and Address ☐ Check if this is the Airport's Physical Address

HeliExperts
489 Broadway
Long Branch, NJ 07740

2. Phone: (732) 870-8883
3. Email: info@heliexp.com

C. Purpose of Notification (Answer all questions that apply)

1. Construct or Establish an: ☐ Airport ☐ Ultralight Flightpark ☐ Balloonport ☑ Heliport ☐ Seaplane Base ☐ Other
2. Construct, Alter or Realign a: ☐ Runway ☑ Helipad(s) ☐ Other ☐ Taxiway (Public Use Airports only)
3. Change Status From/To: ☐ VFR to IFR ☐ IFR to VFR ☐ Private Use to Public Use ☐ Public Use to Other
4. Change Traffic Pattern: ☐ Direction _____ ☐ Altitude _____ ☐ Other (Describe Below)
5. Deactivate: ☐ Airport ☐ RWY _____ ☐ TWY _____
6. Description:
Establishment of a new Hospital, Private, PPR rooftop heliport at the Maine Medical Center in Portland, Maine

D. Name, Location, Use and Type of Landing Area

1. Name of Landing Area: Maine Medical Center
2. Loc ID (for existing):
3. Associated City and State: Portland, ME
4. Distance from City: 0 (nm)
5. County (Physical Location): Cumberland
6. Direction from City: W
7. Latitude: 43° 39' 14.3800"
8. Longitude: 70° 16' 32.6300"
9. Elevation: 240
10. Current Use: ☑ Private ☐ Public ☐ Private Use of Public Lands
11. Ownership: ☑ Private ☐ Public ☐ Military (Branch) _____
12. Airport Type: ☐ Airport ☑ Heliport ☐ Ultralight Flightpark ☐ Seaplane Base ☐ Balloonport ☐ Other

E. Landing Area Data (List any Proposed, New or Unregistered Runways, Helipads etc.)

1. Airport, Seaplane Base or Ultralight Flightpark (use second page if needed)			2. Heliport, Balloonport or other Landing Area (use second page if needed)		
RWY ID	/	/	Helipad ID	H1	H2
Lat. & Long.	Show on attachment(s)	Show on attachment(s)	Lat. & Long.	Show on attachment(s)	Show on attachment(s)
Surface Type			Surface Type	Concrete	Concrete
Length (feet)			TLOF Dimensions	54' Diameter	40' Diameter
Width (feet)			FATO Dimensions	97.2' Diameter	68.1' Diameter
Lighting (if any)			Lighting (if any)	Perimeter	Perimeter
Right Traffic (Y/N)	/	/	Ingress/Egress (Degrees)	085/265, 253/073, 251/071	085/265, 253/073, 251/071
Elevation (AMSL)	Show on attachment(s)	Show on attachment(s)	Elevation (AMSL)	Show on attachment(s)	Show on attachment(s)
VFR or IFR	/	/	Elevated Height (AGL)	120	120

F. Operational Data (Indicate if the number provided is Actual or Estimated)

	1. Number of Based Aircraft		2. Average Number of Monthly Landings	
	Present or Estimated	Estimated in 5 Years	Present or Estimated	Estimated in 5 Years
Single Engine	0	0	0	0
Multi Engine	0	0	0	0
Jet	0	0	0	0
Helicopter	0	0	450	750
Glider	0	0	0	0
Military	0	0	0	0
Ultralight	0	0	0	0

3. What is the Most Demanding Aircraft that operates or will operate at the Airport? (Provide approach speed, rotor diameter, etc. if known)
Design Helicopter: Coast Guard MH-60 J-Hawk // Rotor Diameter = 53.8' // Overall Length = 64.8' // Max Gross Weight = 22,000 lbs.

4. Are IFR Procedures for the Airport Anticipated? ☑ **Yes** ☐ **No** **if Yes, Within** 2 **Years**

G. CERTIFICATION: I hereby certify that all of the above statements made by me are true and complete to the best of my knowledge.

1. Name, title of person filing this notice (type or print)
Raymond A. Syms
Authorized Agent

2. Signature (in ink):

3. Date: 08/29/2017
4. Phone: (732) 870-8883
5. Email: info@heliexp.com

Maine Medical Center, Portland, ME / FAA 7480 Heliport Packet

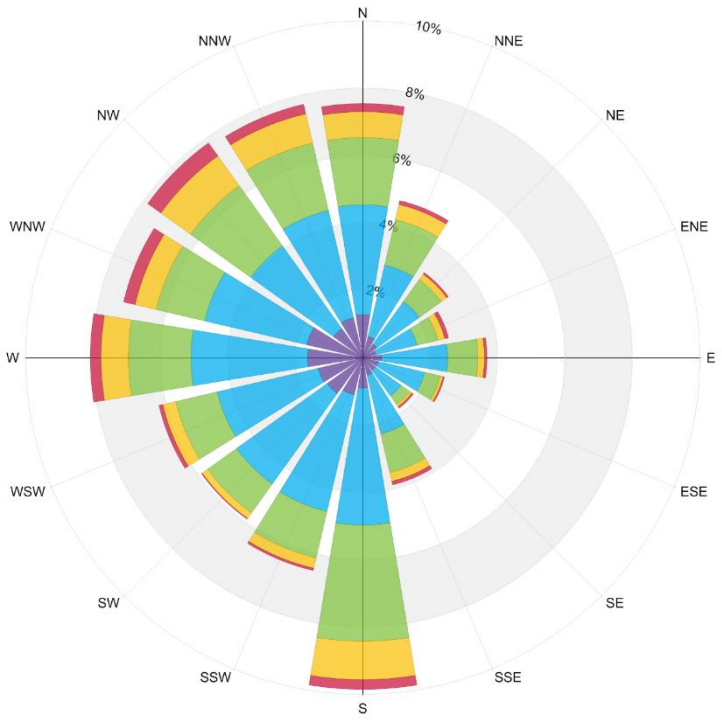
Proposed Site and Aviation Sectional Airspace Overlay



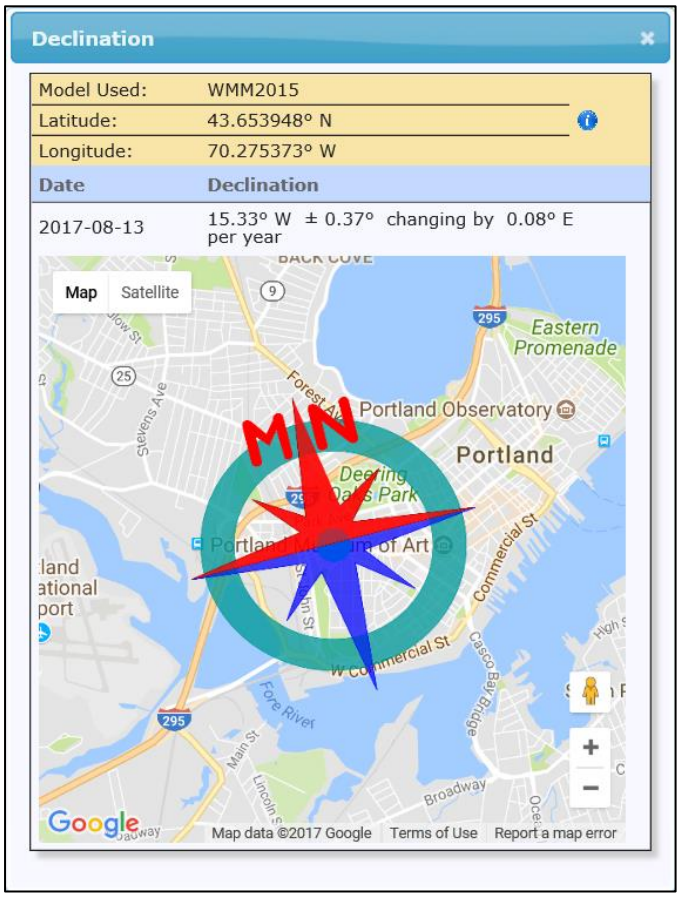
HeliExperts International LLC ©2017 All Rights Reserved

Maine Medical Center, Portland, ME / FAA 7480 Heliport Packet

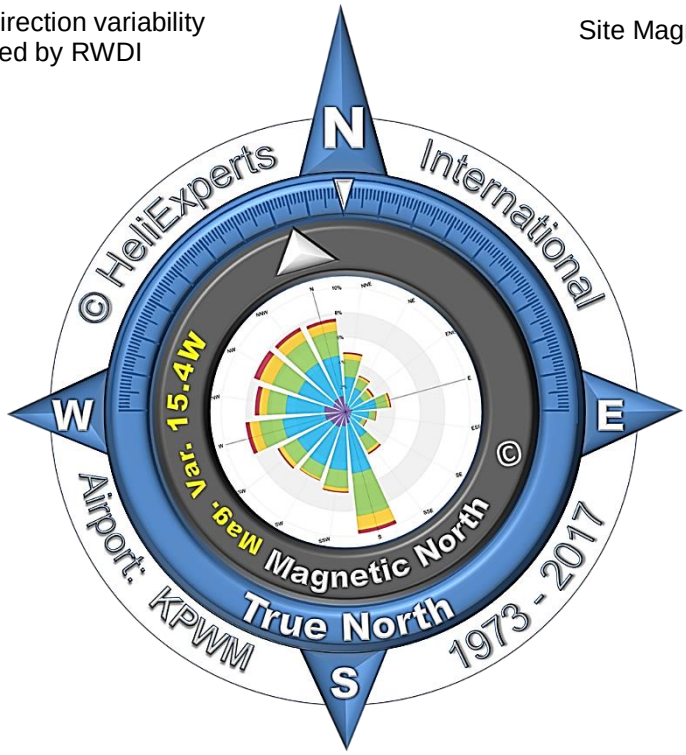
Local Winds and Magnetic Declination



Local wind speed and direction variability
For KPWM Provided by RWDI



Site Magnetic Declination



HeliExperts site specific Wind & Compass
Rose for both Magnetic and True North

HeliExperts International LLC ©2017 All Rights Reserved

Maine Medical Center, Portland, ME / FAA 7480 Heliport Packet

Airports and Heliports within 10NM

There are 4-Heliports, 7-Airports and 1 Ultraflight Flightpark (Public, Private and Military) on record and listed in the FAA 5010 Airport Master Record database located within a 10-nautical mile radius of the proposed Maine Medical Center heliport site located at:

Address: Maine Medical Center
22 Bramhall Street
Portland, ME 04102

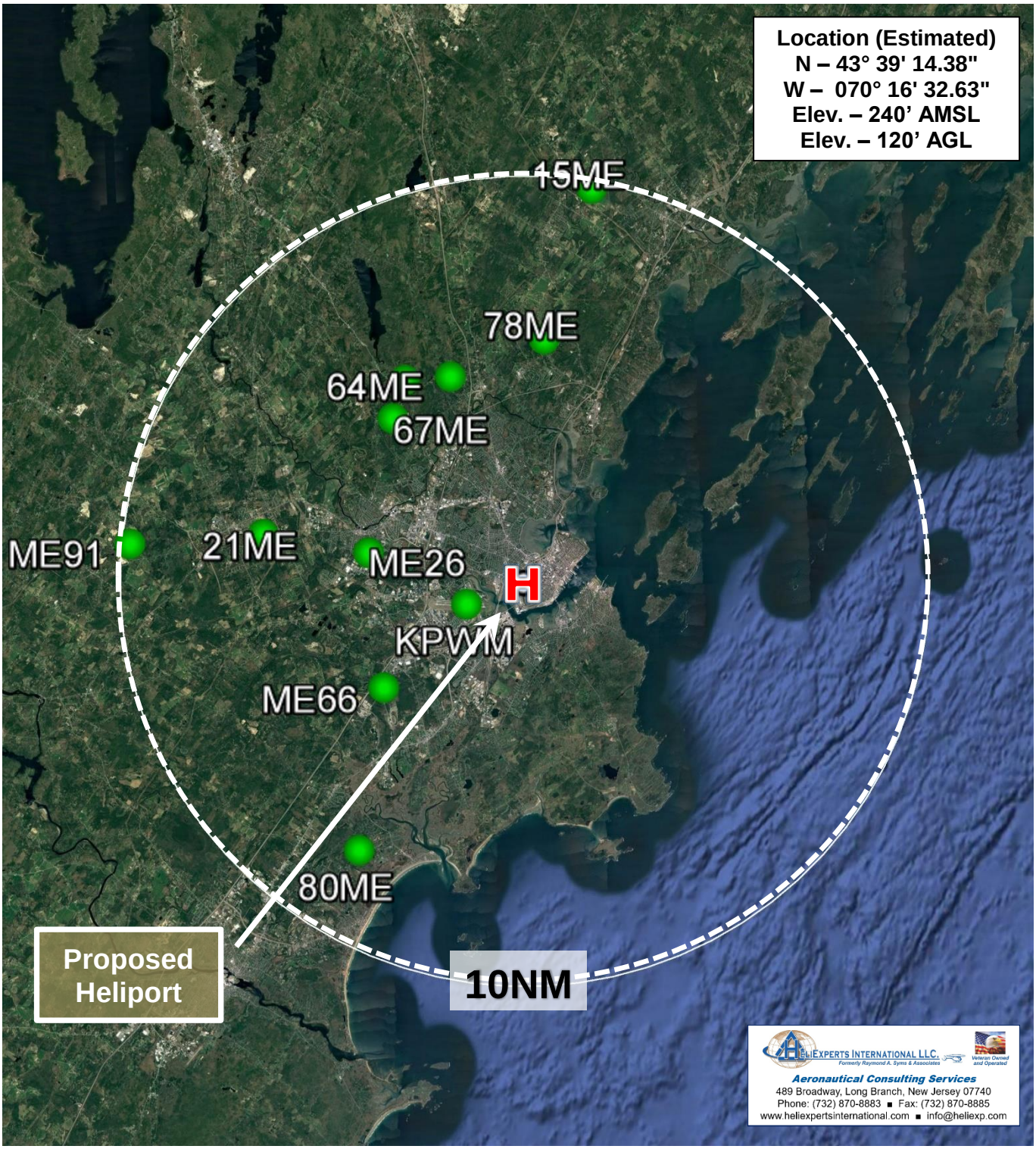
Coordinates: Latitude: N – 43° 39' 14.38"
Longitude: W – 070° 16' 32.63"

ID	CITY	AIRPORT NAME	WHERE
PWM	Portland	Portland International Jetport Airport	1.5 nm W
ME26	Westbrook	Super Cub Field Airport	3.9 nm W
ME66	Scarborough	Scottow Bog Ultralight Flightpark	4.3 nm SW
67ME	Westbrook	Sta-Kel Heliport	5.2 nm NW
64ME	Falmouth	Dave Libby Heliport	5.4 nm NNW
07ME	Westbrook	Westbrook Heliport	5.8 nm NNW
78ME	Falmouth	Eric's Field Airport	6.0 nm N
21ME	Gorham	Moody Field Airport	6.5 nm WNW
80ME	Scarborough	Bayley's Field Airport	7.7 nm SSW
ME21	Chebeague Island	Chebeague Island Heliport	7.9 nm NE
ME91	Gorham	Webster Field Airport	9.6 nm W
15ME	North Yarmouth	Eagle Field Airport	9.9 nm NNE

HeliExperts International LLC ©2017 All Rights Reserved

Maine Medical Center, Portland, ME / FAA 7480 Heliport Packet

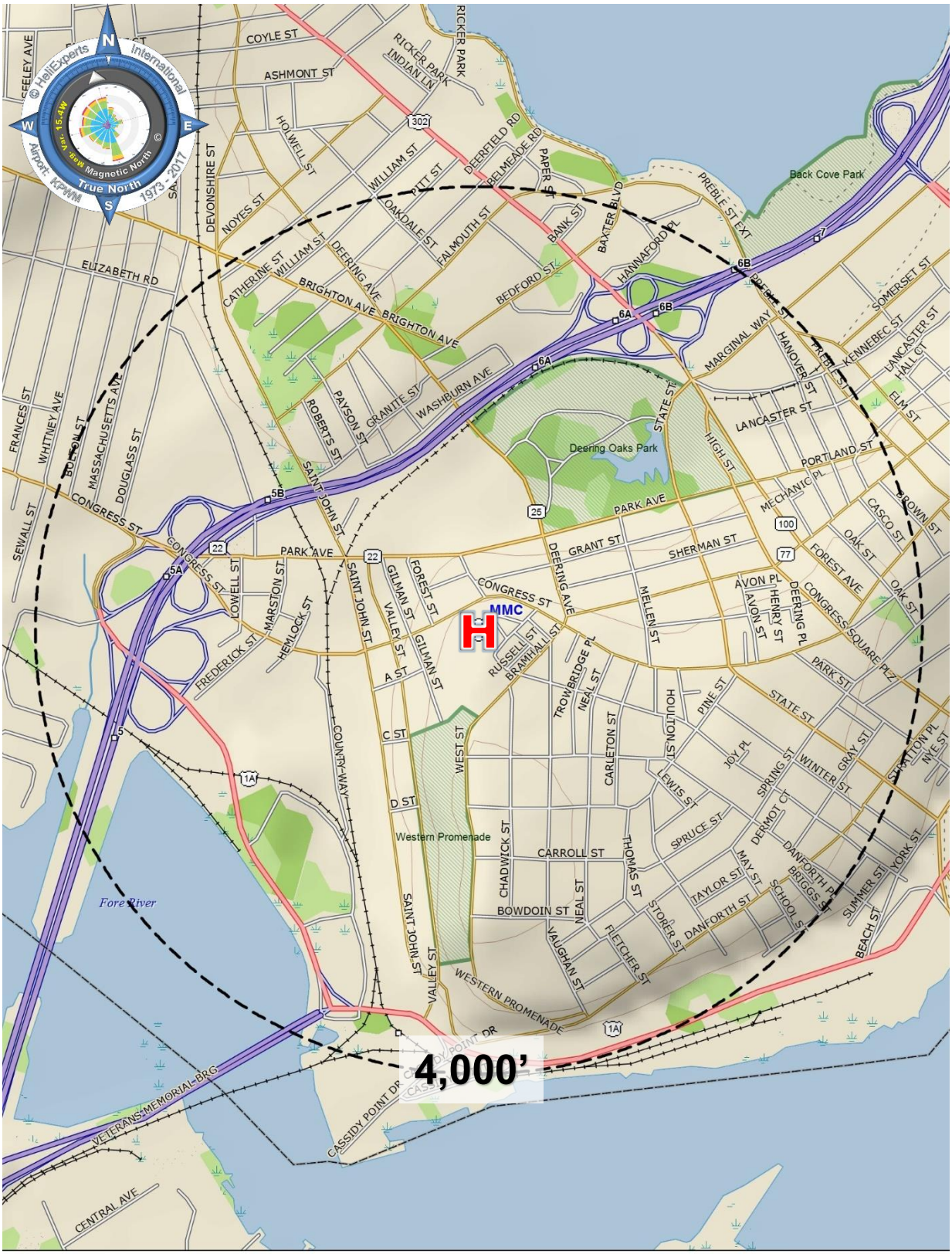
Plotted Airports & Heliports within 10NM



HeliExperts International LLC ©2017 All Rights Reserved

Maine Medical Center, Portland, ME / FAA 7480 Heliport Packet

Site Location Topographical Airspace Considerations



Maine Medical Center, Portland, ME / FAA 7480 Heliport Packet

Proposed Approach/Departure Paths (Satellite Overlay)



Proposed Approach/Departure Paths:

A. Straight Approach
   085° / 265° Magnetic // 070° / 250° True

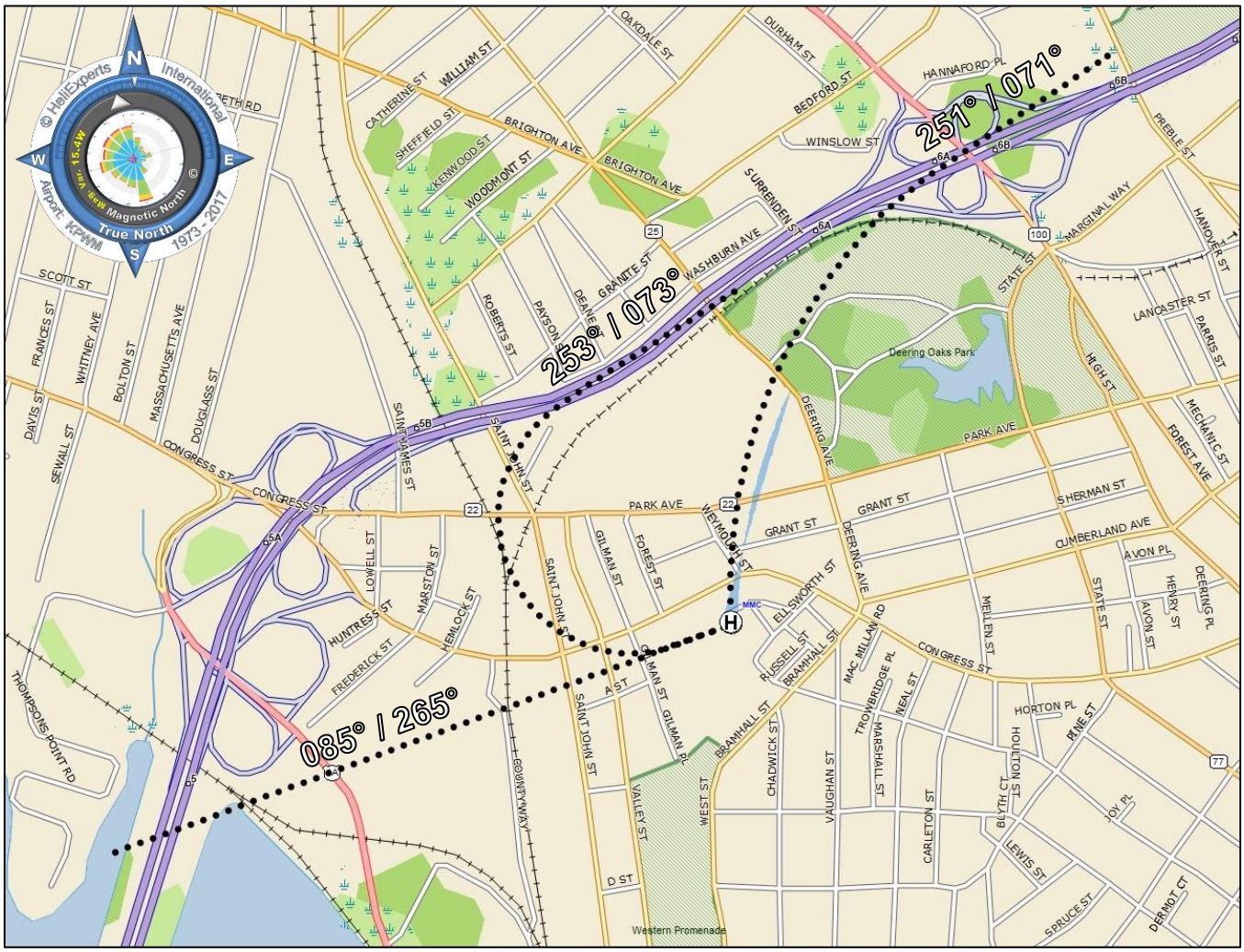
B. Curved Approach, alternate to A *for noise abatement purposes*
   a. 253° / 073° Magnetic // 238° / 058° True

C. Curved Approach
   a. 251° / 071° Magnetic // 235° / 055° True

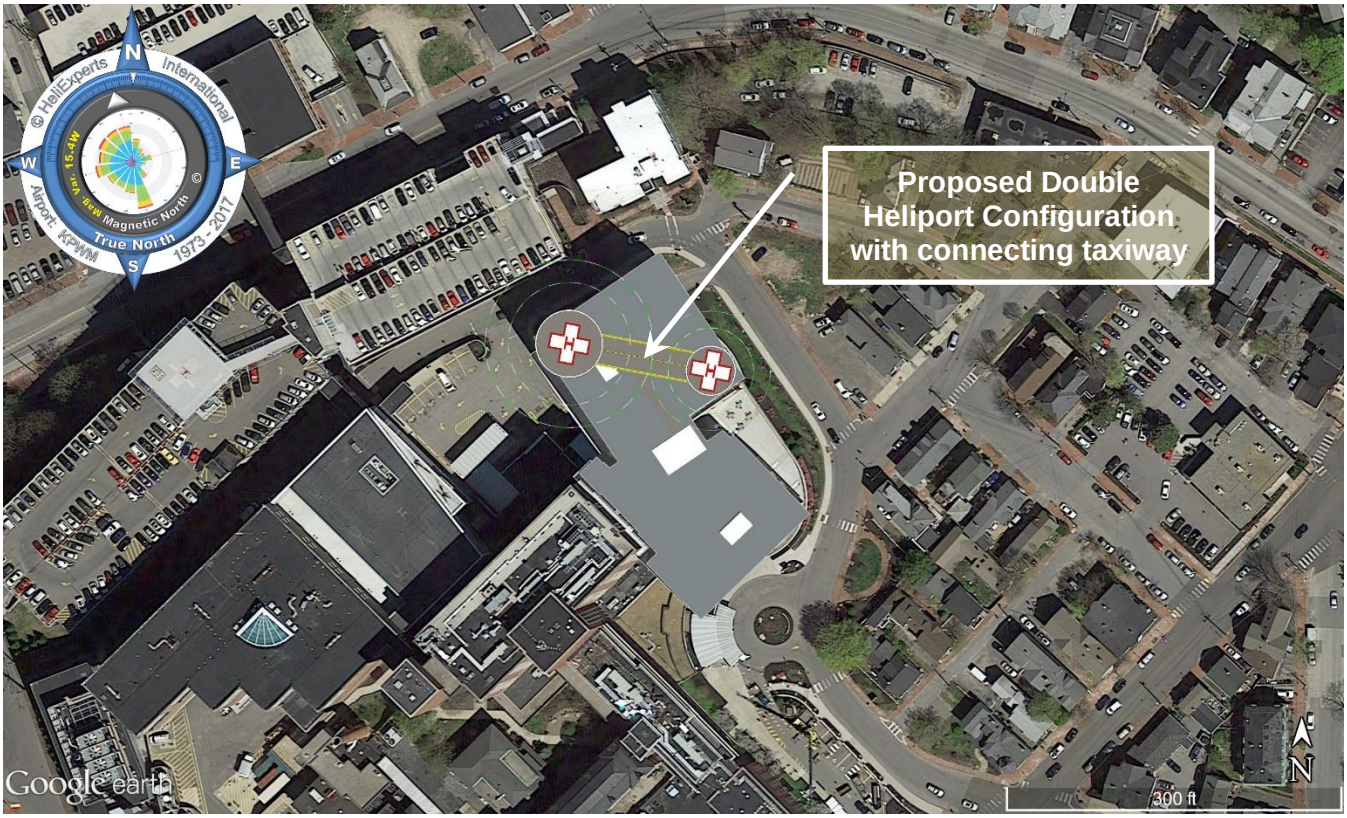
HeliExperts International LLC ©2017 All Rights Reserved

Maine Medical Center, Portland, ME / FAA 7480 Heliport Packet

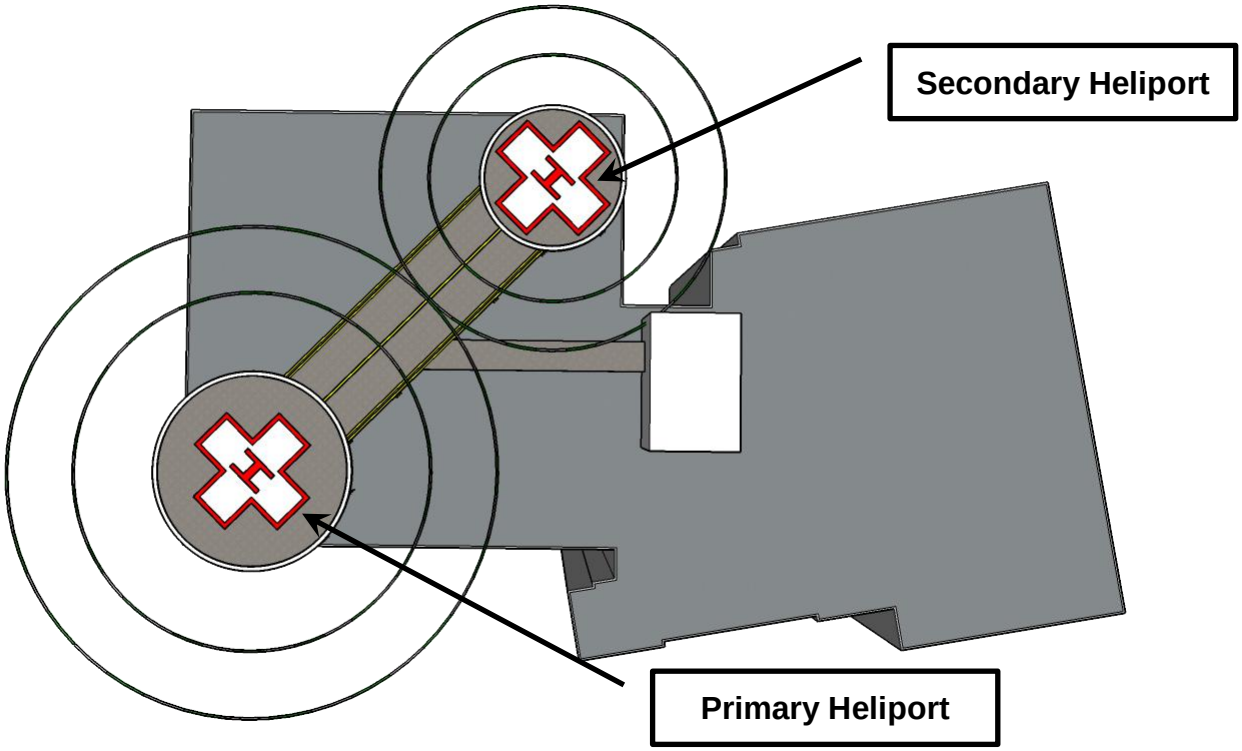
Proposed Approach/Departure Paths (Topographical Overlay)



Proposed Heliport Site Location and Layout



Double Heliport Configuration



HeliExperts International LLC ©2017 All Rights Reserved

PRIMARY HELIPORT DIMENSIONS

Based on the largest helicopter that will service this location being the Coast Guard MH-60/HH-60 Jayhawk helicopter. The primary heliport will also be the designated landing area for the S-76 as well.

- MH-60 Rotor Diameter: 53.8 feet
- MH-60 Overall Length: 64.8 feet
- MH-60 Maximum Gross Weight: 22,000 lbs.
- MH-60Undercarriage: Length = 29' / Width = 9.7 feet

Minimum Touchdown and Liftoff (TLOF) Dimensions

The minimum TLOF dimension (length, width, or diameter) is equal to the rotor diameter (RD) of the design helicopter but not less than 40 feet (12 m).

- 1 X Rotor Diameter = **53.8 feet** (rounded up to 54')

Minimum Final Approach Departure Area (FATO) Dimensions

Design the FATO so its minimum width, length, or diameter is 1½ times the overall length (D) of the design helicopter.

- 1.5 X Overall Length (64.8) = **97.2 feet**

Minimum Safety Area Width Dimensions

Minimum VFR safety area width based on standard hospital heliport markings is 1/3 Rotor Diameter but not less than 10 feet

- 1/3 RD (53.8) = 18'
- Overall safety area = 18' X 2 + FATO(97.2) = **133.2 feet**

HeliExperts International LLC ©2017 All Rights Reserved

SECONDARY HELIPORT DIMENSIONS

The secondary heliport is based on the smaller helicopters servicing this location which includes the; AW-109, EC-135 and the EC-145.

*Special note for a hospital heliport the smallest allowable Touchdown and Liftoff Ares is 40 feet.

The following is a composite helicopter representation for the secondary heliport made up of the largest dimensions and weights of the above three aircraft.

- AW-109 & EC-145 Rotor Diameter: 36.1 feet
- AW-109 Overall Length: 42.8 feet
- EC-145 Maximum Gross Weight: 7,904 lbs
- Undercarriage: Length (AW-109): 12.3 / Width (EC-145): 7.9

Minimum Touchdown and Liftoff (TLOF) Dimensions

The minimum TLOF dimension (length, width, or diameter) is equal to the rotor diameter (RD) of the design helicopter but not less than 40 feet (12 m).

- 1 X Rotor Diameter = 36.1 feet / *minimum = **40 feet**

Minimum Final Approach Departure Area (FATO) Dimensions

Design the FATO so its minimum width, length, or diameter is 1½ times the overall length (D) of the design helicopter.

**Special Note: minimum separation between the perimeters of the FATO and TLOF are equal to: ¾ OL – ½ RD*

- 1.5 X Overall Length (42.8) = 64.2 feet
- Minimum Perimeter between TLOF & FATO: ¾ (42.8) – ½ (36.1) = 14.05
  - 14.05 X 2 + TLOF (40) = **68.1 feet**

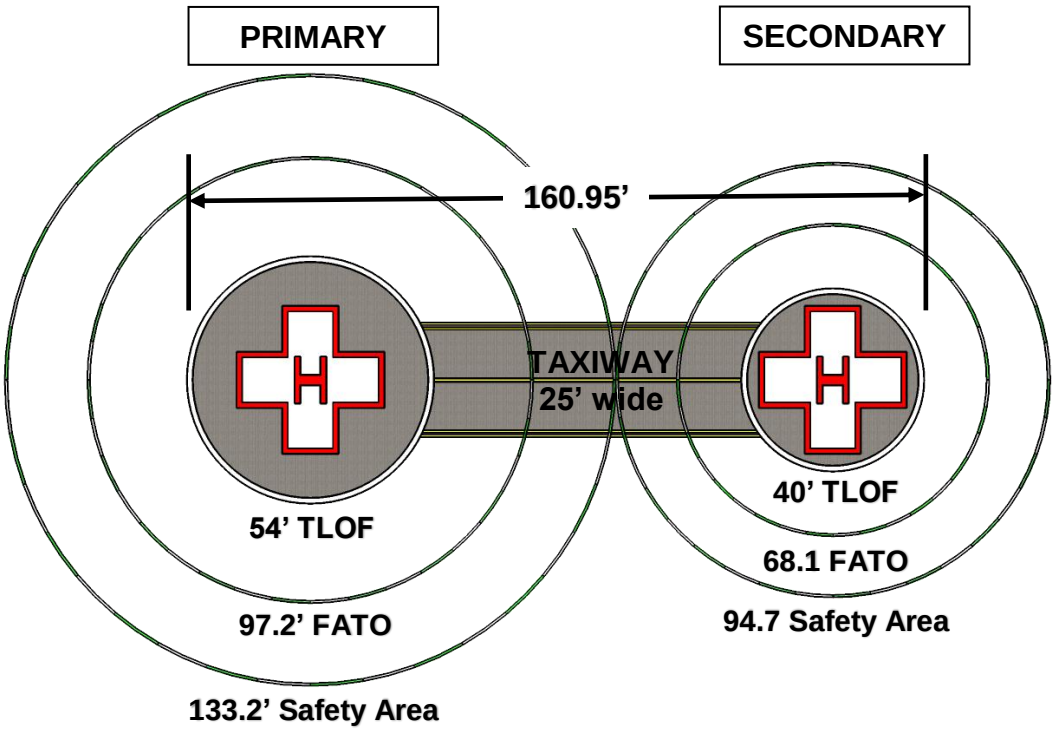
Minimum Safety Area Width Dimensions

Minimum VFR safety area width based on standard hospital heliport markings is 1/3 Rotor Diameter but not less than 10 feet

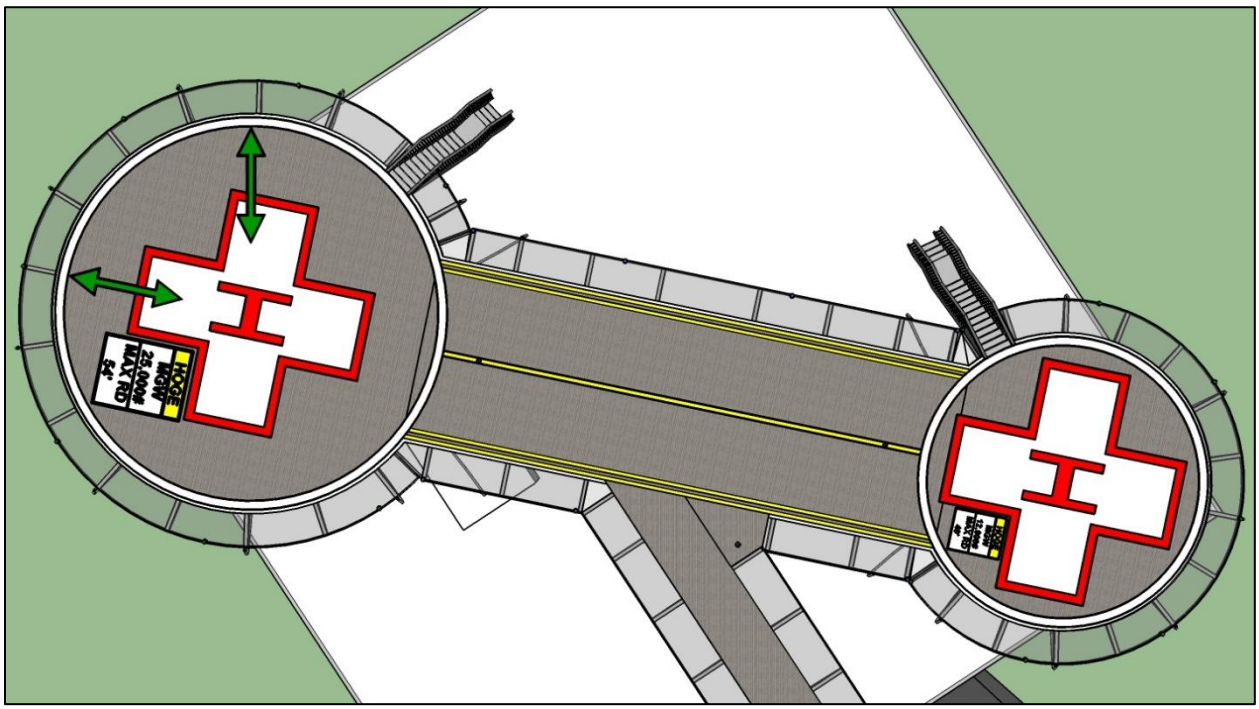
- 1/3 RD (40) = 13.3’
- Overall safety area = 13.3’ X 2 + FATO(68.1) = **94.7 feet**

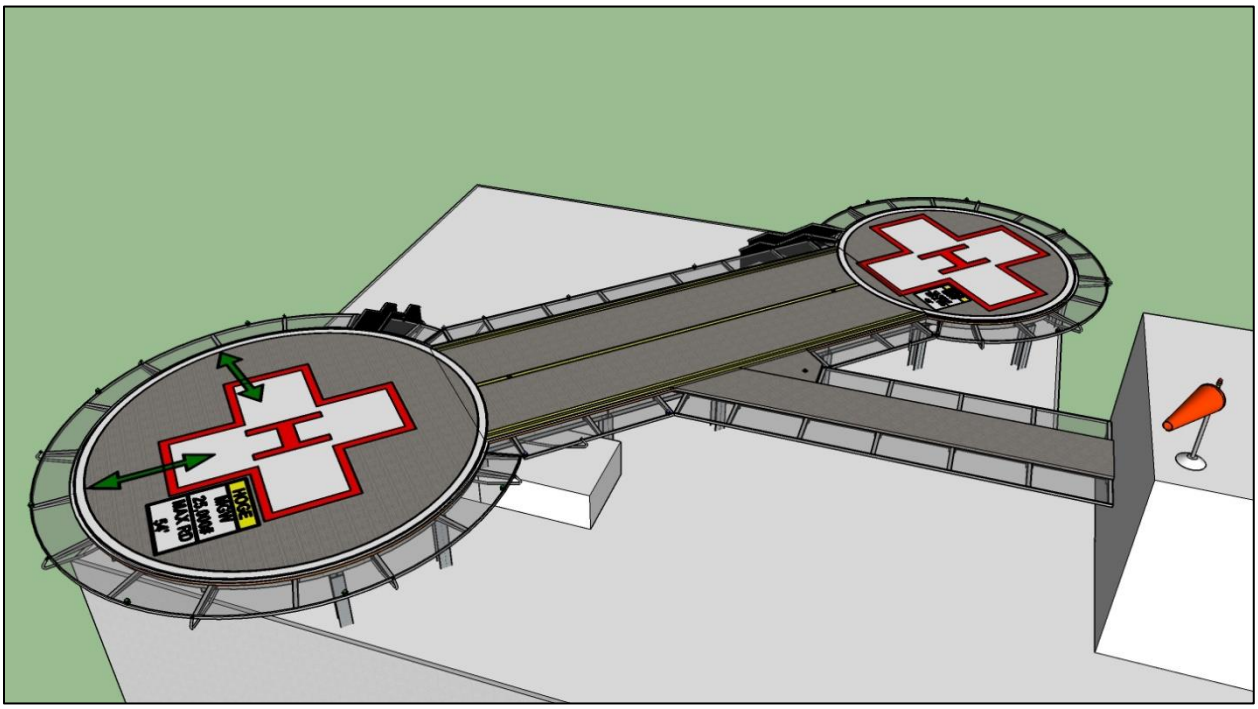
HeliExperts International LLC ©2017 All Rights Reserved

PROPOSED LAYOUT:



CONCEPTUAL EAST WING OVERLAY:





WINDSOCK PLACEMENT

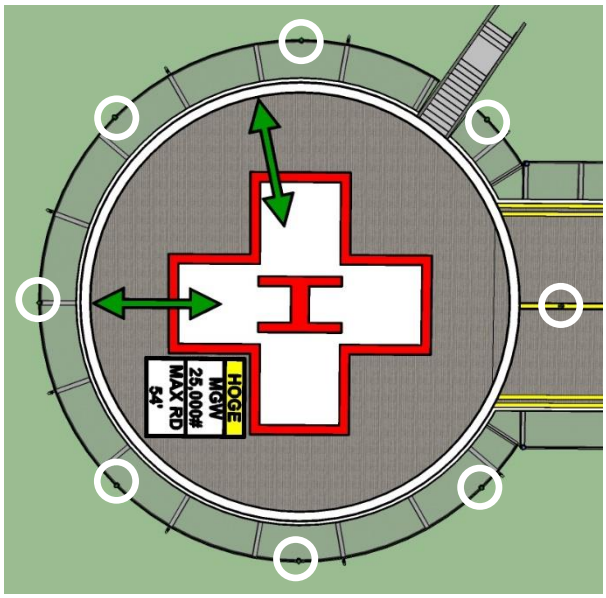
Primary windsock to be located on top of elevator tower. Secondary windsock placement yet to be determined.



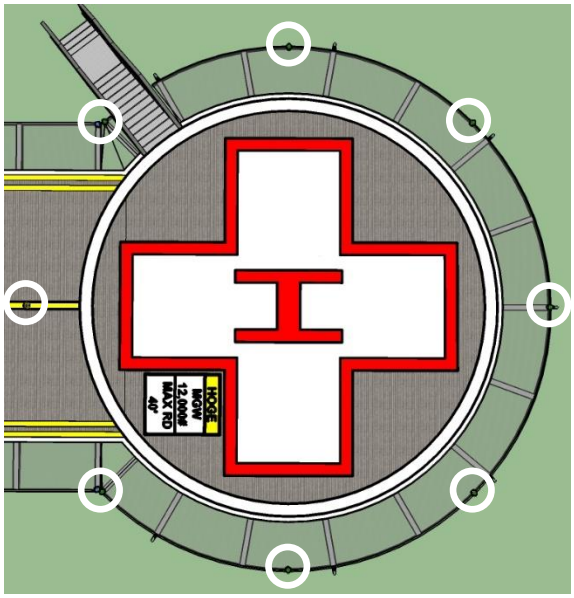
ADB WC 807
LED Internally Lit
Wind Cone

HeliExperts International LLC ©2017 All Rights Reserved

Heliport Lighting Arrangement

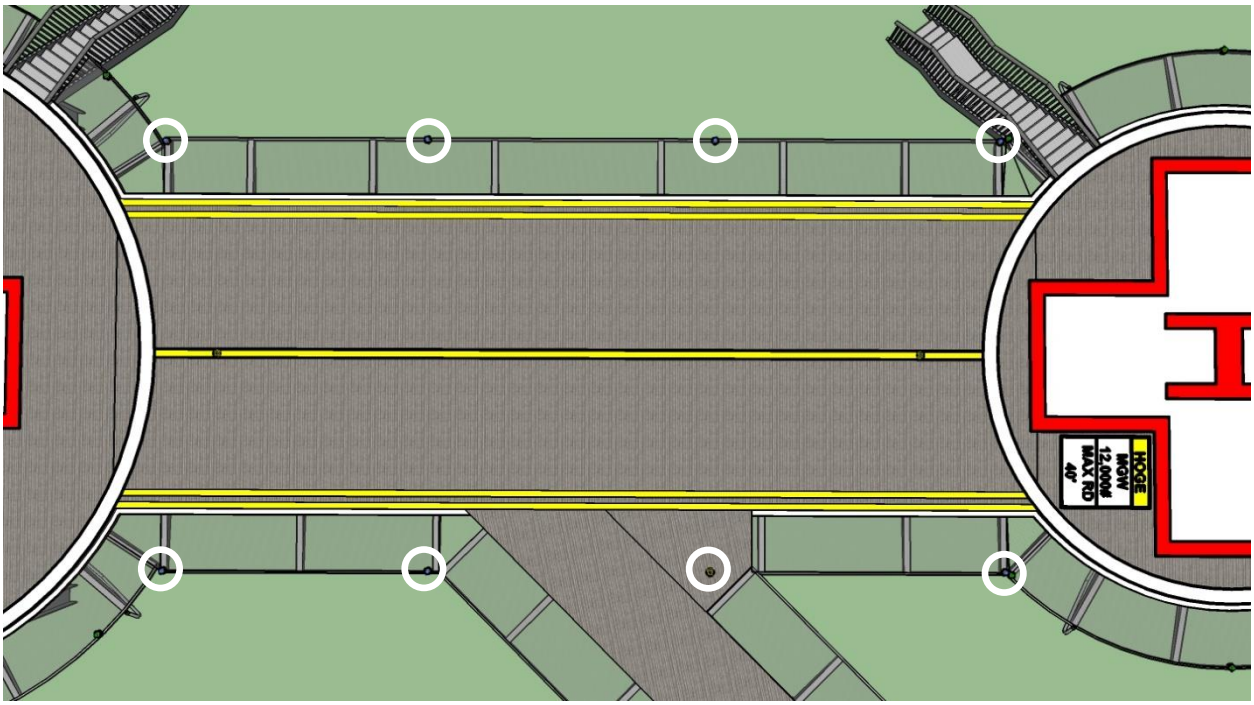


Primary TLOF Perimeter Lighting Layout



Secondary TLOF Perimeter Lighting Layout

Taxiway Lighting



HeliExperts International LLC ©2017 All Rights Reserved

Maine Medical Center, Portland, ME / FAA 7480 Heliport Packet

Heliport Lighting

ADB LED Elevated Heliport Perimeter Light EHP-L



Installed on perimeter safety net

ADB LED In-pavement Utility & Heliport Perimeter Light IUL-L



Used in concrete taxiway 1 each

Taxiway Lighting

L-861T Elevated Taxiway Edge LED (ETES) Light



Installed on perimeter safety net

Obstruction Lighting

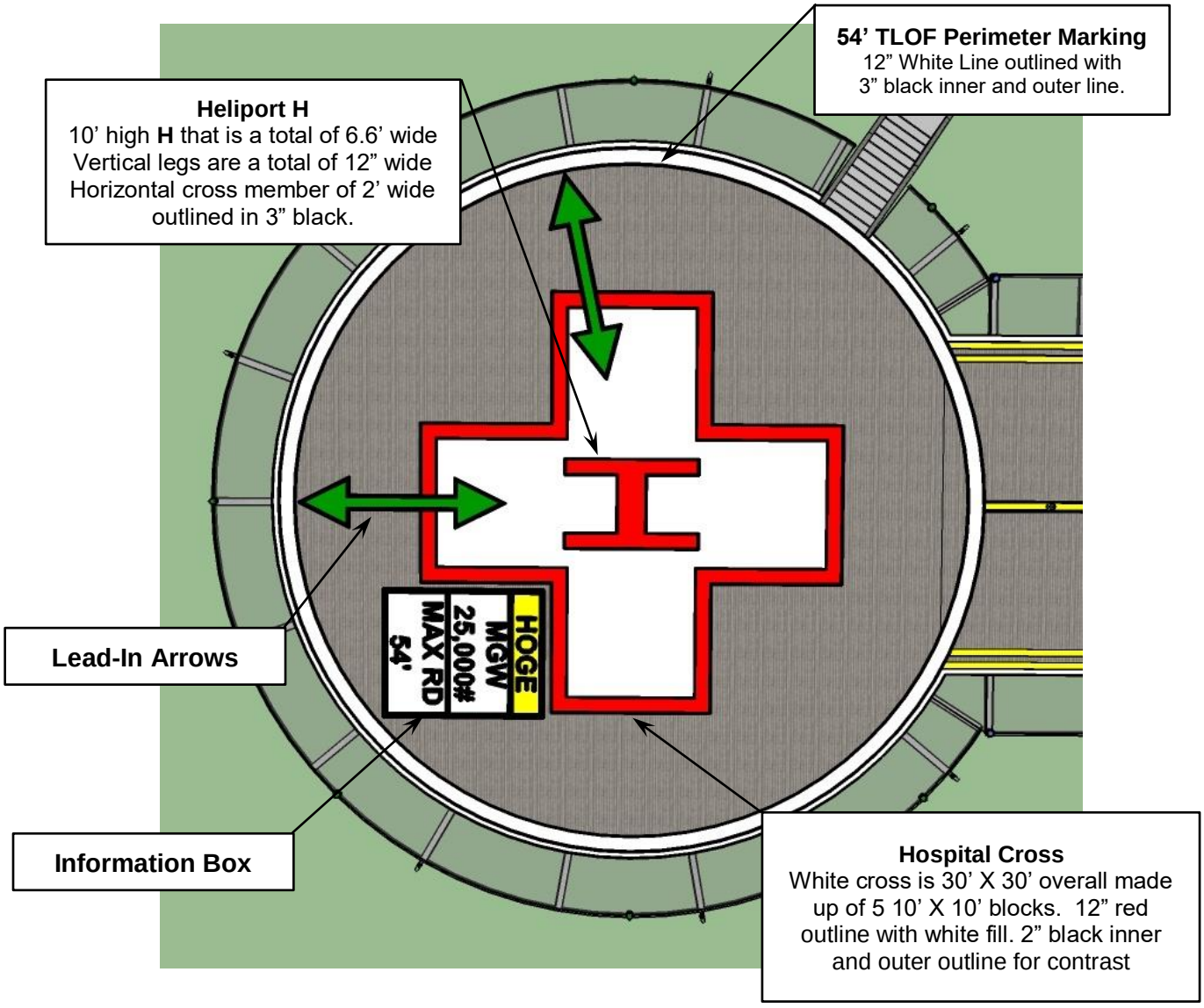
ADB LED LED Steady Burning Obstruction Light L-810(L)



Installed on all applicable obstructions

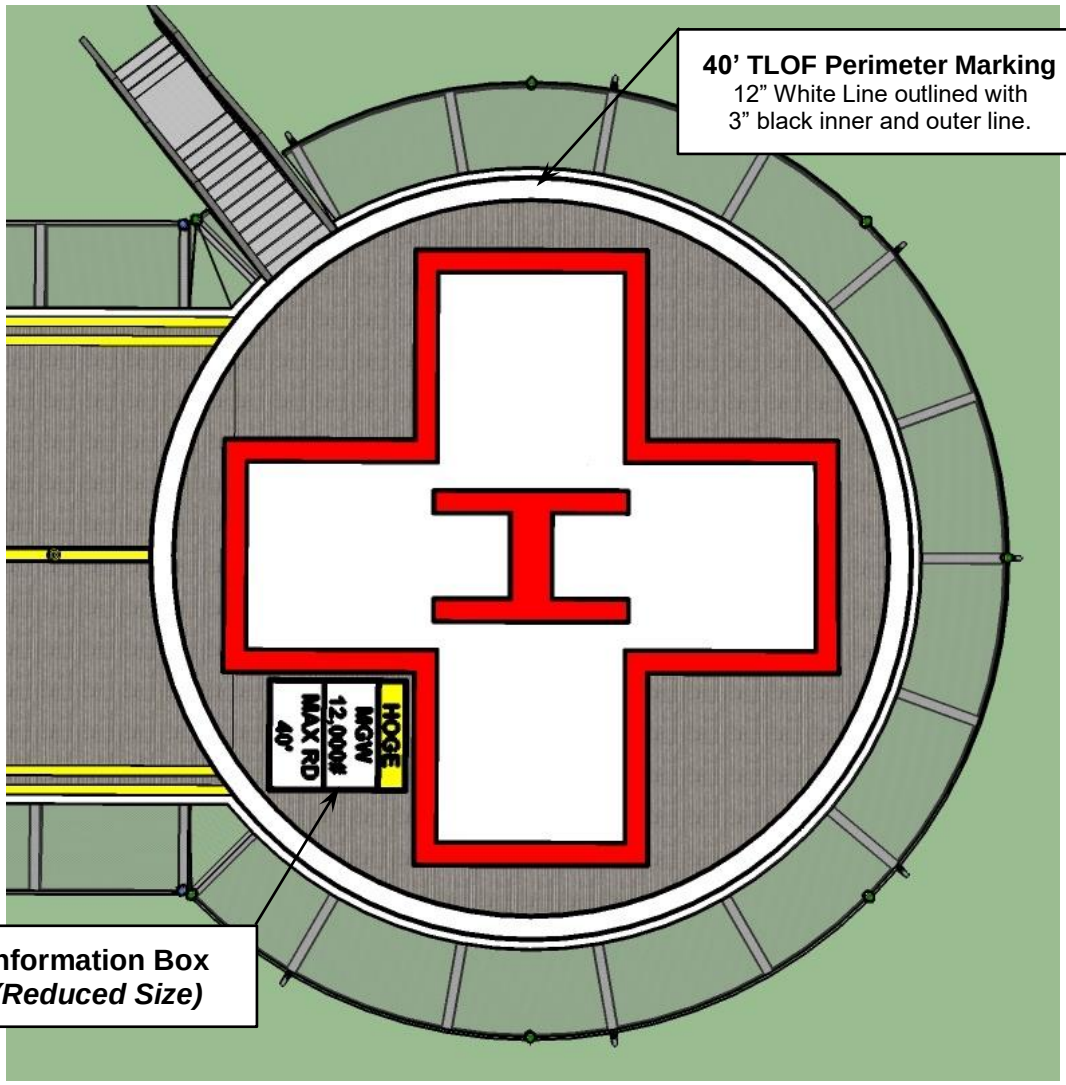
HeliExperts International LLC ©2017 All Rights Reserved

Primary Heliport Markings



HeliExperts International LLC ©2017 All Rights Reserved

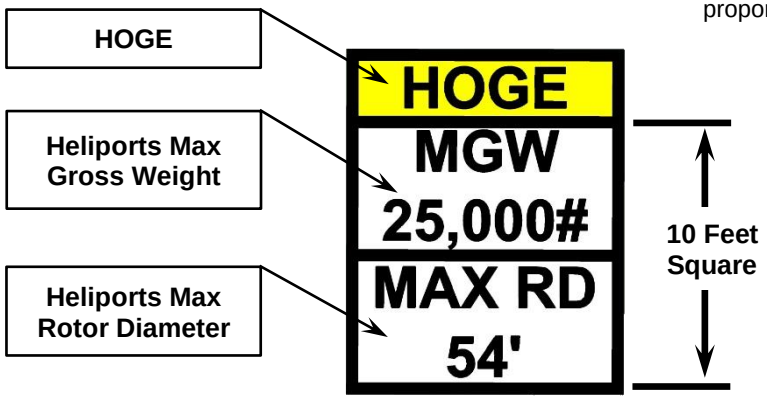
Secondary Heliport Markings



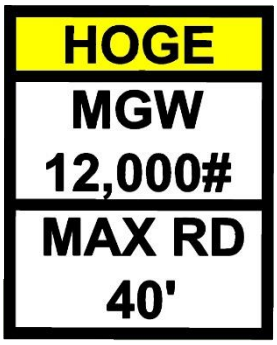
HeliExperts International LLC ©2017 All Rights Reserved

HELIPORT INFORMATION BOX

Heliport Information Box
18” High Letters and Numbers
5” Vertical Stroke with rest in proportion to size



PRIMARY TLOF

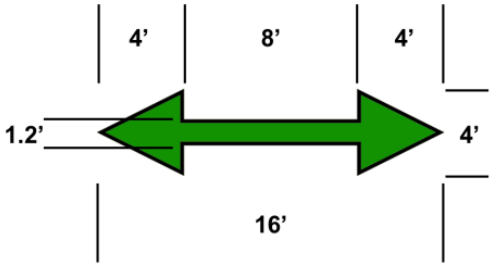


SECONDARY TLOF
Reduced Size

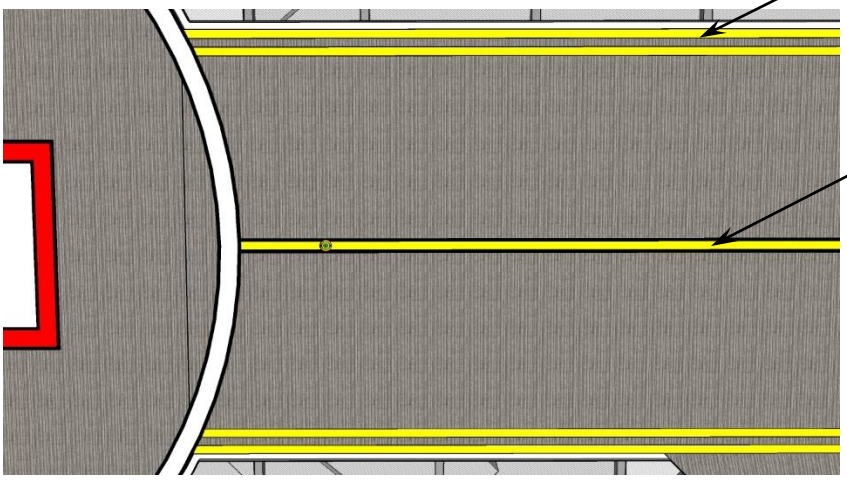
HOGE: Hover Out of Ground Effect Power Required

LEAD-IN ARROWS

Green Lead-In Arrows
Outlined in 2” black



TAXIWAY MARKINGS



Edge Markings
Two Continuous 6” Yellow Lines spaced 6” apart

Center Line Marking
6” Wide Yellow Center Line with 2” Black Outline

HeliExperts International LLC ©2017 All Rights Reserved

RUSSELL ACOUSTICS, LLC
Consulting Engineers in Sound and Vibration

1525-A BEAVER DAM ROAD
POINT PLEASANT, NJ 08742
973.283.0001
973.464.9724 (CELL)

6 August 2017

Mr. Dennis Morelli, AIA
Manager of Facilities Development
Maine Medical Center
22 Bramhall Street, Portland, ME 04102

Re: Heliport Relocation Project
Sound Exposure Study Methodology

Dear Mr. Morelli:

Russell Acoustics LLC was retained to participate in a study of your new proposed rooftop heliport configuration. Maine Medical Center (MMC) has operated a heliport at this site for several years, on the roof of the parking garage, but increased need for emergency services necessitates a second pad. Further, the need to take down the parking garage means a new location is needed for the heliport.

Over a three day period – 1-3 May, 2017 – sound measurements were made around the hospital and into the nearby neighborhoods to assess both existing ambient sounds (without any helicopter activity) and sounds from a helicopter flying in and out of the proposed routes. Figure 1 shows where the instruments were located during the study; these locations were chosen to be close to where sound measurements were made several years ago as part of the original use application for the heliport.

As the new rooftop pads necessitate some changes in the flight routes into and out of the new heliport the new routes have been defined by Heliports International, LLC; these are shown and named on Figure 2. Figure 3 shows the tracks that were actually flown during our testing, based on on-board GPS data from the helicopter.

Instruments & Measurements

The instruments used for the long-term sound measurements are Larson-Davis Model 703 and 705P digital time-history sound level meters equipped with instrumentation microphones and windscreens. They meet ANSI requirements for Type 2 sound level meters. They measure and store the overall A-weighted sound pressure level ("dBA"), at programmed intervals, for programmed measurement times. Each instrument has an internal clock. These were all set and synchronized using a common digital clock, which was set using time from a GPS receiver.

Each instrument was calibrated prior to the test, and the calibration checked after the tests, with a Bruel & Kjaer Type 4230 sound level calibrator. The calibrator's own calibration is done annually and is traceable to the National Institute of Standards and Technology (NIST), following good acoustical

practice. Sound levels in this report are expressed in terms of decibels relative to the ANSI-preferred reference pressure of 20 uPa. The instrument detectors were set for "slow" response. They stored various sound level metrics at 5-second intervals.

The A-weighted sound pressure level ("dBA") is a measurement method that is modeled after the frequency response of the human ear. Measurements of sound using this frequency weighting correlate very well with how "loud" sounds are. It is probably the single most commonly used method for measuring sound on a world-wide basis. Within the U.S. five major Federal agencies - FAA, DOT, DOL (OSHA), HUD and DOD - use it. The study done several years ago used dBA measurements.

Weather over the three days of the study varied considerably in visibility and cloud ceiling, so we were often uncertain as to when (even if) the helicopter could even fly. The temperature typically was in the 40 to 60 degrees Fahrenheit range, but it wasn't until Wednesday (3 May) afternoon the dew point dropped and visibility improved to where the flights could be made.

The first round of testing was done assuming the helicopter would not be flying and so the goal was to get ambient sound measurements. The nine environmental sound monitors were set up at the locations shown on Figure 1. They operated from noon on Monday, 1 May for 24 hours until noon on Tuesday, 2 May; there were no helicopter flights during this time. The data were then read out and the instruments reprogrammed to run from 2 PM on 2 May until 3 PM on Wednesday, May 3, for 25 hours of data. The hope was the weather would clear enough in this time to get in the flights, the only condition being I wanted them all done within one whole hour so we would have the other 24 (out of 25 overall test hours) for ambient sound data if that detail was later needed. In fact the weather did clear Tuesday afternoon and the flight tests were all done in the 5 to 6 PM hour.

The specific helicopter used for the testing was an Agusta A109E, ID N102H, from LifeFlight of Maine.

Data Files

There are a lot of different way to process and display the resulting data. The direct measurements, on both days, were made at 5-second intervals to be consistent and compatible with what you had done in the study several years ago for the original application. But we can process the data to make longer intervals to use for various presentations. For example, in a previous presentation the 1-minute average levels were plotted. We typically show long-term ambient sound levels in 1-hour increments over several days.

Not knowing at this time what format you'll want for your future work, I've provided you with spreadsheets containing different time intervals for the data, all starting with the 5-second direct readings. If you need them for other intervals (longer than 5 seconds) I can generate them for you.

In an overall spreadsheet you'll see multiple tabs, each for a particular instrument and its data in a time increment. The naming convention of the tabs tells you what's what.

Each tab starts with "MM" for "Maine Medical," followed by an "A" or "H" for ambient or helicopter. Next is a three digit number for the instrument serial number; you can map the instrument to its measurement location during the study with the table below, where the "CP" numbers are shown on the map in Figure 1, which also correspond to the locations used in your previous study.

A two-character (letter and number) indicates the time interval of the data. H, M or S correspond to hours, minutes or seconds. The number that follows shows how many of those units are covered by each row in the "Time History" section of the spreadsheet tab. "H1" indicates 1-hour intervals. "S5" indicates 5-second readings. "M1" has 1-minute increments.

Finally, the tab label ends with an "A" or "H" to indicate whether the measurements were made on the first day, only for "A"mbient readings, or on the second day, when the "H"elicopter was flown during one of the hours.

Thus, the tab "MMA469H1" shows measurements made at CP-6, on the second day of testing when the helicopter was present, and the time history in the spreadsheet is in 1-hour increments

Test Location	**Instrument #**
CP-1	464
CP-2	471
CP-3	904
CP-4	460
CP-5	911
CP-6	469
CP-7	910
CP-8	907
CP-9	461

Graphs

There are also many ways to present/graph the data. The temptation might be to plot all the 5-second levels for 24 hours. This can be done but there are 17,280 5-second intervals in 24 hours; you will probably end up with a mess. Generally, if you want to examine detailed sound levels (e.g., when the helicopter flew in and out) using the 5-second values will work.

When discussing the ambient sound (what some mistakenly call "background," but we'll go along with the term for now) it really isn't the sound level on a moment-by-moment basis that determines a person's attitude or assessment of their environment. Rather, it is the ongoing, around-the-clock, long term sound levels that correlate best with attitudes about whether one lives in a "quiet" or "noisy" neighborhood or something in between. My neighbor mows his lawn once a week for about 20 minutes, and I can clearly hear the sound. Yet I live on a quite dead-end street and that's how I'd characterize it.

Both the FAA and HUD (U.S. Housing and Urban Development) use a dBA-based metric of sound, the "day-night sound level", abbreviated DNL or Ldn. This is a long-term (as in an annual average) measure; what happens on a given day or even for some minute or so during a day has little effect on the annual average sound level. (Conversely, this is why we don't put much faith in "ambient noise studies" that measure the sound at a location for 10 minutes or so and declare that to be the ambient level.)

One sample graph (Figure 4) shows both overall sound level information for the 24-houe study and an hourly breakdown of the sound. The "overall" statistics cover, in this case, all 24 hours of the study. The "Leq" is the average sound level (technically, the energy average, as a decibel is a logarithmic function); Leq weights the average somewhat higher than a straight arithmetic average. The L10 and L90 are the sound levels exceed, respectively, 10% and 90% of the time and are

common metrics use with sound measurements. From these we can also say that for 80% of the time the sound levels were between the L10 and L90 levels. For the measurements shown on Figure 4 this means the sound was between 50.5 and 70 dBA at this location for 80% of the 24 hours.

Each hour also shows its Leq average with the green line and the L10 and L90 levels with the range of the blue bar. In addition the red vertical lines show, for each hour, the minimum and maximum sound levels, which are called Lmin and Lmax.

I've not done it but with a little processing of the second day of measurements, one could take out the one hour when the helicopter was flying and the second 24 hours of measurements could be combined into graphs of the ambient sounds over 48 hours. (This is why I wanted all the helicopter testing done within a single hour.) Other than this one test hour there were no helicopter operations at the hospital during any of our sound testing. Alternatively, the test hour could be included so a comparison can be made between when the helicopter was in use and the other 48 hours when it wasn't.

If you want to drill down to look at specific things I suggest trying to balance the specifics of those things (e.g., the actual helicopter flights) with other times when there weren't flight times. You often find other events having nothing to do with the helicopter that were at similar sound levels.

Figure 5 is a graph showing CP-3 covering eight hours of 5-second data, including the hour when the helicopter was flying. This graph has "only" 5,760 data points. Notice that at about 19:40 – two hours after the helicopter was around - there was something that made a burst of sound that was actually a bit louder than the helicopter. You want to look at not just the sound when the helicopter was present but also at other times. People are frequently surprised at the sounds actually present in what they will insist is a "quiet" area. They are familiar with these other sounds and tend to "tune out" sounds from sources like local vehicle traffic, lawn care or snow removal equipment, swimming pool pumps, appliances, etc. The measurement instruments don't ignore any sounds.

There are times when you really want to drill into the individual measurements, as seen on Figure 6. This graph covers part of the eight hours shown on Figure 5, concentrating on a 20 minute period when the helicopter was actually flying into and out of the proposed new heliport area. We can see details of the individual events that we really can't make out in the 8-hour version of the same kind of data on Figure 5.

This also lets us see the "duration" of each event, as defined for aircraft by the FAA. Duration is the time from when the increasing sound level gets to within 10 dBA of the maximum level to when the sound drops down to 10 dBA below the maximum. The duration depends on what the helicopter is doing (flying by or near a pad where it is slowing down or starting to move away) and, from our experience, how familiar the pilot is (i.e., how comfortable [s]he is) with the setting (the test site was new; yet to be built). It is typically around 20 to 30 seconds and is of significance because about 90% of the total sound energy from the takeoff or landing (out of all the sound made for the entire length of the takeoff or landing) occurs during this duration. (The measurements were made at 5-second intervals to be compatible with the previous sound study, so the measured duration will be in 5-second steps.)

So if the hospital has, say, three helicopter operations per day – three approaches and three departures – each with a duration of 30 seconds, that means that 90% of all the sound from all the helicopter operations occurs in a total of 180 seconds over the day of 86,400 seconds.

Finally, we provided you with Excel spreadsheets with data from both days of testing, ambient only and with the test helicopter in operation, for various time intervals. If you need other time intervals prepared, or want other graphs prepared we will be glad to assist you.

Yours truly,



Norman R. Dotti, PE, PP, INCE
Principal

NRD/me

enclosures

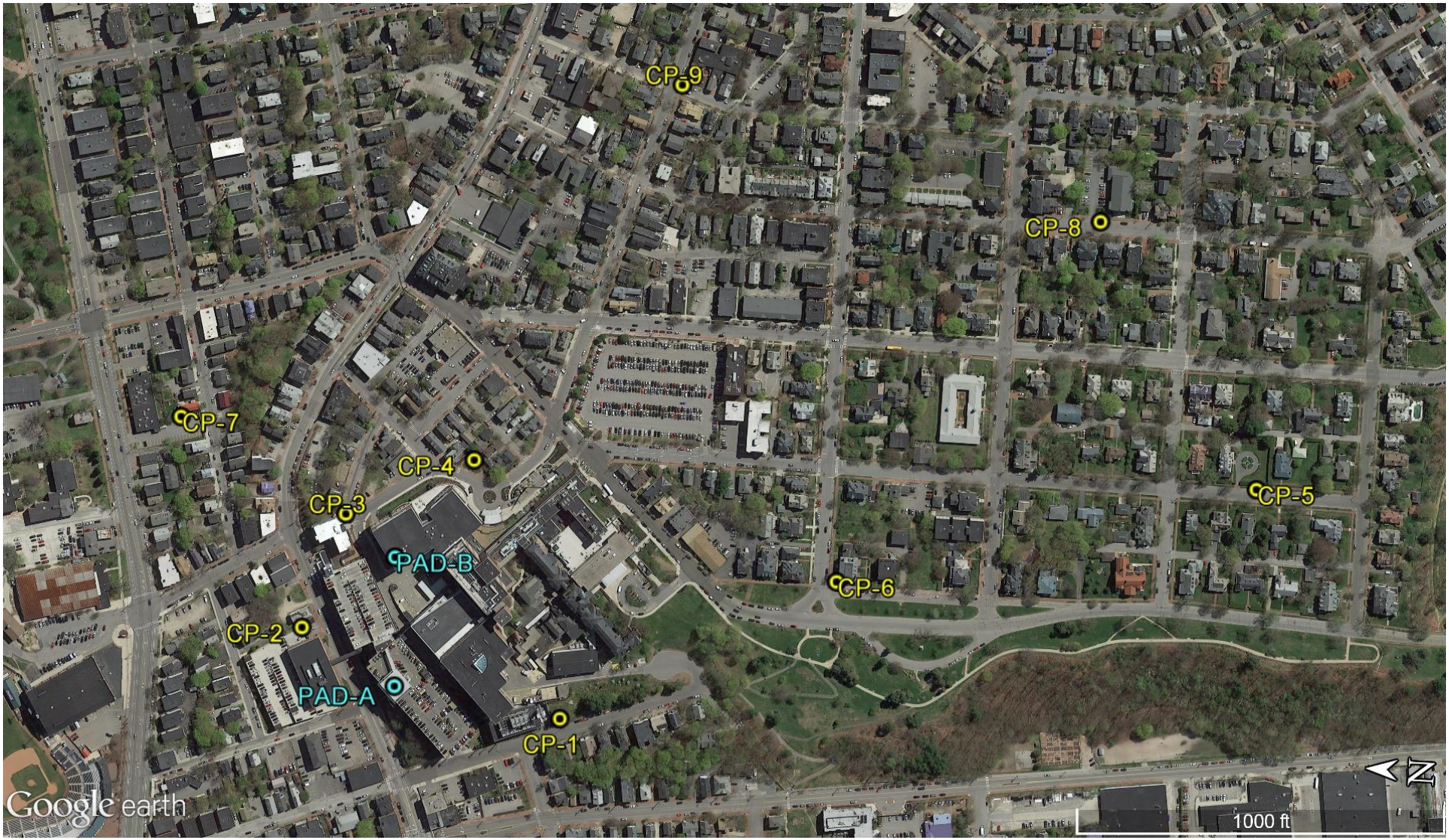


Figure 1 – Sound Measurement Locations

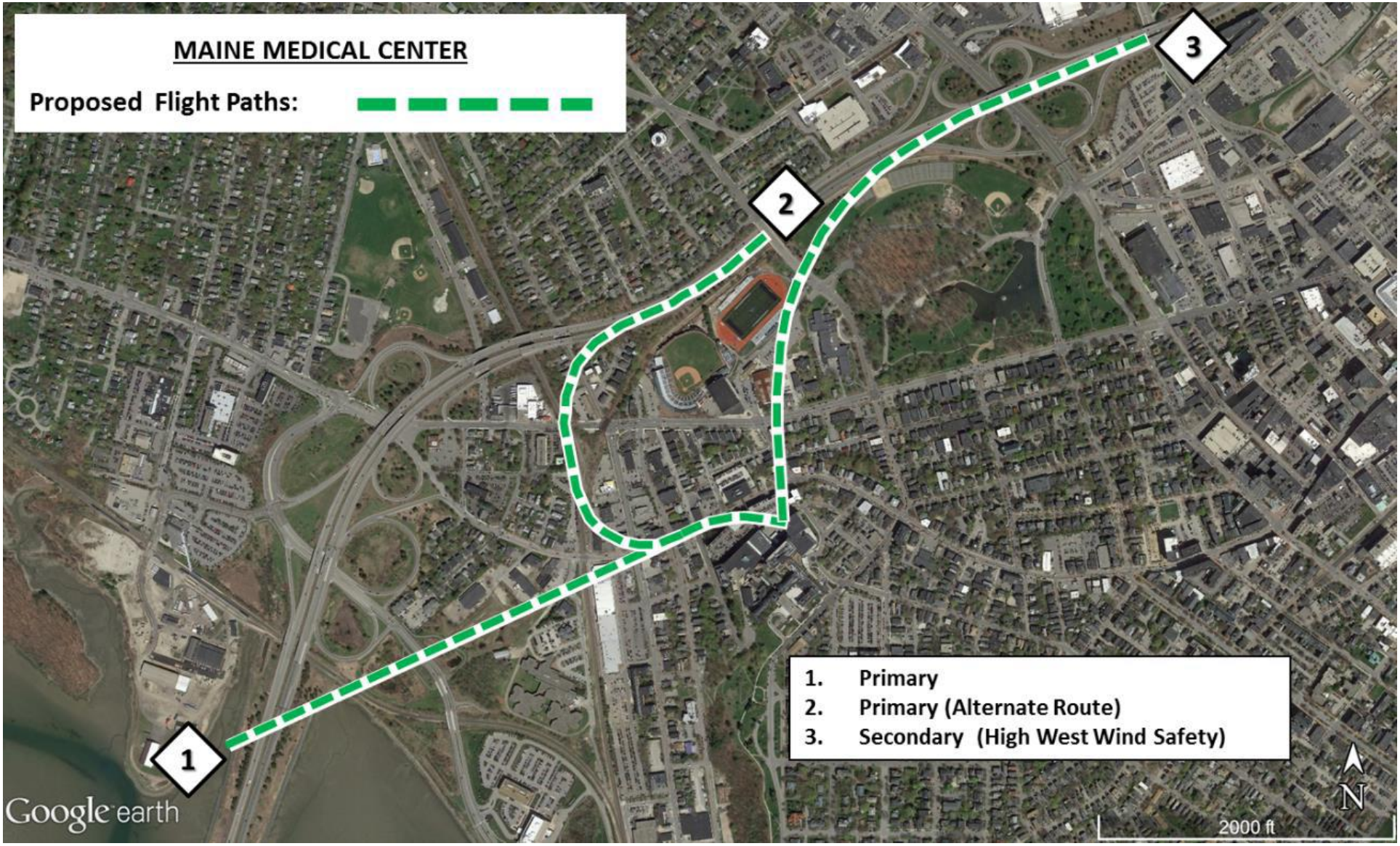


Figure 2 – Planned Flight Tracks

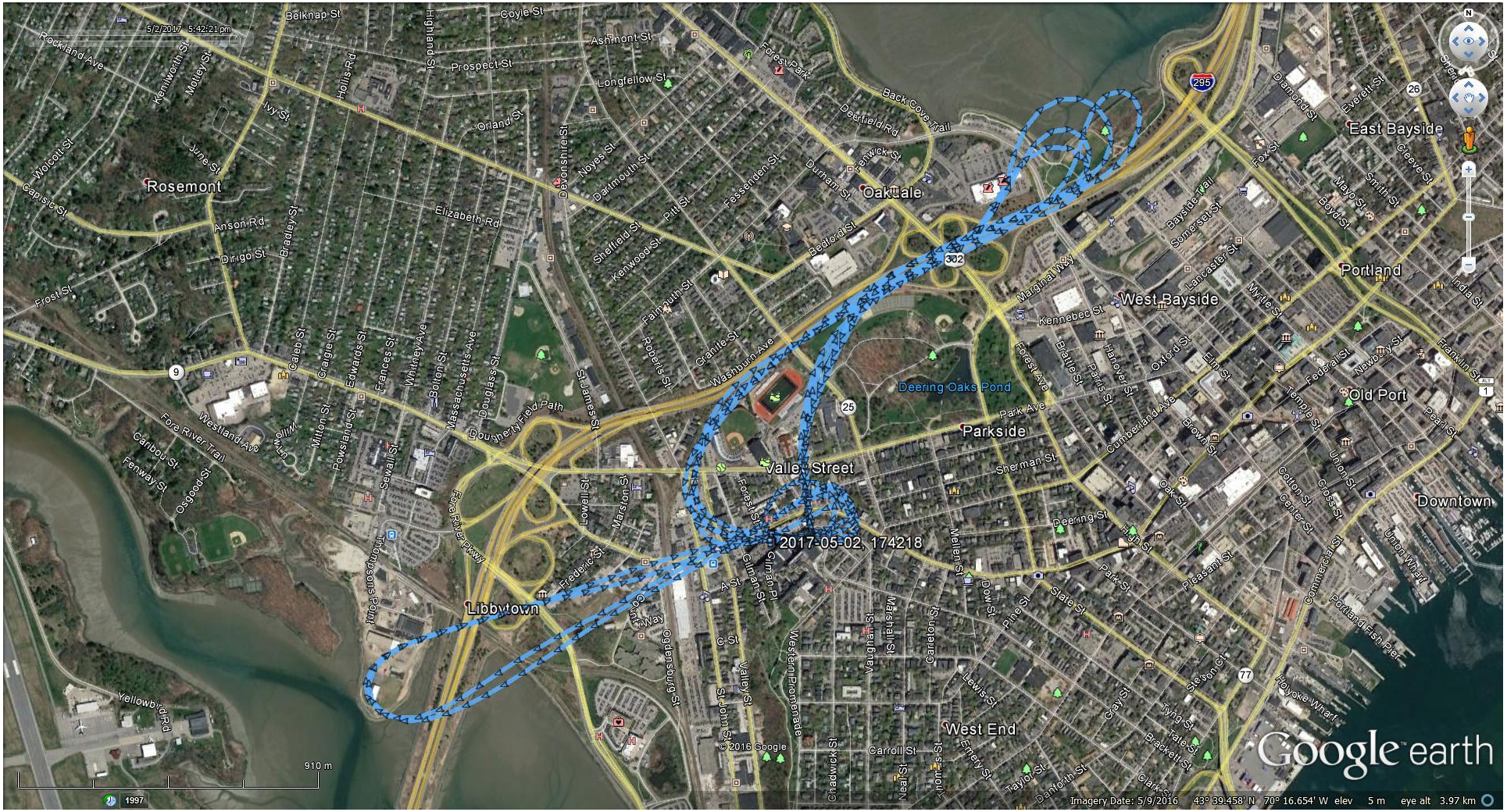


Figure 3 – Flown Tracks (from on-board GPS)

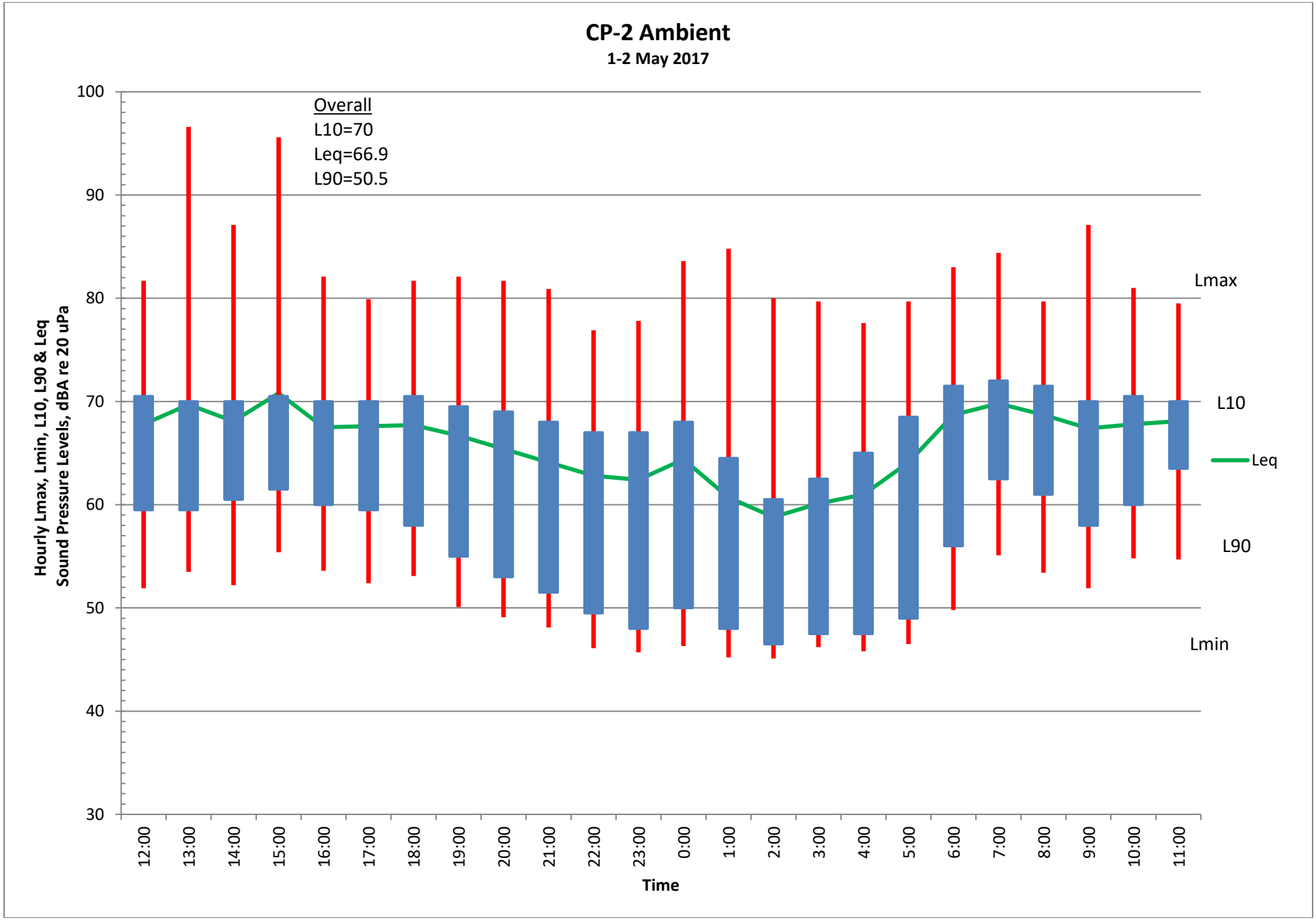


Figure 4 – Sample 24-Hour Ambient Graph

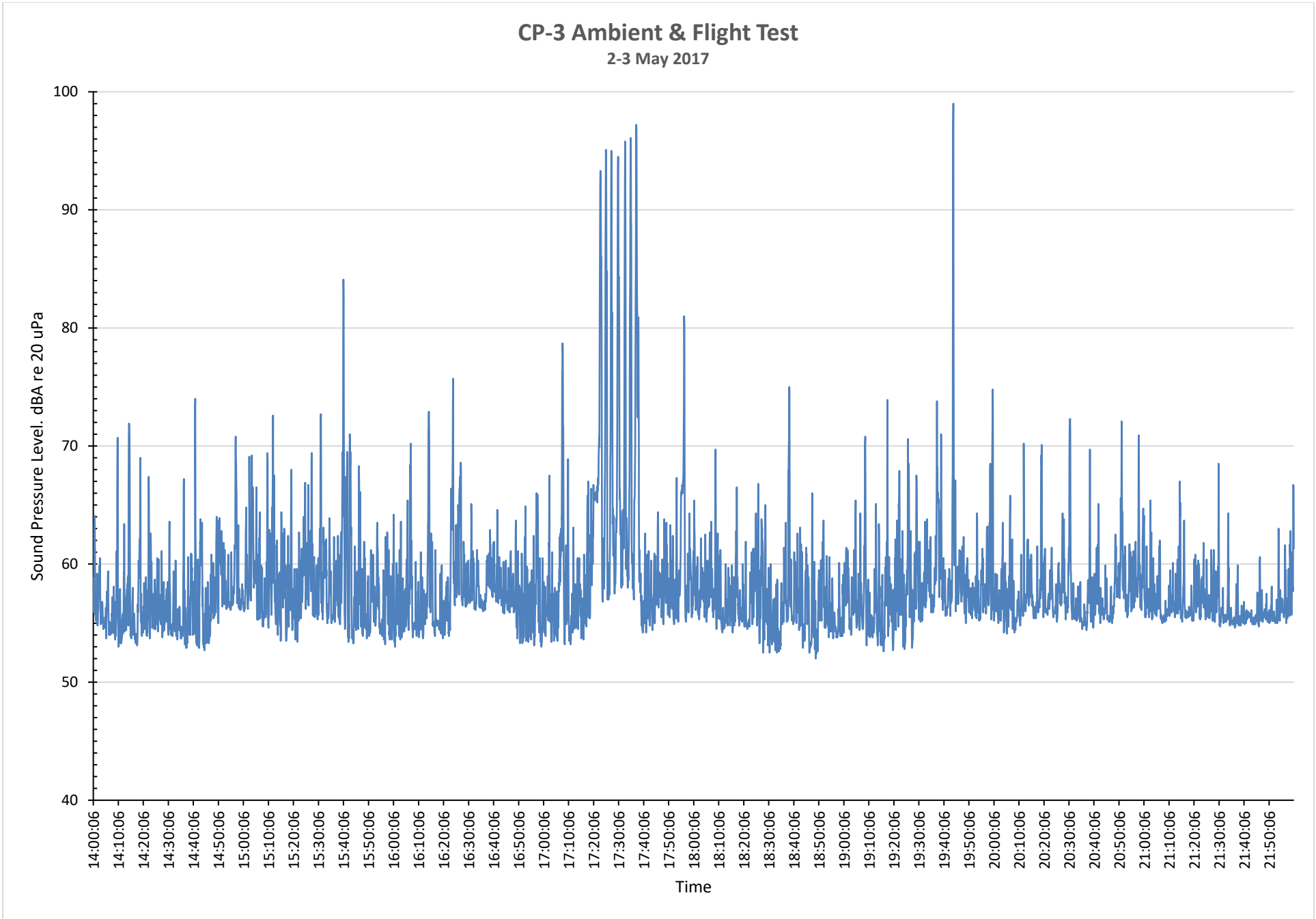


Figure 5 – Sample 8-hour Graph of 5-Second Measurements

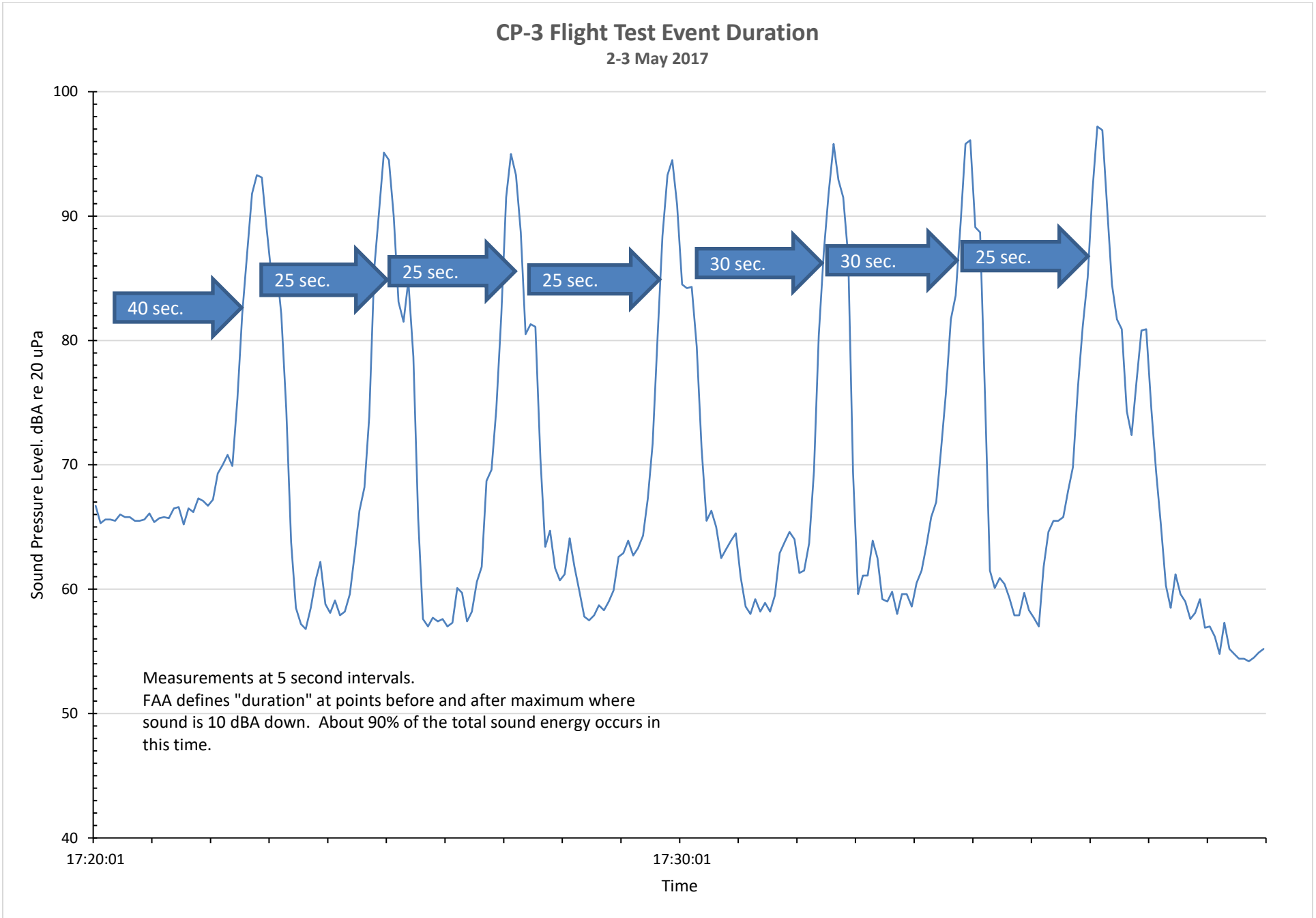


Figure 6 – Individual Helicopter Events with Durations

Maine Medical Center
MaineHealth
centered around you

Get on Board!

Maine Medical Center

Transportation Demand Management Program



Contents

Introduction 3
Purpose 3
Maine Medical Center 3
MMC Facility Planning 4
Commitment to TDM 5
Context 5
Land Use 5
Parking 6
Data Collection 7
Transit 7
Bicycle and Pedestrian Infrastructure 8
Current Travel Behavior 9
Commuting Survey 9
Geospatial Analysis 10
Program Goals 13
Parking and TDM Strategies 13
Current Get on Board Program Elements 13
Biking 13
Mass Transit 14
Carpool 15
Parking Cash Out 15
MMC Shuttles 15
Scooters and Motorcycles 16
UCar 16
TDM and GoMAINE website 16
Pay for Parking 16
Skiing 17
Enhanced Get on Board Program Elements 17
Walking 17

Biking 17
Carpooling/Vanpooling 18
MMC Shuttle 18
UCar 18
Enhanced Transit Subsidies 18
New Program Elements 18
Short-Term (1-3 years) 19
Get on Board! Coordinator 19
Way 2 GO MAINE 19
Improving Data Collection Capabilities 19
Guaranteed Ride Home (GRH) Program 19
Long-Term Actions (5+ years) 19
Regional Connections Partnership 19
Supporting Mass Transit Commutes 20
Education and Marketing Strategies 20
Sharing TDM Program Information 20
Get on Board Fair/Seminars 20
Get on Board Blitz 20
Comprehensive Data and Goal Monitoring 21
Parking Utilization Data 21
Employee Survey 21
Conclusion 21

Introduction

Purpose

The purpose of Maine Medical Center's Transportation Demand Management program, Get on Board, is to reduce the amount of single-occupancy vehicles by enabling and promoting alternative modes of transportation to and from MMC's Bramhall Campus for MMC employees.

Maine Medical Center

Maine Medical Center is a complete health care resource for the people of greater Portland, the entire state of Maine, and northern New England.

Incorporated in 1868, Maine Medical Center is the state's largest medical center, licensed for 637 beds and employing more than 6,000 people – with approximately 2,000 of those employees residing in the City of Portland. Maine Medical Center's unique role as both a community hospital and a referral center requires an unparalleled depth and breadth of services, including the state's only medical school, through a partnership with Tufts University School of Medicine, and a world-class biomedical research center, the Maine Medical Center Research Institute.

Our care model includes the state's largest multispecialty medical group, Maine Medical Partners. Maine Medical Partners provides a wide range of primary, specialty, and subspecialty care delivered through a network of more than 40 locations throughout greater Portland and the southern Maine region.

Maine Medical Center is the flagship hospital of MaineHealth, a 12-member health system touching central, southern, and western Maine and eastern New Hampshire. The collaboration of MaineHealth's members allows greater availability to community health improvement programs, access to clinical trials and research, and shared electronic medical records.

The strength of the health system, anchored by Maine Medical Center, enables its members to invest in shared programs and services that improve the quality of care while reducing costs whenever possible. As a nonprofit institution, Maine Medical Center has provided more than $200 million annually in community benefits, delivering care to those who need it, regardless of their ability to pay.

MISSION, VISION AND VALUES

Maine Medical Center is dedicated to maintaining and improving the health of the communities it serves by:

- Caring for its community
- Educating tomorrow's caregivers
- Researching new ways to provide care

It proudly carries its unique responsibility as Maine's leader in patient care, education and research. MMC is dedicated to the traditions and ideals of not-for-profit healthcare. It provides care to all who seek it.

MMC's efforts to execute its Mission are aimed at achieving a simple, yet powerful Vision: "Working together so (Maine's) communities are the healthiest in America."

MMC is guided by a set of Values, helping to meet and exceed the expectations of those it is privileged to serve. MMC's Values:

- Patient-Centered
- Integrity
- Ownership
- Excellence
- Respect
- Innovation

MMC Facility Planning

Maine Medical Center recently announced a project that will expand and modernize much of its patient care facilities. Over the next five years Maine Medical Center plans to spend $512 million on the construction, renovation and expansion of inpatient and outpatient facilities and services. The majority of this investment will occur at MMC's main Bramhall campus.

Every aspect of this project is designed around the needs of patients. The project will optimize current bed capacity at the state's largest hospital and calls for increasing the number of single rooms available to patients as well as well replacing surgical and treatment areas with ones that conform to 21st century standards. About $50 million of the total project cost will be invested in other outpatient facilities through the hospital's multi-specialty practice organization - Maine Medical Partners.

The project also involves the replacement of the largest parking garage on the campus, a 1,200-space structure used by employees that sits along Congress Street. The need to replace that garage creates an opportunity to reorient the hospital's main entrance to Congress Street, one of the city's main thoroughfares. The hospital's current main entrance faces Bramhall Street in the city's largely residential West End.

The project is organized into three separate site plan descriptions:

- Site Plan #1:
    - Two floor addition to the East Tower housing 64 private universal rooms.
    - Relocation of the helipad which is currently on the employee garage to the East Tower. This move will align emergency services in the East Tower. Patients arriving via the helipad will have a direct vertical connection via elevator to MMC's Emergency Department and trauma services.
    - Three floor addition to the visitor garage on Congress St.
- Site Plan #2:
    - New employee parking garage on St John St that will include over 2,000 parking spaces. The location of the new garage is roughly a quarter mile from the main campus and MMC will encourage employee to walk during nice weather.
- Site Plan #3:

- Removal of the employee parking garage on Congress St.
- Construction of a new hospital tower with 64 private universal rooms, 19 procedure rooms, and space for an additional 32 private universal rooms. This building will also include a new hospital entrance and drop-off area with direct connection to the visitor garage.

The project is expected to be completed in the fall of 2022.

Commitment to TDM

MMC has a long-standing history of promoting health outside of and within its organization. The medical center developed a Transportation Demand Management (TDM) program in 2008, becoming one of the first in Maine to publish such a plan.

In 2008, MMC became one of the first in Maine to develop an independent TDM program.

Known as "Get on Board!," the program supports alternative commuting options such as carpool, mass transit, bicycling, and walking. MMC also engages in an extensive campaign to educate employees about the benefits of alternative modes of transportation and the Get on Board! program. Total enrollment in Get on Board continues to increase year after year.

Over the years, MMC has added elements to strengthen the program's offerings. In 2015, for example, MMC installed additional bicycle parking in its South Parking Lot to enhance cycling access to the main areas of the campus.

The following Plan documents MMC's current TDM efforts, planned program enhancements, as well as new TDM programs. The Plan is intended to serve as a living document. Monitoring reports will be submitted annually to the City's Planning Department.

While MMC encourages sustainable commuting practices across its organization, this TDM Plan applies to MMC's main campus in the west end of Portland, ME, where the majority of MMC's staff is located. Presently, the main campus employs approximately 4,400 individuals.

Context

Land Use

CURRENT

MMC's Bramhall campus is located at a high point in the west end of the Portland peninsula that is renowned for the Western Promenade—an 18-acre park and national historic landmark designed by the Olmsted Brothers, among others. The campus abuts the Western Promenade in a dense urban setting that serves, in many ways, as a transitional zone between areas with diverse character, land uses, and demographics.

The campus, which serves the entire state of Maine as well as eastern New Hampshire, is located within less than a mile's distance of I-295, which links Portland to destinations across New England. To the north, the campus fronts on Congress St —Portland's main thoroughfare that extends along the spine of the peninsula to Portland's downtown and beyond. The MMC campus is located at the western gateway into the City.

FUTURE

The area surrounding MMC is identified in the City's Comprehensive Plan as an area with transformational potential. MMC's TDM plan aligns with this future vision. As part of the project, MMC will add a new entrance to Congress Street and envisions providing active ground floor uses in new buildings. This change will heighten the level of pedestrian activity on Congress Street, and serve to promote the corridor.

Parking

CURRENT

MMC offers its patients, visitors, physicians, and employees several options for parking. MMC currently controls approximately 2,877 total off-street parking spaces either via ownership or through leases with others that specifically serve the Bramhall Campus. Of the 2,877 spaces, 850 spaces are available for public use by patients and visitors, and 2,027 parking spaces are subscribed to staff and physicians.

TABLE 1 Existing Parking Spaces

		Patient / Visitor	Employee	Total at Facility	Ownership
ON-CAMPUS	Employee Garage	0	1,274	1,274	Owned
850 patient / visitor	Patient / Visitor Garage	480	0	480	Owned
1,538 employee spaces	South Lot	370	0	370	Owned
	887 Congress (Forest St Garage)*	0	178	178	Owned
	7 Bramhall St	0	26	26	*Leased*
	905 Congress St (Sportsman Lot)	0	60	60	*Leased*
OFF-CAMPUS	222 St John St (First Atlantic Lot)	0	283	283	*Leased*
489 employee spaces	181 High St (Gateway Garage)	0	100	100	*Leased*
	993 Congress St (Classic Lot)	0	97	97	Owned
	321 Brackett St	0	9	9	*Leased*
	TOTAL PARKING SPACES	850 Patient / Visitor	2,027 Employee	2,877 Total	

* The Forest St Garage has an additional 222 spaces that are dedicated to medical office staff and patients.

MMC has continued to witness demands on the existing parking supply intensify due to increased patient volumes and higher acuity patients with longer lengths of stay. Under current conditions, MMC's staff parking system typically operates at capacity during the weekday daytime hours. When off-site, remote staff parking facilities reach capacity, staff is directed to park on-campus in the Congress Visitor Garage. Some staff members independently choose to park nearby utilizing neighborhood on-street parking, although this is discouraged by MMC.

On behalf of MMC, VHB conducted on-site parking usage observations in January and March 2017. VHB collected parking count data during peak hours, which included late afternoon, evening, and overnight occupancy and turnover. The counts indicate that the parking system typically operates at or above capacity during weekday daytime. MMC's 850 patient/visitor parking spaces equate to 1.33 parking spaces per bed. This ratio is low compared to other New England and national peers. MMC's 2,027 staff

parking spaces equate to 3.18 parking spaces per bed. This ratio is also low when compared to other peer institutions.

FUTURE

Looking towards the future, MMC will undertake a project to modernize its Bramhall campus. The project is detailed above and is anticipated to increase patient/visitor and employee parking demand. This demand will be offset by TDM methods described later in this document, along with expansions in its campus parking capacity.

Data Collection

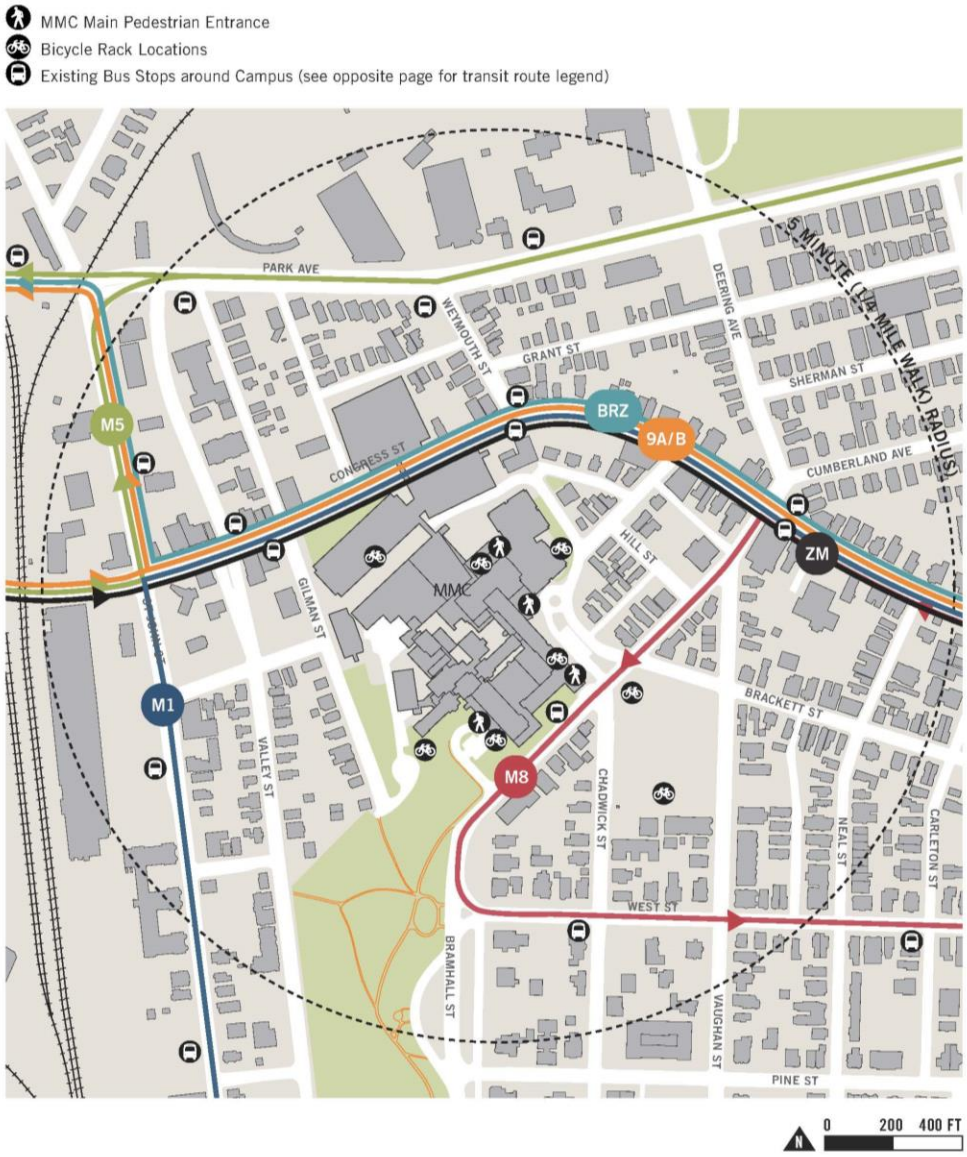
Currently, MMC has a limited transportation mode data collection system. MMC recognizes the need for an improved system. MMC employs a large amount of individuals. Tracking their commute behaviors will require a system that relies on automatic data collection wherever possible. MMC is exploring options to improve data collection such as a card reading system similar to EZ-PASS.

Transit

MMC's main campus is located in a section of the City that is served by the Greater Portland Transit system (METRO), which has multiple routes that stop within walking distance of the Medical Center. The campus is also served by the ZOOM turnpike Express route operated by ShuttleBus-ZOOM.

The METRO routes accessible from the Bramhall Campus have varying service spans with buses generally arriving every 30 to 60 minutes. They provide connections to the nearby Portland Transportation Center (PTC) and the Downtown Hub, which are served by additional METRO and regional bus lines. The PTC also serves as the local connection to Amtrak's Downeaster service that runs along the coast between Boston and Brunswick. The closest bus shelter to the hospital is along Bramhall Street, between the Dana Health Education Center and the South Entrance. This stop is served by METRO Route #8, which provides connections to other parts of the peninsula.

FIGURE 1 Map of Existing Transit Routes and Stops



Bicycle and Pedestrian Infrastructure

MMC understands that all campus users walk at some point to arrive at their MMC destination. To enhance pedestrian accessibility, MMC maintains its network of campus pathways and public sidewalks adjacent to campus. Similar to other medical centers of its size, MMC provides elevated, covered, and temperature-controlled walkways between its parking garages and key campus circulation corridors.

The bike facility network surrounding MMC's campus is fragmented and lacks bicycle infrastructure as illustrated in figure 6 below. In addition, the hilly nature of the Western Promenade impacts bicycling and walking in this area.

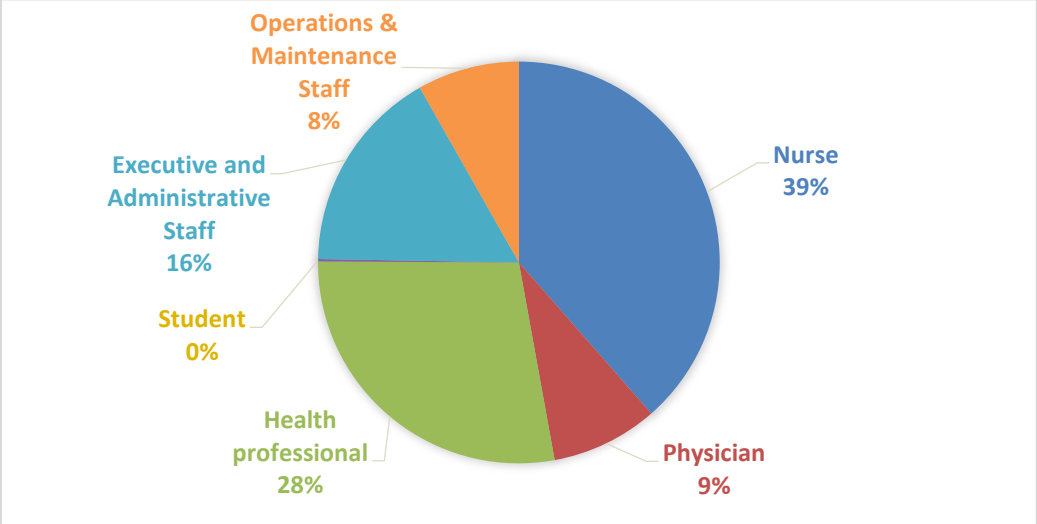
Current Travel Behavior

As part of its efforts to monitor and enhance the Get on Board program, MMC recently conducted a survey of its employees to understand how they commute, any barriers to using alternative transportation, and their interest in other TDM initiatives. The Medical Center also analyzed employee residence data using geospatial analysis tools to better understand employee commuting patterns. The findings from the survey and analysis are summarized below.

Commuting Survey

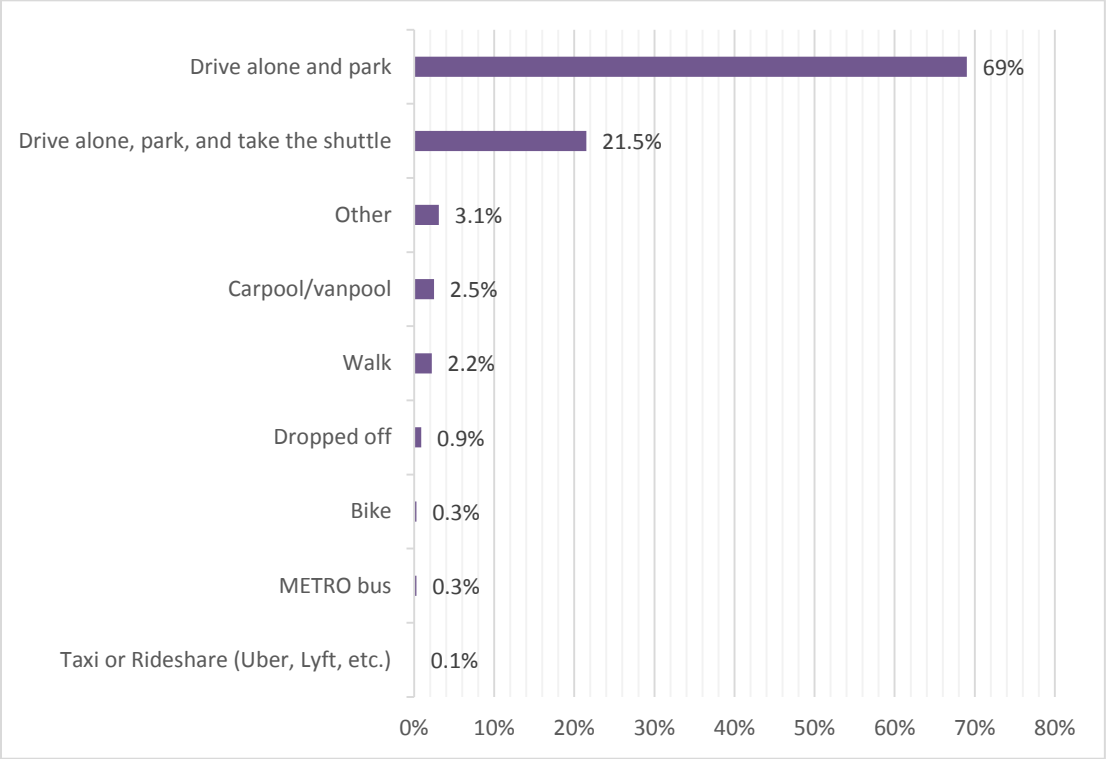
Approximately 1,600 MMC employees participated in the voluntary survey, administered in February 2017 – nearly a 40% response rate. Approximately 81% of the respondents work at the Bramhall campus. The respondents included a diverse spectrum of employees including operations and maintenance staff, students, executive and administrative staff, health professionals, nurses, and physicians. Figure 2 illustrates the various roles held by the survey participants.

FIGURE 2 Survey Respondents by Hospital Affiliation



The survey found that the majority of employees drive to campus. Among alternative modes, carpooling was the most used mode of travel, followed closely by walking. Figure 3 illustrates the commuting modes of MMC employees.

FIGURE 3 Employee Travel Mode To and From MMC



The survey also revealed that among Get on Board enrollees who participate in the program, carpooling benefits were the most used benefits, followed by biking benefits and transit benefits.

As the Get on Board program evolves, MMC intends to administer a commuting survey every 2 years to track travel trends and to gauge the effectiveness of specific initiatives. The information collected will enable MMC to develop informed, data-based enhancements to Get on Board, providing a greater prospect for program success.

Geospatial Analysis

MMC analyzed the residence locations of its employees to understand the commuting patterns of its employees. The analysis showed that approximately 27% of employees live within a 3-mile radius and approximately 73% of employees live beyond a three mile radius of MMC (See, Figures 4 and 5). Three miles is generally considered a reasonable biking distance by industry standards.

FIGURE 4 MMC Bramhall Campus Employees, Distance to Work by Type of Employee

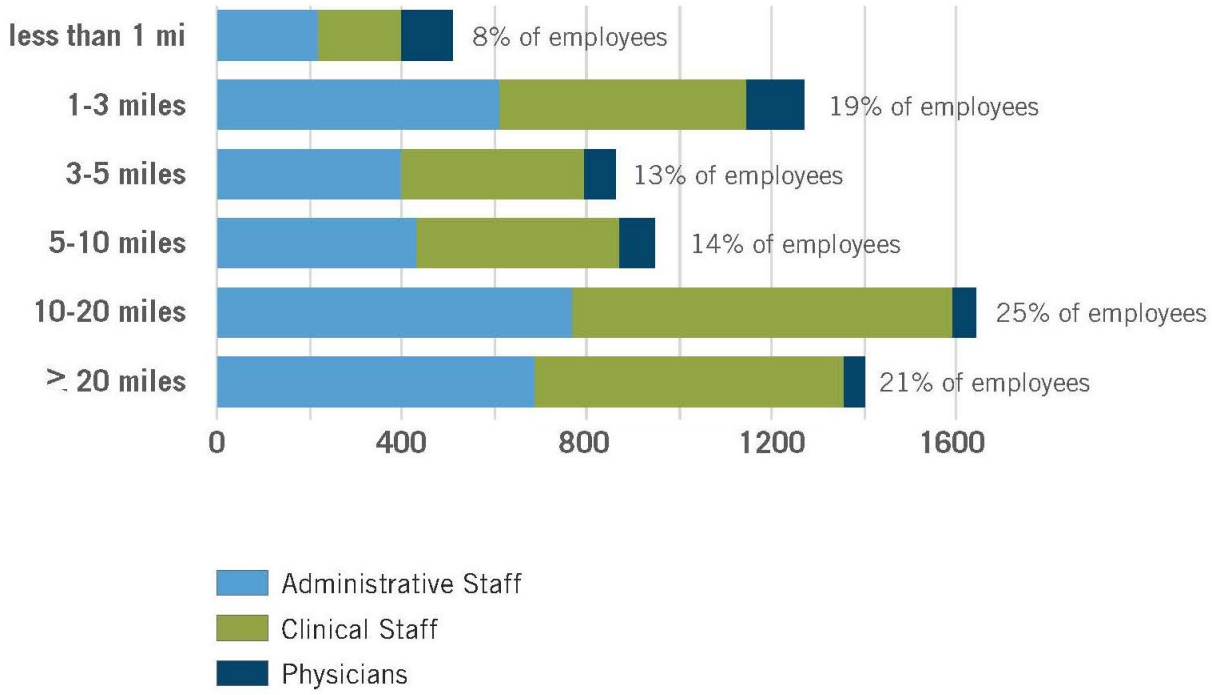
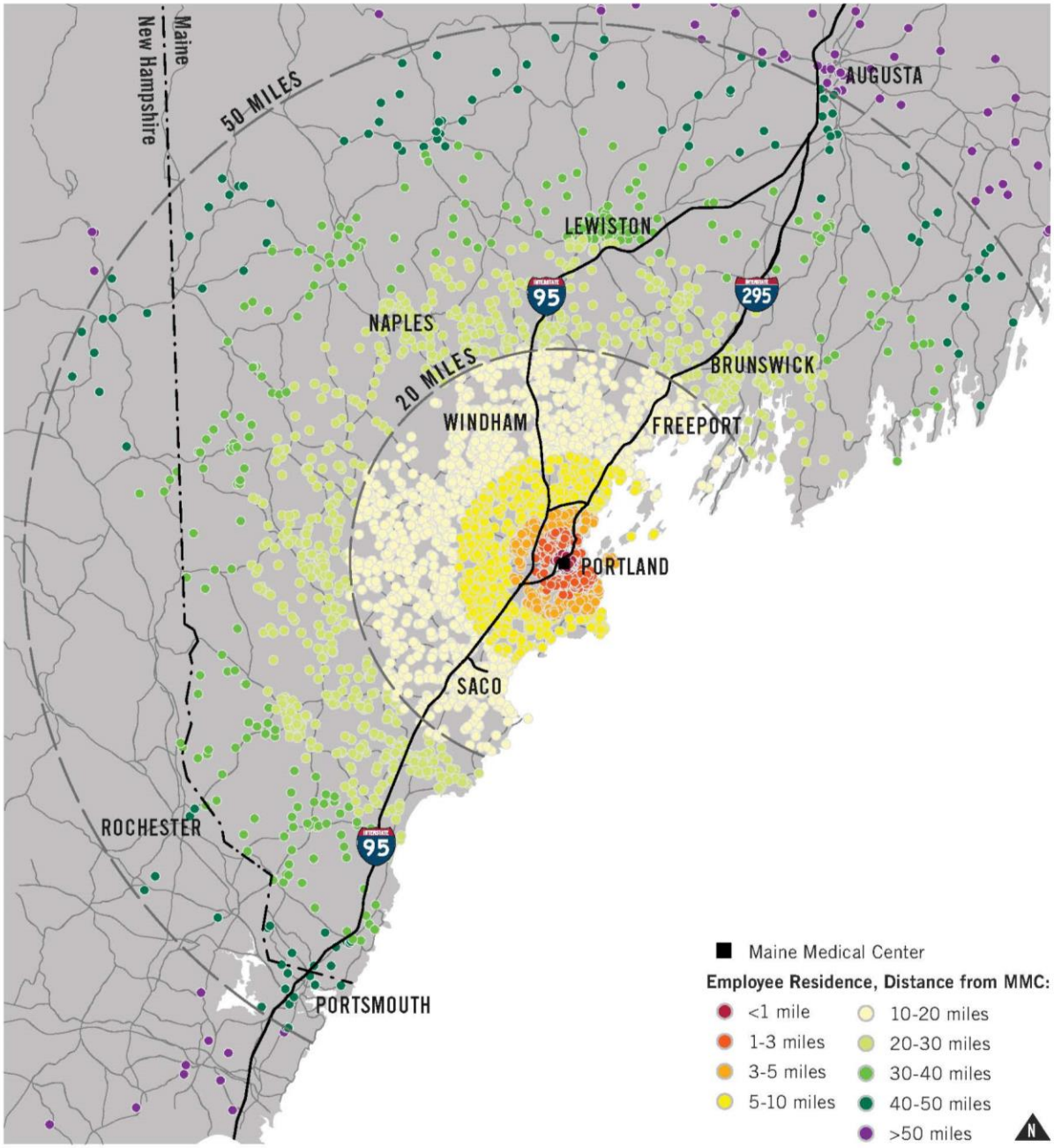


FIGURE 5 Map of MMC Bramhall Campus Employee Residences Illustrating Distance to Work and Travelsheds



Program Goals

As described above, VHB collected parking count data in January and March 2017 on MMC's behalf. The observed data reveals that peak parking demand at the Bramhall campus among patients, visitors, physicians, and staff total roughly 3,122. This number is 4.4% below the expected parking demand (3,264) for a suburban hospital of MMC's size, according to Institute of Transportation Engineers (ITE) parking demand projections. The difference equates to 142 parking spaces. It is also important to note that based on a review of peer institutions, MMC would need to increase its patient/visitor allocation by 344 spaces, or 40%, to achieve a similar beds-to-spaces ratio as its peers.

Peak parking demand at the Bramhall campus is 4.4% below the expected parking demand for a suburban hospital of MMC's size.

The Get on Board program aims to reduce single-occupancy vehicles on MMC's Bramhall campus through effective TDM measures. These measures include a parking "cash out" program, discounted transit fares, premium parking for carpoolers, and bicycle parking and facilities, among others. Additional details about the program elements are described in the next section. MMC believes the program has had a positive impact on employee travel behavior and has contributed to reduced parking demand over the years.

Based on a review of federal census data, employee travel origin and destination information, existing employee travel mode split, and transportation survey results, MMC believes it can further reduce the portion of employees driving alone to work, thus reducing trip making and resultant parking demands. An initial estimate is that an additional 65 individuals who currently drive to MMC could be shifted into alternative modes of accessing the campus over 5 years. This represents an additional 2% reduction from the ITE parking demand projections.

In consultation with the City, MMC has established the following short-term, mid-term, and long-term trip reduction goals.

	Short-Term (0-2 years)	Mid-Term (2-5 years)	Long-Term (5+ years)
Trip Reduction Target	2%	4%	5%

MMC hopes these targets will be achieved through the strategies outlined below. It will endeavor to reduce the number beyond the target identified above through further enhancements or program expansions in the coming years. MMC will continue to monitor parking demand and needs at the Bramhall campus, and re-evaluate its program goals after the initial five year period as needed.

Parking and TDM Strategies

Current Get on Board Program Elements

Get on Board is advanced through a range of monetary incentives and the provision of facilities to support alternative modes. The individual program elements are described below.

Biking

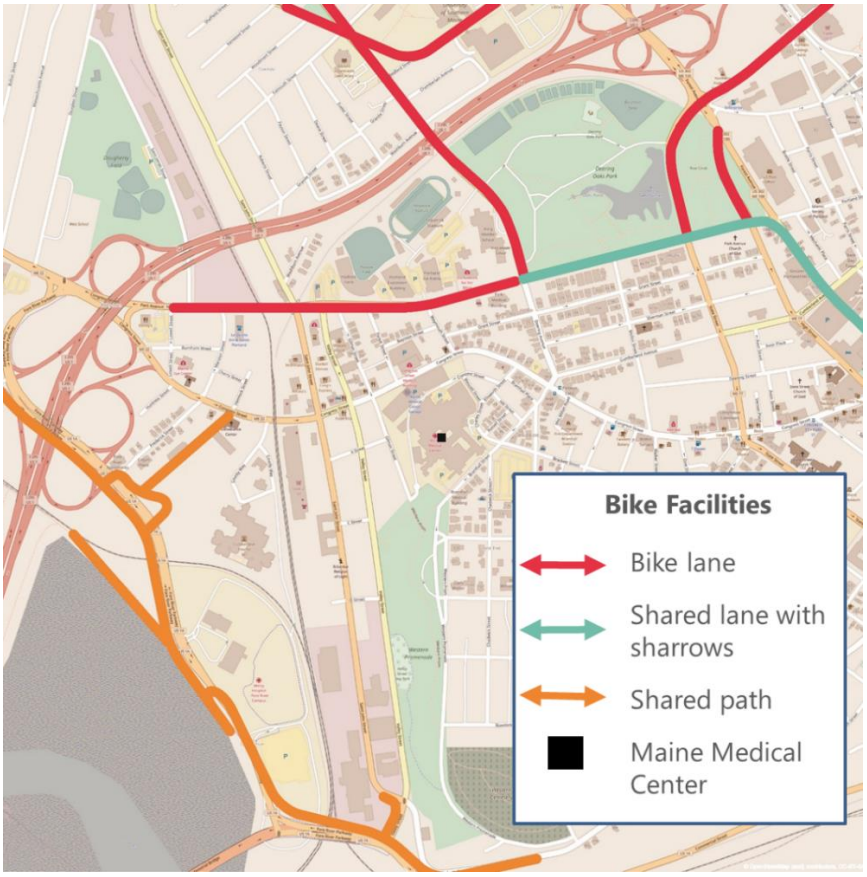
The MMC campus is located in close proximity to existing and planned routes in the City of Portland's growing bicycle network as shown in Figure 6. MMC offers a variety of bike facilities to make bicycle

commuters feel welcome and safe. In 2008, MMC installed five strategically-located bike racks and ten bike lockers on its main campus. Three new bicycle racks were added in the vicinity of the Bramhall entrance and in the South Lot in 2016, bringing total storage capacity to 193 bicycles across campus. Bicycle commuters also have access to additional on-site facilities such as showers and lockers.

Beyond on-campus facilities, MMC is an advocate of the City of Portland's Bikeway Network Plan, which will provide bicycle infrastructure on streets adjacent to campus to connect bicyclists with existing and shared use paths.

The City of Portland's latest Comprehensive Plan proposes transforming the streets surrounding MMC into "neighborhood byways." This kind of facility would be shared between vehicles, bicyclists, and pedestrians, but the roadway would be enhanced with pavement markings, street signs, and even streetscaping to elevate the safety and comfort of bicyclists and pedestrians. This type of improvement would serve to encourage greater walking and biking for those employees who live within a reasonable distance of the hospital. MMC also supports ongoing collaboration with the City of Portland, local and regional transit agencies, and neighborhood and advocacy organizations to ensure the improvement of pedestrian, bicycle, and transit infrastructure and networks serving the campus.

FIGURE 6 Bicycle Network Surrounding MMC



Mass Transit

Under Get on Board, employees can purchase discounted bus tickets and Shuttle-Bus Zoom tickets conveniently on campus. This is a clear demonstration of MMC's commitment to making the TDM Plan

work for its employees and for the City of Portland. Table 2 lists the Greater Portland METRO Bus and Shuttle-Bus Zoom discounts provided through "Get on Board!"

TABLE 2 MMC Transit Discounts

	Regular Price	MMC Sale Price
METRO	$13.50	$8.00
S. Portland	$13.50	$8.00
Zoom 10 Ride	$39.00	$29.60
Zoom Monthly	$100.00	$84.50
Zoom Quarterly	$260.00	$197.50

The *Portland Peninsula Transit Study* [1]established several strategies for improving the utilization of transit in Portland. These strategies involved expanding the transit service to development areas, creating more direct connections, and increasing service frequency to compete with drive-along commute times. The *Portland Transportation Hub Link Feasibility Study*[2] also proposed a route alignment along Congress Street that would increase transit frequency near the hospital. These improvements, if implemented, would highly benefit MMC's campus population in light of the distance that most employees reside from MMC and the fluctuating nature of employees' schedules.

Carpool

Carpooling is the most popular component of the Get on Board program. Over half of program participants at the main campus take advantage of this benefit. Currently, employees participating in a carpool are given access to preferred parking in an area of the Employee Garage that connects directly to the Main Lobby on the ground floor of the hospital.

Parking Cash Out

Presently, MMC operates a "parking cash out" program that offers employees monetary payments in lieu of a parking space. Program participants submit a form each week that certifies their use of alternative transportation during the week to commute to work. Upon receipt of a certification, MMC issues the employee a payment equal to the cost of parking at MMC's employee garage ($3.00/week).

MMC Shuttles

MMC operates employee shuttle services between the Bramhall campus and off-site parking locations Mondays-Fridays, 6:00 am to 11:00 pm. The shuttles include:

- MMC and off-site parking lots at 222 St. John Street and 993 Congress Street (Monday – Friday, 6:00 AM to 11:00 PM)
- MMC Bramhall campus and the 110 Free Street Office Building (Monday-Friday, 6:00 AM to 4:00 PM, every 20 minutes)

[1] Portland Transit Committee. *Portland Peninsula Transit Study* (2009), Retrieved from: https://www.portlandmaine.gov/DocumentCenter/Home/View/3383 .
[2] Portland Area Comprehensive Transportation System (PACTS). *Portland "Hub Link" Feasibility Study* (2015), Retrieved from: http://www.portlandmaine.gov/DocumentCenter/View/14793 .

- MMC Bramhall and Brighton Medical Center (335 Brighton Avenue) (Monday-Friday, 6:00 AM to 4:00 PM)

MMC also provides shuttle service for contractors from the parking lot at 993 Congress Street to the hospital. The shuttles provide a predictable alternative to employees commuting between the three sites and serve to reduce vehicular traffic in and around MMC.

Scooters and Motorcycles

The campus provides a designated parking space for scooters and motorcycles on the first floor of the employee parking garage.



UCar

MMC currently dedicates a space in its Congress Street parking garage for a carshare vehicle, as part of the city-wide carshare program called U Car Share. The program allows members to borrow a car by the hour, providing employees who bike, walk, or ride transit to work with additional mobility for off-site meetings.

TDM and GoMAINE website

The current employee GOB portal is linked to the GoMAINE Commuter Connections website, which is an alternative commuting program operated by MaineDOT. GoMAINE provides commuters with additional commuting resources and benefits that supplement those provided by MMC. These benefits include a carpool ride-matching program and a rewards program for participants.

Pay for Parking

MMC will charge its employees no less than $3 per paycheck to utilize MMC parking. MMC employees are paid bi-weekly. MMC will evaluate employee parking fees in the mid-term. In evaluating future price, MMC will consider the prevailing market price for parking in the surrounding area at the time of implementation, as well as best practices in setting affordable parking prices.

Skiing



In the winter months, some employees chose to leverage their wintertime hobbies to get to work.

Enhanced Get on Board Program Elements

Program enhancements are anticipated to occur within 1-3 years.

Walking

As part of the modernization of Bramhall, MMC will orient entrances to public streets and provide active ground floor uses where possible to encourage pedestrian activity.

Biking

MMC will continue to offer bike storage, bike repair tools, and on-site shower and locker facilities to commuters who choose to bicycle to work.

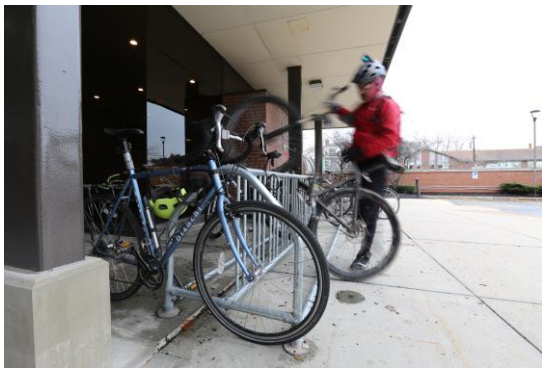
MMC will also continue its parking cash out program to incentivize current bicyclists. To support "interested but cautious" bicyclists, MMC will seek out local bicycling support organizations to host educational safety seminars and/or adult bicycling skills classes at least once per year on the Bramhall Campus. MMC will also promote rewards programs, such as GO MAINE and Bicycle Benefits, to further motivate increased bicycle commuting.

MMC understands that Portland Bikeshare, a non-profit organization with a goal to establish a bikeshare system in the City of Portland, plans to launch a bikeshare pilot in 2018. MMC will support this effort in the future.

MMC also recognizes the importance of safe and accessible infrastructure to active transportation. The presence of infrastructure can provide the sense of security that cautious bicyclists seek to spur a change in travel behavior. Additionally, as active modes become more widespread throughout the City of Portland, the visibility of walkers and bicyclists in the community can encourage greater participation

among MMC employees. MMC supports the City of Portland in its work to improve public rights-of-way and promote active transportation modes.





Carpooling/Vanpooling

Given the success of its carpooling program, MMC will continue to provide carpoolers with premium parking in the new employee parking garage. Similar to bicyclists, pedestrians, and transit riders, carpoolers will also continue to be eligible for parking "cash out" benefits. To facilitate the formation of carpools and vanpools, MMC will promote GOMAINE's carpool matching program to facilitate carpool matching.

MMC Shuttle

Once the new employee parking garage is constructed, MMC will redesign its shuttle route system to serve employees parking at the new site. The new parking garage will consolidate previously dispersed parking options for MMC employees. MMC anticipates the new route will reduce traffic congestion into and around the campus area.

UCar

Working with UHaul and the City's Parking Department, MMC will continue to monitor the use of the UCar vehicle presently located in its Congress Street parking garage. In the event an additional car is warranted, MMC will work with its partners in finding a suitable location on the main campus for the storage and use of the additional UCar.

Enhanced Transit Subsidies

To further incentivize transit use, MMC will fully cover the cost of METRO bus tickets for employees who elect to use METRO as their primary mode of transit to the campus. If METRO ticket costs change, MMC will address program participation rates and work with METRO to find the best solution to support employees who wish to ride METRO. The type and amount of subsidy will depend upon ongoing discussions with METRO to enhance partnerships (see below).

New Program Elements

In addition to enhancements to the initiatives described above, MMC intends to initiate complementary elements to ensure the program's continued success. MMC is currently exploring the following options. The strategies are prioritized based on their implementation timeframe.

Short-Term (1-3 years)

The following actions MMC will pursue immediately (some are already underway) with the intention that all programs are fully operational within the 3-year time horizon.

Get on Board! Coordinator

MMC intends to hire a designated resource who will be responsible for reducing single-occupancy vehicles on the Bramhall campus through the implementation, facilitation, and continuing sustainability of Get on Board. The coordinator will track the progress of the TDM program, oversee operations, and identify future opportunities to reduce single-occupancy vehicles on MMC's Bramhall campus. The Coordinator will also be responsible for monitoring the progress of programs, data collection, and TDM program updates as required.

Way 2 GO MAINE

In October 2017, MMC participated in GOMAINE's Way 2 GO MAINE program for the first time. Way 2 GO MAINE is a 3-week business to business commuter challenge where employees log commute trips and earn prizes. In the first year participating, MMC ranked 2nd for large companies participating with 1,094 trips logged.

MMC plans to participate in the Way 2 GO MAINE B2B challenge in the future.

Improving Data Collection Capabilities

MMC will improve its data collection capabilities as described below.

Guaranteed Ride Home (GRH) Program

MMC will implement a Guaranteed Ride Home program to ensure that employees who regularly commute using alternative modes will have transportation in emergency situations.

Long-Term Actions (5+ years)

MMC recognizes that the following program elements require partnership with outside partners and agencies and, as such, will take longer to achieve. MMC has already laid the groundwork for all of these elements and will continue to pursue them in the coming years.

Regional Connections Partnership

Through its TDM Coordinator, MMC will seek to form partnerships with other major employers in the city, including the City itself, to foster a wholistic approach to travel management. The partnerships would enable the exchange of TDM-related information and experiences between institutions, and it would foster a community that is focused on promoting alternative transportation in the City of Portland. Such collaborations would afford the opportunity to think regionally and help guide both employer provided or sponsored benefits as well as critical external resources such as METRO transit, sidewalks, and bicycle infrastructure.

Supporting Mass Transit Commutes

MMC intends to explore a partnership with the METRO to identify strategies for increasing MMC ridership, such as service updates and/or pricing agreements. The formation of a partnership could be mutually beneficial, by providing METRO with feedback for increasing ridership while maximizing the usefulness of the transit system for MMC employees. As MMC formalizes its ties to other local institutions through a regional partnership, its collaboration with METRO could also extend to other employers.

Education and Marketing Strategies

MMC has a number of approaches to raise awareness about the benefits of alternative transportation and opportunities for participating in the Get on Board program. These strategies are integrated into various aspects of the organization's engagement with employees to reinforce the importance of TDM.

Sharing TDM Program Information

Information about the Get on Board program is available to all MMC employees via the MMC intranet. MMC's intranet is a place where employees routinely go for information. The Get on Board page provides information about all of MMC's TDM programs as well as links to the GOMAINE.org webpage.

MMC intends to develop and deliver information about the Get on Board program using communications best practices that are refined throughout the program's lifespan. Communications methods that are effective will be further refined while elements that are less effective will be reevaluated. Some examples of communication methods include:

- Introducing the program to new employees at orientation: MMC has shared information about the Get on Board program with new employees during orientation but will evaluate whether this is an effective way to educate new employees about the program. There are many factors to consider when providing information to new employees. The biggest factor to consider is the large amount of information shared during orientation.
- Social Media: MMC will use social media is an effective tool to communicate with employees about the Get on Board program.
- Get on Board Kiosks: To supplement information available on the Get on Board intranet site, MMC will designate locations to communicate information to employees in real time. One location under consideration is near shuttle stops.

Get on Board Fair/Seminars

MMC will explore offering educational sessions about the importance of TDM and specific TDM methods such as walking, biking, or riding the bus. Educational sessions will rely on the expertise of local organizations specializing in alternative modes of transportation.

Get on Board Blitz

October is National Rideshare month and the same month of GOMAINE's Way 2 GOMAINE business to business challenge. In the future, MMC will explore ways to increase marketing of the Get on Board program during the month of October, potentially leveraging social media and internal communications vehicles, such as electronic newsletters.

Comprehensive Data and Goal Monitoring

MMC understands from its prior experience with TDM initiatives that achieving change is an iterative process that involves tracking the effectiveness of its programming and making mid-term adjustments if necessary to improve program effectiveness. MMC will collect and analyze data on a regular basis to monitor progress towards its TDM targets. The data would be collected through a range of instruments and will be used to make annual comparisons and to identify trends, and areas for growth. MMC will submit monitoring reports that include a summary of the data monitoring results, comparisons of the data to trip reduction targets, and adjustments to programs as needed.

Parking Utilization Data

MMC is exploring options to improve data collection in the new employee parking garage. The most likely option utilizes Easy-Pass technology to automatically collect information about the vehicles parking in the garage.

In addition, MMC plans to install a parking guidance system in the new employee garage, as well as a controlled-access parking system in the visitor parking garages. Together, these systems will allow MMC to monitor occupancy in each garage and to collect data regarding who uses the parking facilities and the temporal fluctuations in parking demand across various periods of time.

MMC will utilize this parking usage data to assess its parking arrangement on a semi-annual basis.

MMC has received feedback on numerous occasions about inappropriate use of its parking garages. MMC hopes to reduce the misuse of its garages in the future by implementing these monitoring and controlling systems.

Employee Survey

MMC conducted an employee travel survey in 2017 to understand employee commuter preferences, and it intends to administer the survey bi-annually going forward. The survey is administered electronically using a survey platform and will produce data that MMC (or a third party) can use to identify changes and progress from one period to the next. The survey will seek information about the following topics to gauge the effectiveness of initiatives:

- TDM program participation rates
- Individual program effectiveness
- Barriers to TDM use
- Changes in commuting preferences
- Marketing effectiveness

Conclusion

The purpose of Maine Medical Center's Transportation Demand Management program, Get on Board, is to reduce the amount of single-occupancy vehicles by enabling and promoting alternative modes of transportation to and from MMC's Bramhall Campus for MMC employees. The program has an aggressive short-, mid-, and long-term goals. Success of this program partially relies on a cultural shift away from personal vehicles. Maine Medical Center is committed to implementing the programs outlined in this report and supporting the transition away from single occupancy vehicles.

Memorandum

Maine Medical Center Campus-Wide Parking Study

Overview

Maine Medical Center (MMC) retained VHB to conduct a campus-wide parking study that includes an analysis of demand and supply for patient, visitor, and employee parking on MMC's Bramhall Campus. This parking study incorporates the targeted impact of MMC's Get on Board Transportation Demand Management program.

This study quantifies the existing and future parking conditions, with a focus on peak period demand requirements, to help quantify and formulate sound parking strategies to adequately support MMC's patients, visitors, staff, and physicians into the future. The study took into consideration the assessment of two distinct user groups on-campus: patients/visitors and employees (all staff including physicians, nurses, administration, etc.). It also looked at all MMC-controlled parking, including both the on-campus parking as well as off-site, remote staff parking.

Existing Parking Supply

Table 1 provides a summary of existing MMC parking spaces. Currently, there are 850 patient/visitor parking spaces. All patient/visitor parking spaces are located on-campus. There are 2,027 employee parking spaces.

Table 1: Existing MMC Bramhall Campus Parking Supply Summary

		Patient / Visitor	Employee	Total at Facility	Ownership
ON-CAMPUS	Employee Garage	0	1,274	1,274	*Owned*
850 patient/visitor spaces	Patient/Visitor Garage	480	0	480	*Owned*
1,538 employee spaces	South Lot	370	0	370	*Owned*
	887 Congress (Forest St Garage)	0	178	178	*Owned*
	7 Bramhall St	0	26	26	*Leased*
	905 Congress St (Sportsman Lot)	0	60	60	*Leased*
OFF-CAMPUS	222 St John St (First Atlantic Lot)	0	283	283	*Leased*
489 employee spaces	181 High St (Gateway Garage)	0	100	100	*Leased*
	993 Congress St (Classic Lot)	0	97	97	*Owned*
	321 Brackett St	0	9	9	*Leased*
	Total Parking Spaces	**850**	**2,027**	**2,877**	

Existing Parking Demand

Existing MMC parking demand information was collected and quantified via various sources. A description of each of the data sources is outline below:

- Detailed weekday occupancy parking counts were conducted to understand utilization at key points in time to assess peak occupancy, overnight occupancy, and intervals of weekday garage entries and exits. These counts were conducted on multiple days in March and April 2017;
- Intermittent spot checks of parking utilization and access/egress were conducted from January through March 2017 by MMC and its consulting team; and

- MMC Parking and Security staff and the City of Portland Parking Director provided supplemental input regarding their observations and experiences related to the utilization of parking.
- A hospital peer review of parking facilities.

These counts, observations and input were compiled and used to help quantify the existing parking demand for a typical day on the campus. As shown in **Table 2**, MMC typically operates its employee parking at or above capacity during the weekday daytime. Patient/visitor parking generally operates at or near capacity during typical weekdays as well.

Table 2: 2017 MMC Bramhall Campus Parking Spaces/Demand Summary

	Patient / Visitor	Employee	Total at Facility
Parking Spaces	**850**	**2,027**	**2,877**
Parking Demand	**860**	**2,400**	**3,260**

MMC has approximately 2.3 employees, students, and contractors for every one employee parking space near the Bramhall Campus. Under current conditions, MMC would require about 370 additional parking spaces to alleviate today's employee parking shortfall. MMC manages this shortfall utilizing multiple strategies to address the demand for parking, such as TDM programs and moving employees to off-campus locations and securing additional remote parking with shuttle service. These strategies, however, have no satisfactory long-term solutions. The decentralized parking solution creates management challenges and is an employee dissatisfier. MMC continues to hear from employees that parking at the Bramhall Campus is unreliable. There have also been observations of MMC employees utilizing adjacent streets for parking throughout the day.

According to a hospital peer review, MMC's 850 patient/visitor parking spaces equate to 1.33 parking spaces per bed. This ratio is low compared to other New England and national peers. MMC's 2,027 staff parking spaces equate to 3.18 parking spaces per bed. This ratio is also low when compared to other peer institutions.

Future MMC Parking Actions

MMC has proposed multiple capital projects and programs in connection with the Master Facility Plan outlined in MMC's IDP. Near-term (completed by 2021) projects to expand parking supply include:

1. Patient / Visitor Garage Addition: Expand the existing 480-space Patient/Visitor Garage by three levels to accommodate an additional 225 spaces; and
2. New St John St Garage: Construct a new 2,450 space parking garage on the nearby St. John Street and demolish the existing 1,274-space Employee Garage.

The resultant 2021 parking supply upon completion of these near-term projects is summarized in **Table 3**.

Table 3: Expected 2021 MMC Bramhall Campus Parking Supply Summary

		Patient / Visitor	Employee	Total at Facility	Ownership
ON-CAMPUS	Patient/Visitor Garage	705	0	705	*Owned*
1,075 patient/visitor spaces	South Lot	370	0	370	*Owned*
264 employee spaces	887 Congress (Forest St Garage)	0	178	178	*Owned*
	7 Bramhall St	0	26	26	*Leased*
OFF-CAMPUS	New Employee Garage	0	2,450	2,450	*Owned*
2,459 employee spaces	321 Brackett St	0	9	9	*Leased*
	Total Parking Spaces	**1,075**	**2,654**	**3,729**	

Per September 22, 2017 Institutional Development Plan

As shown in **Table 3**, the patient parking supply by 2021 will increase by 225 spaces and the employee parking supply will increase by 696 spaces with these two parking projects completed. With the new Employee Parking Garage located off-campus, the amount of employees who park remotely will increase from about 25 percent to 90 percent.

MMC anticipates consolidating the Gateway Garage and Classic Lot parking spaces into the new employee garage following the opening of the new parking garage.

These efforts are intended to enable MMC to continue with their primary Master Plan goals, which include the expansion of important clinical programs and the de-coupling of semi-private patient rooms to fully private rooms. The proposed new hospital building will be located on the site of the former Employee Garage. As defined in the MMC IDP, the hospital anticipates that the overall patient load will grow by approximately eight percent over the next ten years (or about 0.75 percent per year). Similarly, employment at MMC is expected to grow by approximately 7 percent over the next ten years (or about 0.70 percent per year). The growth rates were applied to the 2017 MMC parking demands to reflect overall anticipated institutional parking growth. **Tables 4 and 5** summarize how the new construction will affect the occupancies over time.

Table 4: Future MMC Bramhall Campus Employee Parking Supply/Demand Summary

	2020	2022	2026
Parking Spaces	**2,654**	**2,723**	**2,723**
Effective Parking Capacity	**2,521**	**2,521**	**2,521**
Parking Demand	**2,465**	**2,500**	**2,570**

For employee parking garages, the effective parking capacity is 95% of striped parking spaces, shown in **Table 4**. This is due to the user group familiarity of the parking garage layout, circulation and general trends of the garage availability due to their daily use of the facility and the low space turnover. Effective capacity for the employee parking spaces is not 100% because of anticipated user compliance with lined spaces (i.e. parking in a way that limits the use of the adjacent parking space).

Table 5: Future MMC Bramhall Campus Patient/Visitor Parking Supply/Demand Summary

	2020	2022	2026
Parking Spaces	**1,075**	**1,075**	**1,075**
Effective Parking Capacity	**970**	**970**	**970**
Parking Demand	**892**	**905**	**933**

For patient/visitor garages, the effective parking capacity is 90% of striped parking spaces, shown in **Table 5**. Patients and visitors are often unfamiliar with the garage layout and operations. Planning to accommodate this targeted utilization will ensure arriving patients and visitors have convenient and available parking.

To help alleviate existing and future parking demands, and to support use of other alternative, sustainable modes of transportation, MMC continues to pursue and bolster its Transportation Demand Management (TDM). The purpose of the TDM Plan, called the Get on Board Program, is to reduce the amount of single-occupancy vehicles by enabling and promoting alternative modes of transportation to and from MMC's Bramhall Campus for MMC employees.

In the 2017 Get On Board plan, MMC established the following short-term, mid-term, and long-term single-occupancy vehicle reduction goals shown in **Table 6** below:

Table 6: 2017 TDM Trip Reduction Goals

	Short-Term (0-2 years)	Mid-Term (2-5 years)	Long-Term (5+ years)
Trip Reduction Target	2%	4%	5%

MMC will continue to monitor parking demand and needs at the Bramhall campus and re-evaluate its program goals. The estimated impacts of the Get on Board program's reduction goals are summarized in **Table 7**.

Table 7: Employee Parking Demand Reduction Due to TDM Efforts Summary

	2020	2022	2026
Parking Demand	**2,465**	**2,500**	**2,570**
Estimated TDM Reduction	**-60**	**-100**	**-120**
TDM Influenced Demand	**2,405**	**2,400**	**2,420**

If Get on Board targets are met, parking demand will reduce by approximately 60 in the short term (2020), 90 in the mid-term (2022) and 120 forecasting out to longer-term (2026). Such reductions strive to follow with less single-occupancy vehicles travelling to and from the Bramhall campus as intended by the Get on Board plan and programs.

Table 8: Employee Parking Demand Reduction Due to TDM Efforts Compared to Effective Employee Parking Capacity

	2020	2022	2026
Effective Employee Parking Capacity	**2,521**	**2,521**	**2,521**
TDM Influenced Demand	**2,405**	**2,399**	**2,420**
Estimated Parking Surplus	**116**	**122**	**101**

Table 8 compares the TDM influenced parking demand to the effective parking capacity for employee parking spaces. The amount of parking surplus fluctuates between 2020 and 2026 because of the time it will take for MMC to enhance the existing TDM program.

This analysis projects parking demand for 2026. The lifespan of the parking garage is expected to exceed 30 years. The estimated parking surplus in **Table 8** is roughly 7% of the total employee parking spaces shown in **Table 4** and is within a reasonable margin of error.

Conclusion

This study quantifies the existing and future parking conditions, with a focus on peak period demand requirements, to help quantify and formulate sound parking strategies to adequately support MMC's patients, visitors, staff, and physicians into the future. VHB determined that existing estimated parking demand at the Bramhall campus exceeds existing supply. The demand for complex healthcare in Maine is growing. As a result, MMC is growing to meet that demand. MMC's forecasts an increase in patient activity at the Bramhall campus by 2026. Using this forecast, VHB estimated a parking demand that will be accommodated only through investments in parking facilities and MMC's Get on Board program.

GORRILL PALMER

707 Sable Oaks Drive, Suite 30
South Portland, Maine 04106
207.772.2515

Evaluation of East Tower Detour
Maine Medical Center (MMC) – Bramhall Campus
Portland, Maine

1/18/2018

Proposed Detours:

There are three detours associated with the proposed upgrade and expansion of the Maine Medical Center (MMC); East Tower, Patient / Visitor Garage, and Utility Plant. Because each of the three detours has their own challenges, subtleties, and time frames, the three detours are being evaluated separately, keeping in mind any overlapping impacts that one may have on the other two. This memo focuses on the East Tower detour as shown on the attached figures.

Description of Detour:

To accommodate construction activities, workers, and to provide safety for the general public, Wescott Street will be closed between Crescent Street and Ellsworth Street, a length of approximately 220 feet. Wescott Street provides two-way traffic, is a town way that experiences approximately 350-400 vehicles on an average day (according to MaineDOT map viewer), and presumably accommodates almost entirely hospital related traffic. Wescott Street provides access to the Emergency / Ambulance area as well as one of two accesses to the visitor / patient parking garage. The other access to the garage is off Congress Street.

The proposed detour will direct current users of Wescott Street to use nearby Crescent Street. Crescent Street is currently a one-way street traveling away from the hospital and is a town way that experiences approximately 250-300 vehicles on an average day (according to MaineDOT map viewer). There do not appear to be any businesses along this section of street. In order to accommodate the detour, this one-way street is proposed to be converted to two-way traffic. The street is approximately 25 feet in width so two-way traffic should be able to be accommodated; however, on-street parking will need to be restricted (see "Parking" below).

There is a potential "pinch point" in two-way traffic flow where Wescott Street intersects Crescent Street in the form of a bumpout that projects into the intersection. This is not initially planned to be removed, but will be monitored closely and if identified as a restriction, will be removed. The bumpout appears to be located within the right of way.

Emergency Vehicles:

During the Wescott Street closure, two-way traffic will still be available between Ellsworth Street and the Emergency Department Ambulatory access via use of Crescent Street. MMC and Turner construction are exploring ways to maintain existing access to the Emergency Department via a temporary drive near Wescott Street and Crescent Street or relocation of the construction fence at Wescott Street and Crescent Street. The Emergency Department has a secondary access near the Emergency Department access door that can also be used and is not effected by the closure. There will be select times when the access at the Wescott Street and Crescent Street corner may be closed for brief times.

In addition to using Crescent Street to access the Emergency Room Ambulatory entrance, ambulances can also use an access from Gilman Street. The access is available the majority of the time; however, it can occasionally be blocked by larger delivery vehicles. Ambulance drivers notify the hospital on their way in to the hospital, and will be notified which access may be more appropriate at that time.

Parking:

The only parking impacts anticipated as a result of the East Tower detour are along the southerly side of Crescent Street. Crescent Street currently does not allow parking on the northerly side of the street, and is restricted to 1 hour parking between 9 AM and 5 PM on the southerly side of the street. As identified above, in order to accommodate two-way traffic on Crescent Street, parking will need to be restricted. Portland does not stripe individual parking spaces, but based on the distance between driveways and field reviews, to restrict parking would remove approximately 7-8 parking spaces. There are 3 residential buildings directly along Crescent Street, with additional residential buildings on each of the corners of the Crescent Street / Ellsworth Street intersection. Of the three residential buildings directly on Crescent Street, they appear to accommodate approximately 12 units. Of these 12 units, there appears to be approximately 9 off street parking spaces available for use, leaving a need for approximately 3 on-street parking spaces. The need for two of the parking spaces are for the building nearest the MMC visitor / patient parking garage.

It was difficult to identify exactly how many units were associated with the two buildings on the corners of the Crescent Street / Ellsworth Street intersection. Of the two buildings, the one located on the southwest corner has two off-street parking spaces off Crescent and three on-street parking spaces directly in front of the building on Ellsworth Street. The building on the northwest corner of the intersection has two off-street parking spaces and two on-street parking spaces directly in front of the building on Ellsworth.

To supplement available driveways and help address loss of parking along Crescent Street, MMC is planning to meet with the residents to discuss the potential loss of parking, and will offer parking in the nearby visitor parking garage as an option.

It should be noted, that additional parking restrictions may be identified on other streets when delivery routes are reviewed in the field to ensure proper turning of larger delivery vehicles can be accommodated.

Parking for workers will be provided off-site at satellite parking areas, such as the MMC Scarborough Campus and shuttled to the work site. Any non-essential vehicles not critical to the work site will be restricted from the site. Any parking by workers in the immediate area reported to MMC or Turner Construction will be taken seriously and addressed by Turner Construction.

Capacity:

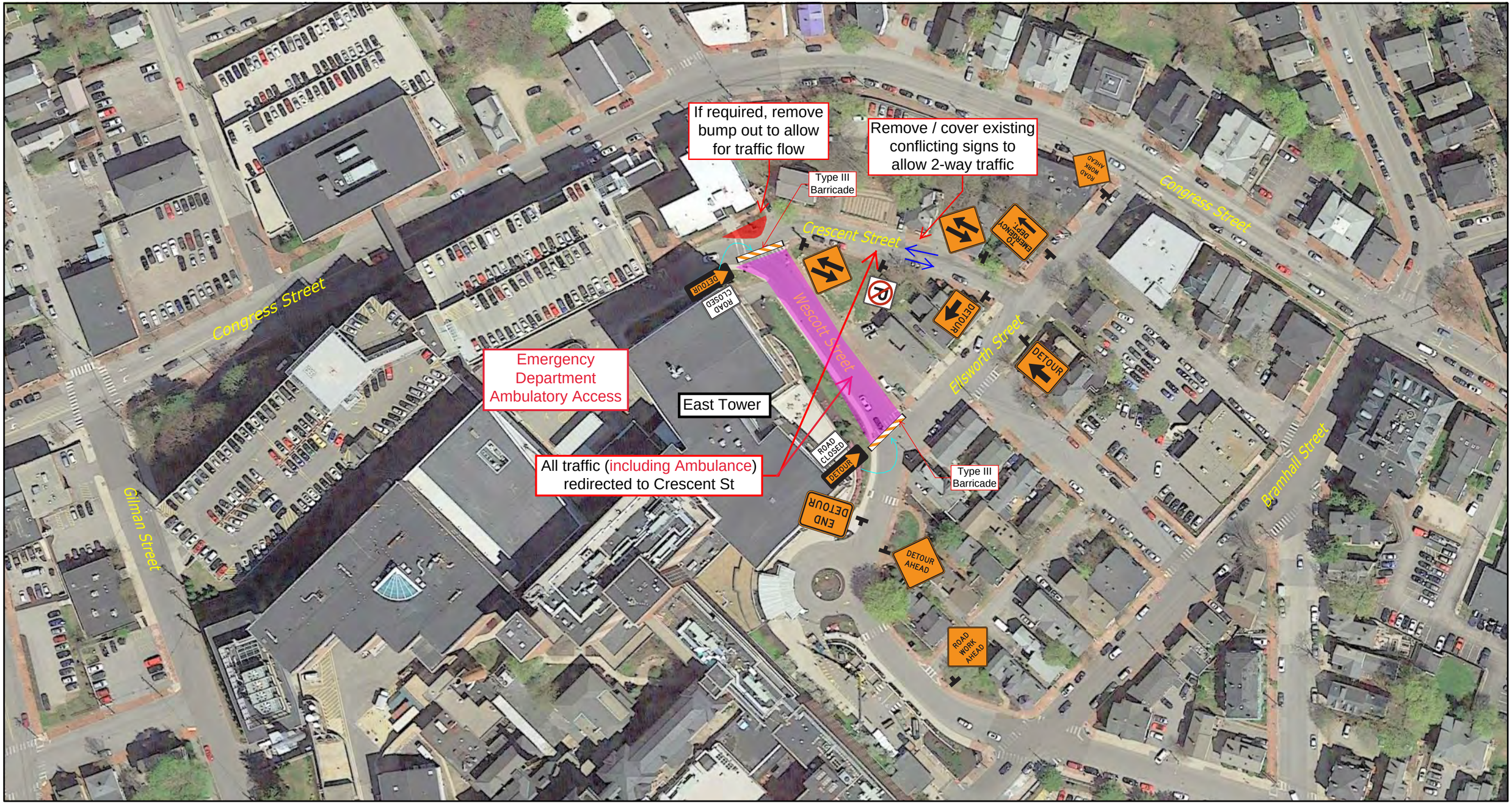
Given the neighborhood location, existing low traffic volumes, calm nature of the immediately surrounding area, and small area of impact of the detour, no capacity challenges are anticipated as a result of the East Tower detour.

Construction related Deliveries and Delivery Routes:

Turner Construction will be the responsible party for the actual construction and will be providing number, type (size), and routes for deliveries under separate cover. It should be noted that Ellsworth Street between Congress Street and Crescent Street (approximately 160 feet) which is currently one-way away from Congress Street, is proposed to be used for larger vehicle deliveries, both entering and exiting the site. Exiting the site will require the use of trained flaggers at the Crescent Street and Congress Street intersections. Given the short distance of this section of Ellsworth Street, line of site between the two intersections can be maintained.

East Tower Traffic Control Plan

Figure No. 1



Maine Medical Center Expansion
PORTLAND, MAINE

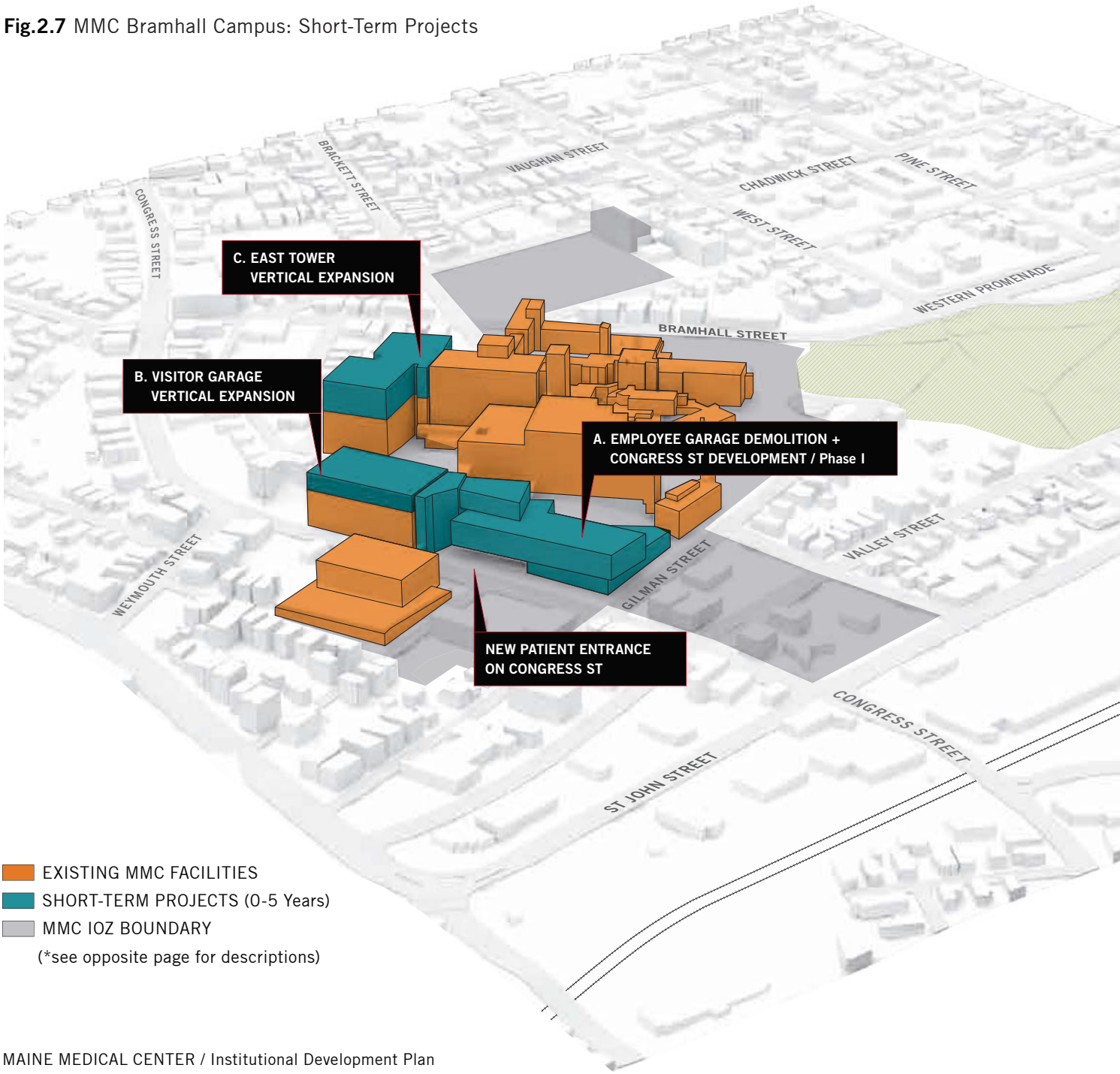
Design: ET
Draft:
Checked: RED
Scale: NONE
Date: JAN 2018
File Name: 2866-01-TRAFF.dwg

GORRILL PALMER
Relationships. Responsiveness. Results.
www.gorrillpalmer.com
207.772.2515

SHORT-TERM PROJECTS (0-5 YEARS)

A series of short-term projects are in the planning stages to meet MMC's current needs and to improve the efficiency of care delivery. These do not represent the only projects that could be proposed within this timeframe: due to the various factors impacting healthcare planning and their short time horizons (0-3 years), there may be other projects proposed within this timeframe.

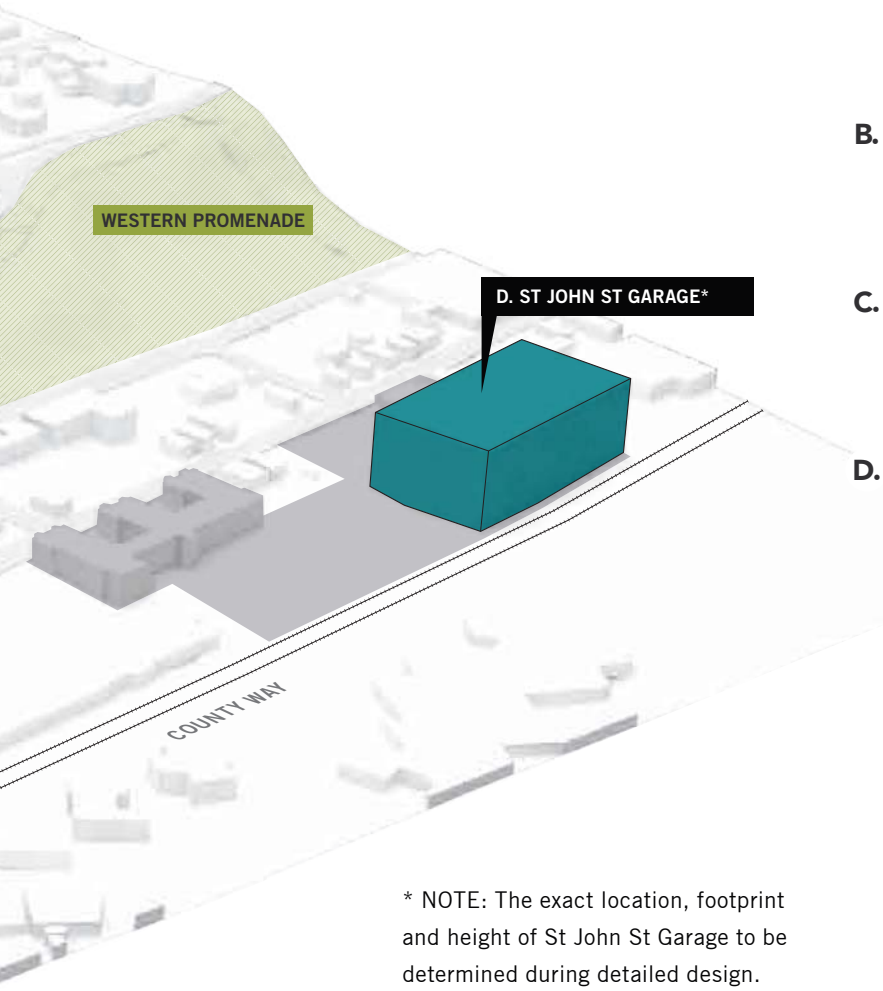
Fig.2.7 MMC Bramhall Campus: Short-Term Projects



Demolitions

A. Employee Garage Demolition

The 2015 building assessment does not recommend continued investment in this structure (see **Fig.2.5 on page 39**).



* NOTE: The exact location, footprint and height of St John St Garage to be determined during detailed design.

Additions / New Construction

A. Congress St Development, Phase I (285,000 GSF)

New six-story building along Congress St on former site of the Employee Garage, plus two-story connector to the LL Bean Building. Building program includes: a new patient entrance, universal, private inpatient beds and new procedure rooms. The new entrance changes the campus's orientation to Congress St.

B. Visitor Garage Vertical Expansion

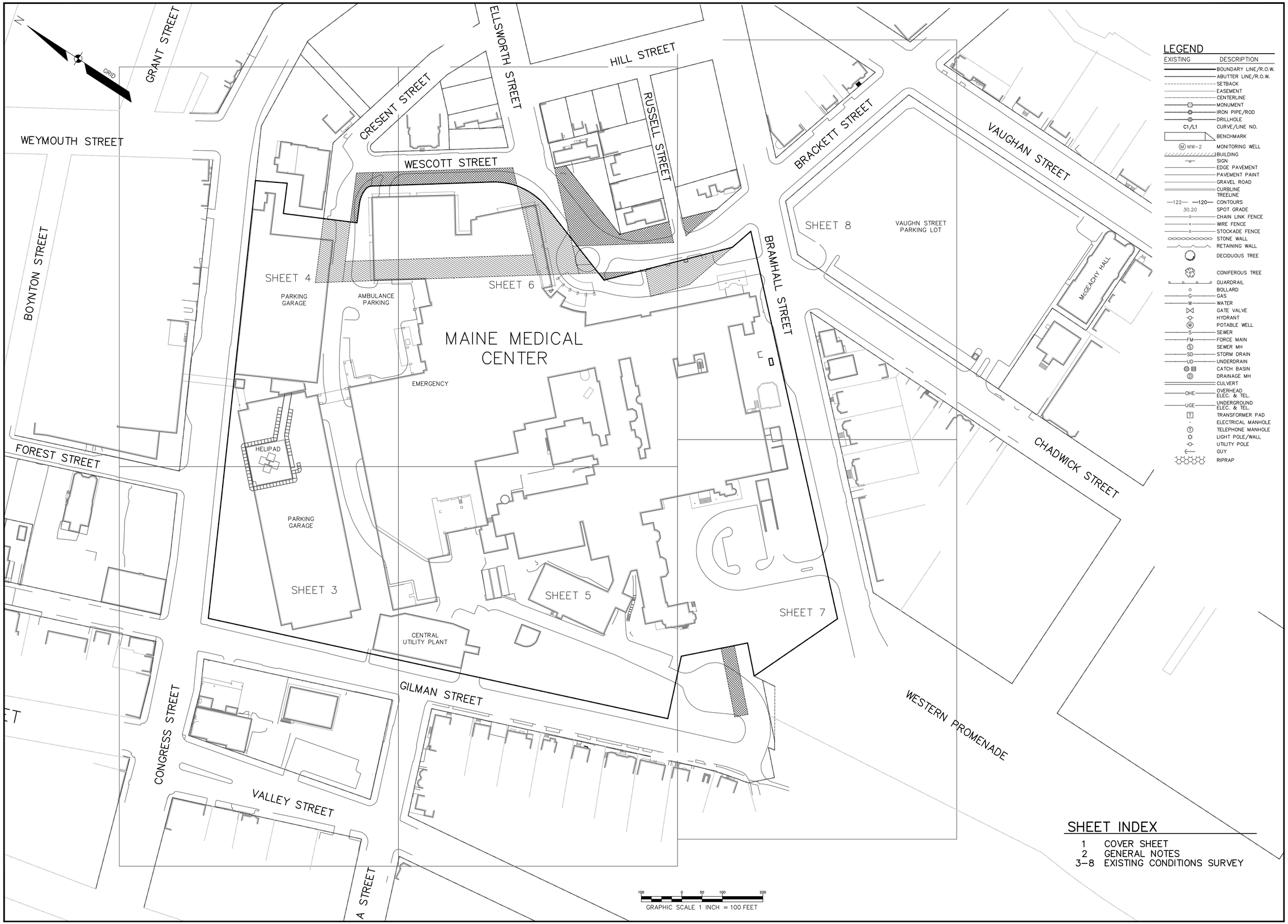
Addition of three floors at top to accommodate 225 new parking spaces.

C. East Tower Vertical Expansion (60,000 GSF)

Addition of two floors at top to accommodate 64 inpatient beds and relocated heliport.

D. St John St Garage

New 10-story, free-standing garage at 222 St John St to accommodate roughly 2,200 new parking spaces. The garage replaces spaces lost in the Employee Garage, in addition to consolidating parking from multiple surface lots owned or leased by MMC. (See **Chapter 3. Transportation Plan** for details).



LEGEND

EXISTING	DESCRIPTION
	BOUNDARY LINE/R.O.W.
	ABUTTER LINE/R.O.W.
	SETBACK
	EASEMENT
	CENTERLINE
	MONUMENT
	IRON PIPE/ROD
	DRILLHOLE
C1/L1	CURVE/LINE NO.
	BENCHMARK
Ⓜ MW-2	MONITORING WELL
	BUILDING
	SIGN
	EDGE PAVEMENT
	PAVEMENT PAINT
	GRAVEL ROAD
	CURBLINE
	TREELINE
122 120	CONTOURS
30.20	SPOT GRADE
	CHAIN LINK FENCE
	WIRE FENCE
	STOCKADE FENCE
	STONE WALL
	RETAINING WALL
	DECIDUOUS TREE
	CONIFEROUS TREE
	GUARDRAIL
	BOLLARD
G	GAS
W	WATER
	GATE VALVE
	HYDRANT
W	POTABLE WELL
S	SEWER
FM	FORCE MAIN
S	SEWER MH
SD	STORM DRAIN
UD	UNDERDRAIN
	CATCH BASIN
D	DRAINAGE MH
	CULVERT
OHE	OVERHEAD ELEC. & TEL.
UGE	UNDERGROUND ELEC. & TEL.
T	TRANSFORMER PAD
E	ELECTRICAL MANHOLE
T	TELEPHONE MANHOLE
	LIGHT POLE/WALL
	UTILITY POLE
	GUY
	RIPRAP

SHEET INDEX

1 COVER SHEET
2 GENERAL NOTES
3–8 EXISTING CONDITIONS SURVEY

STATE OF MAINE
MATTHEW W. EK
2117
PROFESSIONAL LAND SURVEYOR

REV:	BY:	DATE:	STATUS:
B	MWE	12/14/17	SUBMITTED FOR CITY REVIEW
A	MWE	12/23/09	SUBMITTED FOR CLIENT REVIEW

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SEBAGO TECHNICS, INC. ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO SEBAGO TECHNICS, INC.

SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd. - Suite 1A
South Portland, ME 04106
Tel: 207-200-2100
250 Goddard Rd. - Suite B
Lewiston, ME 04240
Tel: 207-783-9958

PROJECT NO.	FIELD BOOK	DESIGN	CHKD	DRAWN
01046	791B	WTC	CDM	MWE

EXISTING CONDITIONS SURVEY
OF:
MAINE MEDICAL CENTER CAMPUS
GILMAN ST, CONGRESS ST, BRAMHALL ST, ET.AL
PORTLAND, MAINE
FOR:
MAINE MEDICAL CENTER
22 BRAMHALL ST
PORTLAND, MAINE 04101

RECORD OWNER:
SEE NOTE 1, SHEET 2

DATE	SCALE
10/23/09	1"=60'

SHEET 1 OF 8

01046-EC-2017.dwg, TAB: EC01

GENERAL NOTES

1. THE RECORD OWNERS OF THE SURVEYED PROPERTIES ARE AS FOLLOWS:
   MAINE MEDICAL CENTER AND MMC REALTY CORPORATION AS DESCRIBED IN DEED BOOK/PAGES:

11613/153	1250/470	1282/323	1285/450	1289/192	1290/192	1296/351
1296/352	13504/86	14026/287	1575/227	16145/275	18032/68	19986/204
2127/269	2127/320	2127/443	2133/310	2133/311	2133/317	2143/330
2147/110	2149/190	22762/45	2301/21	2308/161	2349/229	2619/499
2685/369	2901/326	2951/927	2955/722	2988/139	3075/669	3095/34
3097/244	3108/396	3183/576	3187/234	3188/710	3278/209	3310/115
3310/116	377/296	377/297	378/6	381/260	382/450	384/37
388/92	3995/53	408/457	6177/319	8309/5	8855/81	9392/344
9722/45						

   * ALL RECORDED INFORMATION LISTED HEREON IS WITHIN THE CUMBERLAND COUNTY REGISTRY OF DEEDS (CCRD).

2. THE PROPERTIES ARE SHOWN ON THE CITY OF PORTLAND TAX MAPS AS FOLLOWS:
   MAP 53 BLOCK D, LOT 7,
   MAP 53 BLOCK E, LOT 13
   MAP 54 BLOCK H, LOT 1,
   MAP 64 BLOCK C, LOT 1,

3. BOUNDARY INFORMATION SHOWN HEREON IS BASED UPON ON GROUND SURVEY PERFORMED BY SEBAGO TECHNICS IN SUMMER AND FALL OF 2009 WITH RESEARCH UPDATES THROUGH FALL OF 2017.

4. THE BEARINGS SHOWN HEREON ARE BASED UPON THE MAINE STATE PLANE COORDINATE GRID, WEST ZONE 1802 ON NAD83 IN US FEET.

5. UTILITIES SHOWN HEREON ARE APPROXIMATE AND ARE BASED UPON FIELD LOCATION OF VISIBLE SURFACE FEATURES, INVERT INSPECTIONS, UTILITY MARKINGS BY DIGSMART OF MAINE, AND PLANS REFERENCED HEREON. THE INFORMATION SHOWN HEREON MAY NOT INCLUDE ALL UTILITIES. PRIOR TO ANY CONTRUCTION DIGSAFE AND APPROPRIATE UTILITY PROVIDERS MUST BE CONTACTED.

6. THE RIGHT OF WAY LINES ON THE STREETS ABUTTING THE LOCUS PROPERTIES SHOWN HEREON WERE ESTABLISHED UTILIZING CITY PUBLIC WORKS RECORDS AND FOUND MONUMENTATION AT THE CORNERS AND ANGLE POINTS OF THE STREETS.

EASEMENT, ENCUMBRANCE, AND AGREEMENT REFERENCES:

A. UNDERGROUND ANCHOR SYSTEM EASEMENT RESERVED BY MMC IN CONVEYANCE TO CRESCENT HEIGHTS LLC IN DEED BOOK 26288 PAGE 49.
B. UTILITY/DRAINAGE EASEMENT FOR A DRAIN/SEWER PIPE FROM THE PROPERTY NOW OF CRESCENT HEIGHTS, LLC. FORMERLY AS DESCRIBED IN DEED BOOK 1938 PAGE 248 AND 1946 PAGE 370.
C. UTILITY EASEMENT: TO NET&T NEAR THE NORTHERLY CORNER OF THE PARKING GARAGE ON CONGRESS ST. PER DEED BOOK 8573 PAGE 121.
D. CERTIFICATE OF VARIANCE APPROVAL GRANTING RELIEF FROM SECTION 14–137(7) MAXIMUM STRUCTURE HEIGHT OF 45 FEET, DATED JUNE 25, 1996, AND RECORDED IN DEED BOOK 12629 PAGE 295.
E. SITE LOCATION OF DEVELOPMENT DEPARTMENT ORDER BY MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION FOR MAINE MEDICAL CENTER, PER DEED BOOK 13919 PAGE 114.
F. UTILITY EASEMENT: MMC TO NET&T 6' X 8' NEAR GILMAN AND CONGRESS PER DEED BOOK 13027 PAGE 207.
G. AMENDMENT TO CITY CODE SEC. 14–49 (ZONING MAP AMENDMENT) RE: CONDITIONAL REZONING FOR PROPERTY IN VICINITY OF WESTERN PROMENADE/MAINE MEDICAL CENTER. DATED MAY 24, 2005 AND RECORDED IN DEED BOOK 22671 PAGE 60.

PLAN REFERENCES

1. STATE OF MAINE DEPARTMENT OF TRANSPORTATION PLAN SHOWING VALLEY, CONGRESS, AND ST. JOHN STREETS, CITY OF PORTLAND DEPARTMENT OF PUBLIC WORKS FILE NO. 726 / 16.
2. STANDARD BOUNDARY SURVEY FOR MAINE MEDICAL CENTER BY STEVENS, MORTON, ROSE, & THOMPSON, INC. DATED OCTOBER 06, 1990 RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN PLAN BOOK 188, PAGE16.
3. CITY OF PORTLAND DEPARTMENT OF PUBLIC WORKS LAND SWAP WITH MAINE MEDICAL CENTER (GILMAN ST. & ARSENAL ST.) DATED JANUARY 23, 1974. DPW FILE NO. 547 / 20.
4. PLAN OF LAND OF J.M. WOOD ESQ. ELLSWORTH AND O STREETS DPW FILE NO. 361 / 3.
5. PLAN OF LAND SURVEYED FOR MOODY F. WALKER SEPTEMBER 23, 1863 BY HOWE & OSGOOD C.E. CCRD PLAN BOOK 21, PAGE 36.
6. SITE PLAN OF NEUROSCIENCE INSTITUTE CONGRESS AND GILMAN ST. PORTLAND MAINE BY GREGORY K. JOHNSON AIA DATED JULY 31, 1987 ON FILE WITH THE DPW.
7. PLAN OF PROPOSED WIDENING CONGRESS STREET AUGUST 1885, DPW FILE NO. 360 / 2.
8. CITY OF PORTLAND DEPARTMENT OF PUBLIC WORKS, B ST. WIDENING DATED NOV.4, 1937 DPW FILE NO. 569 / 9.
9. PLAN OF CITY LANDS BETWEEN GILMAN STREET AND MAINE CENTRAL RAILROAD SOUTH OF CONGRESS STREET, DPW FILE NO. 18 / 4.
10. PLAN OF CITY LAND BETWEEN CONGRESS AND "A" STS DATED 1883 DPW FILE NO. 379 / 10.
11. CITY OF PORTLAND PLAN OF "B" VALLEY ST DATED FEB. 1926 DPW FILE. NO.179.
12. CITY OF PORTLAND, DEPARTMENT OF PUBLIC WORKS ARSENAL STREET DISCONTINUANCE DATED APRIL 15, 1953 DPW FILE NO. 410 / 96.
13. MMC PARKING FACILITY PROPOSED GRADING PLAN DATED 29 MAY 1971 BY TAC, DPW FILE NO. 680 / 4.
14. CITY OF PORTLAND DEPARTMENT OF PUBLIC WORKS WESTERN PROMENADE SLOPE, CITY BOUNDARY BETWEEN GILMAN AND "B" ST. DATED JAN. 4,1933 DPW FILE NO. 462 / 32 AND 462 / 32–A.
15. PLAN OF LAND WEST OF THE BRACKETT LINE CHADWICK AND VAUGHN STREETS, DATED 12 JUNE 1833 RECORDED IN CCRD PLAN BOOK 1, PAGE 1, DPW FILE NO. 462 / 4.
16. PLAN OF CITY LANDS BETWEEN GILMAN AND "B" STREETS DATED MAY 1883, DPW FILE NO. 69 / 4R, CCRD PLAN BOOK 4, PAGE 43.
17. WESTERN PROMENADE DATED JAN. 1926 CITY OF PORTLAND DPW SHEET NO. 7 FILE NO. 142.
18. CITY OF PORTLAND WORK SHEET CONGRESS, ARSENAL, AND BRACKETT STREETS DPW FILE NO. 363 / 11.
19. CITY OF PORTLAND, PLAN SHOWING PROPOSED GILMAN STREET, CONGRESS AND ASH STREETS, DPW FILE NO. 365 / 6.
20. CITY OF PORTLAND PLAN SHOWING GILMAN STREET, CONGRESS ST. AND WESTERN PROMENADE, DPW FILE NO. 365 / 7.
21. PLAN OF CITY LAND BETWEEN GILMAN & "B" STREETS DATED MAY 1883, CCRD PLAN BOOK 4, PAGE 43, DPW FILE NO. 379 / 25.
22. PORTLAND WATER DISTRICT, MAP NO. 7 SHOWING MAINE MEDICAL CENTER AREA.
23. CITY OF P D PLAN SHOWING CONGRESS STREET SHEET NO. 3 DPW FILE NO. 150.ORTLAN
24. CITY OF PORTLAND PLAN SHOWING GILMAN STREET DATED FEB 1926 DPW FILE NO. 178.
25. CITY OF PORTLAND PROPERTY PLAN BOOK NO. 274 SHOWNG PROPOSED TAKING FROM MAINE MEDICAL CENTER ON CHARLES STREET DATED NOVEMBER 29, 1973.
26. CITY OF PORTLAND PLAN OF BRAMHALL ST., VAUGHAN ST., AND BRACKETT ST. DATED OCT. 1925 DPW FILE NO. 90.
27. STANDARD BOUNDARY SURVEY AT 25–27 ELLSWORTH STREET MADE FOR MAINE MEDICAL CENTER BY OWEN HASKELL, INC. DATED OCT. 14, 2002 ON FILE WITH SEBAGO TECHNICS,INC.
28. CITY OF PORTLAND MAINE DEPARTMENT OF PUBLIC WORKS, CHARLES ST. AS BUILT PLAN DATED 1973 DPW FILE NO. 495 / 7.
29. CITY OF PORTLAND MAINE DEPARTMENT OF PUBLIC WORKS, WESCOTT ST. AS BUILT PLAN DATED 1973 DPW FILE NO. 495 / 6.
30. CITY OF PORTLAND MAINE DEPARTMENT OF PUBLIC WORKS, HILL ST. AS BUILT PLAN DATED 1973 DPW FILE NO. 495 / 5.
31. CITY OF PORTLAND MAINE DEPARTMENT OF PUBLIC WORKS, HILL ST. AS BUILT PLAN DATED 1973 DPW FILE NO. 495 / 5.
32. CITY OF PORTLAND MAINE DEPARTMENT OF PUBLIC WORKS, ELLSWORTH ST. AS BUILT PLAN DATED 1973 DPW FILE NO. 495 / 2.
33. CITY OF PORTLAND MAINE DEPARTMENT OF PUBLIC WORKS, CRESCENT ST. AS BUILT PLAN DATED 1973 DPW FILE NO. 495 / 3.
34. STREET VACATION / ACCEPTANCE AND LAND TRANSFER PLAN OF MAINE MEDICAL CENTER BY SEBAGO TECHNICS, INC AS REVISED THROUGH JULY 5, 2005 DPW FILE NO. 992 / 3.
35. STANDARD BOUNDARY SURVEY ON CONGRESS AND ELLSWORTH STREETS, PORTLAND MAINE BY DESLAURIERS & ASSOCIATES DATED AUGUST 30, 1999.
36. STANDARD BOUNDARY SURVEY AT 26–28 ELLSWORTH STREET MADE FOR MAINE MEDICAL CENTER BY OWEN HASKELL, INC. DATED OCT. 14, 2002 ON FILE WITH SEBAGO TECHNICS, INC.
37. EXISTING CONDITIONS & STANDARD BOUNDARY SURVEY MAINE MEDICAL CENTER DATED MAY 1, 1996 BY TITCOMB ASSOCIATES.
38. PLAN OF CRESCENT STREET DATED OCT. 1886 BY PORTLAND CITY ENGINEER DPW FILE NO.10 / 02.
39. CITY OF PORTLAND PLAN OF BRAMHALL ST., ELLSWORTH ST., AND CHARLES ST. DATED OCT. 1926 DPW FILE NO. 158..
40. PLAN OF STREETS ON BRAMHALL'S HILL SEPTEMBER 1858 BY A.P. MARSHALL CITY ENGINEER DPW FILE NO. 359 / 22.
41. PLAN OF LAND OR LOTS WEST OF THE BRACKETT ESTATE DATED 1835, DPW FILE NO.134 / 2.
42. PLAN NO. 5 SHOWING STREETS ON BRAMHALL'S HILL SURVEYED MAY 1862 BY C.R. GOODELL C.E. DPW FILE NO. / 15.
43. CITY OF PORTLAND PLAN SHOWING ARSENAL STREET DATED OCT 1925, DPW FILE NO. 95.
44. PLAN OF LAND OR LOTS WEST OF THE BRACKETT ESTATE DATED 1835, DPW FILE NO.396 / 17..
45. PLAN OF CHANGE IN LINE OF CONGRESS STREET, DPW FILE NO. 360 / 25.
46. PLAN OF CHANGE IN LINE OF CONGRESS STREET, DATED OCTOBER 1854, DPW FILE NO. 360 / 27.
47. PLAN OF J.B. BROWN'S LAND WEST OF BRAMHALL'S HILL MADE BY WM. S. EDWARDS C.E. DATED 1871ON FILE IN THE DPW OFFICE.
48. CITY OF PORTLAND MAINE DEPARTMENT OF PUBLIC WORKS, ARSENAL ST. DISCONTINUANCE PLAN DATED 12/2/41 ON FILE IN DPW OFFICE.
49. THIS PLAN OF A TOWN ON BRAMHALL'S HILL PORTLAND MAINE AT THE REQUEST OF WLLIAL VAUGHAN, THE PROPRIETOR COMPLETED IN 1813 BY PELEG WADSWORTH, SURVEYOR, DPW FILE NO. 404 / 130, CCRD PLAN BOOK 37, PAGE 12.
50. T.F. CHAPPELL C.E. PLAN OF ASH STREET, ARSENAL ST., CONGRESS ST.
51. PARKING AREA ON BRAMHALL RESERVOIR SITE CHADWICK, BRAMHALL AND VAUGHAN STS. DATED 1964 DPW FILE NO. 698 / 14.
52. MAINE MEDICAL CENTER PKG C– SITE UTILITIES EXISTING CONDITIONS PLAN DATED THROUGH 05/25/05 BY THE RICHIE ORGANIZATION.
53. MAINE MEDICAL CENTER, PORTLAND MAINE BEAN BUILDING SITE UTILITIES AT ER. BY SHEPLEY, BULFINCH, RICHARDSON, & ABBOTT, DATED THROUGH 3/28/97.
54. BOUNDARY SURVEY OF SPORTSMANS LOT FOR MAINE MEDICAL CENTER, BY SEBAGO TECHNICS, INC., DATED THROUGH 10/23/09.
55. EXISTING CONDITIONS PLAN OF EAGLES CLUB BLOCK FOR MAINE MEDICAL CENTER, BY SEBAGO TECHNICS, INC., DATED THROUGH 11/3/09.

STATE OF MAINE · MATTHEW W. EK · 2117 · PROFESSIONAL LAND SURVEYOR

REV:	BY:	DATE:	STATUS:
B	MWE	12/14/17	SUBMITTED FOR CITY REVIEW
A	MWE	12/23/09	SUBMITTED FOR CLIENT REVIEW

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SEBAGO TECHNICS, INC. ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO SEBAGO TECHNICS, INC.

SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd. - Suite 1A
South Portland, ME 04106
Tel: 207-200-2100
250 Goddard Rd. - Suite B
Lewiston, ME 04240
Tel: 207-783-9986

PROJECT NO.	FIELD BOOK	DESIGN	CHKD.	DRAWN
01046	791B	WTC	CDM	MWE

EXISTING CONDITIONS SURVEY
OF:
MAINE MEDICAL CENTER CAMPUS
GILMAN ST. CONGRESS ST. BRAMHALL ST. ET AL
PORTLAND, MAINE
FOR:
MAINE MEDICAL CENTER
22 BRAMHALL ST
PORTLAND, MAINE 04101

RECORD OWNER:
SEE NOTE 1, SHEET 2

DATE	SCALE
10/23/09	NA

SHEET 2 OF 8

01046-EC-2017.dwg, TAB: EC02

CONGRESS STREET
(FKA MAINE STREET)
76 FEET WIDE

CONGRESS STREET
(FKA MAINE STREET)
66 FEET WIDE

VALLEY STREET
(FORMERLY B STREET)

GILMAN STREET
60 FEET WIDE

A STREET

N/F
GLI REALTY CO.
7815/332

N/F
TPA ASSOCIATES
9335/26

N/F
TPA ASSOCIATES
9335/26

N/F
RBT.K JORDAN TRUSTEE
22902/156

EAST END CORP.
23397/308
1+ STORY BUILDING

EAST END HOLDINGS, LLC
PARCEL 1 OF
20289/341

EAST END HOLDINGS, LLC
PARCEL 2 OF
20289/341

EAST END HOLDINGS, LLC
PARCEL 3 OF
20289/341

EAST END HOLDINGS, LLC
PARCEL 4 OF
20289/341

2+ STORY RESTAURANT/HOUSE

FACE OF BUILDING ALONG CONGRESS STREET ENCROACHES INTO CONGRESS STREET RIGHT OF WAY UP TO APPROXIMATELY 0.26 FEET.

8" x 8" GRANITE MONUMENT IN HANDHOLE

8" x 8" GRANITE MONUMENT WITH BRASS PLUG #PLS2239

8" x 8" GRANITE MONUMENT WITH BRASS PLUG IN HANDHOLE

8" x 8" GRANITE MONUMENT WITH BRASS PLUG (HELD AS 3 FOOT OFFSET)

REMAINS OF CONC. WALL

BENCHMARK
BRASS PLUG IN 8" x 8" GRAN. MON.
ELEV=52.17'

BENCHMARK
TOP CENTER OF 6" X 6" GRAN. MON.
ELEV=41.78'

BENCHMARK
EASTERLY EDGE OF SEWER MANHOLE
RIMELEV=1063.57'

SEE NOTE 8
1" IRON PIPE FLUSH

SEE NOTE 7

1/2" DRILL HOLE

5/8" REBAR 1" HIGH

5/8" REBAR FLUSH W/ WORN ALUMN. CAP

6" x 6" GRANITE MONUMENT FLUSH

S63°11'56"W 181.65'

66.00'

76.00'

MAINE MEDICAL CENTER

COMMUNICATION BOX ON CONC. PAD

GRANITE BENCH/RETAINING WALL

COLUMNS (TYPICAL) SECOND FLOOR THIRD FLOOR

WOOD GUARDRAIL

CONC. PAD

ELEVATOR

TRANSFORMER PAD

METAL BULKHEAD

A/C UNIT

OVERHANG

REMAINS OF OLD CONCRETE CENTER BLOCK WALL

CONC. ENTRANCE/EXIT TO PARKING GARAGE

PARKING GARAGE

HELIPAD

STAIRWAY

CRUSHED STONE

CONC. RETAINING WALL

MAINE MEDICAL CENTER

CENTRAL UTILITY PLANT

BOLLARD (TYPICAL)

GRAVEL AREA

GRAVEL DRIVE

GRAVEL PARKING

PAVED PARKING

MISC. LANDSCAPE

SHEET 3

SHEET 4

SHEET 5

SHEET 6

GRID

GRAPHIC SCALE 1 INCH = 20 FEET

NOTES

1. SEE SHEET 2 FOR GENERAL NOTES.

STATE OF MAINE
MATTHEW W. EK
2117
PROFESSIONAL LAND SURVEYOR

REV.	BY:	DATE:	STATUS:
A	MWE	12/23/09	SUBMITTED FOR CLIENT REVIEW
B	MWE	12/14/17	SUBMITTED FOR CITY REVIEW

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SEBAGO TECHNICS, INC. ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO SEBAGO TECHNICS, INC.

SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd. - Suite 1A
South Portland, ME 04106
Tel: 207-200-2100
250 Goddard Rd. - Suite B
Lewiston, ME 04240
Tel: 207-783-9858

PROJECT NO.	FIELD BOOK	DESIGN	CHKD	DRAWN
01046	791B	WTC	CDM	MWE

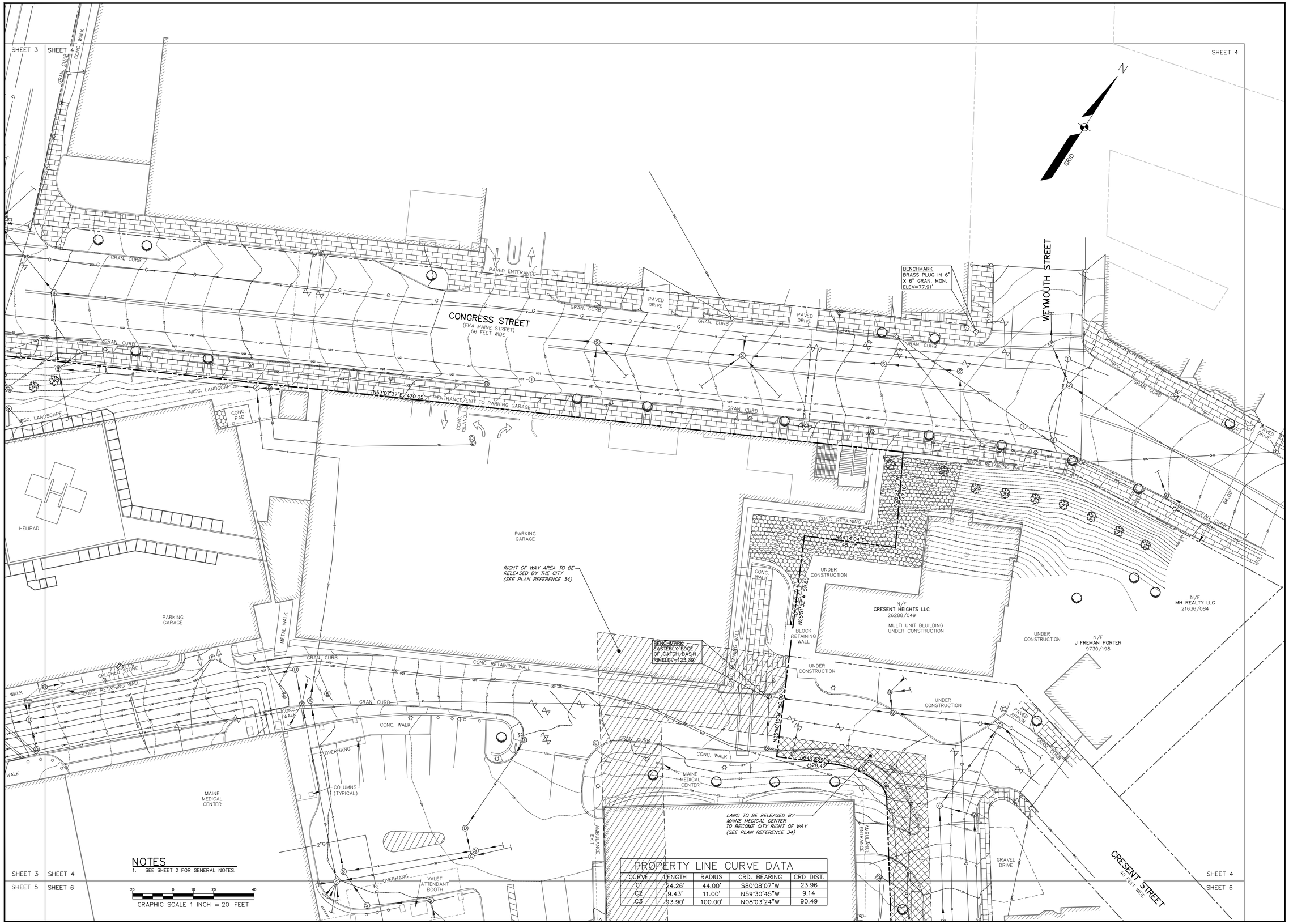
EXISTING CONDITIONS SURVEY
OF:
MAINE MEDICAL CENTER CAMPUS
GILMAN ST, CONGRESS ST, BRAMHALL ST, ET AL
PORTLAND, MAINE
FOR:
MAINE MEDICAL CENTER
22 BRAMHALL ST
PORTLAND, MAINE 04101

RECORD OWNER:
SEE NOTE 1, SHEET 2

DATE	SCALE
10/23/09	1"=20'

SHEET 3 OF 8

01046-EC-2017.dwg, TAB:ECO3



PROPERTY LINE CURVE DATA

CURVE	LENGTH	RADIUS	CRD. BEARING	CRD DIST.
C1	24.26'	44.00'	S80°08'07"W	23.96
C2	9.43'	11.00'	N59°30'45"W	9.14
C3	93.90'	100.00'	N08°03'24"W	90.49

STATE OF MAINE
MATTHEW W. EK
2117
PROFESSIONAL LAND SURVEYOR

REV:	BY:	DATE:	STATUS:
B	MWE	12/14/17	SUBMITTED FOR CITY REVIEW
A	MWE	12/23/09	SUBMITTED FOR CLIENT REVIEW

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SEBAGO TECHNICS, INC. ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO SEBAGO TECHNICS, INC.

SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd. - Suite 1A
South Portland, ME 04106
Tel. 207-200-2100
250 Goddard Rd. - Suite B
Lewiston, ME 04240
Tel. 207-783-5656

PROJECT NO.	FIELD BOOK	DESIGN	CHKD	DRAWN
01046	791B	WTC	CDM	MWE

EXISTING CONDITIONS SURVEY
OF:
MAINE MEDICAL CENTER CAMPUS
GILMAN ST, CONGRESS ST, BRAMHALL ST, ET.AL
PORTLAND, MAINE
FOR:
MAINE MEDICAL CENTER
22 BRAMHALL ST
PORTLAND, MAINE 04101

RECORD OWNER:
SEE NOTE 1, SHEET 2

DATE	SCALE
10/23/09	1"=20'

SHEET 4 OF 8

01046-EC-2017.dwg, TAB:EC04

SHEET 3 | SHEET 4
SHEET 5 | SHEET 6

A STREET
GILMAN STREET
60 FEET WIDE

BENCHMARK
TOP CENTER OF 6" X 6" GRAN. MON.
ELEV=66.99'

BENCHMARK
SOUTHERLY EDGE OF CATCH BASIN.
RIM ELEV=108.15'

BENCHMARK
TOP CENTER OF 6" X 6" GRAN. MON.
ELEV=105.02'

N20°41'01"W 696.16'

S69°14'08"W 94.58'

CENTRAL UTILITY PLANT
MAINE MEDICAL CENTER

GRID

GRAPHIC SCALE 1 INCH = 20 FEET

NOTES

1. SEE SHEET 2 FOR GENERAL NOTES.

SHEET 5 | SHEET 7
SHEET 5 | SHEET 6

REV.	BY:	DATE:	STATUS:
B	MWE	12/14/17	SUBMITTED FOR CITY REVIEW
A	MWE	12/23/09	SUBMITTED FOR CLIENT REVIEW

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SEBAGO TECHNICS, INC. ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO SEBAGO TECHNICS, INC.

STATE OF MAINE
MATTHEW W. EK
2117
PROFESSIONAL LAND SURVEYOR

SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd. - Suite 1A
South Portland, ME 04106
Tel. 207-200-2100
250 Goddard Rd. - Suite B
Lewiston, ME 04240
Tel. 207-783-9566

PROJECT NO.	FIELD BOOK	DESIGN	CHKD	DRAWN
01046	791B	WTC	CDM	MWE

EXISTING CONDITIONS SURVEY
OF:
MAINE MEDICAL CENTER CAMPUS
GILMAN ST, CONGRESS ST, BRAMHALL ST, ET AL
PORTLAND, MAINE
FOR:
MAINE MEDICAL CENTER
22 BRAMHALL ST
PORTLAND, MAINE 04101

RECORD OWNER:
SEE NOTE 1, SHEET 2

DATE	SCALE
10/23/09	1"=20'

SHEET 5 OF 8

01046-EC-2017.dwg, TAB:EC05

SHEET 3 | SHEET 4
SHEET 5 | SHEET 6

PROPERTY LINE CURVE DATA

CURVE	LENGTH	RADIUS	CRD. BEARING	CRD DIST.
C1	24.26'	44.00'	S80°08'07"W	23.96
C2	9.43'	11.00'	N59°30'45"W	9.14
C3	93.90'	100.00'	N08°03'24"W	90.49

OVERHANG
VALET ATTENDANT BOOTH
COLUMN (TYPICAL)
EMERGENCY ENTRANCE
CONC. WALK
MAIN ENTRANCE
RIGHT OF WAY AREA TO BE RELEASED BY THE CITY (SEE PLAN REFERENCE 34)
LAND TO BE RELEASED BY MAINE MEDICAL CENTER TO BECOME CITY RIGHT OF WAY (SEE PLAN REFERENCE 34)
S45°53'31"E 178.42'
GRAVEL DRIVE
CRESENT STREET
40 FEET WIDE
GRAN. CURB
WESCOTT STREET
50 FEET WIDE
GRID
GRAVEL PARKING LOT
BLOCK RETAINING WALL
PATIO AREA
MISC. LANDSCAPE
CONC. WALK
ELLSWORTH STREET
60 FEET WIDE
MAINE MEDICAL CENTER
BENCHMARK
NORTHERLY EDGE OF CATCH BASIN
RIMELEV=142.70'
TIMBER BORDER
PICNIC TABLE ON CONC. PAD WITH PATIO BLOCK BORDER (TYPICAL)
FIRE ESCAPE
BROKEN PAVEMENT
CONC. PAD
STAIRWAY
BLOCK PATIO WITH ROOF
CONC. FOUNDATION WALL AND FOOTING
BRICK DRAINAGE CHANNEL
BENCHMARK
EASTERLY EDGE OF CATCH BASIN
RIMELEV=145.89'
BENCHMARK
EASTERLY EDGE OF CATCH BASIN
RIMELEV=136.98'
S18°00'42"W 136.31'
1.45'
N47°21'29"W
LAND TO BE RELEASED BY MAINE MEDICAL CENTER TO BECOME CITY RIGHT OF WAY (SEE PLAN REFERENCE 34)
N/F JEFFERY L. FREILAND 14253/320
N/F PAULA WILHOITE 18004/025
N/F MICHAEL J. FREILAND 14591/320
N/F JUNE C. SOULE 3988/248
HILL STREET
60 FEET WIDE
RUSSELL STREET
20 FEET WIDE
METAL GRATE
N/F BEH REDEVELOPMENT LLC

SHEET 5 | SHEET 6 | SHEET 6
SHEET 7 | SHEET 7 | SHEET 8
SHEET 6 | SHEET 8

NOTES
1. SEE SHEET 2 FOR GENERAL NOTES.

GRAPHIC SCALE 1 INCH = 20 FEET (20 0 10 20 40)

STATE OF MAINE
MATTHEW W. EK
2117
PROFESSIONAL LAND SURVEYOR

REV:	BY:	DATE:	STATUS:
A	MWE	12/23/09	SUBMITTED FOR CLIENT REVIEW
B	MWE	12/14/17	SUBMITTED FOR CITY REVIEW

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SEBAGO TECHNICS, INC. ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO SEBAGO TECHNICS, INC.

SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd. - Suite 1A
South Portland, ME 04106
Tel: 207-200-2100
250 Goddard Rd. - Suite B
Lewiston, ME 04240
Tel: 207-783-9556

PROJECT NO.	FIELD BOOK	DESIGN	CHKD	DRAWN
01046	791B	WTC	CDM	MWE

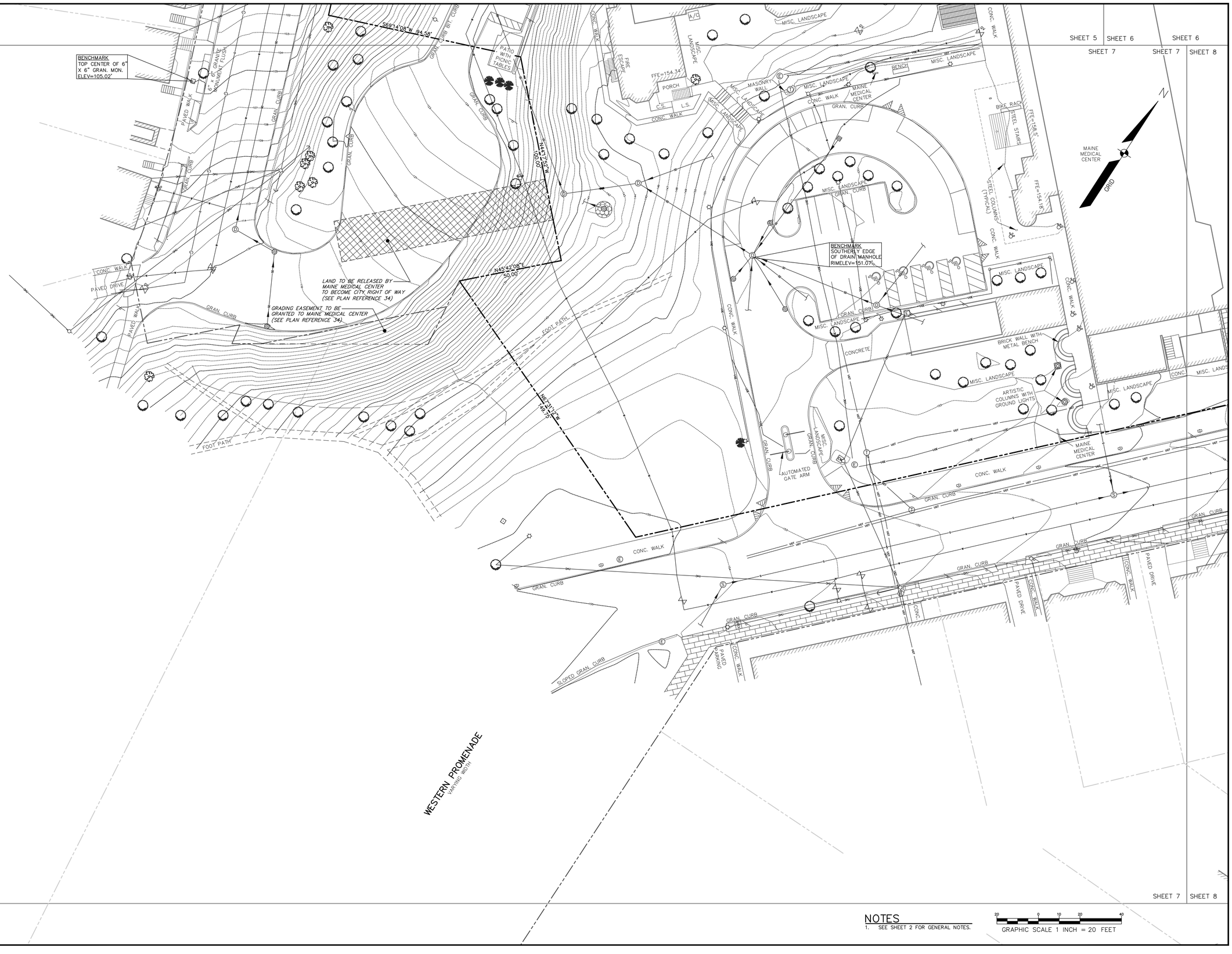
EXISTING CONDITIONS SURVEY
OF:
MAINE MEDICAL CENTER CAMPUS
GILMAN ST, CONGRESS ST, BRAMHALL ST, ET.AL
PORTLAND, MAINE
FOR:
MAINE MEDICAL CENTER
22 BRAMHALL ST
PORTLAND, MAINE 04101

RECORD OWNER:
SEE NOTE 1, SHEET 2

DATE	SCALE
10/23/09	1"=20'

SHEET 6 OF 8

01046-EC-2017.dwg, TAB:EC06



NOTES

1. SEE SHEET 2 FOR GENERAL NOTES.

GRAPHIC SCALE 1 INCH = 20 FEET

STATE OF MAINE
MATTHEW W. EK
2117
PROFESSIONAL LAND SURVEYOR

REV:	BY:	DATE:	STATUS:
B	MWE	12/14/17	SUBMITTED FOR CITY REVIEW
A	MWE	12/23/09	SUBMITTED FOR CLIENT REVIEW

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SEBAGO TECHNICS, INC. ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO SEBAGO TECHNICS, INC.

SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd. - Suite 1A
South Portland, ME 04106
Tel. 207-200-2100
250 Goddard Rd. - Suite B
Lewiston, ME 04240
Tel. 207-783-5656

PROJECT NO.	FIELD BOOK	DESIGN	CHKD	DRAWN
01046	791B	WTC	CDM	MWE

EXISTING CONDITIONS SURVEY

OF:
MAINE MEDICAL CENTER CAMPUS
GILMAN ST, CONGRESS ST, BRAMHALL ST, ET.AL
PORTLAND, MAINE

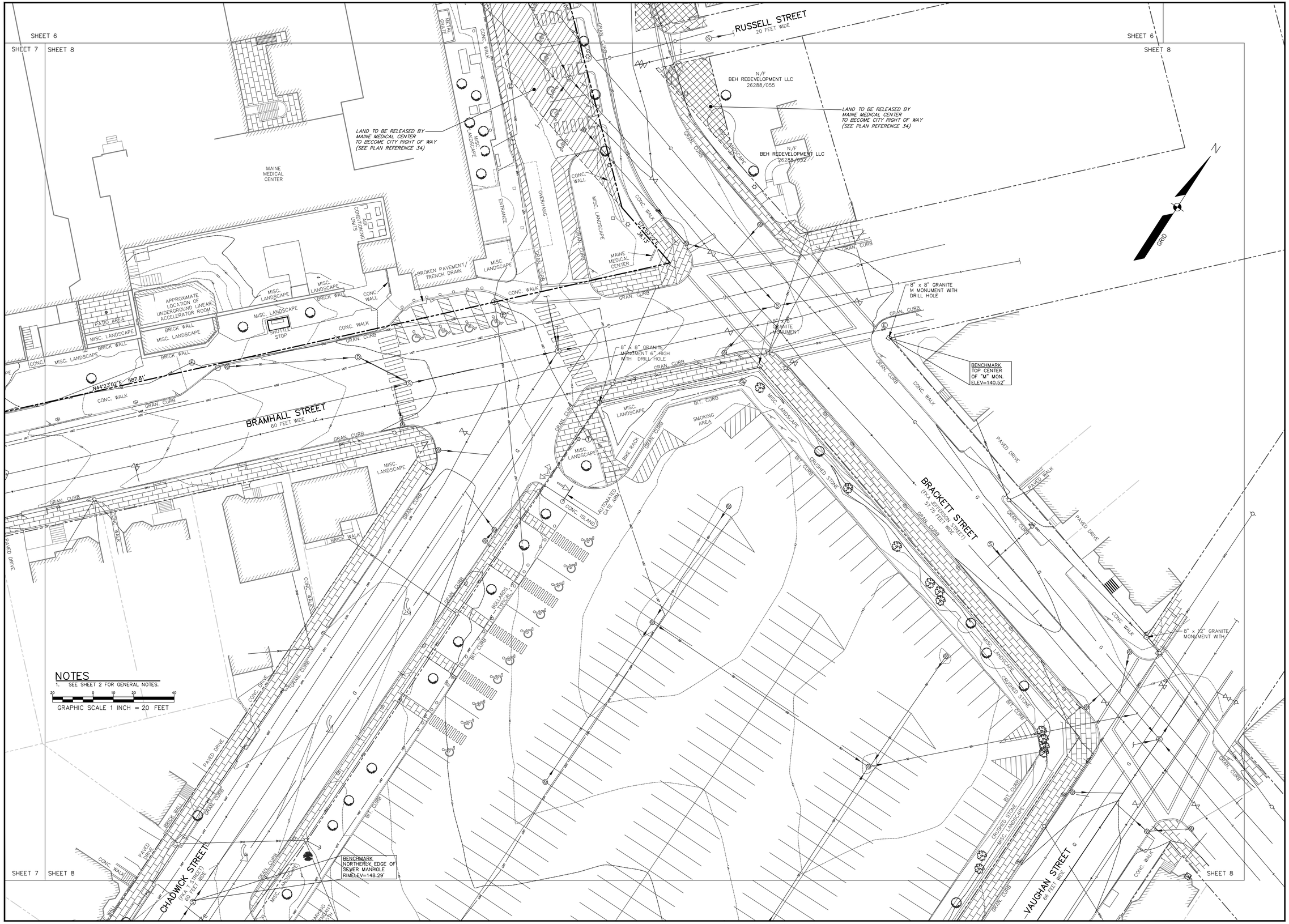
FOR:
MAINE MEDICAL CENTER
22 BRAMHALL ST
PORTLAND, MAINE 04101

RECORD OWNER:
SEE NOTE 1, SHEET 2

DATE	SCALE
10/23/09	1"=20'

SHEET 7 OF 8

01046-EC-2017.dwg, TAB:EC07



NOTES

1. SEE SHEET 2 FOR GENERAL NOTES.

GRAPHIC SCALE 1 INCH = 20 FEET

STATE OF MAINE
MATTHEW W. EK
2117
PROFESSIONAL LAND SURVEYOR

REV:	BY:	DATE:	STATUS:
B	MWE	12/14/17	SUBMITTED FOR CITY REVIEW
A	MWE	12/23/09	SUBMITTED FOR CLIENT REVIEW

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SEBAGO TECHNICS, INC. ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO SEBAGO TECHNICS, INC.

SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd. - Suite 1A
South Portland, ME 04106
Tel. 207-200-2100
250 Goddard Rd. - Suite B
Lewiston, ME 04240
Tel. 207-783-5656

PROJECT NO.	FIELD BOOK	DESIGN	CHKD	DRAWN
01046	791B	WTC	CDM	MWE

EXISTING CONDITIONS SURVEY

OF:
MAINE MEDICAL CENTER CAMPUS
GILMAN ST, CONGRESS ST, BRAMHALL ST, ET.AL
PORTLAND, MAINE

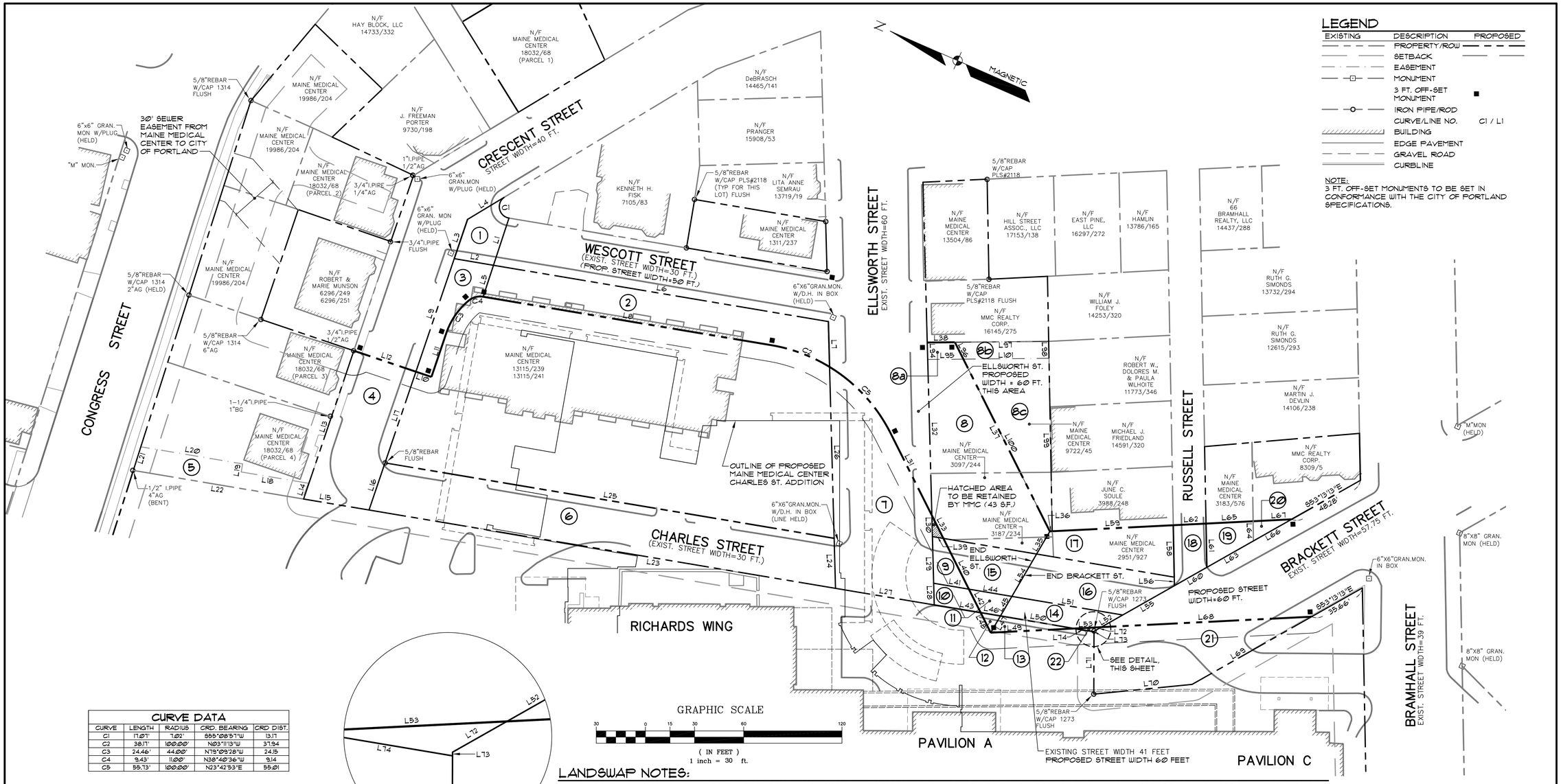
FOR:
MAINE MEDICAL CENTER
22 BRAMHALL ST
PORTLAND, MAINE 04101

RECORD OWNER:
SEE NOTE 1, SHEET 2

DATE	SCALE
10/23/09	1"=20'

SHEET 8 OF 8

01046-EC-2017.dwg, TAB: EC08



LEGEND

EXISTING	DESCRIPTION	PROPOSED
	PROPERTY/ROW	
	SETBACK	
	EASEMENT	
	MONUMENT	
	3 FT. OFF-SET MONUMENT	
	IRON PIPE/ROD	
	CURVE/LINE NO.	C1 / L1
	BUILDING	
	EDGE PAVEMENT	
	GRAVEL ROAD	
	CURBLINE	

NOTE:
3 FT. OFF-SET MONUMENTS TO BE SET IN CONFORMANCE WITH THE CITY OF PORTLAND SPECIFICATIONS.

DETAIL
SCALE: 1"=4'

CURVE DATA

CURVE	LENGTH	RADIUS	CRD. BEARING	CRD DIST.
C1	17.07'	7.00'	S55°08'57"W	13.17
C2	38.11'	100.00'	N03°11'13"W	37.94
C3	24.46'	44.00'	N73°29'28"W	24.15
C4	9.43'	11.00'	N38°40'36"W	9.14
C5	55.13'	100.00'	N23°42'53"E	55.01

LINE DATA

LINE	DIRECTION	DISTANCE
L1	N84°30'13"E	30.34'
L2	S14°01'22"E	24.30'
L3	S85°02'38"W	25.33'
L4	N54°46'28"W	26.56'
L5	S84°30'13"W	20.23'
L6	N14°01'22"W	207.31'
L7	N64°41'55"E	27.71'
L8	S14°01'22"E	178.42'
L9	S85°02'38"W	72.90'
L10	S25°00'10"E	10.00'
L11	N85°02'38"E	28.22'
L12	N25°00'10"W	40.00'
L13	S85°02'38"W	85.50'
L14	N85°02'38"E	10.13'
L15	S14°08'05"E	40.52'
L16	N85°02'38"E	30.39'
L17	N85°02'38"E	58.81'
L18	N14°08'05"W	41.88'
L19	N75°59'55"E	5.00'
L20	N14°08'05"W	63.00'
L21	S83°57'36"W	15.15'
L22	S14°08'05"E	105.39'
L23	S14°08'05"E	288.76'
L24	N64°41'55"E	30.51'
L25	N14°08'05"W	278.04'
L26	S64°41'55"W	104.73'
L27	S14°08'05"E	61.14'
L28	N64°41'55"E	13.25'
L29	N64°41'55"E	283.33
L30	N64°41'55"E	12.50'
L31	N39°40'51"E	56.18'
L32	S64°41'55"W	105.65'
L33	S39°40'51"W	15.71'
L34	N14°08'05"W	57.76'
L35	S83°13'14"E	16.03'
L36	N26°31'20"W	1.45'
L37	N39°40'51"E	129.25'
L38	N24°12'40"W	16.87'
L39	N14°08'05"W	6.79'
L40	N39°40'51"E	34.69'
L41	S14°08'05"E	21.80'
L42	N39°40'51"E	16.11'
L43	S14°08'05"E	28.77'
L44	N14°08'05"W	26.63'
L45	S83°25'14"E	13.30'
L46	N14°08'05"W	12.20'
L47	S83°25'14"E	11.76'
L48	S39°40'51"W	13.63'
L49	S26°31'20"E	51.26'
L50	N14°08'05"W	45.91'
L51	N14°08'05"W	68.62'
L52	S53°13'13"E	15.01'
L53	S26°31'20"E	16.30'
L54	S83°25'14"E	29.94'
L55	S53°13'13"E	36.25'
L56	N65°15'43"E	5.23'
L57	N14°08'05"W	85.21'
L58	N65°15'43"E	31.73'
L59	N26°31'20"W	74.60'
L60	S53°13'13"E	22.15'
L61	N65°15'43"E	26.73'
L62	N26°31'20"W	20.01'
L63	S53°13'13"E	32.76'
L64	N65°29'08"E	12.23'
L65	N26°31'20"W	28.80'
L66	S53°13'13"E	26.76'
L67	N26°31'20"W	23.49'
L68	N26°31'20"W	128.54'
L69	S53°13'13"E	83.82'
L70	S29°20'43"E	60.31'
L71	S66°31'42"W	38.16'
L72	N53°13'13"W	5.00'
L73	S66°31'42"W	0.29'
L74	S14°08'05"E	12.02'

EASEMENT LINE DATA

LINE	DIRECTION	DISTANCE
L36	N26°31'20"W	1.45'
L37	N39°40'51"E	129.25'
L38	N24°12'40"W	16.87'
L84	N64°41'55"E	10.36'
L85	N24°12'40"W	21.77'
L86	N39°40'51"E	11.54'
L87	S24°12'40"E	57.35'
L88	S65°45'11"W	10.36'
L89	S65°15'43"W	105.65'
L100	N39°40'51"E	111.71'
L101	N24°12'40"W	59.28'
L102	S14°11'19"W	20.27'
L103	S78°04'16"W	80.18'

LANDSWAP NOTES:

1. DISCONTINUE A PORTION OF WESCOTT STREET CONTAINING APPROXIMATELY 785 SF. TO BE ACCEPTED AS A PORTION OF CRESCENT STREET.

2. MAINE MEDICAL CENTER TO CONVEY A PARCEL OF LAND CONTAINING APPROXIMATELY 4293 SF. TO BE ACCEPTED AS A PORTION OF WESCOTT STREET.

3. MAINE MEDICAL CENTER TO CONVEY A PARCEL OF LAND CONTAINING APPROXIMATELY 1182 SF. TO BE ACCEPTED AS A PORTION OF CRESCENT STREET.

4. DISCONTINUE A PORTION OF CRESCENT STREET CONTAINING APPROXIMATELY 3697 SF. TO BE CONVEYED TO MAINE MEDICAL CENTER.

5. DISCONTINUE AN EXISTING SEWER RIGHT-OF-WAY (CCRD 1149/348 PROCTOR TO CITY 10-04-23) CONTAINING APPROXIMATELY 1372 SF. TO BE CONVEYED TO MAINE MEDICAL CENTER.

6. DISCONTINUE A PORTION OF CHARLES STREET CONTAINING APPROXIMATELY 8502 SF. TO BE CONVEYED TO MAINE MEDICAL CENTER.

7. DISCONTINUE A PORTION OF ELLSWORTH STREET CONTAINING APPROXIMATELY 6267 SF. TO BE CONVEYED TO MAINE MEDICAL CENTER.

8. MAINE MEDICAL CENTER TO CONVEY A PARCEL OF LAND CONTAINING APPROXIMATELY 5673 SF. TO BE ACCEPTED AS A PORTION OF ELLSWORTH STREET.

8a. A PARCEL OF LAND ALONG ELLSWORTH STREET OWNED BY THE CITY CONTAINING APPROXIMATELY 200 SF. TO BE DESIGNATED AS AN ACCESS EASEMENT TO MMC REALTY CORP.

8b. A PARCEL OF LAND OWNED BY MAINE MEDICAL CENTER CONTAINING 568 SF. TO BE DESIGNATED AS AN ACCESS EASEMENT TO MMC REALTY CORP.

8c. A PARCEL OF LAND OWNED BY MAINE MEDICAL CENTER CONTAINING 2,840 SF. TO BE DESIGNATED AS AN EASEMENT TO ALLOW CONSTRUCTION OF POCKET PARK.

9. A PORTION OF LAND BEING USED AS CHARLES STREET CONTAINING APPROXIMATELY 400 SF. TO BE CONVEYED FROM THE CITY OF PORTLAND (OBTAINED IN A DEED RECORDED AT CUMBERLAND COUNTY REGISTRY OF DEEDS IN BOOK 3488, PAGE 191) TO MAINE MEDICAL CENTER.

10. DISCONTINUE A PORTION OF CHARLES STREET CONTAINING APPROXIMATELY 329 SF. TO BE CONVEYED TO MAINE MEDICAL CENTER.

11. DISCONTINUE A PORTION OF CHARLES STREET CONTAINING APPROXIMATELY 252 SF. TO BE ACCEPTED AS A PORTION OF ELLSWORTH STREET.

12. MAINE MEDICAL CENTER TO CONVEY A PARCEL OF LAND CONTAINING APPROXIMATELY 671 SF. TO BE ACCEPTED AS A PORTION OF ELLSWORTH STREET.

13. MAINE MEDICAL CENTER TO CONVEY A PARCEL OF LAND CONTAINING APPROXIMATELY 252 SF. TO BE ACCEPTED AS A PORTION OF BRACKETT STREET.

14. DISCONTINUE A PORTION OF CHARLES STREET CONTAINING APPROXIMATELY 800 SF. TO BE ACCEPTED AS A PORTION OF BRACKETT STREET.

15. A PORTION OF LAND (OBTAINED IN A DEED RECORDED AT CUMBERLAND COUNTY REGISTRY OF DEEDS IN BOOK 3488, PAGE 191) BEING USED AS CHARLES STREET CONTAINING APPROXIMATELY 1181 SF. TO BE ACCEPTED AS A PORTION OF ELLSWORTH STREET.

16. A PORTION OF LAND (OBTAINED IN A DEED RECORDED AT CUMBERLAND COUNTY REGISTRY OF DEEDS IN BOOK 3488, PAGE 191) BEING USED AS CHARLES STREET CONTAINING APPROXIMATELY 2231 SF. TO BE ACCEPTED AS A PORTION OF BRACKETT STREET.

17. MAINE MEDICAL CENTER TO CONVEY A PARCEL OF LAND CONTAINING APPROXIMATELY 1835 SF. TO BE ACCEPTED AS A PORTION OF BRACKETT STREET.

18. DISCONTINUE A PORTION OF RUSSELL STREET CONTAINING APPROXIMATELY 631 SF. TO BE ACCEPTED AS A PORTION OF BRACKETT STREET.

19. MAINE MEDICAL CENTER TO CONVEY A PARCEL OF LAND CONTAINING APPROXIMATELY 551 SF. TO BE ACCEPTED AS A PORTION OF BRACKETT STREET.

20. MAINE MEDICAL CENTER REALTY CORPORATION TO CONVEY A PARCEL OF LAND CONTAINING APPROXIMATELY 141 SF. TO BE ACCEPTED AS A PORTION OF BRACKETT STREET.

21. DISCONTINUE A PORTION OF BRACKETT STREET CONTAINING APPROXIMATELY 3719 SF. TO BE CONVEYED TO MAINE MEDICAL CENTER.

22. DISCONTINUE A PORTION OF CHARLES STREET CONTAINING APPROXIMATELY 20 SF. TO BE CONVEYED TO MAINE MEDICAL CENTER.

APPROVAL- CITY OF PORTLAND CITY COUNCIL

_____ DATE

_____ CHAIRPERSON

STATE OF MAINE

_____ COUNTY SS REGISTRY OF DEEDS

RECEIVED _____, 20____

AT ___h _____m _____M. AND RECORDED IN PLAN BOOK _____ PAGE _____

ATTEST _____ REGISTRAR

REV:	BY:	DATE:	STATUS:
G	WTC	7-15-05	ADD EASEMENT AREAS 8a, 8b AND 8c
F	WTC	5-27-05	FINAL SITE PLAN SUBMITTAL
E	MWE	12-10-04	REVISE PER CITY OF PORTLAND SURVEY REVIEW
D	MWE	11-24-04	REVISE PER CITY OF PORTLAND SURVEY REVIEW
C	MWE	7-12-04	REVISE PARCEL CONVEYANCES
B	DRL	4-15-04	REVISE RIGHT-OF-WAY PER CITY REVIEW
A	WTC	3-16-04	REVISE RIGHT-OF-WAY WIDTH PER CITY REQUEST

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SEBAGO TECHNICS, INC. ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO SEBAGO TECHNICS, INC.

Sebago Technics
Engineering Expertise You Can Build On
One Chabot Street
Westbrook, Maine 04092-1339
Tel (207) 856-0277

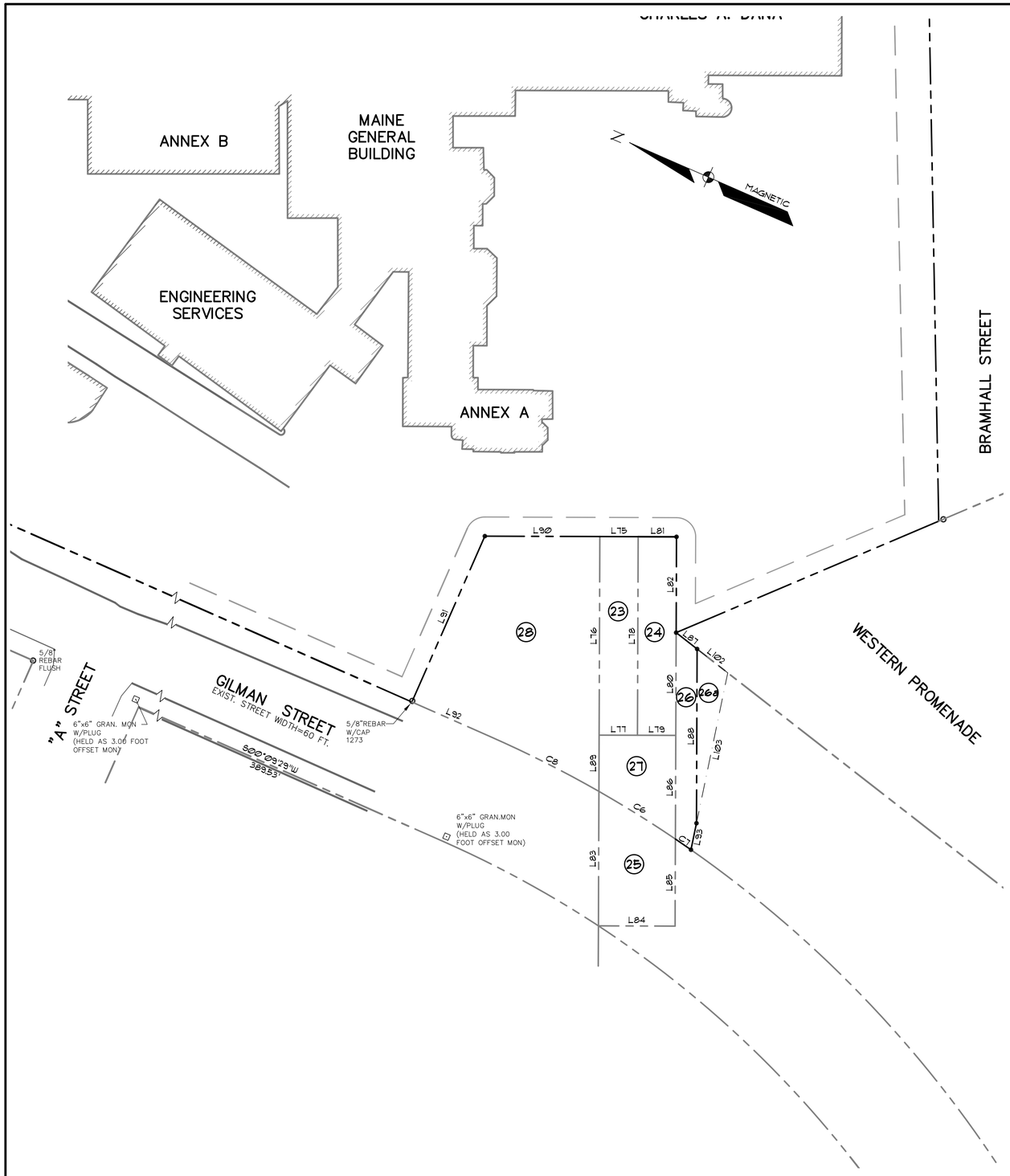
PROJECT NO.	FIELD BOOK	DESIGN	CHKD	DRAWN
01046	791	WTC	MWE	MAL

STREET VACATION/ACCEPTANCE AND LAND TRANSFER PLAN
OF
MAINE MEDICAL CENTER
BRAMHALL STREET
PORTLAND, MAINE
FOR:
MAINE MEDICAL CENTER
22 BRAMHALL STREET
PORTLAND, MAINE 04104

DATE	SCALE
11-19-03	1"=30'

SHEET 1 OF 2

01046SVLT



GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)

1 inch = 30 ft.

LINE DATA

LINE	DIRECTION	DISTANCE
L75	N23°27'43"W	20.00'
L76	S66°32'17"W	103.65'
L77	S23°27'43"E	20.00'
L78	N66°32'17"E	103.65'
L79	S23°27'43"E	20.00'
L80	N66°32'17"E	53.65'
L81	N23°27'43"W	20.00'
L82	N66°32'17"E	50.00'
L83	S66°32'17"W	70.19'
L84	S23°27'43"E	40.00'
L85	N66°32'17"E	45.47'
L86	S66°32'17"W	54.03'
L87	S14°17'19"W	13.87'
L88	N66°32'17"E	90.97'
L89	S66°32'17"W	29.37'
L90	N23°27'43"W	60.00'
L91	N89°55'43"W	94.58'
L92	S00°09'29"W	44.94'
L93	S78°04'10"W	14.13'

CURVE DATA

CURVE	LENGTH	RADIUS	CRD. BEARING	CRD DIST.
C6	47.03'	614.56'	N08°15'07"E	47.02
C7	9.86'	614.56'	N10°54'15"E	9.86
C8	63.30'	614.56'	N03°06'31"E	63.27

EASEMENT LINE DATA

LINE	DIRECTION	DISTANCE
L88	N66°32'17"E	90.97'
L102	S14°17'19"W	20.21'
L103	S78°04'10"W	80.18'

LEGEND

EXISTING	DESCRIPTION	PROPOSED
	PROPERTY/ROW	
	SETBACK	
	EASEMENT	
	MONUMENT	
	3 FT. OFF-SET MONUMENT	
	IRON PIPE/ROD	
	CURVE/LINE NO.	C1 / L1
	BUILDING	
	EDGE PAVEMENT	
	GRAVEL ROAD	
	CURBLINE	

NOTE:
3 FT. OFF-SET MONUMENTS TO BE SET IN CONFORMANCE WITH THE CITY OF PORTLAND SPECIFICATIONS.

LANDSWAP NOTES:

23. MAINE MEDICAL CENTER TO CONVEY A PARCEL OF LAND CONTAINING APPROXIMATELY 2073 S.F. TO BE ACCEPTED AS A PORTION OF A TURN AROUND. BY VIRTUE OF DISCONTINUANCE THIS STRIP REVERTED TO MMC OWNERSHIP.

24. A PARCEL OF LAND OWNED BY THE CITY CONTAINING APPROXIMATELY 2073 S.F. TO BE ACCEPTED AS A PORTION OF A TURN AROUND. BY VIRTUE OF DISCONTINUANCE THIS STRIP REVERTED TO CITY OWNERSHIP.

25. DISCONTINUE A PORTION OF ARSENAL STREET CONTAINING APPROXIMATELY 2327 S.F. TO BE ACCEPTED AS A PORTION OF GILMAN STREET.

26. A PARCEL OF PARK LAND OWNED BY THE CITY (DEED BOOK 274 PAGE 6) CONTAINING APPROXIMATELY 1,152 S.F. TO BE ACCEPTED AS A PORTION OF GILMAN STREET FOR A TURN AROUND AREA.

26a. A PARCEL OF PARK LAND OWNED BY THE CITY TO BE DESIGNATED AS A GRADING EASEMENT TO MAINE MEDICAL, CONTAINING APPROXIMATELY 729 S.F.

27. DISCONTINUE A PORTION OF ARSENAL STREET CONTAINING APPROXIMATELY 1655 S.F. TO BE ACCEPTED AS A PORTION OF A TURN AROUND.

28. A PARCEL OF LAND OWNED BY THE CITY CONTAINING APPROXIMATELY 8936 S.F. TO BE ACCEPTED AS A PORTION OF A TURN AROUND.

29. TOTAL AREA OF LAND TO BE TRANSFERRED FROM MAINE MEDICAL CENTER TO THE CITY OF PORTLAND = 16,728 S.F.

30. TOTAL AREA OF LAND TO BE TRANSFERRED FROM THE CITY OF PORTLAND TO MAINE MEDICAL CENTER = 22,205 S.F.

APPROVAL- CITY OF PORTLAND CITY COUNCIL

_____ DATE

_____ CHAIRPERSON

STATE OF MAINE

_____ COUNTY SS REGISTRY OF DEEDS
RECEIVED _____, 20____
AT ____h _____m _____M. AND RECORDED IN
PLAN BOOK _____ PAGE _____

ATTEST _____ REGISTRAR

REV:	BY:	DATE:	STATUS:
G	WTC	7-15-05	REVISE LAND SWAP AREA 26, ADD EASEMENT AREA 26a
F	WTC	5-27-05	FINAL SITE PLAN SUBMITTAL
E	MWE	12-10-04	REVISE PER CITY OF PORTLAND SURVEY REVIEW
D	MWE	11-24-04	REVISE PER CITY OF PORTLAND SURVEY REVIEW
C	MWE	7-12-04	REVISE PARCEL CONVEYANCES
B	DRL	4-15-04	REVISE RIGHT-OF-WAY PER CITY REVIEW
A	WTC	3-16-04	REVISE RIGHT-OF-WAY WIDTH PER CITY REQUEST

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SEBAGO TECHNICS, INC. ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO SEBAGO TECHNICS, INC.

Sebago Technics
Engineering Expertise You Can Build On
One Chabot Street
Westbrook, Maine 04092-1339
Tel (207) 856-0277

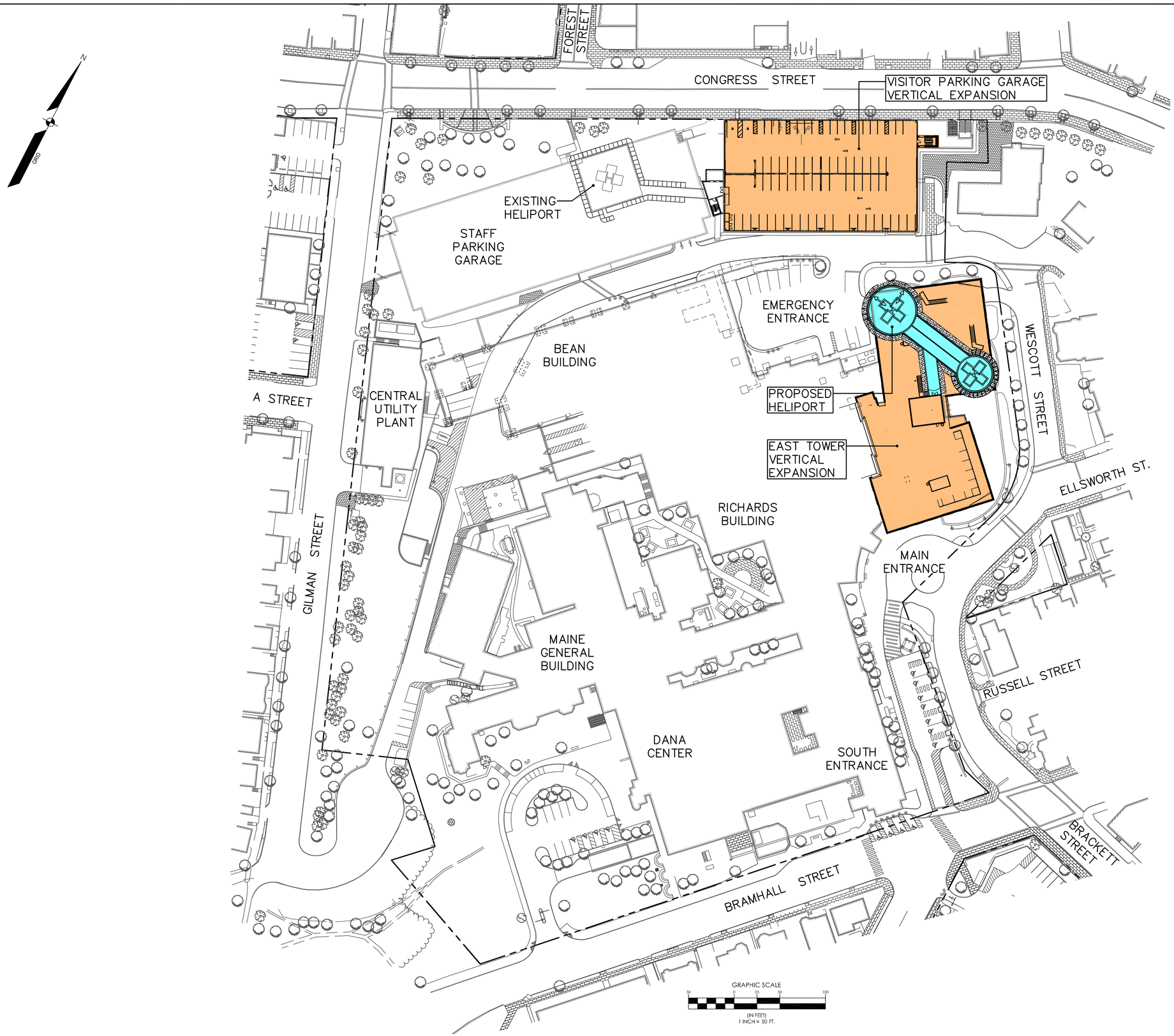
PROJECT NO.	FIELD BOOK	DESIGN	CHKD	DRAWN
01046	791	WTC	MWE	MAL

STREET VACATION/ACCEPTANCE AND LAND TRANSFER PLAN
OF
MAINE MEDICAL CENTER
BRAMHALL STREET
PORTLAND, MAINE
FOR:
MAINE MEDICAL CENTER
22 BRAMHALL STREET
PORTLAND, MAINE 04104

DATE	SCALE
7-12-04	1"=30'

SHEET 2 OF 2

01046SVLT



DESIGNED	CHECKED
WTC	WTC

REV.	BY:	DATE:	STATUS:
A	WTC	12-15-17	CITY SUBMITTAL NO. 1

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SEBAGO TECHNICS, INC. ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO SEBAGO TECHNICS, INC.

SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd.
Suite 1A
South Portland, ME 04106
Tel: 207-200-2100

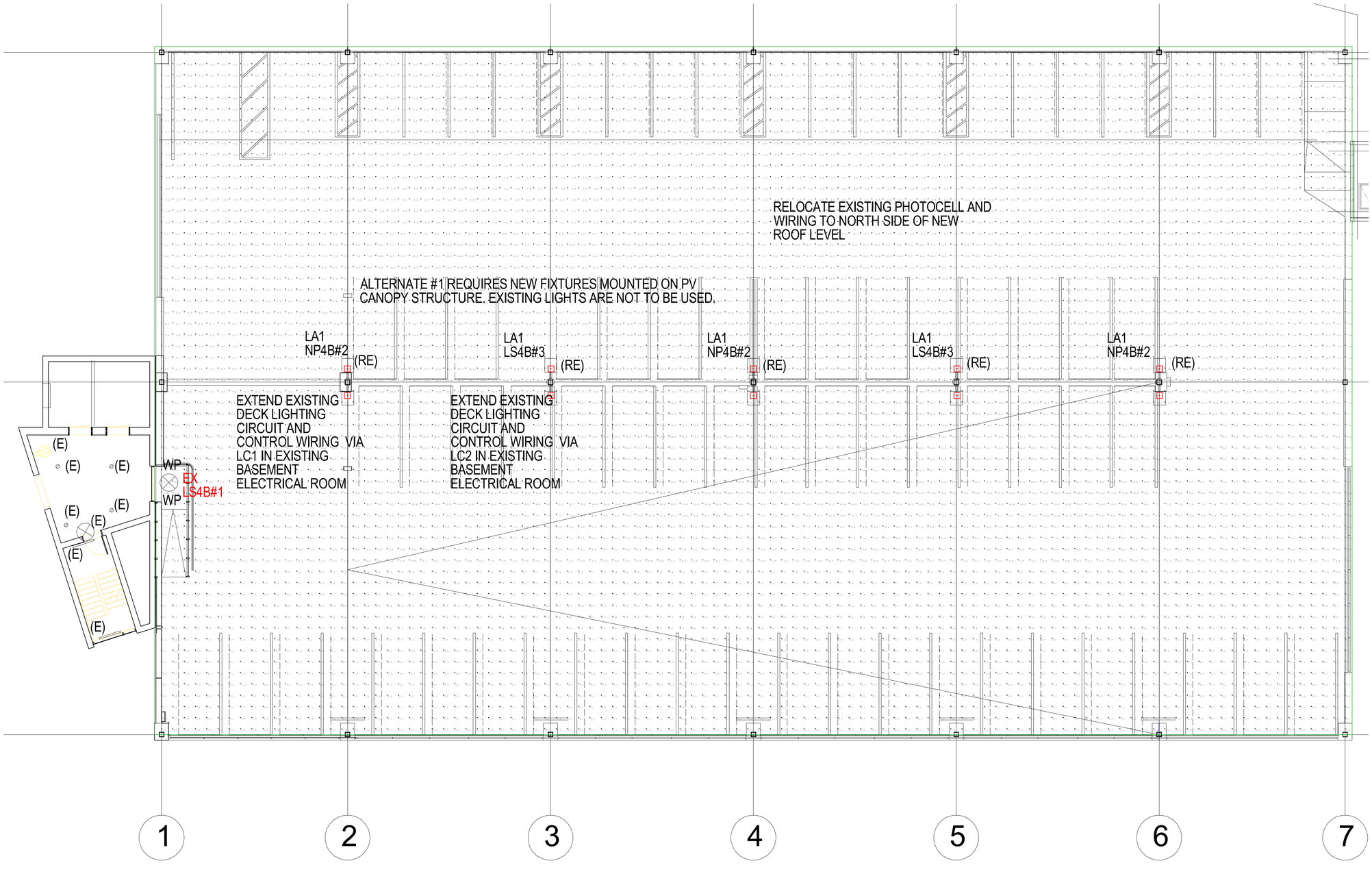
SITE PLAN
OF:
MAINE MEDICAL CENTER - EAST TOWER AND VISITOR GARAGE
22 BRAMHALL STREET
PORTLAND, MAINE
FOR:
MAINE MEDICAL CENTER
22 BRAMHALL STREET
PORTLAND, MAINE 04102

PROJECT NO.	SCALE
15466	1"=50'

SHEET 1 OF 1

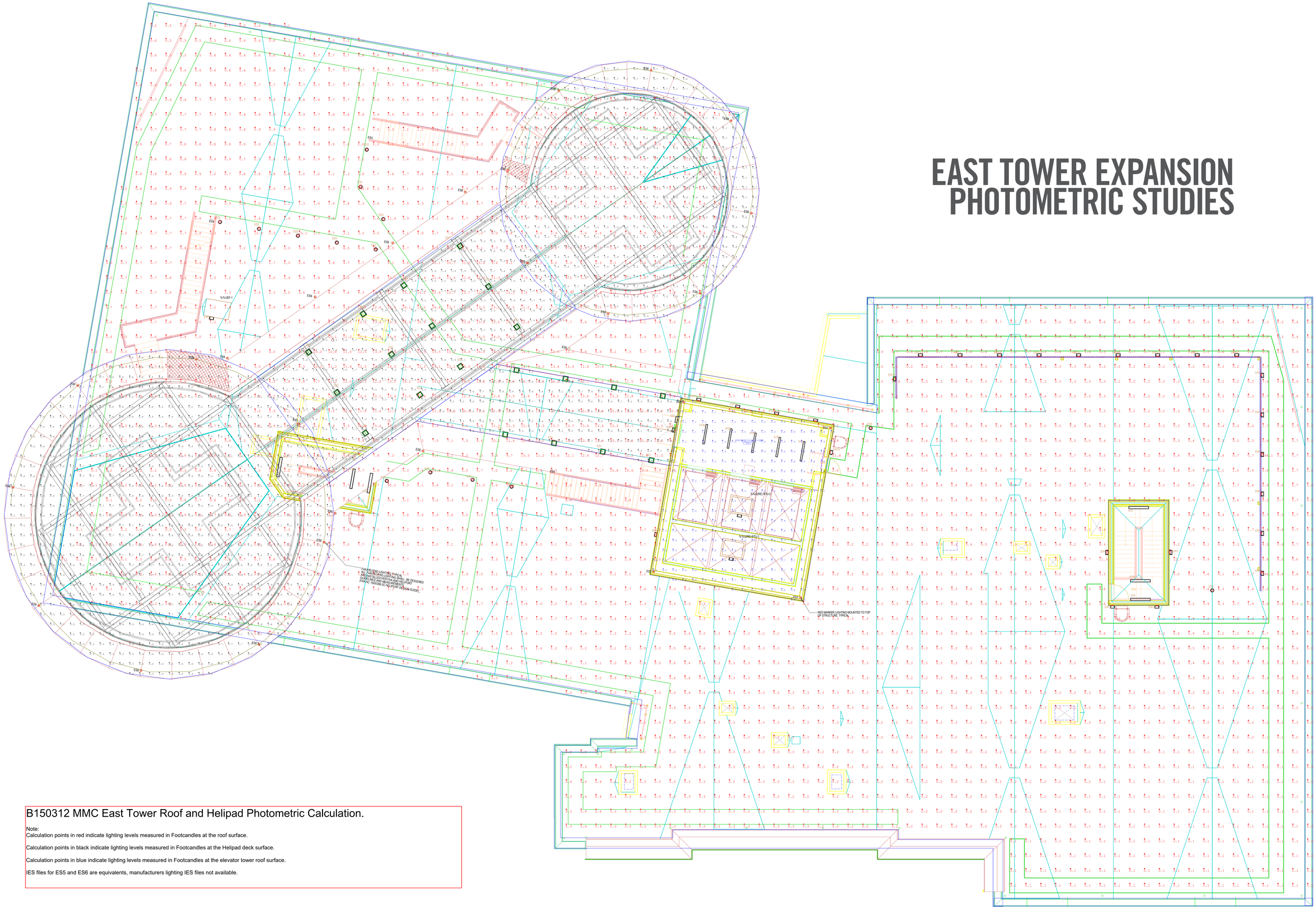
154688.dwg, TAB:SKETCH

VISITOR GARAGE EXPANSION
PHOTOMETRIC STUDIES



PERKINS+WILL

EAST TOWER EXPANSION
PHOTOMETRIC STUDIES



B150312 MMC East Tower Roof and Helipad Photometric Calculation.

Note:
Calculation points in red indicate lighting levels measured in Footcandles at the roof surface.

Calculation points in black indicate lighting levels measured in Footcandles at the Helipad deck surface.

Calculation points in blue indicate lighting levels measured in Footcandles at the elevator tower roof surface.

IES files for ES5 and ES6 are equivalents, manufacturers lighting IES files not available.

PERKINS+WILL

Maine Medical Center
MaineHealth

centered around you

Updated Signage Plan

Site Plan Application #1

East Tower Expansion, Visitor Garage Expansion, Central Utility Plant Upgrade

January 5, 2018

Attached is the updated signage plan for Maine Medical Center's Bramhall Campus. This plan reflects existing conditions. No changes are planned as part of MMC's Site Plan #1 for the East Tower Expansion, Visitor Garage Expansion, and Central Utility Plan upgrade.

Maine Medical Center

PORTLAND CAMPUS

Environmental Graphics & Wayfinding

Exterior Sign System

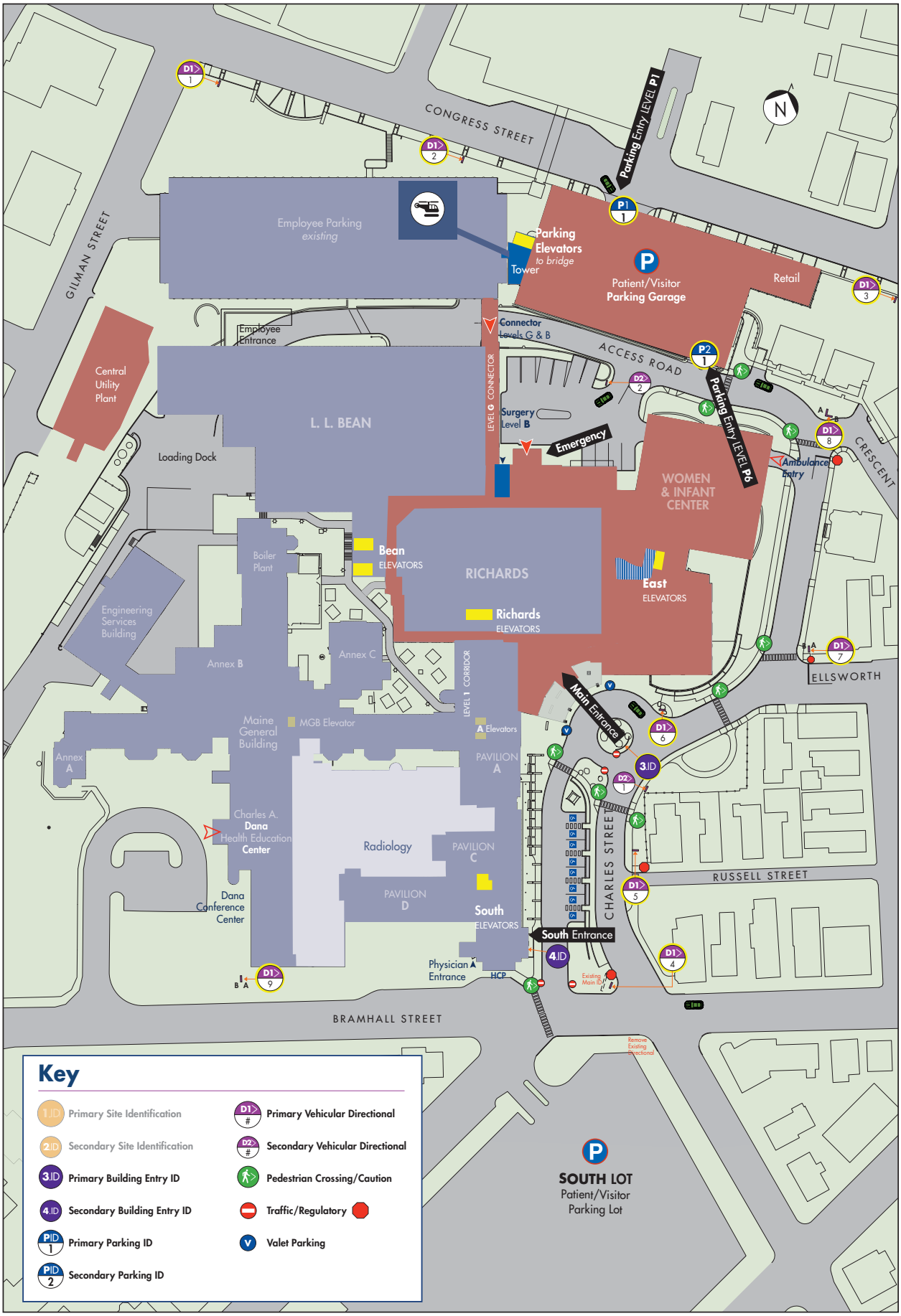
City of Portland Submittal

05 January 2018

ENVIRONMENTAL GRAPHICS
Gamble Design LLC
154 Maplewood Avenue
Portsmouth NH 03801
✆ 603.427.1300

ARCHITECTURE/INTERIOR DESIGN
TRO|Jung Brannen
22 Boston Wharf Road
Boston MA 02210
✆ 617.502.3400

SITE/LANDSCAPE
Sebago Technics
1 Chabot Street
Westbrook ME 04092
✆ 207.856.0277

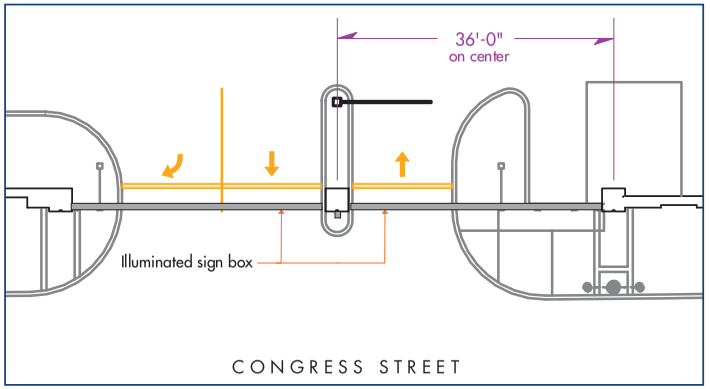


Maine Medical Center
PORTLAND CAMPUS
2008

ENVIRONMENTAL GRAPHICS
Gamble Design LLC
154 Maplewood Avenue
Portsmouth NH 03801
✆ 603.427.1300

DRAWING TITLE
Exterior Sign Location Plan
Campus Wayfinding
Scale: as shown
22 April 2008

DRAWING N°
SLP. 1



Plan View

P1
A
Parking Garage Entry ID 1 Congress Street *suspended/illuminated*
Scale: 1/16" = 1'-0"

Maine Medical Center
MaineHealth
SIGN STANDARDS

ENVIRONMENTAL GRAPHICS
Gamble Design LLC
154 Maplewood Avenue
Portsmouth NH 03801
✆ 603.427.1300

DRAWING TITLE
Parking Garage Entry ID *Congress Street*
Sign boxes/internally illuminated
Scale: as shown
29 October 2009

DRAWING N°
P1.1





Marquee Sign *projecting/double sided*
Grid armature fabricated from 4" square aluminum extrusion with horizontal 3" sq. steel structural supports; MPC paint color: "Satin Aluminum" to match new exterior signs; "PARK" letterforms are 1/4" clear "push-thru" graphics in colors shown captured by 5" deep satin aluminum disks; Disks internally illuminated by LED and mounted flush to grid structure. Price static sign box or changeable LED message boards as options.

1 **Parking Garage Entry ID** *view eastward up Congress Street*
Scale: relative to image

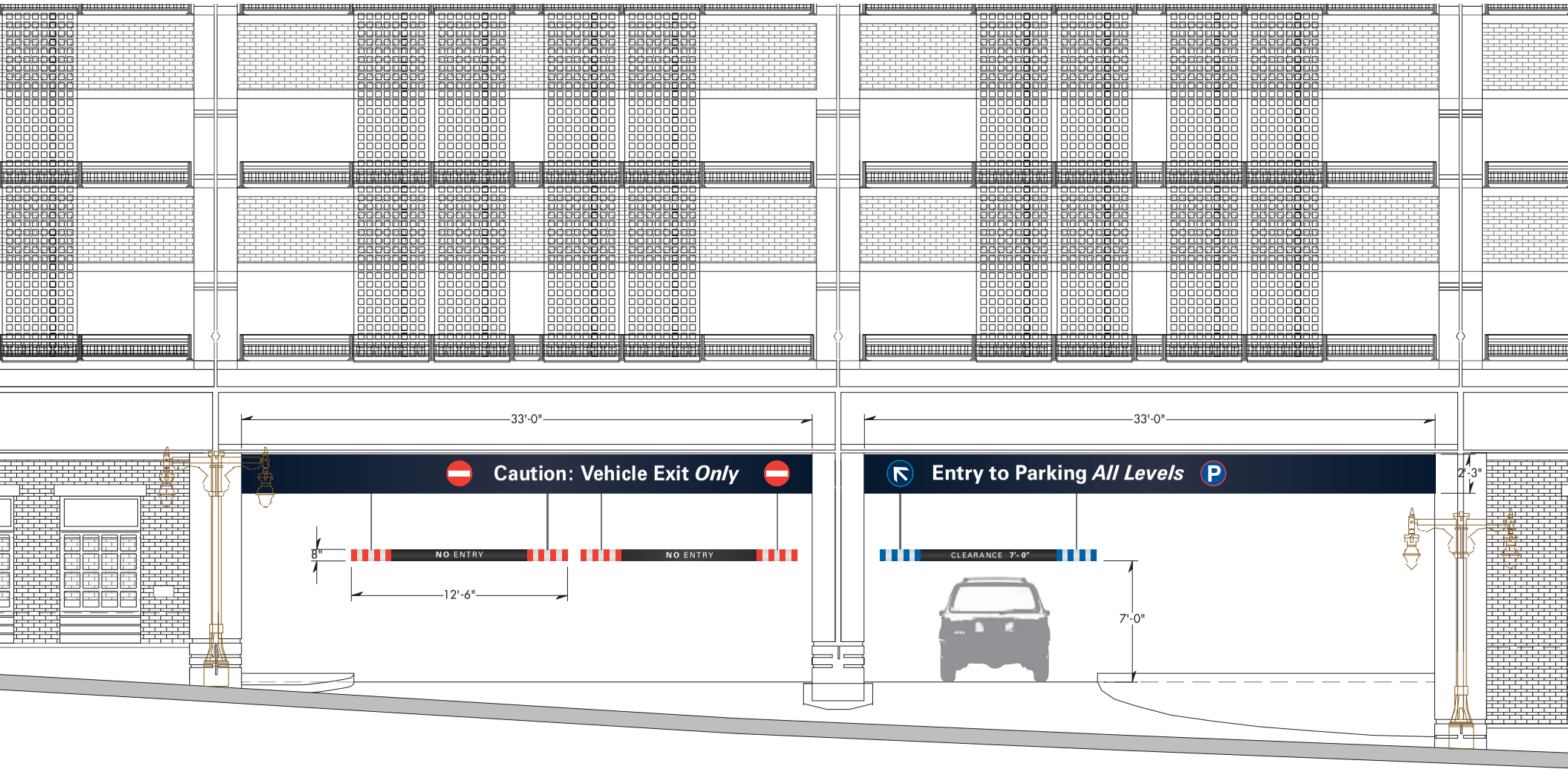
P1 B **Parking Garage Entry ID** *view across Congress Street*
Scale: relative to image

Maine Medical Center
MaineHealth
SIGN STANDARDS

ENVIRONMENTAL GRAPHICS
Gamble Design LLC
154 Maplewood Avenue
Portsmouth NH 03801
✆ 603.427.1300

DRAWING TITLE
Parking Garage Marquee *Congress Street*
Disks/signs on grid armature: LED illuminated
Scale: as shown
16 October 2008

DRAWING N°
P1.2



P1 C **Parking Garage Entry ID 1** Congress Street *dimensions/detail*
Scale: 3/16" = 1'-0"

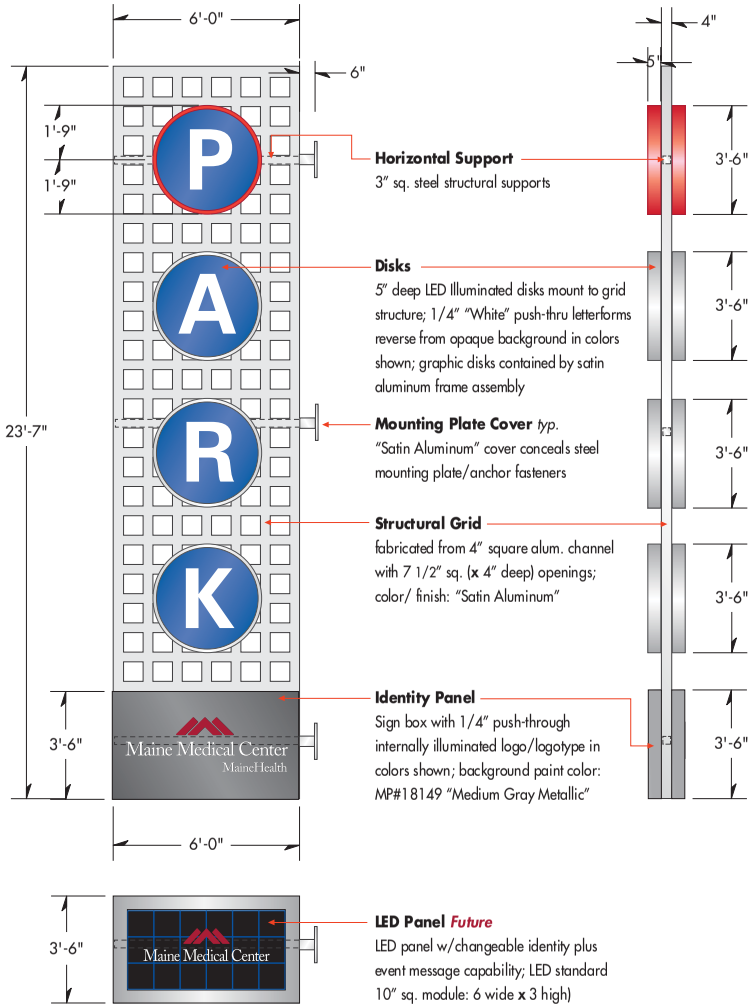
Maine Medical Center
PORTLAND CAMPUS

ENVIRONMENTAL GRAPHICS
Gamble Design LLC
154 Maplewood Avenue
Portsmouth NH 03801
✆ 603.427.1300

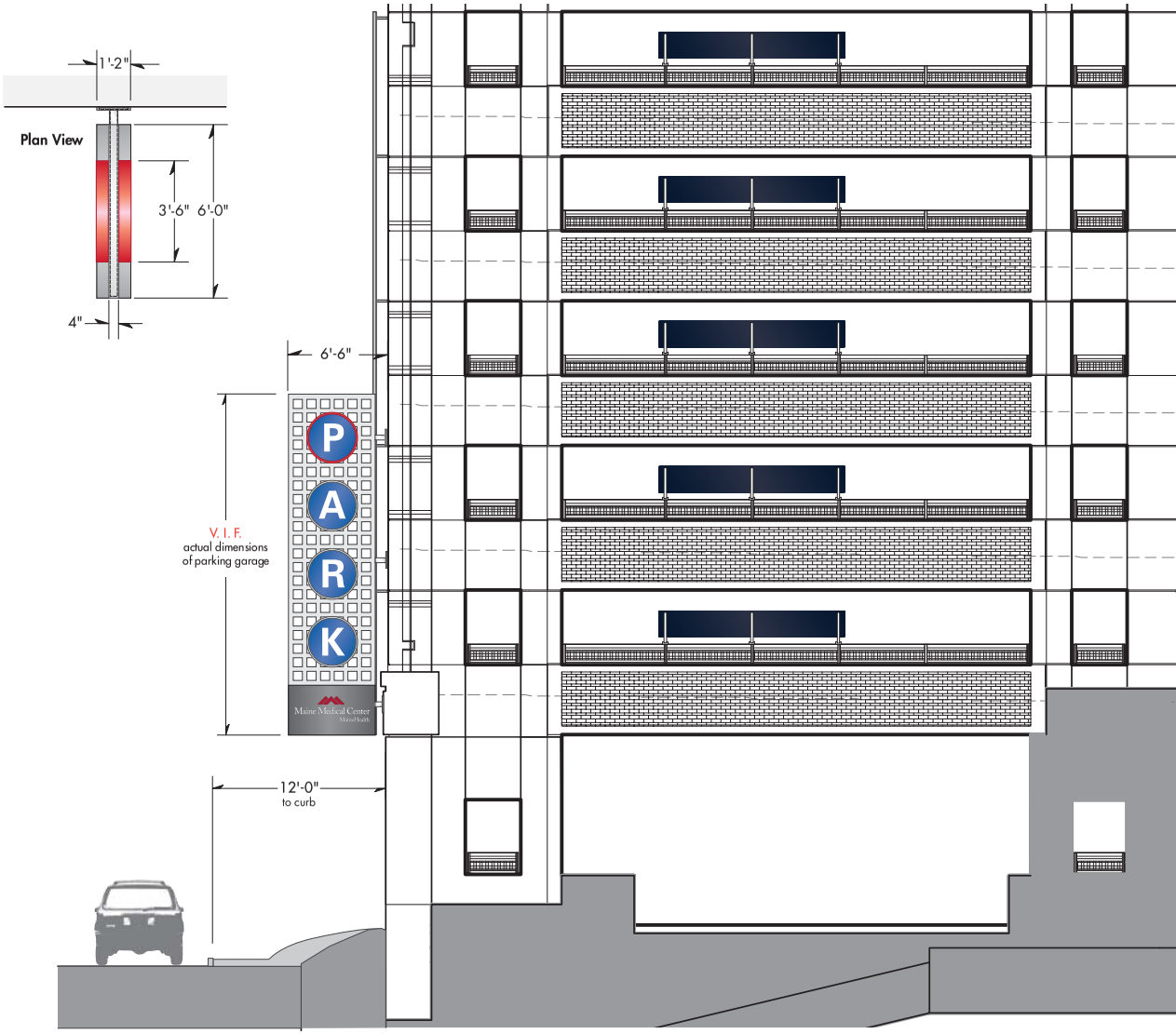
ARCHITECTURE
TRO|Jung Brannen
22 Boston Wharf Road
Boston MA 02210
✆ 617.502.3400

DRAWING TITLE
Parking Garage Entry ID *Congress Street*
Sign box/clearance bar dimensions
Scale: as shown
22 April 2008

DRAWING N°
P1.3



A **Projecting Parking Entry ID** Side/Front Elevation *Revised* **End View**
Scale: 1/4" = 1'-0"



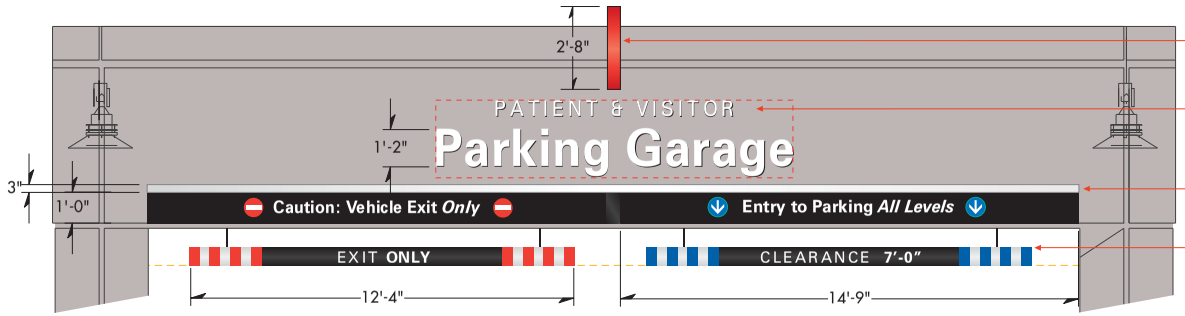
PID 1A **Projecting Parking Entry ID** view up Congress Street *illuminated/dimensional*
Scale: 1/8" = 1'-0"

Maine Medical Center
MaineHealth
SIGN STANDARDS

ENVIRONMENTAL GRAPHICS
Gamble Design LLC
154 Maplewood Avenue
Portsmouth NH 03801
✆ 603.427.1300

DRAWING TITLE
Parking Entry ID *Final*
Projecting marquee: dimensional/illuminated
Scale: as shown
24 March 2009

DRAWING N°
PID.1



Design Layout *no MMC identity*
Scale: 1/4" = 1'- 0"

Projecting "P"
Internally illuminated disk sign projects from fascia

Dimensional Graphics
1" deep dimensional graphics flush mounted to precast fascia; paint color: "Satin Aluminum"

Sign Panels w/**Arc**
Painted sign panels swith vinyl graphics mount flush over garage entry; fabricated aluminum "arc" band over panels (projects approx. 3") paint color: "Satin Aluminum"; separates panels from dimensional graphics above.

Clearance Bar *typical*
7" diameter painted acrylic tubing or equal suspends from precast structure above; Verify drop height

P2
1
Parking Garage Secondary Entry ID South Elevation *dimensional graphics w/illuminated disk*
Scale: 1/16" = 1'-0"

Maine Medical Center
PORTLAND CAMPUS

ENVIRONMENTAL GRAPHICS
Gamble Design LLC
154 Maplewood Avenue
Portsmouth NH 03801
✆ 603.427.1300

ARCHITECTURE
TRO|Jung Brannen
22 Boston Wharf Road
Boston MA 02210
✆ 617.502.3400

DRAWING TITLE
Secondary Parking ID/Entry *at Level P6*
Fascia mounted w/illuminated disk
Scale: as shown
22 April 2008

DRAWING N°
P2.1



Projecting Sign
Parking symbol disk projects from concrete column; internally-illuminated/double-sided

Dimensional Graphics
Non-illuminated dimensional graphics/panels flush mounted to concrete fascia.

Sign Panel
Sign panels with vinyl graphics mount flush over parking garage entry; 3" arc band above panels; color: "Satin Aluminum"

Clearance Bar *typical*
Painted plastic tube with vinyl graphics suspended from ceiling; graphic layout shown on dwg. #P2.1; clearance height TBD

Level ID
Painted sign panel with vinyl graphics

P2
1
Secondary Parking Garage Entry ID on internal Access Road *projecting/dimensional*
Scale: relative to image

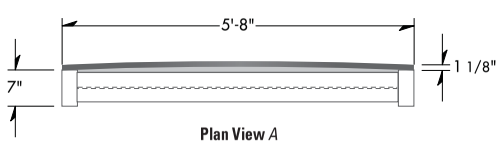
Maine Medical Center
PORTLAND CAMPUS

ENVIRONMENTAL GRAPHICS
Gamble Design LLC
154 Maplewood Avenue
Portsmouth NH 03801
✆ 603.427.1300

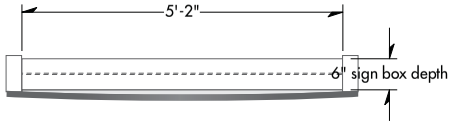
ARCHITECTURE
TRO|Jung Brannen
22 Boston Wharf Road
Boston MA 02210
✆ 617.502.3400

DRAWING TITLE
Secondary Parking Entry ID *at Level P6*
Sign graphics mounted to fascia
Scale: as shown
31 March 2008

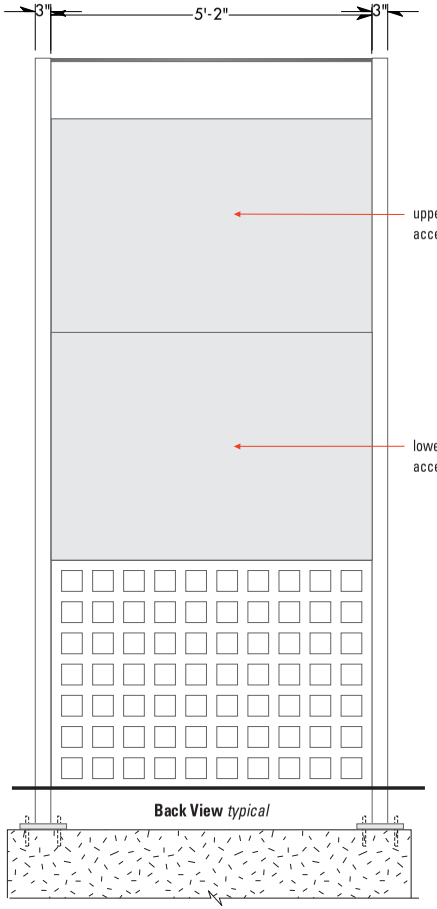
DRAWING N°
P2.2



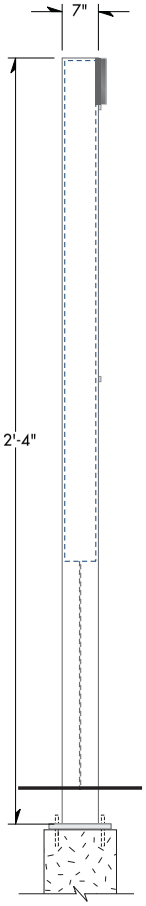
Plan View *A*



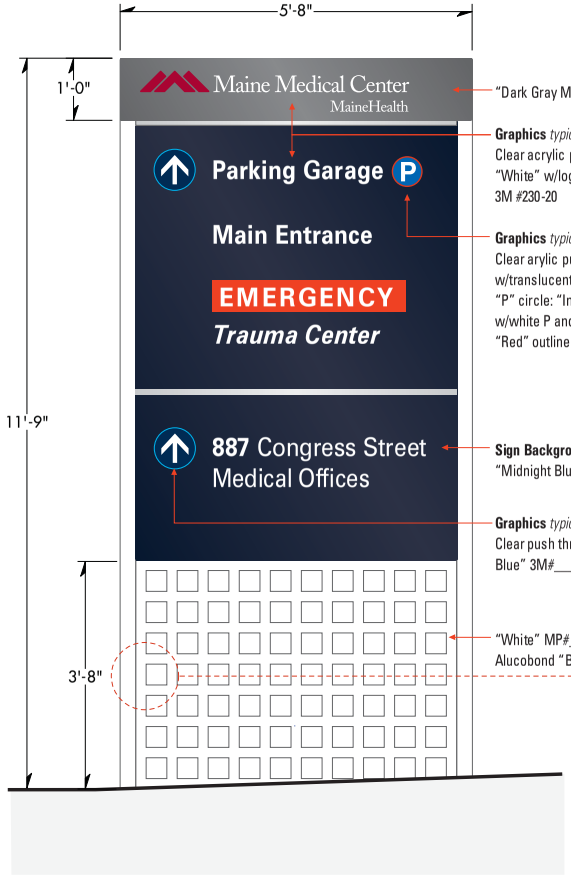
Plan View B



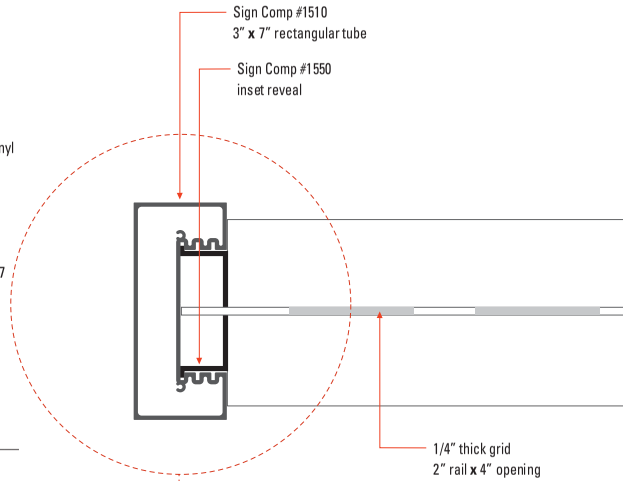
Back View *typical*



Side View



D1 / 1 **Primary Directional Sign 1**
Scale: 1/2" = 1'-0"



D1 / B **Sign Post/Grid** *Detail*
Scale: 3" = 1'- 0"

Maine Medical Center
PORTLAND CAMPUS

ENVIRONMENTAL GRAPHICS
Gamble Design LLC
154 Maplewood Avenue
Portsmouth NH 03801
✆ 603.427.1300

ARCHITECTURE
TRO|Jung Brannen
22 Boston Wharf Road
Boston MA 02210
✆ 617.502.3400

DRAWING TITLE
Primary Directional 1
Freestanding/illuminated
Scale: as shown
22 April 2008

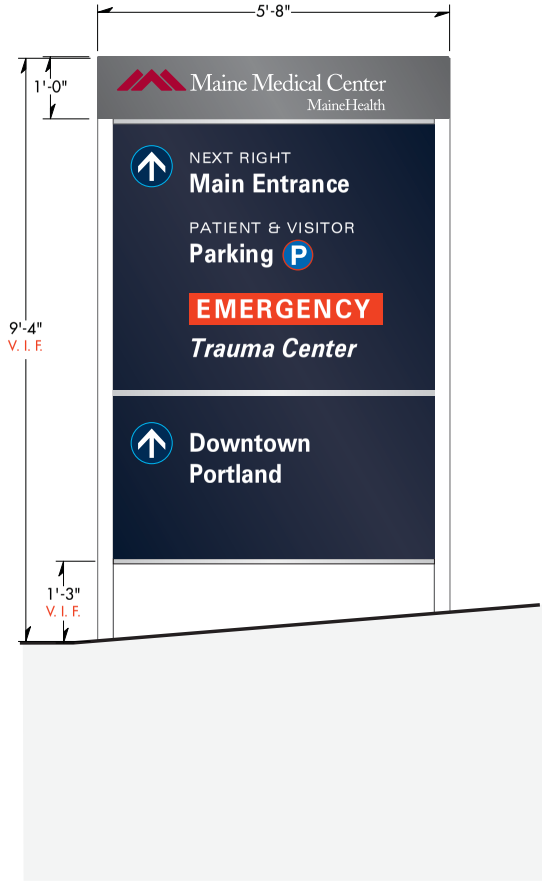
DRAWING N°
D1.1



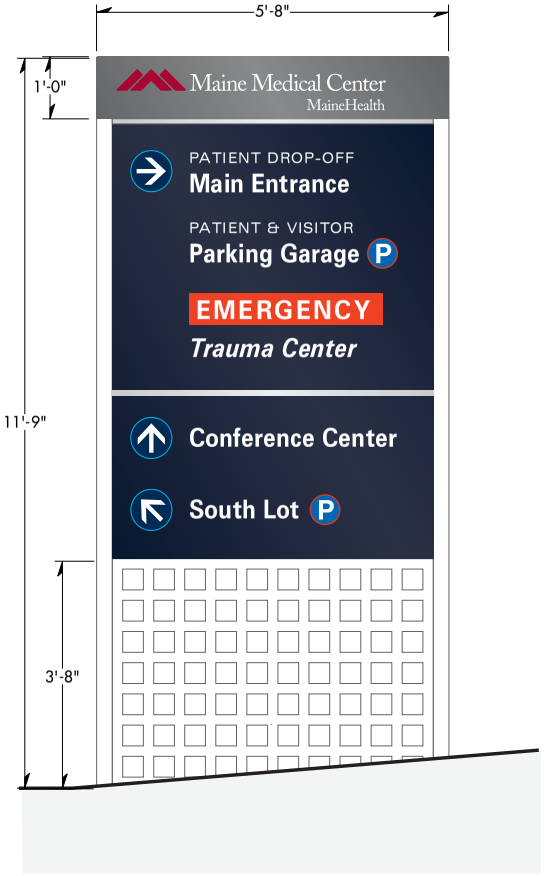
Top View *typical*



D1 2 **Primary Directional Sign** *D1-2*
Scale: 1/2" = 1'-0"



D1 3 **Primary Directional Sign** *D1-3*
Scale: 1/2" = 1'-0"



D1 4 **Primary Directional Sign** *D1-4*
Scale: 1/2" = 1'-0"

Maine Medical Center
PORTLAND CAMPUS

ENVIRONMENTAL GRAPHICS
Gamble Design LLC
154 Maplewood Avenue
Portsmouth NH 03801
✆ 603.427.1300

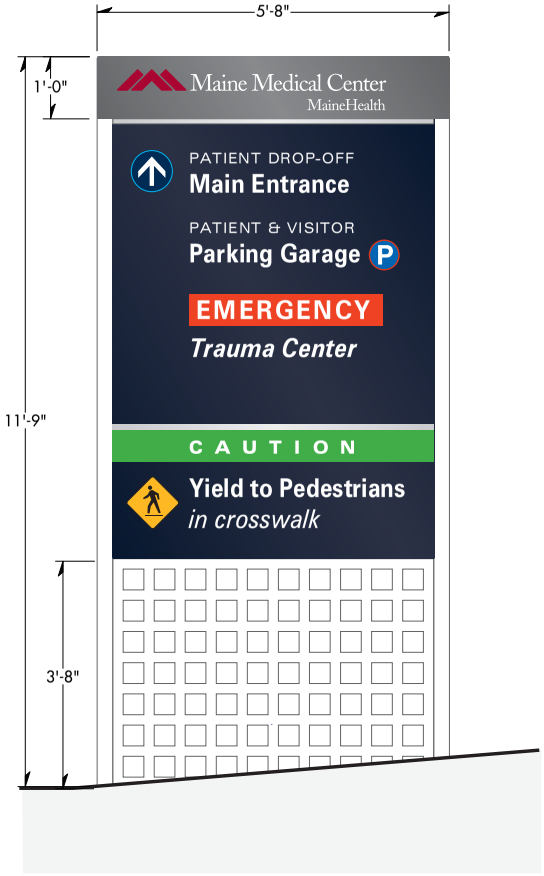
ARCHITECTURE
TRO|Jung Brannen
22 Boston Wharf Road
Boston MA 02210
✆ 617.502.3400

DRAWING TITLE
Primary Directional Sign + *Trauma Center*
Freestanding/illuminated
Scale: as shown
22 April 2008

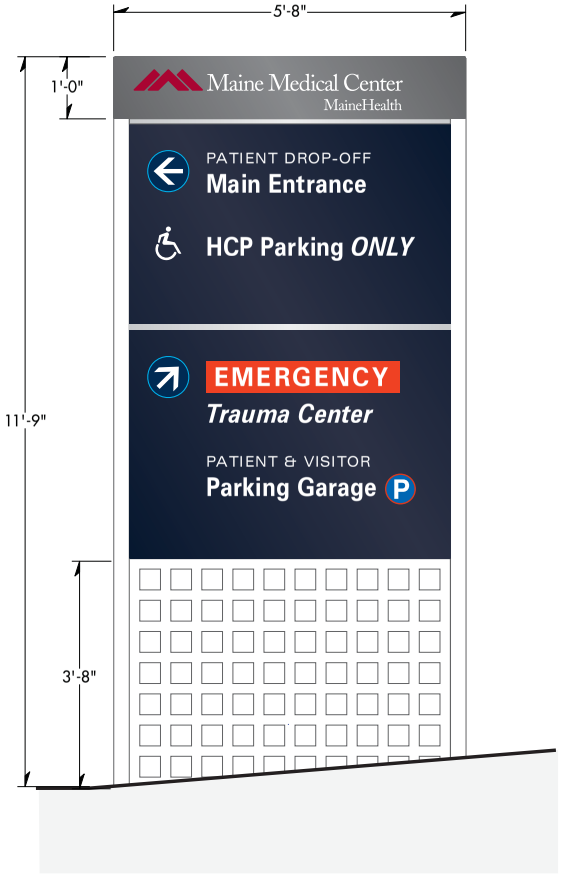
DRAWING N°
D1.2-4



Top View *typical*



D1 5 **Primary Directional Sign** *D1-5*
Scale: 1/2" = 1'-0"



D1 6 **Primary Directional Sign** *D1-6*
Scale: 1/2" = 1'-0"

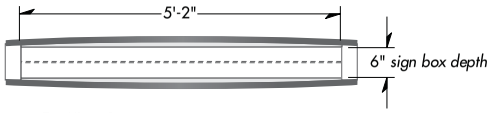
Maine Medical Center
PORTLAND CAMPUS

ENVIRONMENTAL GRAPHICS
Gamble Design LLC
154 Maplewood Avenue
Portsmouth NH 03801
✆ 603.427.1300

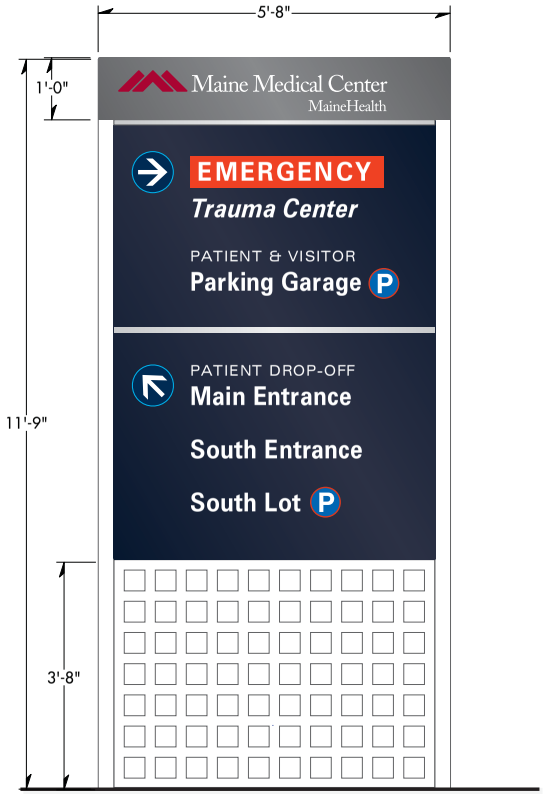
ARCHITECTURE
TRO|Jung Brannen
22 Boston Wharf Road
Boston MA 02210
✆ 617.502.3400

DRAWING TITLE
Primary Directional Sign
Freestanding/illuminated
Scale: as shown
22 April 2008

DRAWING N°
D1.5-6

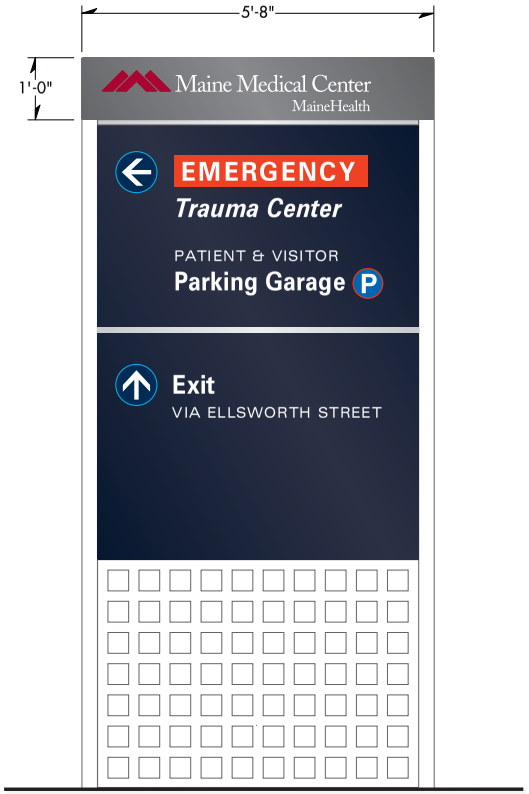


Top View *D1.7 double-sided*



Side A

D1 7 **Primary Directional Sign** Double-sided *D1-7 side A*
Scale: 1/2" = 1'-0"



Side B

Primary Directional Sign Double-sided *D1-7 side B*
Scale: 1/2" = 1'-0"

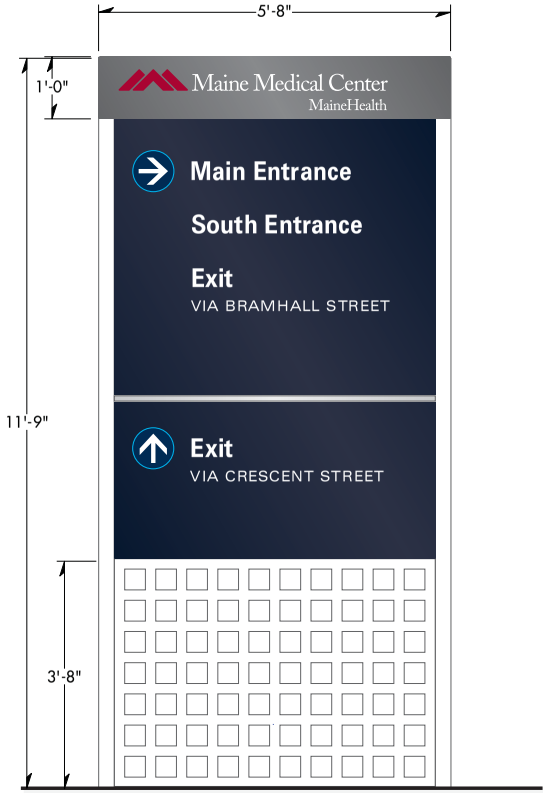
Maine Medical Center
PORTLAND CAMPUS

ENVIRONMENTAL GRAPHICS
Gamble Design LLC
154 Maplewood Avenue
Portsmouth NH 03801
✆ 603.427.1300

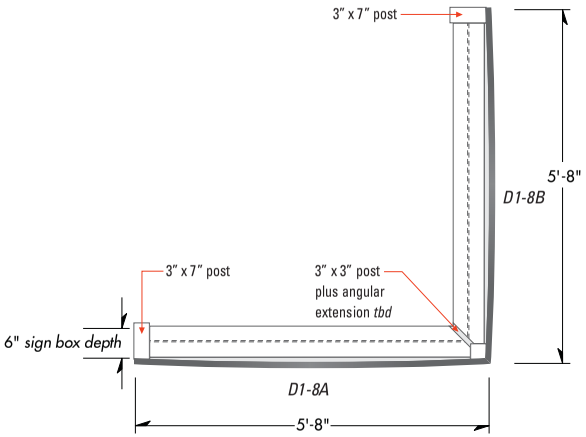
ARCHITECTURE
TRO|Jung Brannen
22 Boston Wharf Road
Boston MA 02210
✆ 617.502.3400

DRAWING TITLE
Primary Directional Sign 7 *double-sided*
Freestanding/illuminated
Scale: as shown
22 April 2008

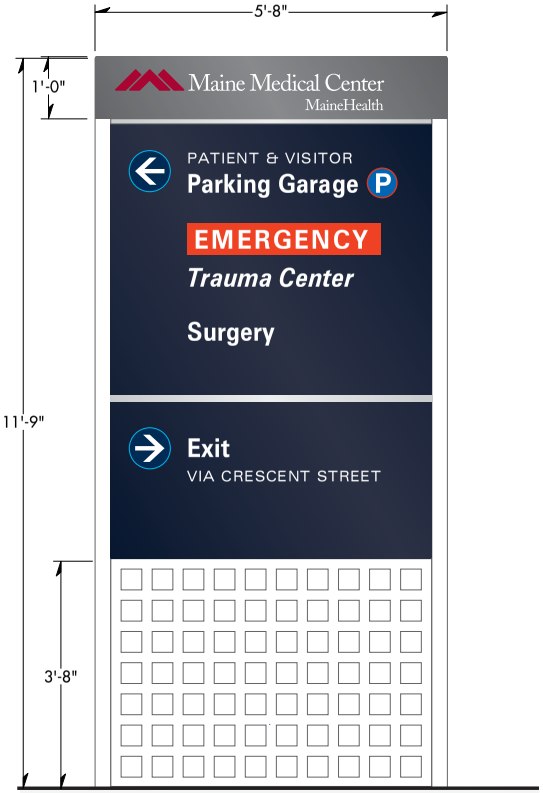
DRAWING N°
D1.7



Side A



Top View *sign location #8*



Side B

D1 8A **Primary Directional Sign** *D1-8A*
Scale: 1/2" = 1'- 0"

D1 8B **Primary Directional Sign** *D1-8B*
Scale: 1/2" = 1'-0"

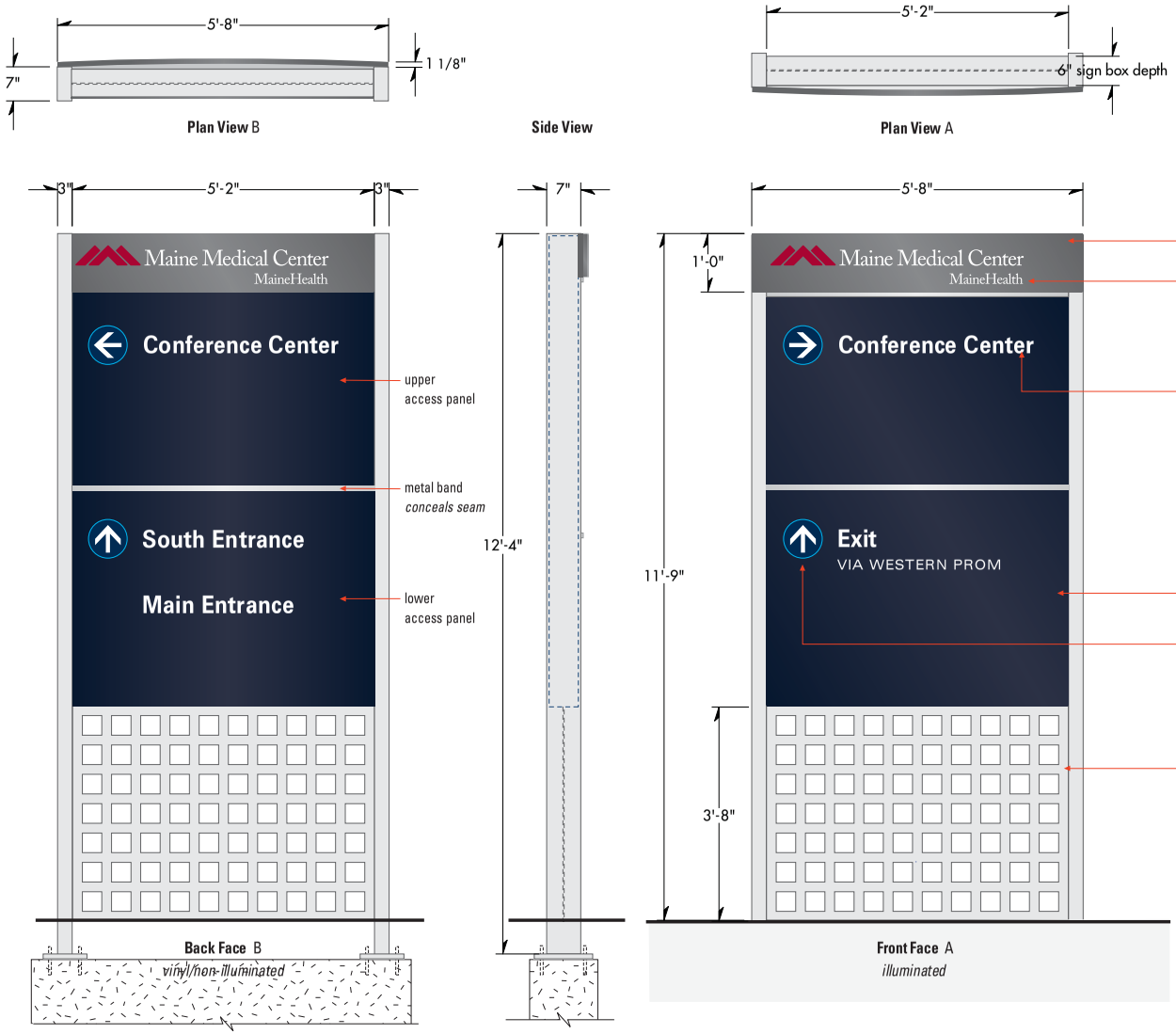
Maine Medical Center
PORTLAND CAMPUS

ENVIRONMENTAL GRAPHICS
Gamble Design LLC
154 Maplewood Avenue
Portsmouth NH 03801
✆ 603.427.1300

ARCHITECTURE
TRO|Jung Brannen
22 Boston Wharf Road
Boston MA 02210
✆ 617.502.3400

DRAWING TITLE
Primary Directional Sign *"L" angle sign*
Freestanding/illuminated
Scale: as shown
22 April 2008

DRAWING N°
D1.8



D1 / 9 **Primary Directional Sign** *Revised*
Scale: 1/2" = 1'-0"

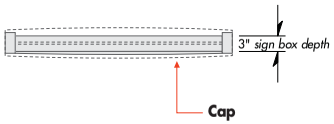
Maine Medical Center
PORTLAND CAMPUS

ENVIRONMENTAL GRAPHICS
Gamble Design LLC
154 Maplewood Avenue
Portsmouth NH 03801
✆ 603.427.1300

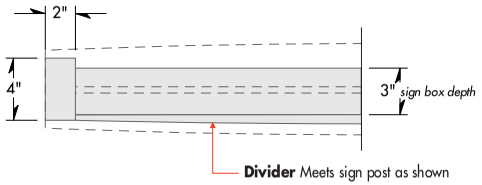
ARCHITECTURE
TRO|Jung Brannen
22 Boston Wharf Road
Boston MA 02210
✆ 617.502.3400

DRAWING TITLE
Primary Directional Sign 9
Freestanding/illuminated
Scale: as shown
22 April 2008

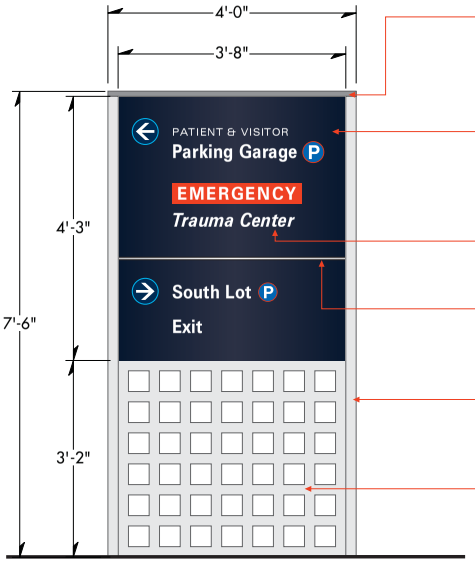
DRAWING N°
D1.9



Top View *typical*



Detail 1 1/2" = 1'-0"



Cap
"Medium Gray Metallic" cap with two curved and two flat edges; mounts at top of sign assembly; cap shown by dashed line above

Sign Cabinet
Painted "Midnight Blue Metallic" sign box with applied graphics; non-illuminated *(give price option for illumination)*

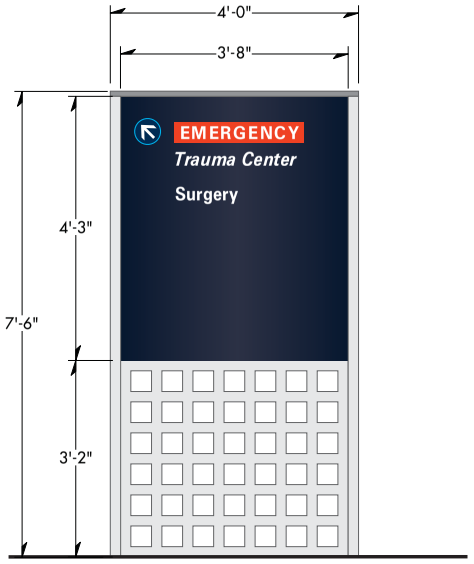
Graphics
Vinyl graphics in colors as shown

Divider
1" "Satin Aluminum" curved divider; placement is determined by sign message

Post
2" HT x 4" D "Satin Aluminum" posts; all conduit/electrical to be concealed within posts

Grid
1/4" panel with grid pattern as shown; 2" bands between 4" open squares; paint "Satin Aluminum"

D2 1 **Secondary Directional Sign**
Scale: 1/2" = 1'-0"



D2 2 **Secondary Directional Sign**
Scale: 1/2" = 1'-0"

Maine Medical Center
PORTLAND CAMPUS

ENVIRONMENTAL GRAPHICS
Gamble Design LLC
154 Maplewood Avenue
Portsmouth NH 03801
✆ 603.427.1300

ARCHITECTURE
TRO|Jung Brannen
22 Boston Wharf Road
Boston MA 02210
✆ 617.502.3400

DRAWING TITLE
Secondary Directional Sign
Freestanding
Scale: as shown
4 April 2008

DRAWING N°
D2.1-2

Fig.5.17 Computer-generated shadow study / Existing conditions on June 21, noon



Fig.5.18 Computer-generated shadow study / Proposed long-term projects on June 21, noon

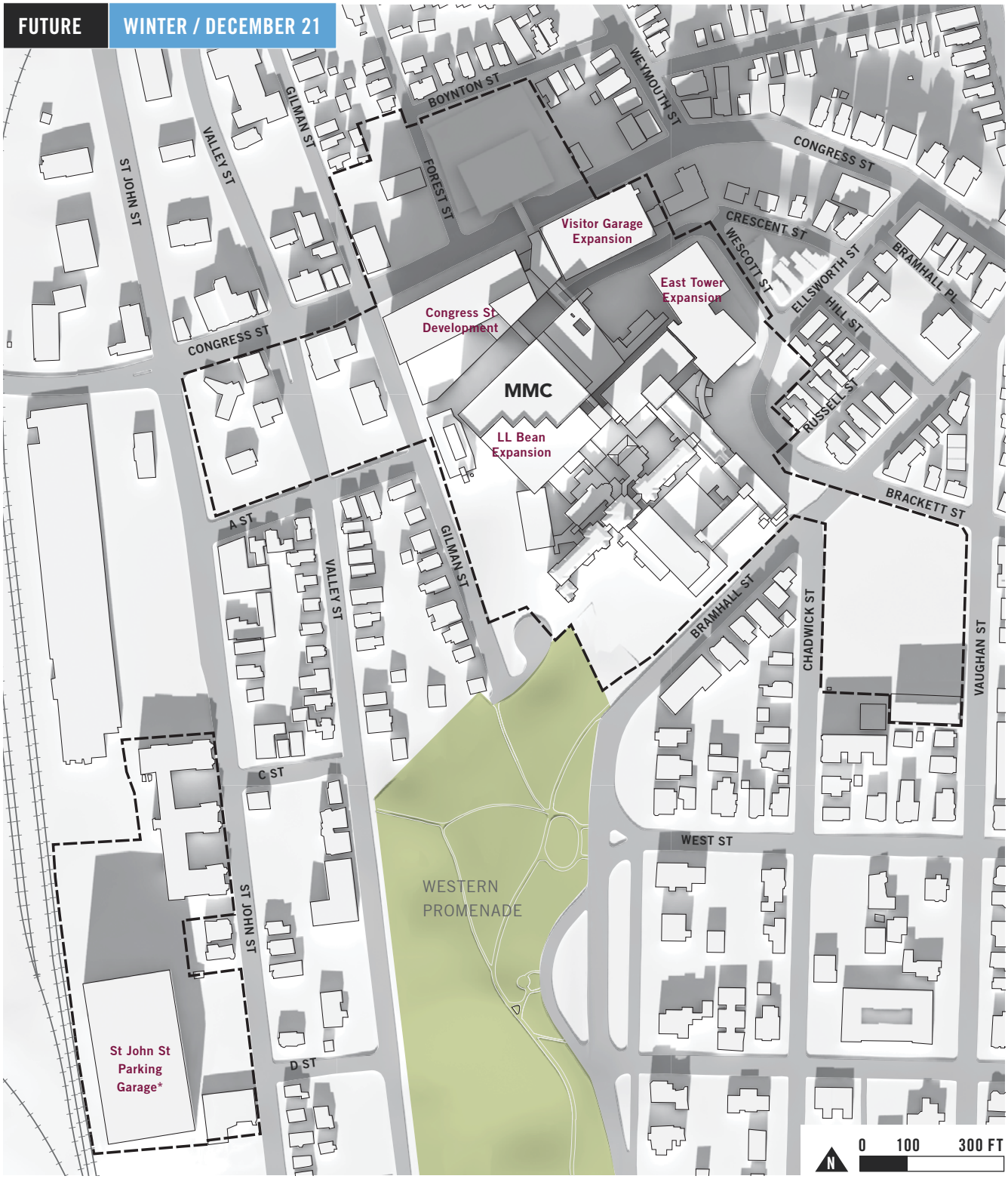


* NOTE: Exact garage location and footprint to be determined during detailed design.

Fig.5.19 Computer-generated shadow study / Existing conditions on December 21, noon



Fig.5.20 Computer-generated shadow study / Proposed long-term projects on December 21, noon



* NOTE: Exact garage location and footprint to be determined during detailed design.

EAST TOWER EXPANSION
LEVEL 6 FLOOR PLAN

SCALE 1/8" = 1'-0"

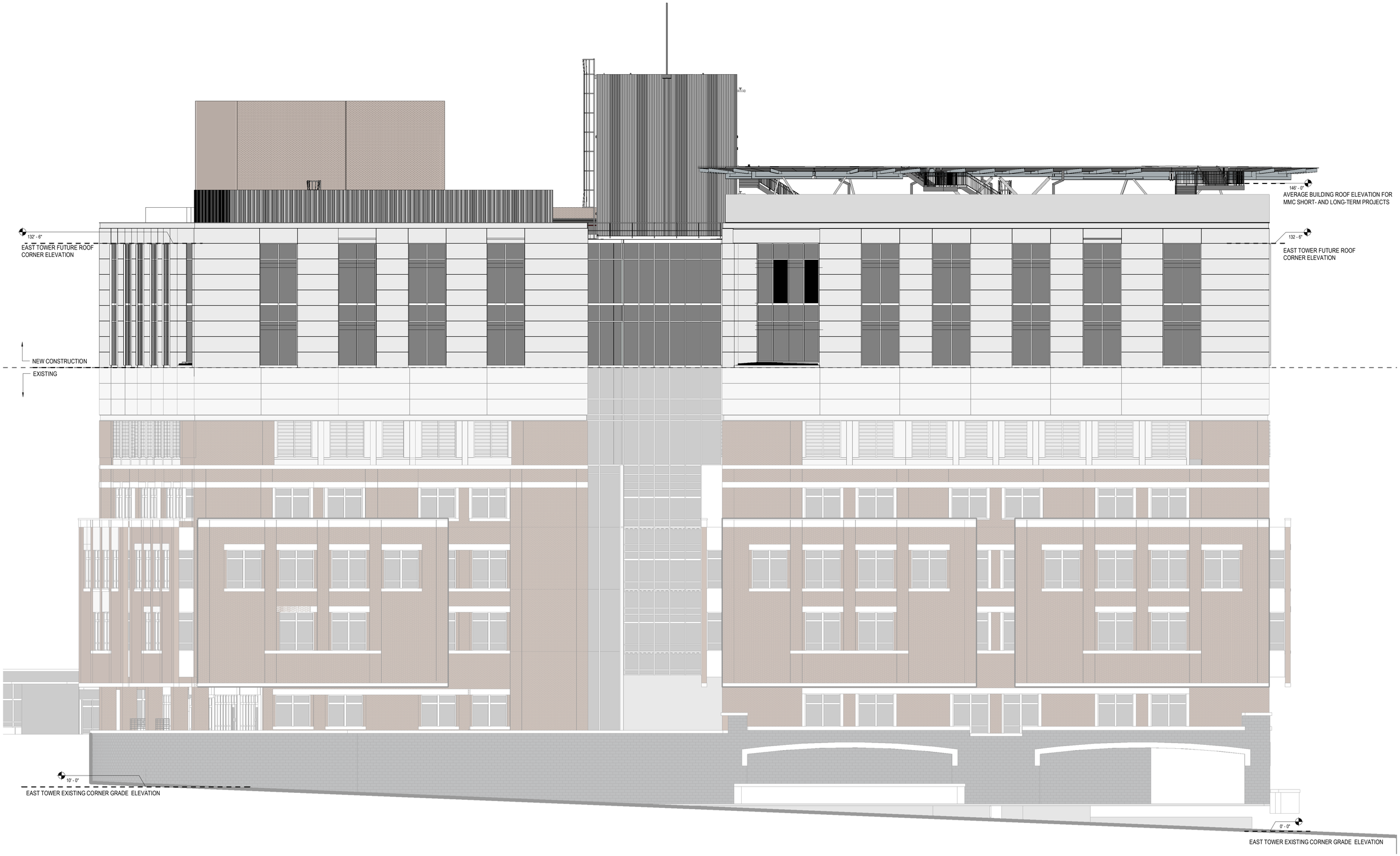

PATIENT ROOM 252 SF
PATIENT ROOM 254 SF
PATIENT ROOM 243 SF
PATIENT ROOM 248 SF
PATIENT ROOM 245 SF
PATIENT ROOM 242 SF
PATIENT ROOM 245 SF
PATIENT ROOM 258 SF
PATIENT ROOM 251 SF
PATIENT ROOM 258 SF
PATIENT ROOM 265 SF
PATIENT ROOM 264 SF
PATIENT ROOM 253 SF
PATIENT ROOM 251 SF
PATIENT ROOM 258 SF
PATIENT ROOM 247 SF
PATIENT ROOM 258 SF
PATIENT ROOM 314 SF
PATIENT ROOM 268 SF
PATIENT ROOM 249 SF
PATIENT ROOM 251 SF
PATIENT ROOM 246 SF
PATIENT ROOM 253 SF
PATIENT ROOM 243 SF
PATIENT ROOM 245 SF
PATIENT ROOM 260 SF
PATIENT ROOM 262 SF
PATIENT ROOM 261 SF
TOILET (PATIENT) 74 SF
TOILET (PATIENT) 49 SF
TOILET (PATIENT) 49 SF
TOILET (PATIENT) 49

EAST TOWER EXPANSION
LEVEL 7 FLOOR PLAN

SCALE 1/8" = 1'-0"



PERKINS+WILL



1/8" = 1'-0"

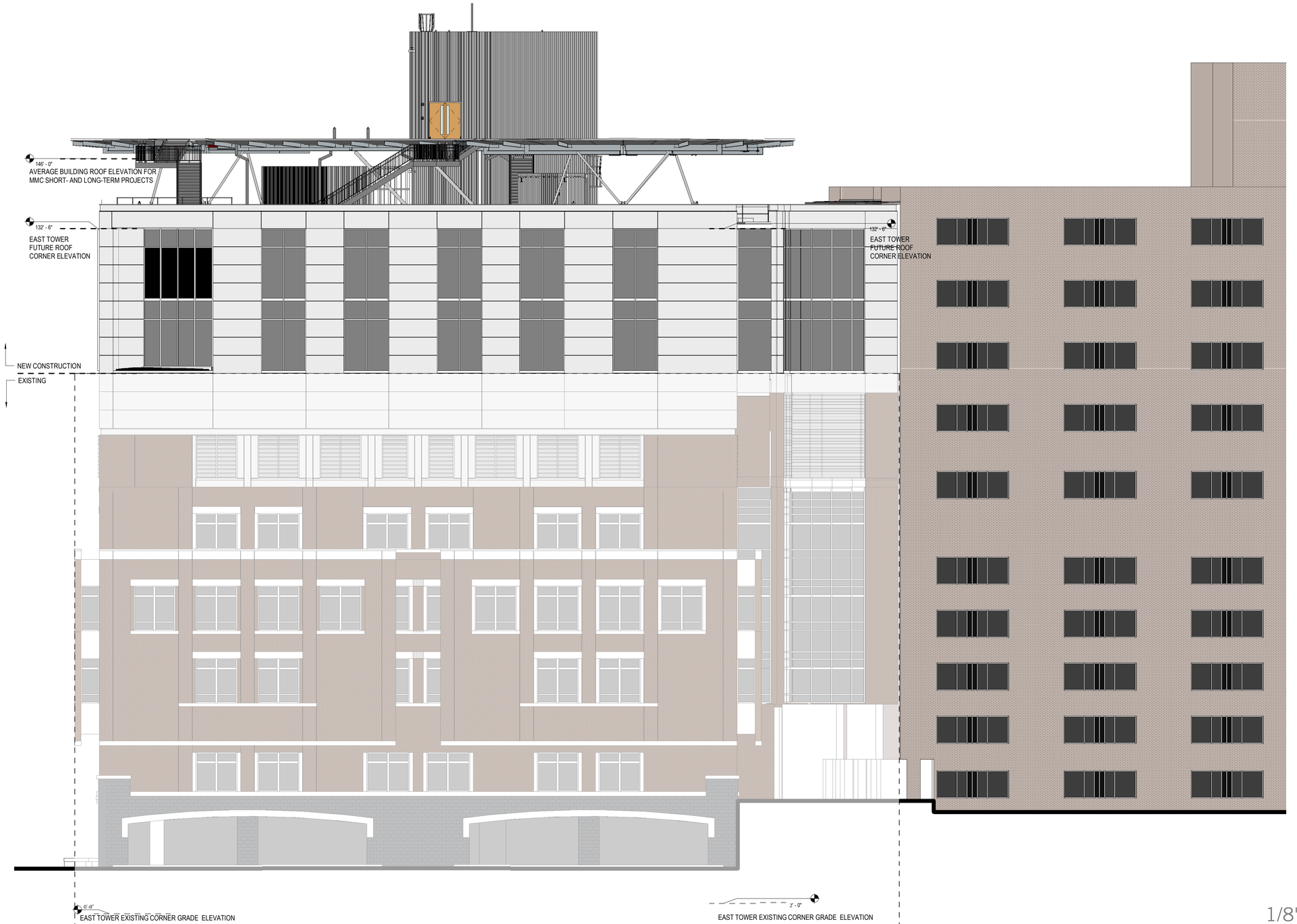
Maine Medical Center
MaineHealth

East Tower 6 & 7 Addition

EAST ELEVATION

PERKINS+WILL

12/28/2017 11:14:55
AM



1/8" = 1'-0"

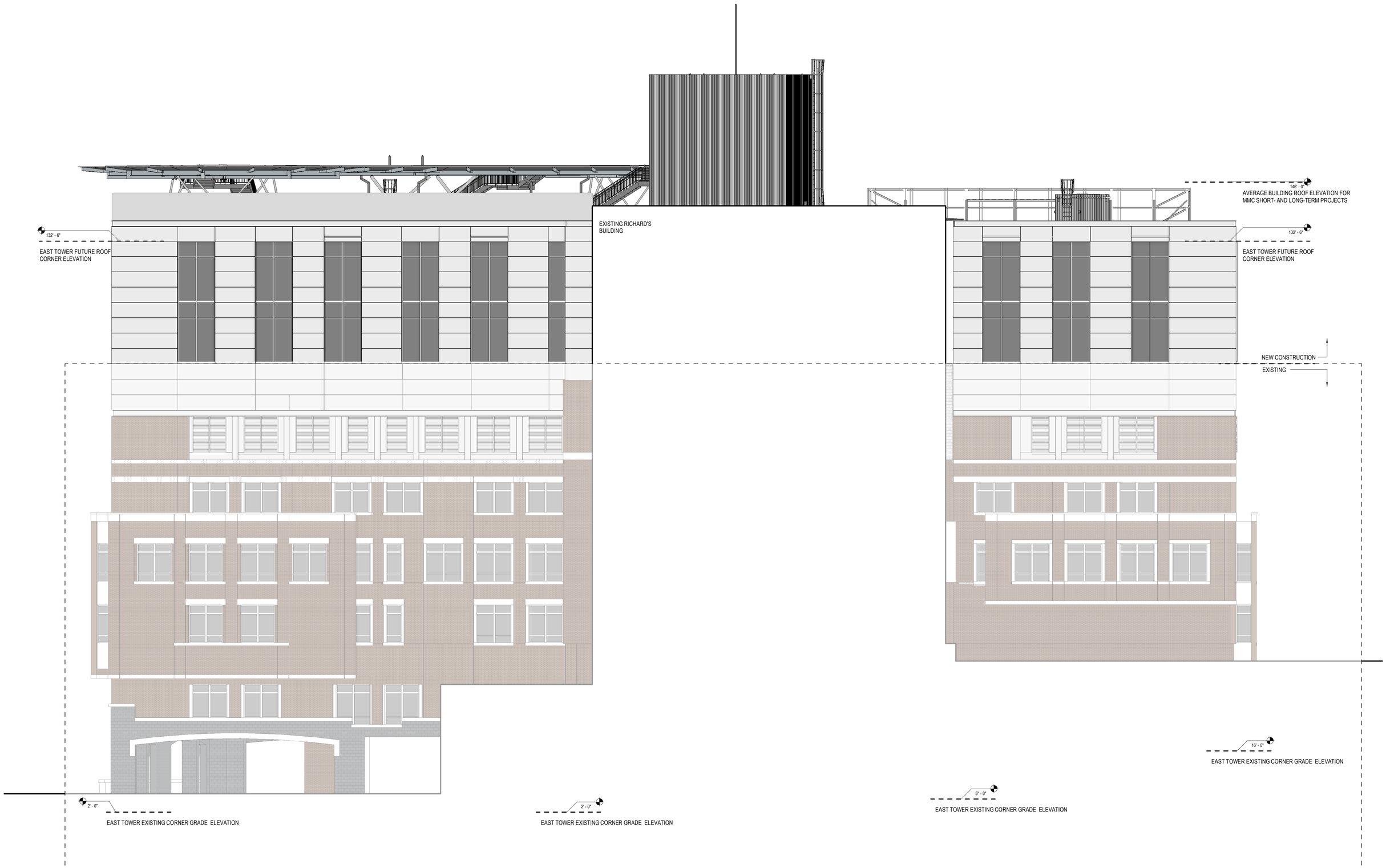
Maine Medical Center
MaineHealth

East Tower 6 & 7 Addition

NORTH ELEVATION

PERKINS+WILL

12/28/2017 11:16:37
AM



1/8" = 1'-0"

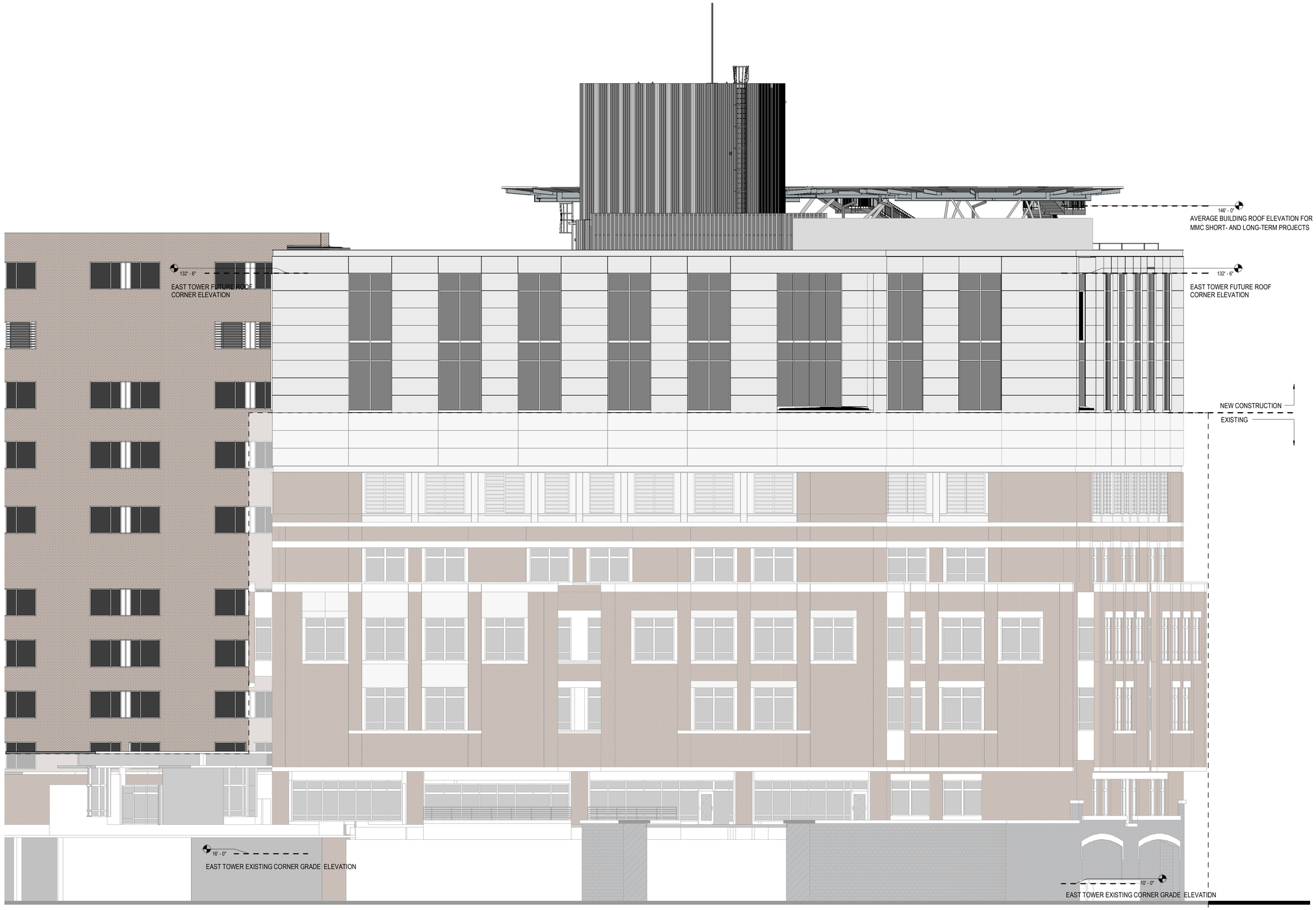
Maine Medical Center
MaineHealth

East Tower 6 & 7 Addition

WEST ELEVATION

PERKINS+WILL

12/28/2017 11:15:25 AM



1/8" = 1'-0"

Maine Medical Center
MaineHealth

East Tower 6 & 7 Addition

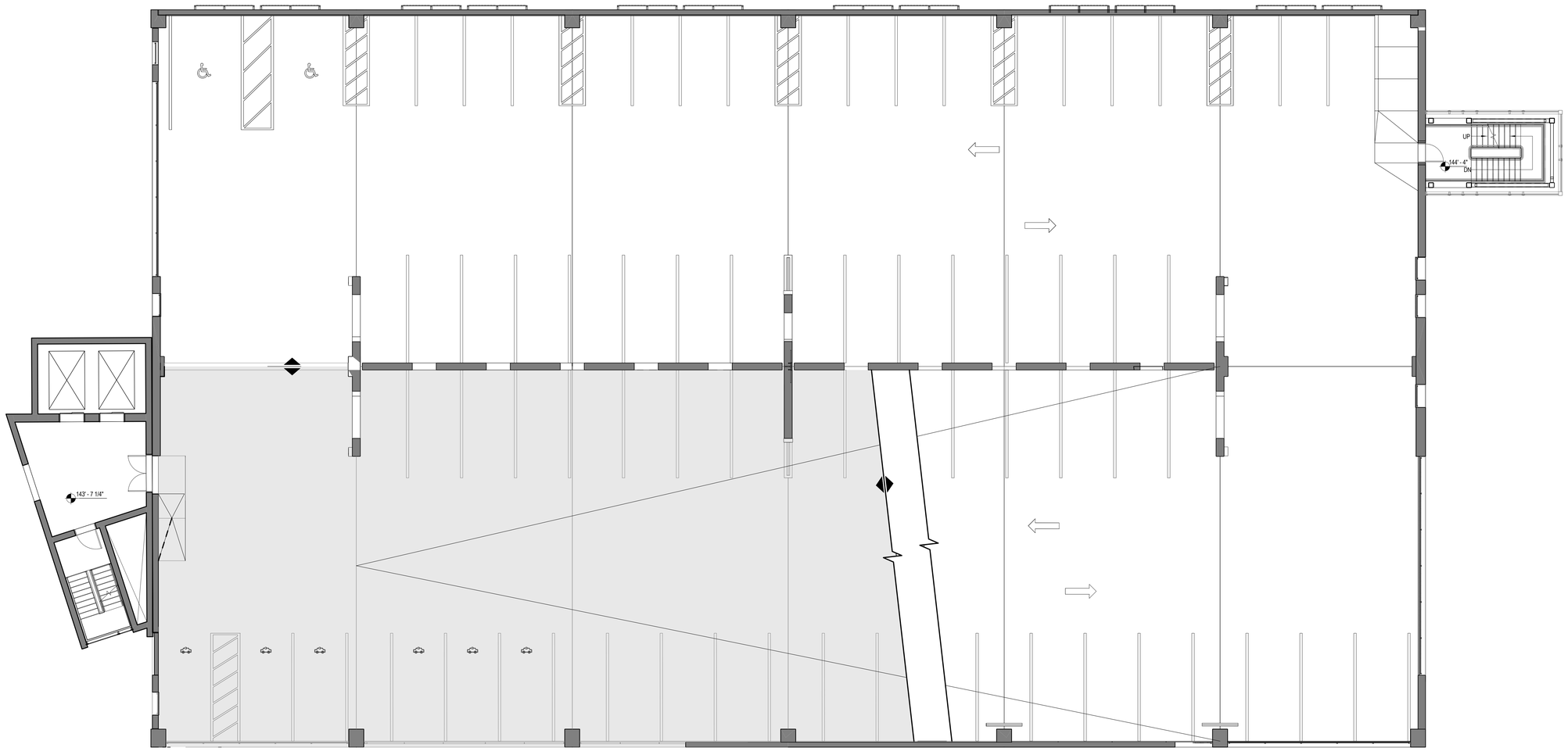
SOUTH ELEVATION

PERKINS+WILL

12/28/2017 11:15:58 AM

VISITOR GARAGE EXPANSION
LEVEL P8 FLOOR PLAN

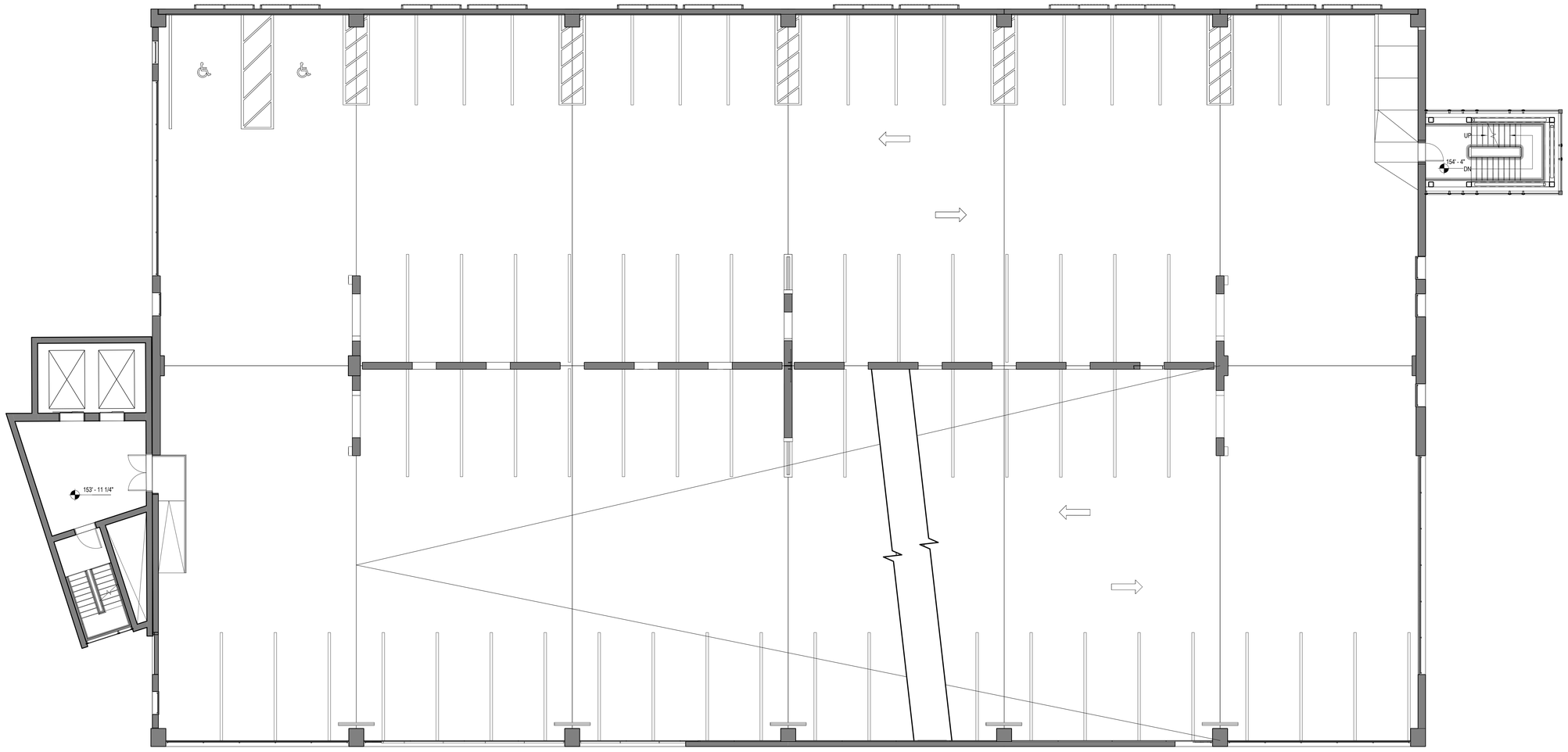
SCALE 1/8" = 1'-0"



PERKINS+WILL

VISITOR GARAGE EXPANSION
LEVEL P8 FLOOR PLAN

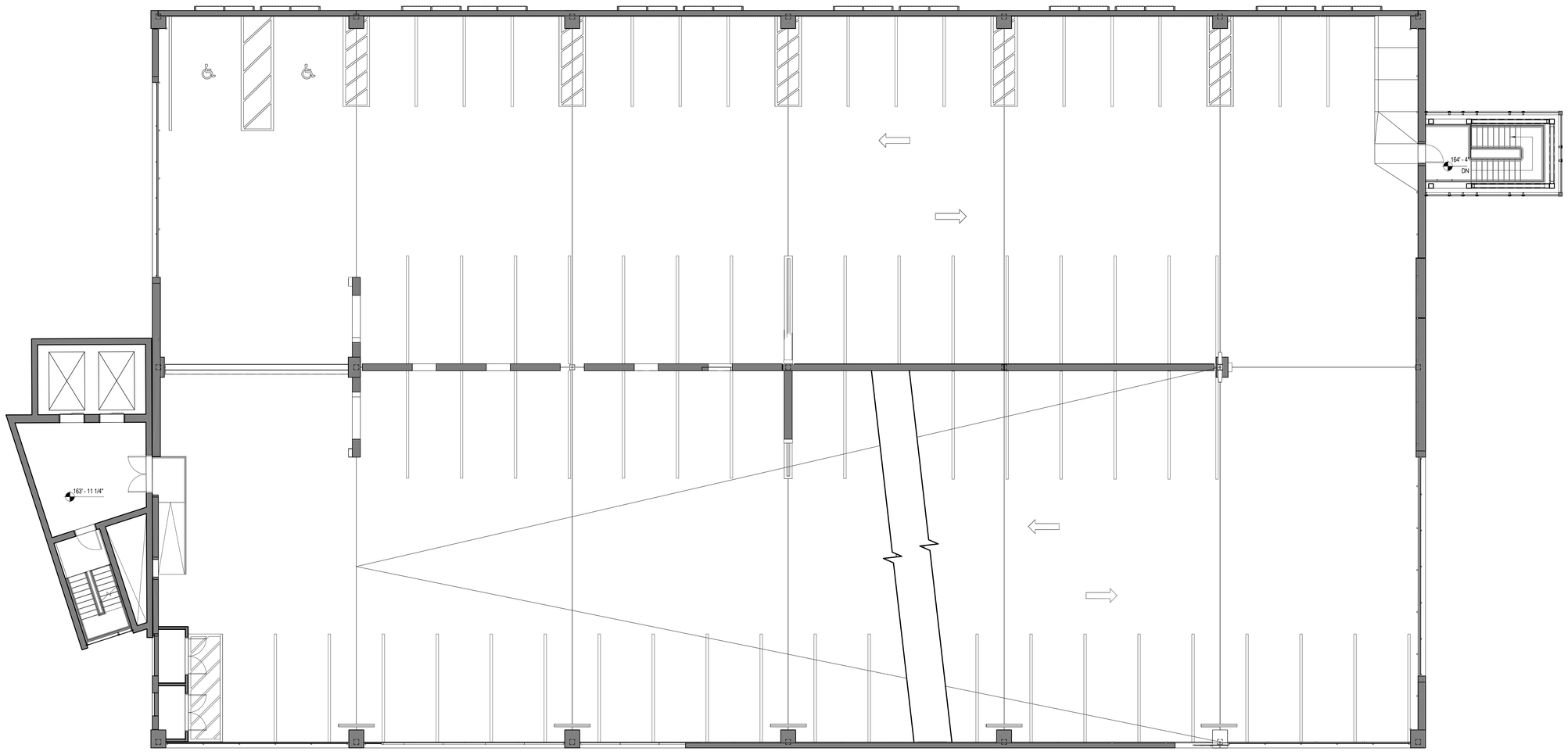
SCALE 1/8" = 1'-0"



PERKINS+WILL

VISITOR GARAGE EXPANSION
LEVEL P10 FLOOR PLAN

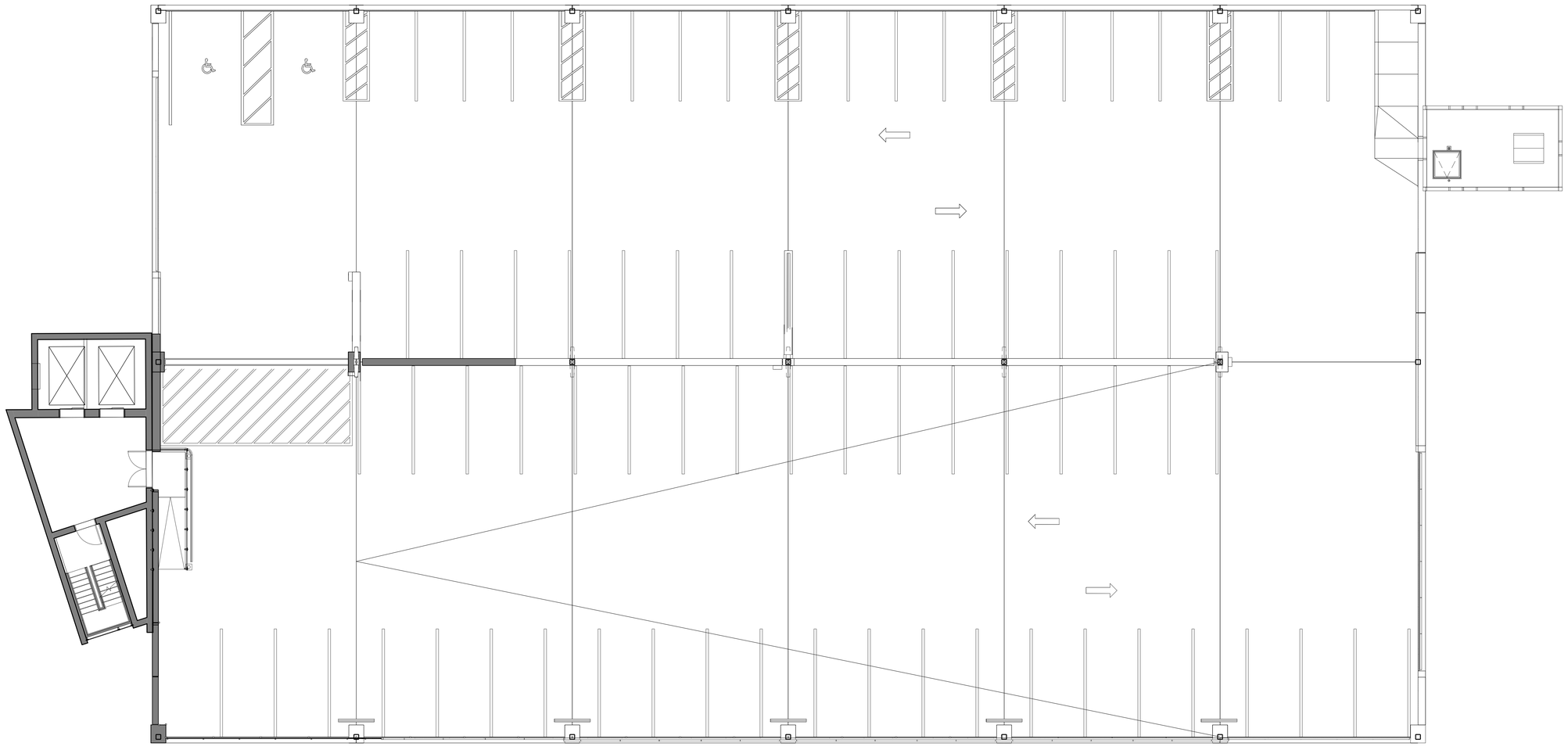
SCALE 1/8" = 1'-0"



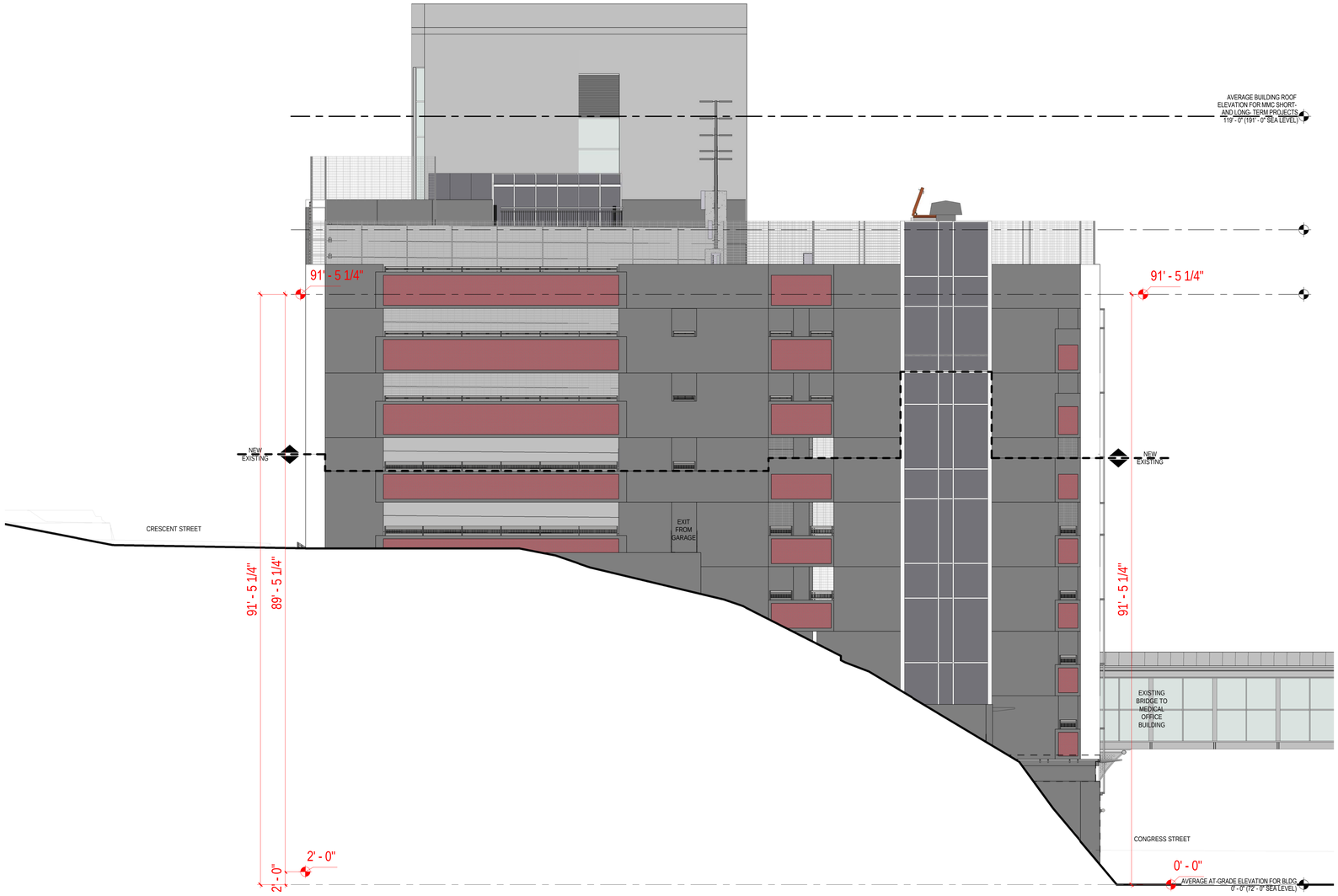
PERKINS+WILL

VISITOR GARAGE EXPANSION
LEVEL P11 FLOOR PLAN

SCALE 1/8” = 1’-0”



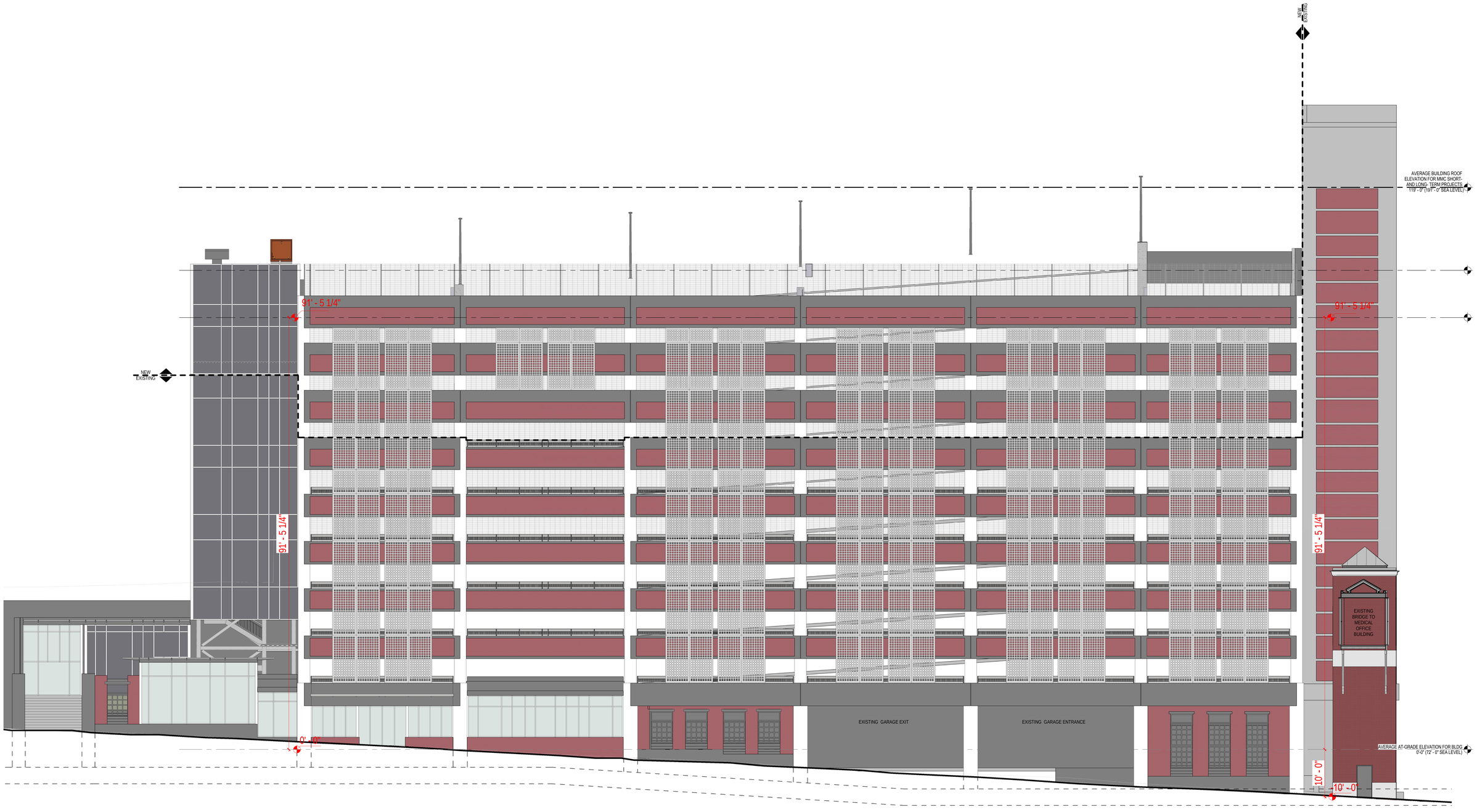
PERKINS+WILL



Visitor Garage Expansion

EAST ELEVATION

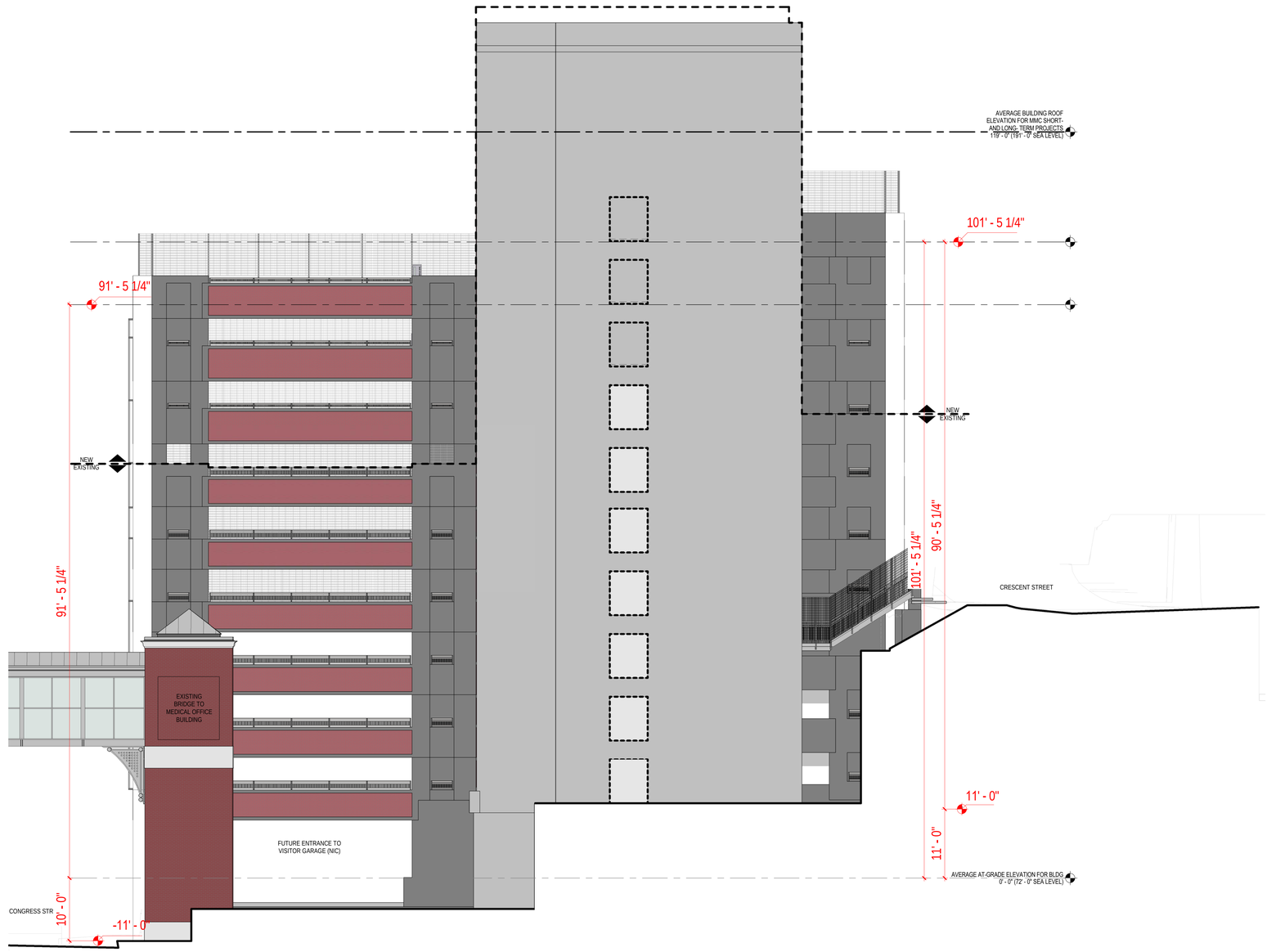
PERKINS+WILL
DOCUMENT SET



Visitor Garage Expansion

NORTH ELEVATION

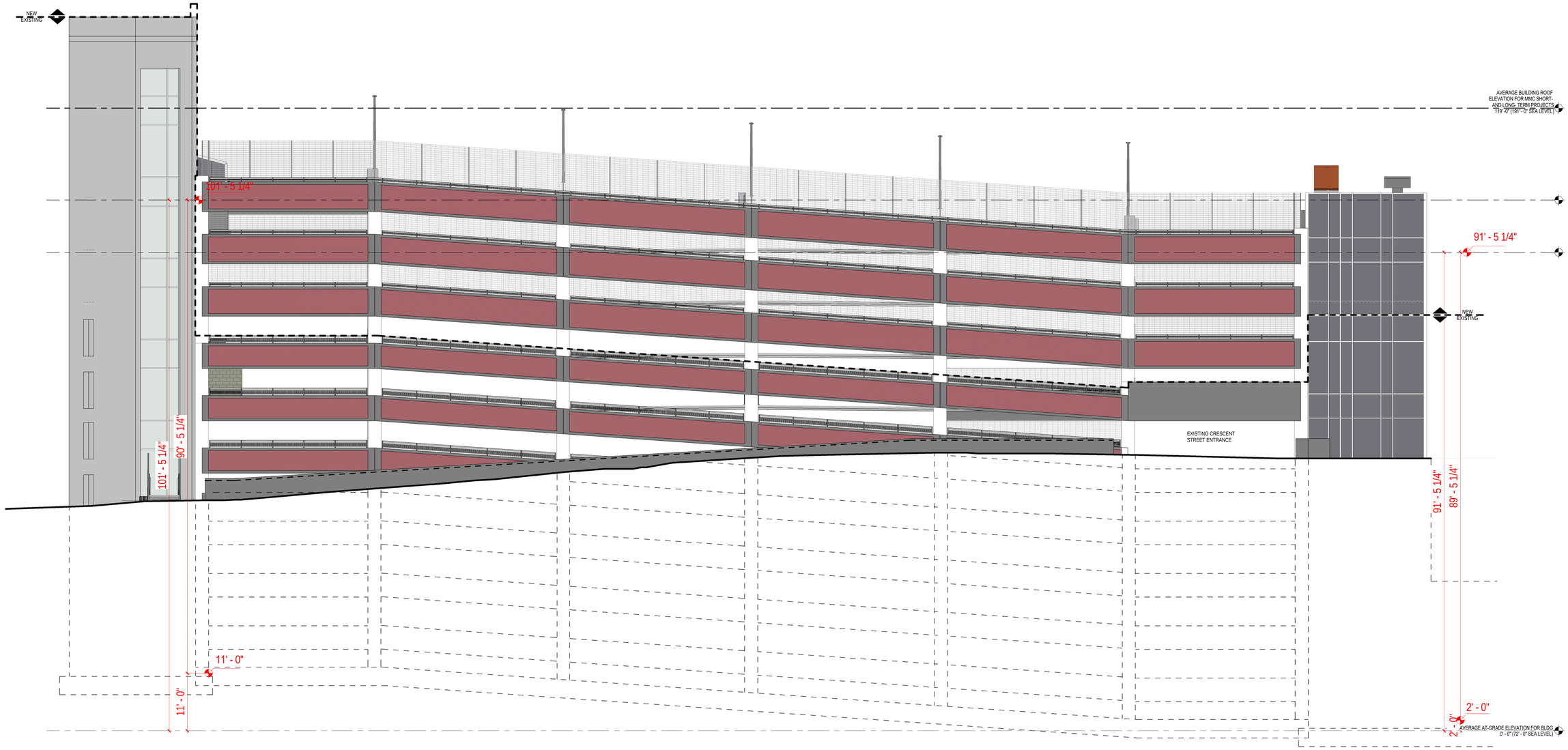
PERKINS+WILL
DOCUMENT SET



Visitor Garage Expansion

WEST ELEVATION

PERKINS+WILL
DOCUMENT SET



Visitor Garage Expansion

SOUTH ELEVATION

PERKINS+WILL
DOCUMENT SET

Maine Medical Center
MaineHealth

PERKINS+WILL

MMC East Tower Expansion – City Design Comments

To:	City of Portland Planning Department
From:	Jeffrey Keilman, Perkins+Will; Al Green, MMC
Date:	January 19, 2018
Subject:	**MMC East Tower Expansion – Phase 1 Design Narrative**
Attachments	
	Slides shared with City Staff on January 16, 2018

Campus Vision

The campus transformation of Maine Medical Center draws its inspiration from its site, history, programmatic needs and most importantly the desire to create a sense of place. Specifically, the hospital will reflect its location within Portland and the state of Maine. The goal is to preserve the historic character of the existing campus yet provide the opportunity for new design identities to develop that represent the modern delivery of healthcare and the future of Maine Medical Center.

Many key design drivers and interventions envisioned for Maine Medical Center's campus transformation balance the clinical needs of the hospital with the campus' place within the city of Portland. Included is a primary effort to improve the built environment of MMC's campus relationship with the city. This goal is balanced with the clinical needs of the patients served by MMC. Healthcare design has to start with the internal program and layout to ensure a successful and functional design. From there, the exterior design can begin to take shape and be informed by the internal concepts.

The ultimate success of the project will be to provide a positive patient and visitor experience. The creation of healing environments is an essential element to the design of the submitted projects. This is through the incorporation of nature, natural light, and the blending of interior and exterior. Access to views and light are proven to improve positive patient outcomes. Proper location and use of glass and transparency provides connections to the exterior to improve patient experience but also to further reinforce wayfinding.

The current projects submitted within this Site Plan application were developed as a continuation of existing conditions. The façade of the East Tower expansion will relate to the existing conditions and massing of the East Tower by utilizing metal panel and glass.

The internal planning strategies, critical for a clinically driven building, aimed to blend the exterior with the interior through strategic planning that enabled the interiors to be opened up to and expressed on the exterior through the large corner windows.

The East Tower Expansion is conceived as the next phase in the campus replacement and modernization that will continue to blend and blur the new and existing campus architecture. The

addition will continue to link the vision started with the Bean 2 surgical expansion and will culminate with the Congress St. addition.

Context

The East Tower and Visitor Garage expansions are extensions of existing conditions, and as such derive many of the material choices from the existing adjacent construction.

Through the design process, the team explored the impact of the structures from various viewpoints understanding the additions scale within the urban context. Multiple angles and views were analyzed by the design team in conjunction with Maine Medical Center, including long-views, which influenced the decisions of various fenestration patterns and scale. This is particularly important for the East Tower addition which is visible from many points in the city. The design responds to both the long views with the use of scale of fenestration, but also manages to respond to local context through the attention to details, and sensitivity to materials and palate from the campus and neighborhood.

Building Design

The current Site Plan submission outlines (2) projects that are expansions and extensions of existing conditions. Within this context the design process still aimed to express the internal program constraints and create a dialogue between the interior and exterior.

Design is always subjective but the process to reach the current solution was reviewed and vetted by many parties, including critical voices form Maine Medical Center but also internally to Perkins+Will with multiple peer design reviews. The Perkins+Will internal review includes international designers as well as those from across the United States. The proposed design was universally selected as the best option to meet with the campus vision and existing context.

The design team believes the response for the East Tower expansion is in line with the key elements of design outlined through the design guidelines established in MMC's Institutional Development Plan, including the attention to proportion, rhythm, and use of materials. Design iterations were studied and reviewed by multiple stakeholders, including Maine Medical Center. The proposed design was the first solution where all parties agreed that the strategy successfully unifies the existing structure with the new addition while meeting the stringent interior requirements for advanced patient care in a healthcare setting.

By maximizing and utilizing the opportunities provided by the massing and proportions, the design is unified with the existing structure, but also creates urban scale gestures recognizing the prominence within the city. In particular, the scale of multistory fenestration and use of rhythm provided by the interior program.

One key design approach was to limit the current idiosyncrasies that are on the existing East Tower building that are not represented by any of the adjacent structures on the Maine Medical campus. In particular, the pavilions, Richards, and Bean are buildings that have a minimalist approach to massing and detailing on their exterior facades. In essence, the proposed design is more compatible with the existing campus and future goals outlined within the previously approved IDP. This was achieved by

simplifying the palate of materials and utilizing the existing materials on the structure. Introduction of new materials or further reinforcing the banding would have the opposite effect of creating a larger impact of the massing within the city and the campus.

The Visitor Garage expansion will match the current rhythm and proportions of the existing garage. The street façade of the Visitor Garage is an existing condition however opportunities for activation are being considered currently.

Building Materials

The selected materials for each addition are derived from the existing materials on the building and are as follows:

- East Tower – White Aluminum Composite Panels and Glass Curtain Wall
- Visitor Garage – Precast Concrete Panels with imbedded brick

Design Constraints

As with any building addition or expansion, existing conditions and real world constraints are critical in determining the final design solution. In particular, constructability for both the East Tower and Visitor Garage were important design drivers. Capacity within the existing structure, feasibility of installation of façade systems, and schedule were considered in selecting the final design solution.

hcc: Project File
Chuck Siconolfi – P+W
Romeo Moreira – P+W
Rashid Ashraf – P+W
Adam Troidl - Colliers
Mark Harris - MMC
Walter Pochebit – MMC
Al Green – MMC
Dennis Morelli - MMC

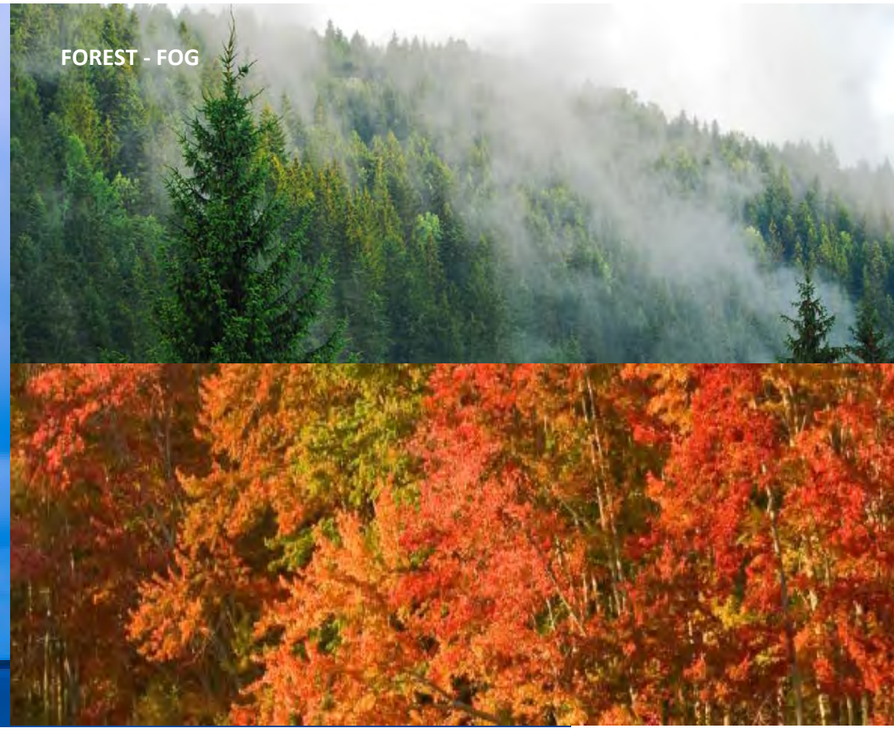
MMC SITE PLAN SUBMISSION

EAST TOWER & VISITOR GARAGE

CONCEPT DIAGRAMS







SOLID HEAVY



SOLID / LIGHT



ETHEREAL







INTEGRATION OF INSIDE AND OUTSIDE



Blurring the lines between the inside and the outside to bring the garden into the hospital.





CIRCULATION













MATERIALS INSPIRED BY MAINE









50 YEAR PALETTE

Use of natural materials take clues from nature to create a timeless environment.













50 PALETTE



Sky



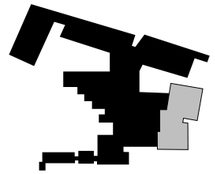
Sea



Land

COLOR OPTIONS

FLOOR PLAN



Views to White Mountains



Views to Casco Bay



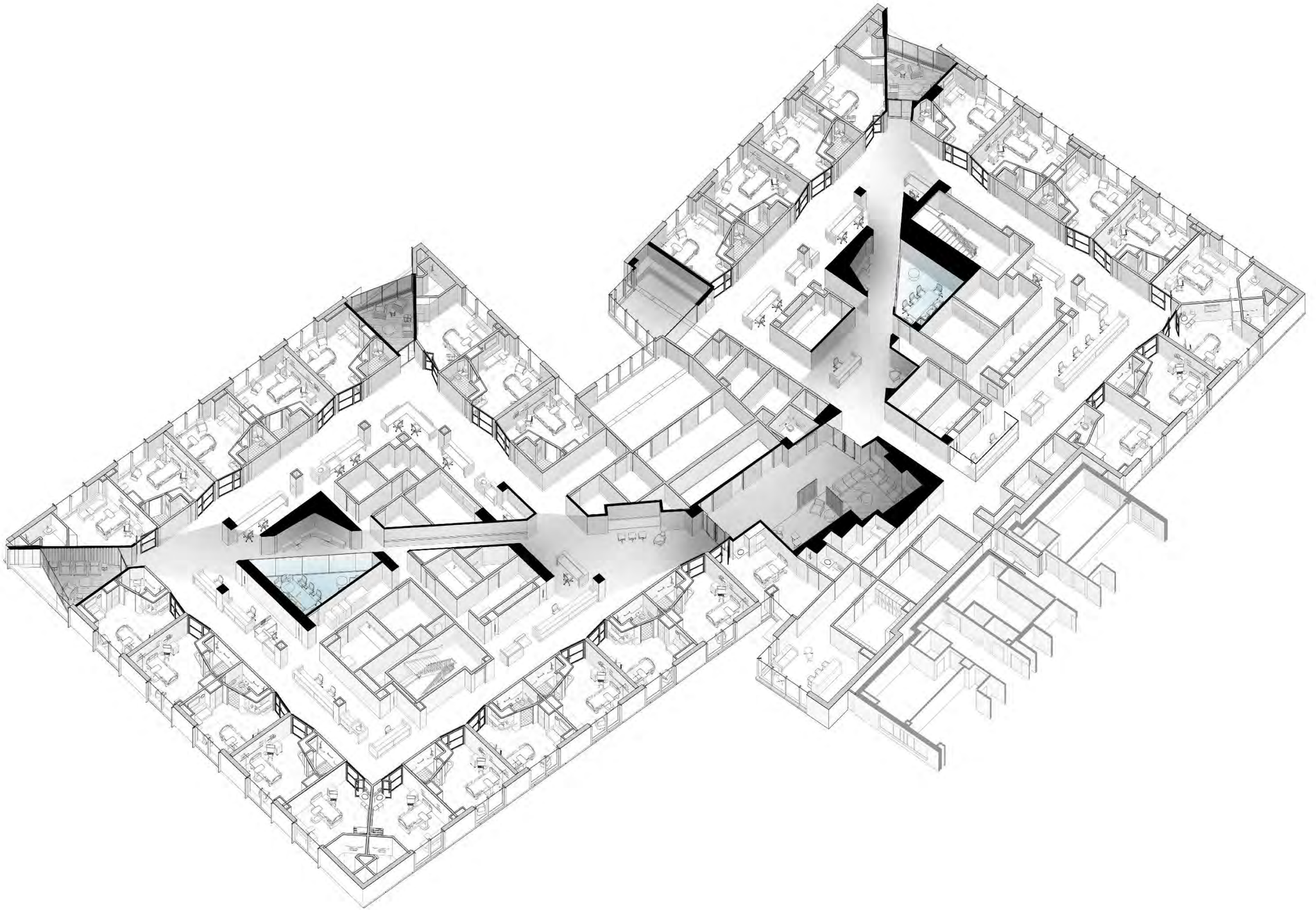
Views to Portland Water Front



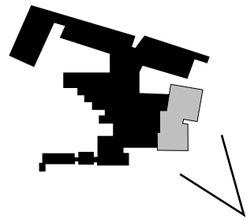


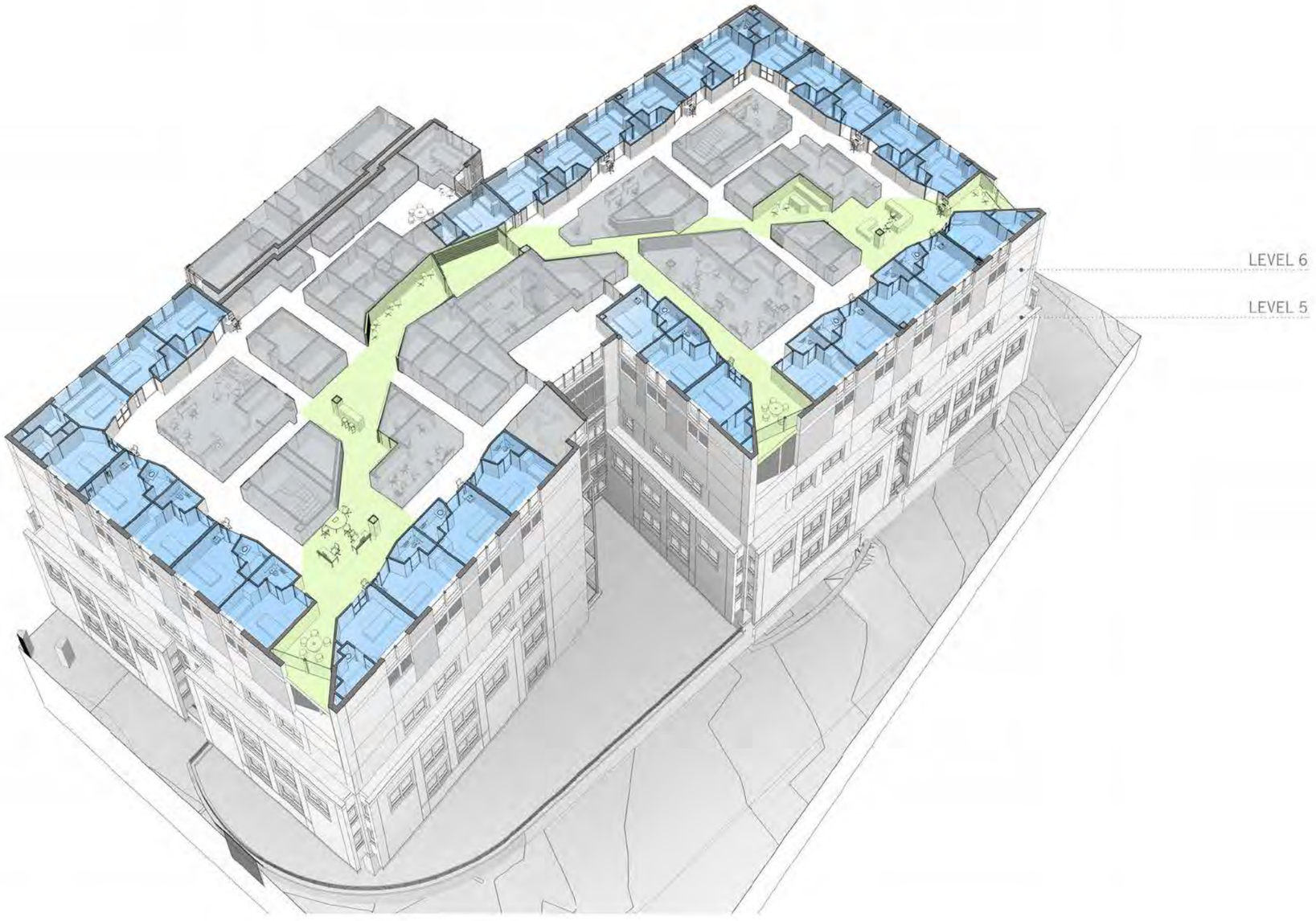
0 10 20 50

AXONOMETRIC



AXONOMETRIC



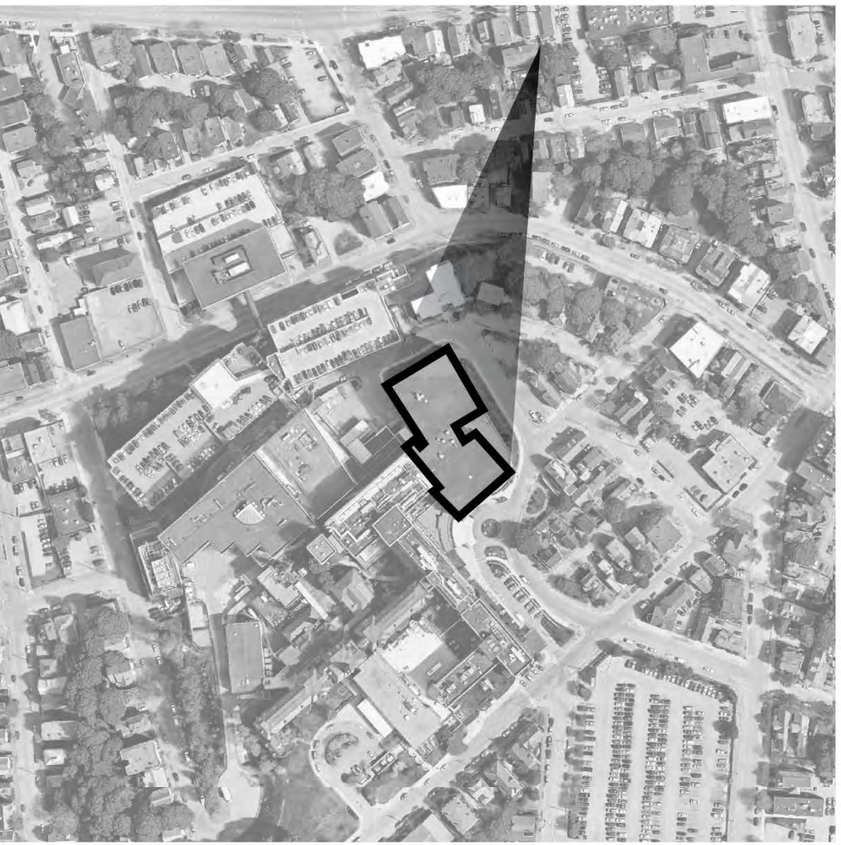


CAMPUS AERIAL





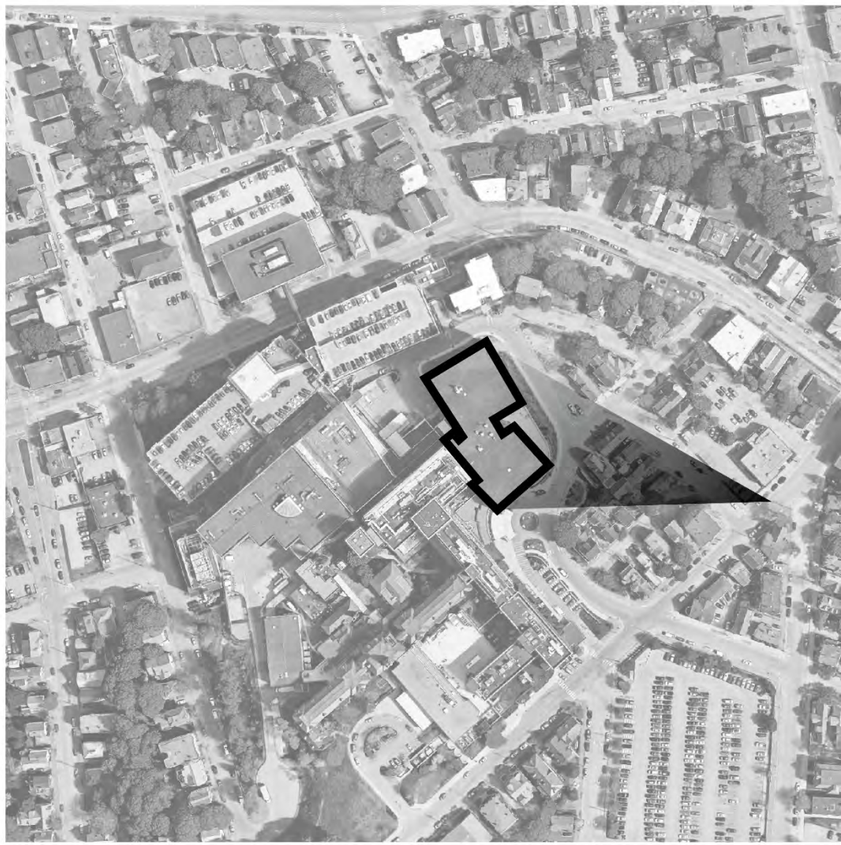




AERIAL VIEW



VIEW FROM BRAMHALL ST



VIEW FROM HILL ST


AERIAL VIEW
South West



South West





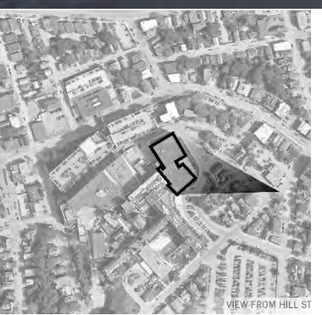




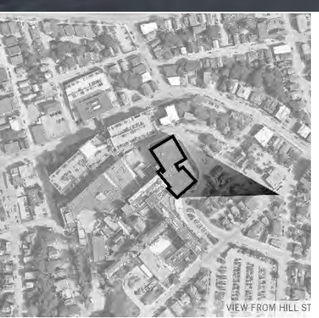
Bramhall and Chadwick Street



Bramhall and Chadwick Street

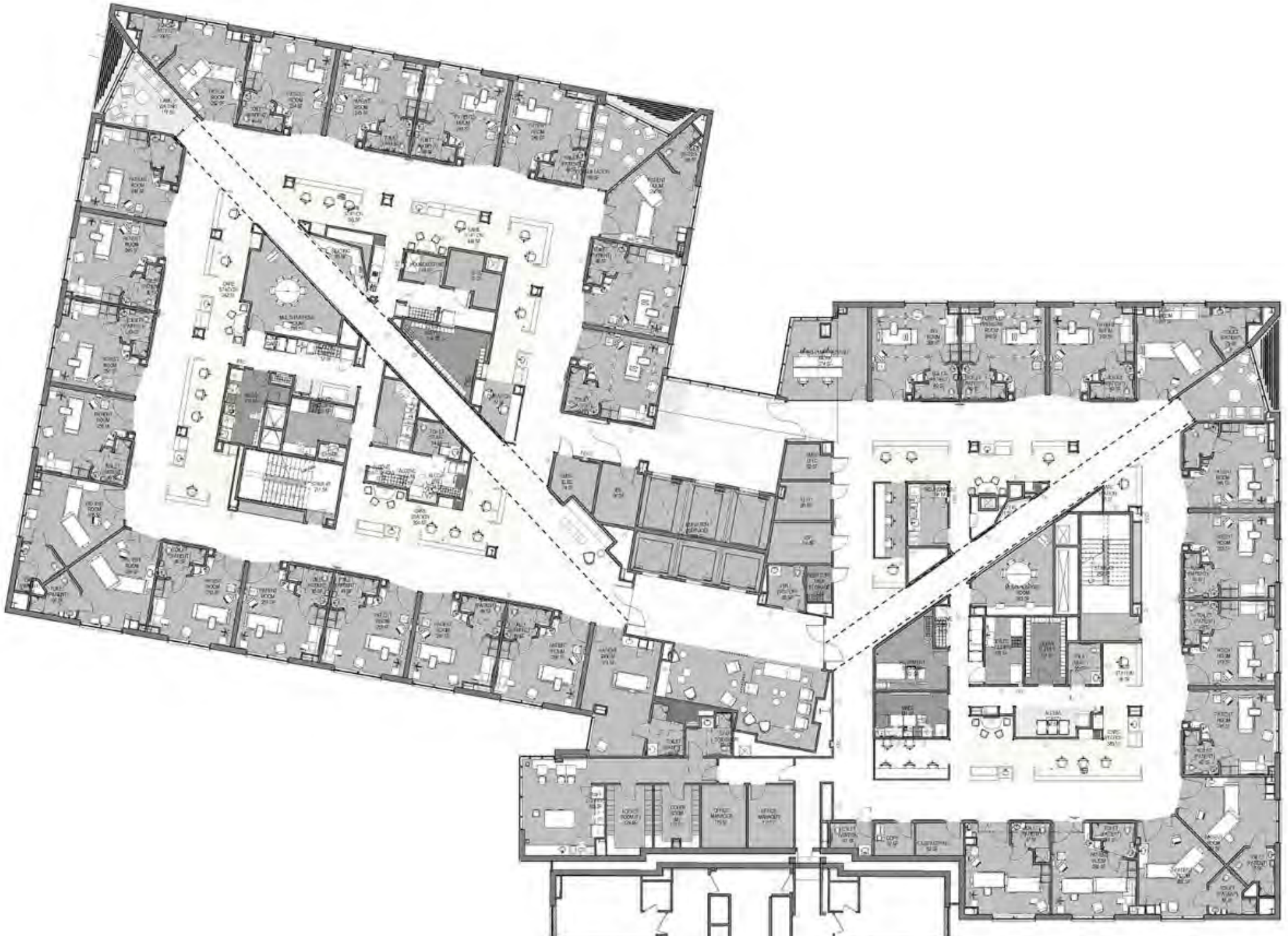


Bramhall and Hill Street



Bramhall and Hill Street

TYPICAL FLOOR PLAN



EAST ELEVATION



NORTH ELEVATION



SOUTH ELEVATION



WEST ELEVATION

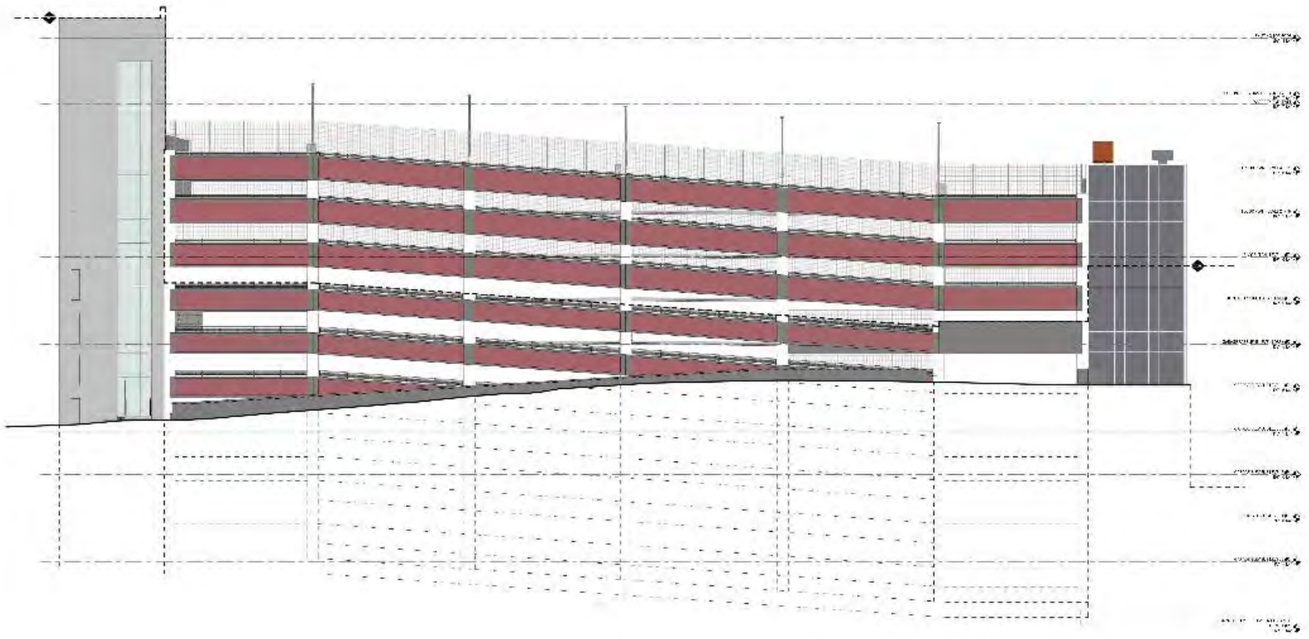


Visitor Garage Expansion

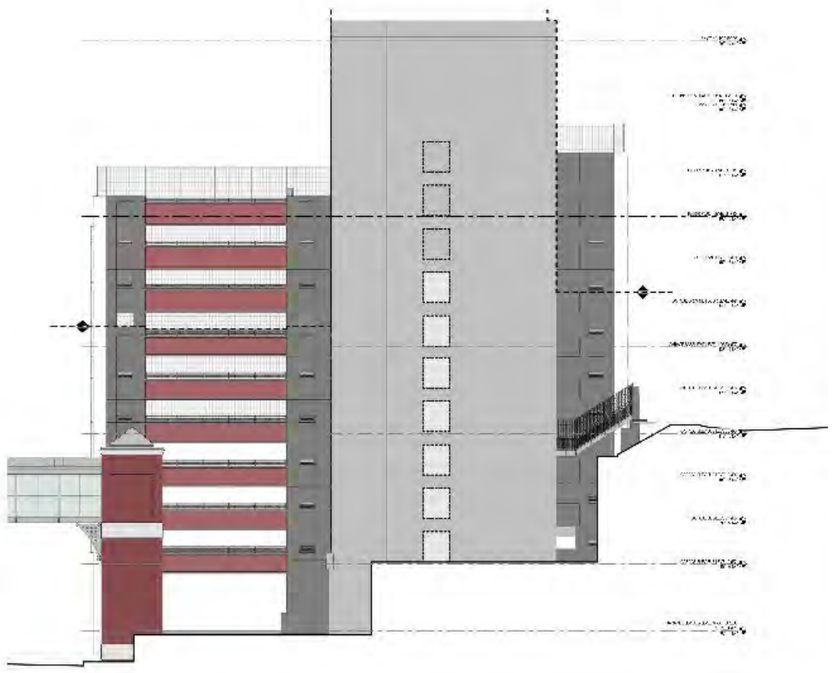
EXISTING



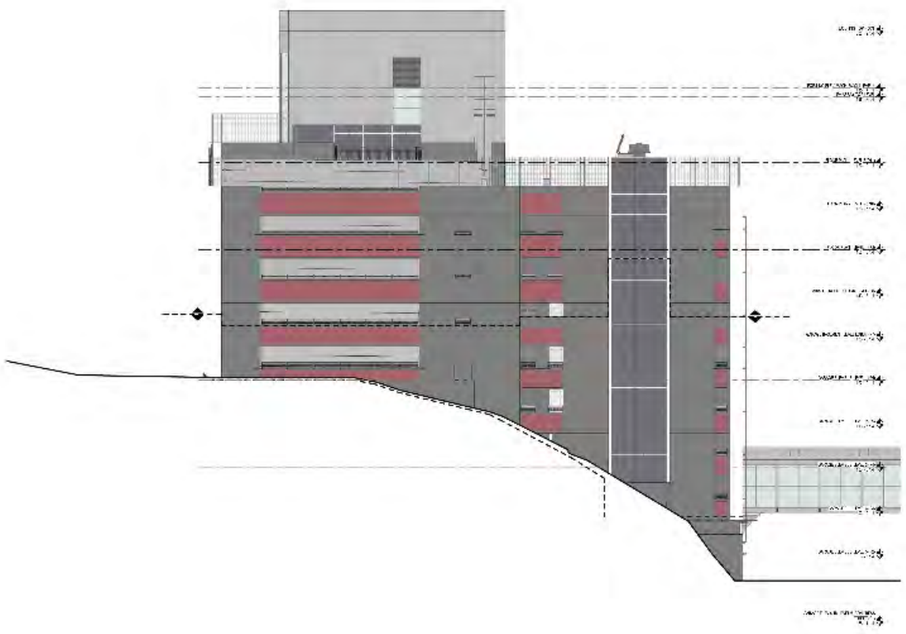
SOUTH ELEVATION



WEST ELEVATION



EAST ELEVATION



NORTH ELEVATION



APPENDIX




US-1
Hide imagery




GROVER C
EDITH C. RICHARDS
MEMORIAL
MAIN




WESCOTT ST
ELLSWORTH ST
STOP
NO PARKING ANY TIME
Maine Medical Center
EMERGENCY
Trauma Center
Parking Garage
Main Entrance
South Entrance
South Lot








Medical Center
Maine

Maine Medical Center
MaineHealth
centered around you

Get on Board!

Maine Medical Center

Transportation Demand Management Program
Tuesday, February 13, 2018



Contents

Introduction 3
Purpose 3
Maine Medical Center 3
MMC Facility Planning 4
Commitment to TDM 5
Context 6
Land Use 6
Parking 6
Data Collection 8
Transit 8
Bicycle and Pedestrian Infrastructure 9
Current Travel Behavior 10
Commuting Survey 10
Geospatial Analysis 11
Program Goals 14
Parking and TDM Strategies 15
Current Get on Board Program Elements 15
Biking 15
Mass Transit 16
Carpool 16
Parking Cash Out 16
MMC Shuttles 17
Scooters and Motorcycles 17
UCar 17
TDM and GoMAINE website 17
Pay for Parking 17
Skiing 18
Enhanced Get on Board Program Elements 18
Walking 18

Biking 18
Carpooling/Vanpooling 19
MMC Shuttle 19
UCar 19
Enhanced Transit Subsidies 19
New Program Elements 20
Short-Term (1-5 years) 20
Get on Board! Coordinator 20
Way 2 GO MAINE 20
Improving Data Collection Capabilities 20
Guaranteed Ride Home (GRH) Program 20
Pay for Parking 20
Long-Term Actions (5+ years) 21
Regional Connections Partnership 21
Supporting Mass Transit Commutes 21
Education and Marketing Strategies 22
Sharing TDM Program Information 22
Get on Board Fair/Seminars 22
Get on Board Blitz 22
Comprehensive Data and Goal Monitoring 23
Parking Utilization Data 23
Employee Survey 23
Reporting Frequency 23
Conclusion 24

Introduction

Purpose

The purpose of Maine Medical Center's Transportation Demand Management program, Get on Board, is to reduce the amount of single-occupancy vehicles by enabling and promoting alternative modes of transportation to and from MMC's Bramhall Campus for MMC employees.

Maine Medical Center

Maine Medical Center is a complete health care resource for the people of greater Portland, the entire state of Maine, and northern New England.

Incorporated in 1868, Maine Medical Center is the state's largest medical center, licensed for 637 beds and employing more than 6,000 people – with approximately 2,000 of those employees residing in the City of Portland. Maine Medical Center's unique role as both a community hospital and a referral center requires an unparalleled depth and breadth of services, including the state's only medical school, through a partnership with Tufts University School of Medicine, and a world-class biomedical research center, the Maine Medical Center Research Institute.

Our care model includes the state's largest multispecialty medical group, Maine Medical Partners. Maine Medical Partners provides a wide range of primary, specialty, and subspecialty care delivered through a network of more than 40 locations throughout greater Portland and the southern Maine region.

Maine Medical Center is the flagship hospital of MaineHealth, a 12-member health system touching central, southern, and western Maine and eastern New Hampshire. The collaboration of MaineHealth's members allows greater availability to community health improvement programs, access to clinical trials and research, and shared electronic medical records.

The strength of the health system, anchored by Maine Medical Center, enables its members to invest in shared programs and services that improve the quality of care while reducing costs whenever possible. As a nonprofit institution, Maine Medical Center has provided more than $200 million annually in community benefits, delivering care to those who need it, regardless of their ability to pay.

MISSION, VISION AND VALUES

Maine Medical Center is dedicated to maintaining and improving the health of the communities it serves by:

- Caring for its community
- Educating tomorrow's caregivers
- Researching new ways to provide care

It proudly carries its unique responsibility as Maine's leader in patient care, education and research. MMC is dedicated to the traditions and ideals of not-for-profit healthcare. It provides care to all who seek it.

MMC's efforts to execute its Mission are aimed at achieving a simple, yet powerful Vision: "Working together our communities are the healthiest in America."

MMC is guided by a set of Values, helping to meet and exceed the expectations of those it is privileged to serve. MMC's Values:

- Patient-Centered
- Integrity
- Ownership
- Excellence
- Respect
- Innovation

MMC Facility Planning

Maine Medical Center recently announced a project that will expand and modernize much of its patient care facilities. Over the next five years Maine Medical Center plans to spend $512 million on the construction, renovation and expansion of inpatient and outpatient facilities and services. The majority of this investment will occur at MMC's main Bramhall campus.

Every aspect of this project is designed around the needs of patients. The project will optimize current bed capacity at the state's largest hospital and calls for increasing the number of single rooms available to patients as well as well replacing surgical and treatment areas with ones that conform to 21st century standards. About $50 million of the total project cost will be invested in other outpatient facilities through the hospital's multi-specialty medical group organization - Maine Medical Partners.

The project also involves the replacement of the largest parking garage on the campus, a 1,200-space structure used by employees that sits along Congress Street. The need to replace that garage creates an opportunity to reorient the hospital's main entrance to Congress Street, one of the city's main thoroughfares. The hospital's current main entrance faces Bramhall Street in the city's largely residential West End.

The project is organized into three separate site plan descriptions:

- Site Plan #1:
    - Two floor addition to the East Tower housing 64 private universal rooms.
    - Relocation of the helipad which is currently on the employee garage to the top of the East Tower. Patients arriving via the helipad will have a direct vertical connection via elevator to MMC's Emergency Department and trauma services on the first floor of the East Tower.
    - Three floor addition to the visitor garage on Congress St.
- Site Plan #2:
    - New employee parking garage on St John St that will include over 2,400 parking spaces. The location of the new garage is roughly a quarter mile from the main campus and MMC will encourage employee to walk during nice weather.
- Site Plan #3:

- Removal of the current employee parking garage on Congress St.
- Construction of a new hospital tower with 64 private universal rooms, 19 procedure rooms, and space for an additional 32 private universal rooms. This building will also include a new hospital entrance and drop-off area with direct connection to the visitor garage.

The project is expected to be completed in the fall of 2022.

Commitment to TDM

MMC has a long-standing history of promoting health outside of and within its organization. The medical center developed a Transportation Demand Management (TDM) program in 2008, becoming one of the first in Maine to publish such a plan.

In 2008, MMC became one of the first in Maine to develop an independent TDM program.

Known as "Get on Board!," the program supports alternative commuting options such as carpool, mass transit, bicycling, and walking. MMC also engages in an extensive campaign to educate employees about the benefits of alternative modes of transportation and the Get on Board! program. Total enrollment in Get on Board continues to increase year after year.

Over the years, MMC has added elements to strengthen the program's offerings. In 2015, for example, MMC installed additional bicycle parking in its South Parking Lot to enhance cycling access to the main areas of the campus.

The following Plan documents MMC's current TDM efforts, planned program enhancements, as well as new TDM programs. The Plan is intended to serve as a living document. Monitoring reports will be submitted annually to the City's Planning Department.

While MMC encourages sustainable commuting practices across its organization, this TDM Plan applies to MMC's main campus in the west end of Portland, ME, where the majority of MMC's staff is located. Presently, the main campus has approximately 4,400 employed individuals on any given week day. Maine Medical Center employs more than 8,000 people throughout Southern Maine, roughly 6,000 of MMC employees work at the Bramhall Campus.

Context

Land Use

CURRENT

MMC's Bramhall campus is located at a high point in the west end of the Portland peninsula that is renowned for the Western Promenade—an 18-acre park and national historic landmark designed by the Olmsted Brothers, among others. The campus abuts the Western Promenade in a dense urban setting that serves, in many ways, as a transitional zone between areas with diverse character, land uses, and demographics.

The campus, which serves the entire state of Maine as well as eastern New Hampshire, is located within less than a mile's distance of I-295, which links Portland to destinations across New England. To the north, the campus fronts on Congress St —Portland's main thoroughfare that extends along the spine of the peninsula to Portland's downtown and beyond. The MMC campus is located at the western gateway into the City.

FUTURE

The area surrounding MMC is identified in the City's Comprehensive Plan as an area with transformational potential. MMC's TDM plan aligns with this future vision. As part of the project, MMC will add a new entrance to Congress Street and envisions providing active ground floor uses in new buildings. This change will heighten the level of pedestrian activity on Congress Street, and serve to promote the corridor.

Parking

CURRENT SUPPLY

MMC offers its patients, visitors, physicians, and employees several options for parking. MMC currently controls approximately 2,877 total off-street parking spaces either via ownership or through leases with others that specifically serve the Bramhall Campus. Of the 2,877 spaces, 850 spaces are available for public use by patients and visitors, and 2,027 parking spaces are subscribed to staff and physicians.

TABLE 1 Existing Parking Spaces

		Patient / Visitor	Employee	Total at Facility	Ownership
ON-CAMPUS 850 patient / visitor 1,538 employee spaces	Employee Garage	0	1,274	1,274	Owned
	Patient / Visitor Garage	480	0	480	Owned
	South Lot	370	0	370	Owned
	887 Congress (Forest St Garage)*	0	178	178	Owned
	7 Bramhall St	0	26	26	*Leased*
	905 Congress St (Sportsman Lot)	0	60	60	*Leased*
OFF-CAMPUS 489 employee spaces	222 St John St (First Atlantic Lot)	0	283	283	*Leased*
	181 High St (Gateway Garage)	0	100	100	*Leased*
	993 Congress St (Classic Lot)	0	97	97	Owned
	321 Brackett St	0	9	9	*Leased*
	TOTAL PARKING SPACES	850 Patient / Visitor	2,027 Employee	2,877 Total	

* The Forest St Garage has an additional 222 spaces that are dedicated to medical office staff and patients.

CURRENT DEMAND

MMC has continued to witness demands on the existing parking supply intensify due to increased patient volumes and higher acuity patients with longer lengths of stay. Under current conditions, MMC's staff parking system typically operates at capacity during the weekday daytime hours. When off-site, remote staff parking facilities reach capacity, staff is directed to park on-campus in the Congress Visitor Garage. Some staff members independently choose to park nearby utilizing neighborhood on-street parking, although this is discouraged by MMC.

On behalf of MMC, VHB conducted on-site parking usage observations in January and March 2017. VHB collected parking count data during peak hours, which included late afternoon, evening, and overnight occupancy and turnover. The counts indicate that the parking system typically operates at or above capacity during weekday daytime.

The observed data reveals that peak parking demand at the Bramhall campus among patients, visitors, physicians, and staff total roughly 3,122. This number is 4.4% below the expected parking demand (3,264) for a suburban hospital of MMC's size, according to Institute of Transportation Engineers (ITE) parking demand projections. The difference equates to 142 parking spaces.

VHB compared MMC's parking ratio per licensed bed to other hospitals in New England and nationally. MMC's 850 patient/visitor parking spaces equate to 1.33 parking spaces per bed is low compared to peers. The midpoint patient and visitor parking space/licensed bed ratio among MMC peers is 1.87. It is also important to note that based on a review of peer institutions, MMC would need to increase its patient/visitor allocation by 344 spaces, or 40%, to achieve a similar beds-to-spaces ratio as its peers. MMC's 2,027 staff parking spaces equate to 3.18 parking spaces per bed is also low when compared to other peer institutions. The midpoint employee parking space/licensed bed ratio among MMC peers is 4.38.

Based on these comparisons and the onsite usage observations, VHB estimates that the MMC parking demand exceeds patient and visitor supply by roughly 350 and exceeds employee parking supply by roughly 200. Therefore, the average weekday parking demand in 2017 is:

- 1,200 for patient and visitor parking
- 2,250 for employees

The employee parking demand per Bramhall campus employee is roughly 0.375.

FUTURE

Looking towards the future, MMC will undertake a project to modernize its Bramhall campus. The project is detailed above and is anticipated to increase patient/visitor and employee parking demand. This demand will be offset by TDM methods described later in this document, along with expansions in its campus parking capacity.

Data Collection

Currently, MMC has a limited transportation mode data collection system. MMC recognizes the need for an improved system. MMC employs a large number of individuals and tracking their commute behaviors will require a system that relies on automatic data collection wherever possible. MMC is exploring options to improve data collection such as a card reading system similar to EZ-PASS.

Transit

MMC's main campus is located in a section of the City that is served by the Greater Portland Transit system (METRO), which has multiple routes that stop within walking distance of the Medical Center. The campus is also served by the ZOOM turnpike Express route operated by ShuttleBus-ZOOM.

The METRO routes accessible from the Bramhall Campus have varying service spans with buses generally arriving every 30 to 60 minutes. They provide connections to the nearby Portland Transportation Center (PTC) and the Downtown Hub, which are served by additional METRO and regional bus lines. The PTC also serves as the local connection to Amtrak's Downeaster service that runs along the coast between Boston and Brunswick. The closest bus shelter to the hospital is along Bramhall Street, between the Dana Health Education Center and the South Entrance. This stop is served by METRO Route #8, which provides connections to other parts of the peninsula. There are two other nearby bus stops on the corners of Congress St and Gilman St and Congress St and Weymouth St. These bus stops are served by routes #9, #1, METRO's express service BREEZ, and the ZOOM turnpike express. For the most up to date METRO stops and routes, go to www.gpmetrobus.com.

FIGURE 1 Map of Existing Transit Routes and Stops



Bicycle and Pedestrian Infrastructure

MMC understands that all campus users walk at some point to arrive at their MMC destination. To enhance pedestrian accessibility, MMC maintains its network of campus pathways and public sidewalks adjacent to campus. Similar to other medical centers of its size, MMC provides elevated, covered, and temperature-controlled walkways between its parking garages and key campus circulation corridors.

The bike facility network surrounding MMC's campus is fragmented and lacks bicycle infrastructure as illustrated in figure 6 below. In addition, the hilly nature of the Western Promenade impacts bicycling and walking in this area.

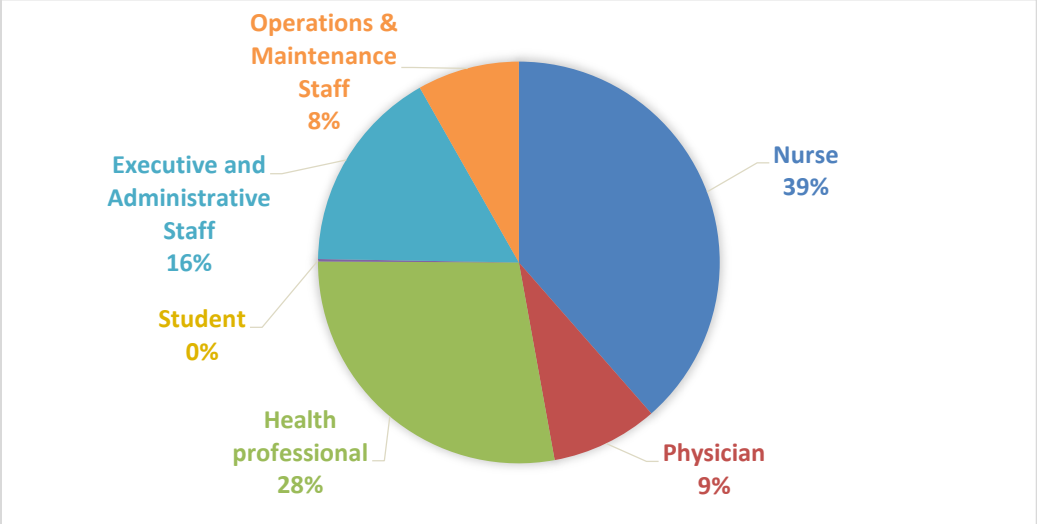
Current Travel Behavior

As part of its efforts to monitor and enhance the Get on Board program, MMC recently conducted a survey of its employees to understand how they commute, any barriers to using alternative transportation, and their interest in other TDM initiatives. The Medical Center also analyzed employee residence data using geospatial analysis tools to better understand employee commuting patterns. The findings from the survey and analysis are summarized below.

Commuting Survey

Approximately 1,600 MMC employees participated in the voluntary survey, administered in February 2017 – nearly a 40% response rate. Approximately 81% of the respondents work at the Bramhall campus. The respondents included a diverse spectrum of employees including operations and maintenance staff, students, executive and administrative staff, health professionals, nurses, and physicians. Figure 2 illustrates the various roles held by the survey participants.

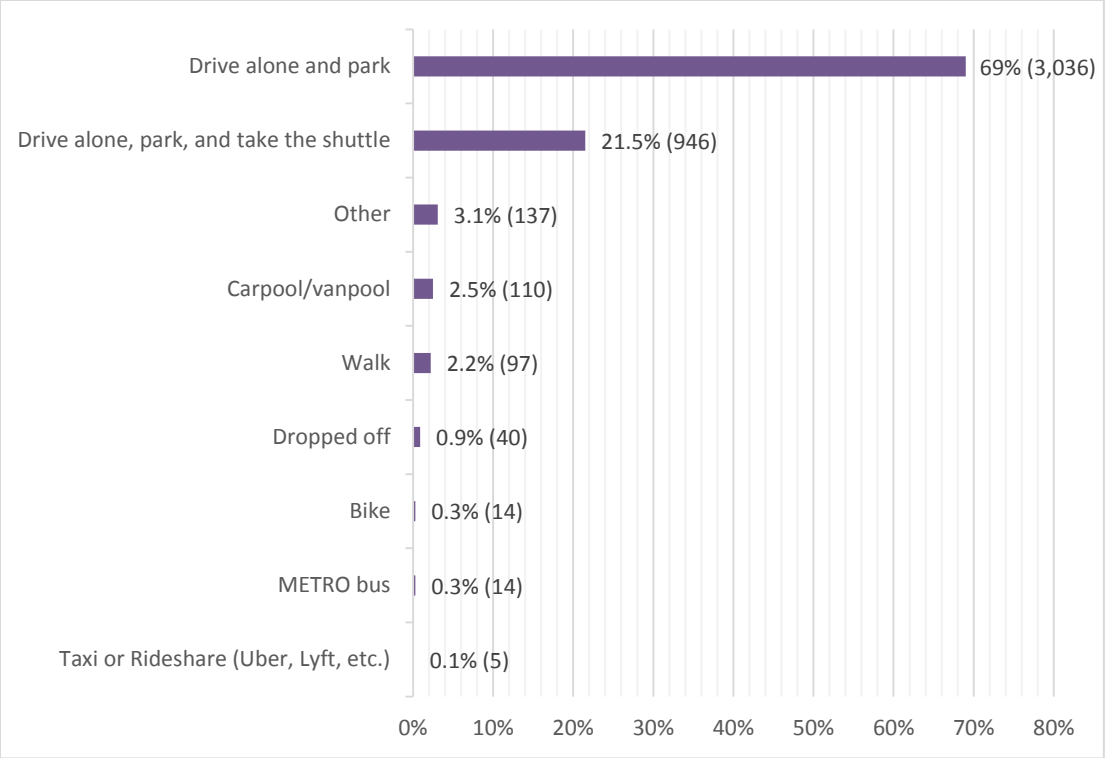
FIGURE 2 Survey Respondents by Hospital Affiliation



The survey found that the majority of employees drive to campus. Among alternative modes, carpooling was the most used mode of travel, followed closely by walking. Figure 3 illustrates the commuting modes of MMC employees.

FIGURE 3 Estimated Employee Travel Mode To and From MMC on an Average Workday

(4,400 estimated employees on campus per average weekday)



The survey also revealed that among Get on Board enrollees who participate in the program, carpooling benefits were the most used benefits, followed by biking benefits and transit benefits.

As the Get on Board program evolves, MMC intends to administer a commuting survey bi-annually to track travel trends and to gauge the effectiveness of specific initiatives. The information collected will enable MMC to develop informed, data-based enhancements to Get on Board, providing a greater prospect for program success.

Geospatial Analysis

MMC analyzed the residence locations of its employees to understand the commuting patterns of its employees. The analysis showed that approximately 27% of employees live within a 3-mile radius and approximately 73% of employees live beyond a three mile radius of MMC (See, Figures 4 and 5). Three miles is generally considered a reasonable biking distance by industry standards.

FIGURE 4 MMC Bramhall Campus Employees, Distance to Work by Type of Employee

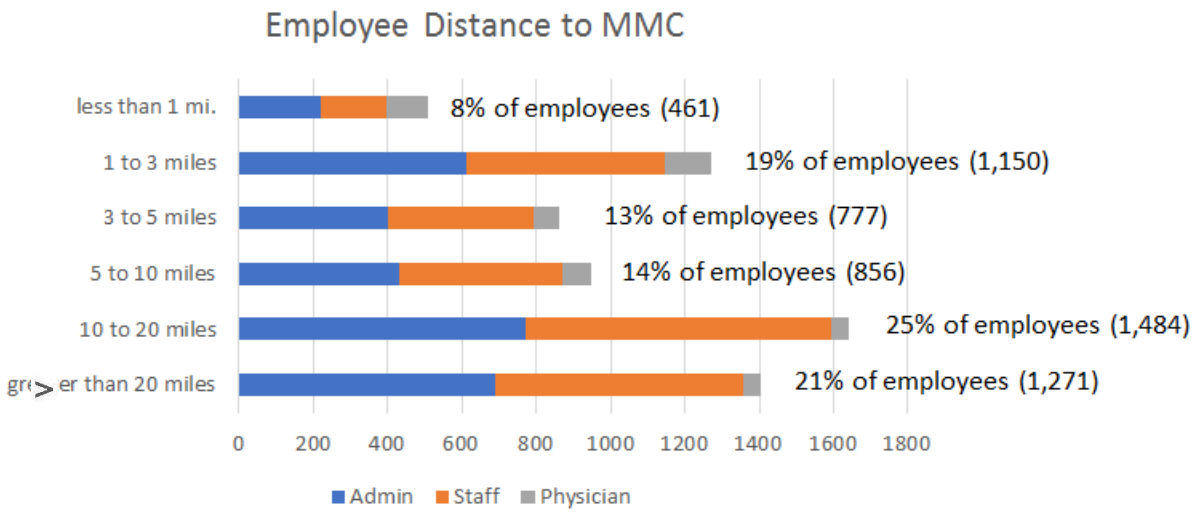
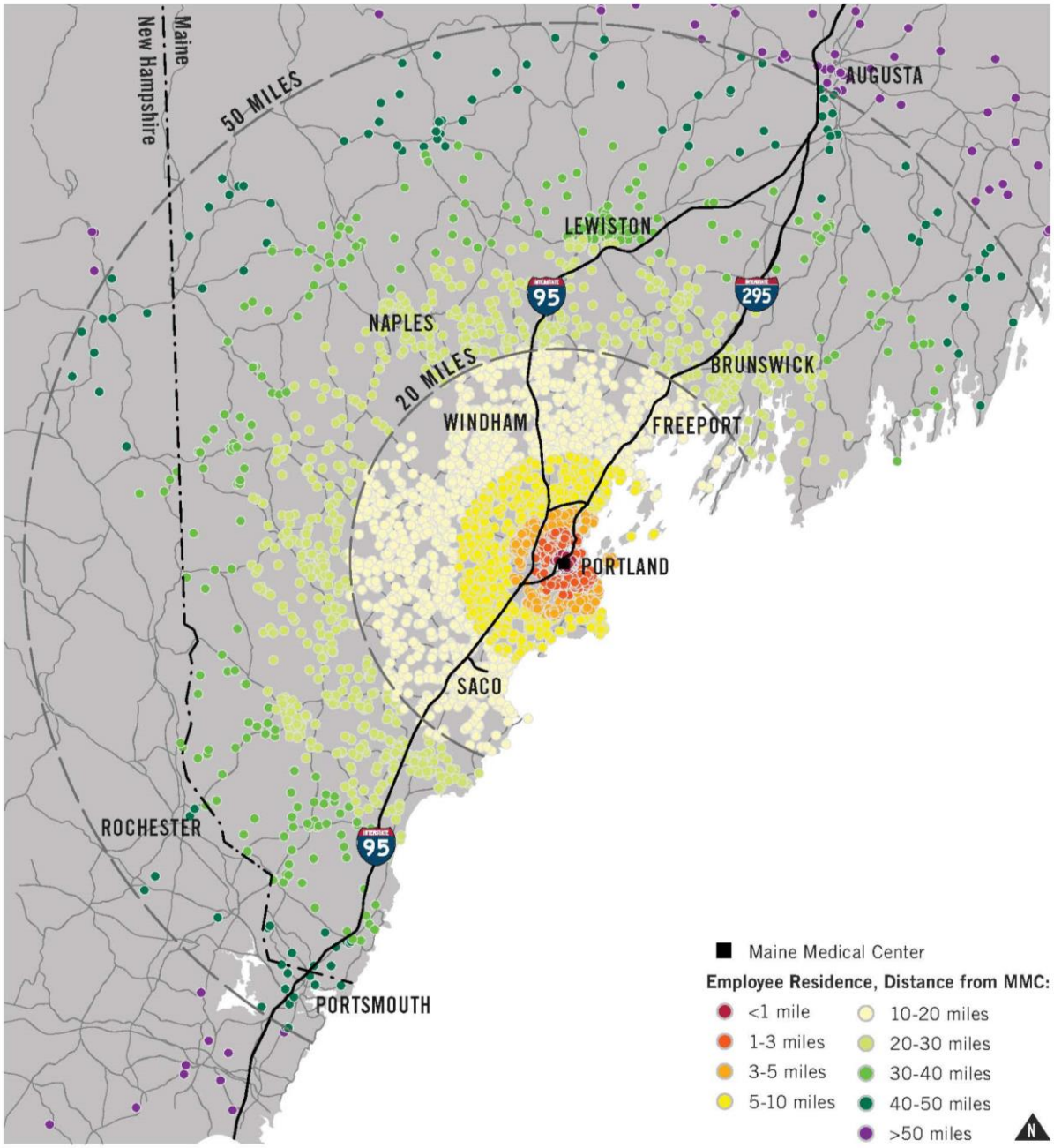


FIGURE 5 Map of MMC Bramhall Campus Employee Residences Illustrating Distance to Work and Travelsheds



Program Goals

The goal of the program is to reduce employee use of single-occupancy vehicles as they commute to work at MMC's Bramhall Campus. At this time, MMC has determined the best way to measure a reduction in employee single-occupancy vehicles is to monitor employee parking demand per employee.

$$Employee\ Parking\ Demand\ Per\ Employee\ = \frac{Estimated\ Employee\ Parking\ Demand}{Bramhall\ Campus\ Employees}$$

As the program grows and evolves with time, new goals and metrics may be identified.

VHB conducted a study to determine the existing parking demand for employees (refer to the Context section of this document). This study will serve as the baseline for future reduction targets

Peak parking demand at the Bramhall campus is 4.4% below the expected parking demand for a suburban hospital of MMC's size.

The Get on Board program aims to reduce single-occupancy vehicles on MMC's Bramhall campus through effective TDM measures. These measures include a parking "cash out" program, discounted transit fares, premium parking for carpoolers, and bicycle parking and facilities, among others. Additional details about the program elements are described in the next section. MMC believes the program has had a positive impact on employee travel behavior and has contributed to reduced parking demand over the years.

Based on a review of federal census data, employee travel origin and destination information, existing employee travel mode split, and transportation survey results, MMC believes it can further reduce the portion of employees driving alone to work, thus reducing trip making and resultant parking demands. An initial estimate is that an additional 65 individuals who currently drive to MMC could be shifted into alternative modes of accessing the campus over 5 years. This represents an additional 2% reduction from the ITE parking demand projections.

In consultation with the City, MMC has established the following aggressive short-term, mid-term, and long-term trip reduction goals. These targets are applied to the 2017 baseline identified in the Context section of this document.

	2017 Baseline	Short-Term (0-2 years)	Mid-Term (2-5 years)	Long-Term (5+ years)
Targeted Reduction		2%	4%	5%
Employee Parking Demand Per Employee	0.375	0.368	0.360	0.356

MMC hopes these targets will be achieved through the strategies outlined below. It will endeavor to reduce the number beyond the target identified above through further enhancements or program expansions in the coming years. MMC will continue to monitor parking demand and needs at the Bramhall campus, and re-evaluate its program goals after the initial five year period as needed.

Parking and TDM Strategies

Current Get on Board Program Elements

Get on Board is advanced through a range of incentives and the provision of services to support alternative modes. The individual program elements are described below.

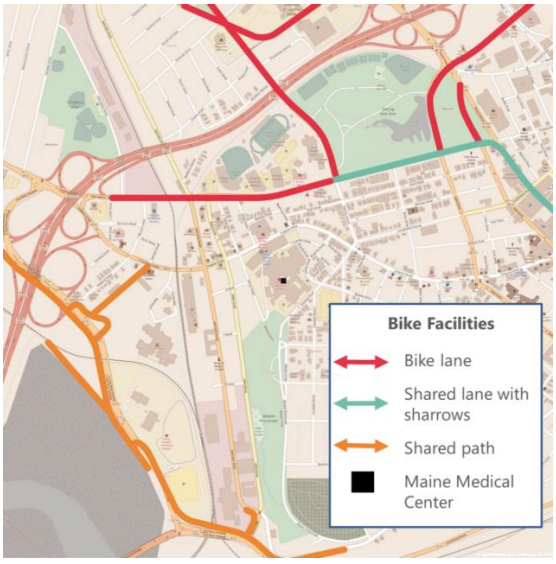
Biking

The MMC campus is located in close proximity to existing and planned routes in the City of Portland's growing bicycle network as shown in Figure 6. MMC offers a variety of bike facilities to make bicycle commuters feel welcome and safe. In 2008, MMC installed five strategically-located bike racks and ten bike lockers on its main campus. Three new bicycle racks were added in the vicinity of the Bramhall entrance and in the South Lot in 2016, bringing total storage capacity to 193 bicycles across campus. Bicycle commuters also have access to additional on-site facilities such as showers and lockers.

Beyond on-campus facilities, MMC is an advocate of the City of Portland's Bikeway Network Plan, which will provide bicycle infrastructure on streets adjacent to campus to connect bicyclists with existing and shared use paths.

The City of Portland's latest Comprehensive Plan proposes transforming the streets surrounding MMC into "neighborhood byways." This type of improvement would serve to encourage walking and biking for employees who live within a reasonable distance of the hospital. MMC also supports ongoing collaboration with the City of Portland, local and regional transit agencies, and neighborhood and advocacy organizations to explore opportunities to improve pedestrian, bicycle, and transit infrastructure and networks serving the Bramhall Campus. The City of Portland has plans to expand the bike lanes illustrated in Figure 6 and add a Neighborhood byway.

FIGURE 6 Bicycle Network Surrounding MMC as of 2017



Mass Transit

Under Get on Board (GOB), employees can purchase discounted bus tickets and Shuttle-Bus Zoom tickets conveniently on campus. This is a clear demonstration of MMC's commitment to making the TDM Plan work for its employees and for the City of Portland. Table 2 lists the Greater Portland METRO Bus and Shuttle-Bus Zoom discounts provided through "Get on Board!"

TABLE 2 MMC Transit Discounts

	Regular Price	MMC Sale Price	% Discount
METRO	$13.50	$8.00	60%
S. Portland	$13.50	$8.00	60%
Zoom 10 Ride	$39.00	$29.60	76%
Zoom Monthly	$100.00	$84.50	85%
Zoom Quarterly	$260.00	$197.50	76%

The *Portland Peninsula Transit Study* [1]established several strategies for improving the utilization of transit in Portland. These strategies involved expanding the transit service to development areas, creating more direct connections, and increasing service frequency to compete with drive-alone commute times. The *Portland Transportation Hub Link Feasibility Study*[2] also proposed a route alignment along Congress Street that would increase transit frequency near the hospital. These improvements, if implemented, would highly benefit MMC's campus population in light of the distance that most employees reside from MMC and the fluctuating nature of employees' schedules.

Carpool

Carpooling is the most popular component of the Get on Board program. Over half of program participants at the main campus take advantage of this benefit. Currently, employees participating in a carpool are given access to preferred parking in an area of the Employee Garage that connects directly to the Main Lobby on the ground floor of the hospital. MMC is planning to relocate its employee parking garage to St John St. Appropriate incentives that encourage participation in the carpool program have not been fully identified. However, until other incentives are identified, carpool participants will have preferred parking in the St John St employee garage.

Parking Cash Out

Presently, MMC operates a "parking cash out" program that offers employees monetary payments in lieu of a parking space. Program participants submit a form each week that certifies their use of alternative transportation during the week to commute to work. Upon receipt of a certification, MMC issues the employee a payment equal to the cost of parking at MMC's employee garage.

[1] Portland Transit Committee. *Portland Peninsula Transit Study* (2009), Retrieved from: https://www.portlandmaine.gov/DocumentCenter/Home/View/3383 .
[2] Portland Area Comprehensive Transportation System (PACTS). *Portland "Hub Link" Feasibility Study* (2015), Retrieved from: http://www.portlandmaine.gov/DocumentCenter/View/14793 .

MMC Shuttles

MMC operates employee shuttle services between the Bramhall campus and off-site parking locations Mondays-Fridays, 6:00 am to 11:00 pm. The shuttles include:

- MMC and off-site parking lots at 222 St. John Street and 993 Congress Street (Monday – Friday, 6:00 AM to 11:00 PM)
- MMC Bramhall campus and the 110 Free Street Office Building (Monday-Friday, 6:00 AM to 4:00 PM, every 20 minutes)
- MMC Bramhall and Brighton Medical Center (335 Brighton Avenue) (Monday-Friday, 6:00 AM to 4:00 PM)

MMC also provides shuttle service for contractors from the parking lot at 993 Congress Street to the hospital. The shuttles provide a predictable alternative to employees commuting between the three sites and serves to reduce vehicular traffic in and around MMC.

Scooters and Motorcycles

The campus provides a designated parking space for scooters and motorcycles on the first floor of the employee parking garage.



UCar

MMC currently dedicates a space in its Congress Street parking garage for a carshare vehicle, as part of the city-wide carshare program called U Car Share. The program allows members to borrow a car by the hour, providing employees who bike, walk, or ride transit to work with additional mobility for off-site meetings. Between mid-March and October of 2016, the UCar program had 96 reservations for a total of 4,105 miles.

TDM and GoMAINE website

The current employee GOB portal is linked to the GoMAINE Commuter Connections website, which is an alternative commuting program operated by MaineDOT. GoMAINE provides commuters with additional commuting resources and benefits that supplement those provided by MMC. These benefits include a carpool ride-matching program and a rewards program for participants.

Pay for Parking

MMC charges its employees no less than $3 per paycheck to utilize MMC parking. MMC employees are paid bi-weekly.

$$\$78 = \$3 \times 26\, pay\ periods$$

Skiing



In the winter months, some employees chose to leverage their wintertime hobbies to get to work.

Enhanced Get on Board Program Elements

Program enhancements are anticipated to occur within 1-3 years.

Walking

As part of the modernization of Bramhall, MMC will orient entrances to public streets and provide active ground floor uses where possible to encourage pedestrian activity.

Biking

MMC will continue to offer bike storage, bike repair tools, and on-site shower and locker facilities to commuters who choose to bicycle to work.

MMC will also continue its parking cash out program to incentivize current bicyclists. To support "interested but cautious" bicyclists, MMC will seek out local bicycling support organizations to host educational safety seminars and/or adult bicycling skills classes at least once per year on the Bramhall Campus. MMC will also promote rewards programs, such as GO MAINE and Bicycle Benefits, to further motivate increased bicycle commuting.

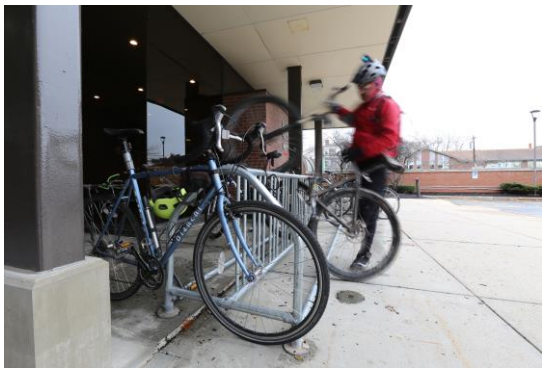
MMC understands that Portland Bikeshare, a non-profit organization with a goal to establish a bikeshare system in the City of Portland, plans to launch a bikeshare pilot in 2018. MMC will support this effort in the future.

MMC also recognizes the importance of safe and accessible infrastructure to active transportation. The presence of infrastructure can provide the sense of security that cautious bicyclists seek to spur a change in travel behavior. Additionally, as active modes become more widespread throughout the City of Portland, the visibility of walkers and bicyclists in the community can encourage greater participation

among MMC employees. MMC supports the City of Portland in its work to improve public rights-of-way and promote active transportation modes.

The City of Portland has proposed a bike lane on Congress St and a proposed Neighborhood Byway on Bramhall St. Both of these proposed improvements are immediately adjacent to MMC's Bramhall campus.





Carpooling/Vanpooling

Given the success of its carpooling program, MMC will continue to provide carpoolers with premium parking in the new employee parking garage. Similar to bicyclists, pedestrians, and transit riders, carpoolers will also continue to be eligible for parking "cash out" benefits. To facilitate the formation of carpools and vanpools, MMC will promote GOMAINE's carpool matching program to facilitate carpool matching.

MMC Shuttle

Once the new employee parking garage is constructed, MMC will redesign its shuttle route system to serve employees parking at the new site. The new parking garage will consolidate previously dispersed parking options for MMC employees. MMC anticipates the new route will reduce traffic congestion into and around the campus area.

UCar

Working with UHaul and the City's Parking Department, MMC will continue to monitor the use of the UCar vehicle presently located in its Congress Street parking garage. In the event an additional car is warranted, MMC will work with its partners in finding a suitable location on the main campus for the storage and use of the additional UCar.

Enhanced Transit Subsidies

To further incentivize transit use, MMC will fully cover the cost of METRO bus tickets for employees who elect to use METRO as their primary mode of transit to the campus. If METRO ticket costs change, MMC will address program participation rates and work with METRO to find the best solution to support employees who wish to ride METRO. The type and amount of subsidy will depend upon ongoing discussions with METRO to enhance partnerships (see below).

Employees who use the METRO can apply for 100% reimbursement of METRO ticket costs. This project is administered on a reimbursement basis in order to minimize abuse of this benefit.

New Program Elements

In addition to enhancements to the initiatives described above, MMC intends to initiate complementary elements to ensure the program's continued success. The strategies are prioritized based on their implementation timeframe.

Short-Term (1-5 years)

The following actions MMC will pursue immediately (some are already underway) with the intention that all programs are fully operational within the 3-year time horizon.

Get on Board! Coordinator

MMC will hire a designated resource who will work to reduce employee single-occupancy vehicles on the Bramhall campus through the implementation, facilitation, and continuing sustainability of Get on Board. The coordinator will track the progress of the TDM program, oversee operations, and identify future opportunities to reduce single-occupancy vehicles on MMC's Bramhall campus by employees. The Coordinator will also be responsible for monitoring the progress of programs, data collection, and TDM program updates as required.



Way 2 GO MAINE

In October 2017, MMC participated in GOMAINE's Way 2 GO MAINE program for the first time. Way 2 GO MAINE is a 3-week business to business commuter challenge where employees log commute trips and earn prizes. In the first year participating, MMC ranked 2nd for large companies participating with 1,094 trips logged.

MMC will participate in the Way 2 GO MAINE B2B challenge in the future.

Improving Data Collection Capabilities

MMC will improve its data collection capabilities as described below.

Guaranteed Ride Home (GRH) Program

MMC will implement a Guaranteed Ride Home program to ensure that employees who regularly commute using alternative modes will have transportation in emergency situations.

Pay for Parking

MMC will evaluate employee parking fees in the mid-term. In evaluating future price, MMC will consider the prevailing market price for parking in the surrounding area at the time of implementation, as well as best practices in setting affordable parking prices in the region.

Long-Term Actions (5+ years)

MMC recognizes that the following program elements require partnerships with outside partners and agencies and, as such, will take longer to achieve. MMC has already laid the groundwork for all of these elements and will continue to pursue them in the coming years.

Regional Connections Partnership

Through its TDM Coordinator, MMC will seek to form partnerships with other major employers in the city, including the City itself, to foster a wholistic approach to travel management. The partnerships would enable the exchange of TDM-related information and experiences between institutions, and it would foster a community that is focused on promoting alternative transportation in the City of Portland. Such collaborations would afford the opportunity to think regionally and help guide both employer provided or sponsored benefits as well as critical external resources such as METRO transit, sidewalks, and bicycle infrastructure. Opportunities to improve existing transit infrastructure would be a focus of any regional connections partnership.

Supporting Mass Transit Commutes

MMC intends to explore a partnership with the METRO to identify strategies for increasing MMC ridership, such as service updates and/or pricing agreements. Service updates could include changes in existing routes, new routes, or alternative route schedules. The formation of a partnership could be mutually beneficial, by providing METRO with feedback for increasing ridership while maximizing the usefulness of the transit system for MMC employees. As MMC formalizes its ties to other local institutions through a regional partnership, its collaboration with METRO could also extend to other employers.

Education and Marketing Strategies

MMC has a number of approaches to raise awareness about the benefits of alternative transportation and opportunities for participating in the Get on Board program. These strategies are integrated into various aspects of the organization's engagement with employees to reinforce the importance of TDM.

Sharing TDM Program Information

Information about the Get on Board program is available to all MMC employees via the MMC intranet. MMC's intranet is a place where employees routinely go for information. The Get on Board page provides information about all of MMC's TDM programs as well as links to the GOMAINE.org webpage.

MMC will develop and deliver information about the Get on Board program using communications best practices that are refined throughout the program's lifespan. Communications methods that are effective will be further refined while elements that are less effective will be reevaluated. Some examples of communication methods include:

- Introducing the program to new employees at orientation: MMC has shared information about the Get on Board program with new employees during orientation but will evaluate whether this is an effective way to educate new employees about the program. There are many factors to consider when providing information to new employees. The biggest factor to consider is the large amount of information shared during orientation.
- Social Media: MMC will use social media as an effective tool to communicate with employees about the Get on Board program.
- Get on Board Kiosks: To supplement information available on the Get on Board intranet site, MMC will designate locations to communicate information to employees in real time. One location under consideration is near shuttle stops.

MMC will commit to reorganizing information on its intranet site within the first six months following the hiring of the TDM Coordinator.

Get on Board Fair/Seminars

MMC will explore offering educational sessions about the importance of TDM and specific TDM methods such as walking, biking, or riding the bus. Educational sessions will rely on the expertise of local organizations specializing in alternative modes of transportation.

Get on Board Blitz

October is National Rideshare month and the same month of GOMAINE's Way 2 GOMAINE business to business challenge. In the future, MMC will explore ways to increase marketing of the Get on Board program during the month of October, potentially leveraging social media and internal communications vehicles, such as electronic newsletters.

Comprehensive Data and Goal Monitoring

MMC understands from its prior experience with TDM initiatives that achieving change is an iterative process that involves tracking the effectiveness of its programming and making mid-term adjustments if necessary to improve program effectiveness. MMC will collect and analyze data on a regular basis to monitor progress towards its TDM targets. The data would be collected through a range of instruments and will be used to make annual comparisons and to identify trends, and areas for growth. MMC will submit monitoring reports that include a summary of the data monitoring results, comparisons of the data to trip reduction targets, and adjustments to programs as needed.

Parking Utilization Data

MMC is exploring options to improve data collection in the new employee parking garage. The most likely option utilizes Easy-Pass technology to automatically collect information about the vehicles parking in the garage.

In addition, MMC plans to install a parking guidance system in the new employee garage, as well as a controlled-access parking system in the visitor parking garages. Together, these systems will allow MMC to monitor occupancy in each garage and to collect data regarding who uses the parking facilities and the temporal fluctuations in parking demand across various periods of time.

MMC will utilize this parking usage data to assess its parking arrangement on a semi-annual basis.

MMC has received feedback on numerous occasions about inappropriate use of its parking garages. MMC hopes to reduce the misuse of its garages in the future by implementing these monitoring and controlling systems.

Employee Survey

MMC conducted an employee travel survey in 2017 to understand employee commuter preferences, and it intends to administer the survey bi-annually going forward. The survey is administered electronically using a survey platform and will produce data that MMC (or a third party) can use to identify changes and progress from one period to the next. The survey will seek information about the following topics to gauge the effectiveness of initiatives:

- TDM program participation rates
- Individual program effectiveness
- Barriers to TDM use
- Changes in commuting preferences
- Marketing effectiveness

Reporting Frequency

MMC will submit annual monitoring reports that will include a summary of progress toward targets established in the TDM Plan.

Conclusion

The purpose of Maine Medical Center's Transportation Demand Management program, Get on Board, is to reduce the amount of employee single-occupancy vehicles at MMC's Bramhall Campus by enabling and promoting alternative modes of transportation to and from MMC's Bramhall Campus for MMC employees. The program has aggressive short- and long-term goals. Success of this program partially relies on a cultural shift away from personal vehicles. Maine Medical Center is committed to implementing the programs outlined in this report and supporting the transition away from single occupancy vehicles.

Memorandum
Maine Medical Center

To:	Members of the City of Portland Planning Board
From:	Jeff Sanders, Chief Operating Officer, MMC
Date:	January 2, 2018
Re:	MMC Heliport

Thank you for the opportunity to present to you on Tuesday January 23, 2018 about the East Tower and Visitor Garage projects at Maine Medical Center. The projects include space for 64 private universal patient rooms and 225 parking spaces and a relocated helipad. There were several questions during the meeting about the relocated helipad that were answered during the meeting but that I would like to summarize in this memo.

1. Question: Is there an expected increase in helicopter traffic?

   Answer: Maine Medical Center expects an increase in flights over the next five years. The Federal Aviation Administration application that was submitted as part of MMC's site plan application materials included an error. Rather than monthly volume, annual volume was provided. There are 450 flights per year today and MMC expects volume to grow to 750 per year in five years. An updated copy of the FAA application will be submitted to the Planning Authority.

2. Question: Why are there 2 helipads with different sizes?

   Answer: The primary helipad is the larger of the two helipads and is designed to accommodate United States Coast Guard and military aircraft which on rare instances transport patients into MMC. The larger pad is the same size as the existing pad. The second pad will be used only as necessary for a second aircraft in bound if there is already a helicopter on the primary pad. Two-three times per month there are concurrent flights into MMC that require the landed aircraft to depart from MMC and relocate to the airport and then return to pick up the medical crew and equipment with the second aircraft having to do the same relocation to and from the airport. Most noise complaints received by MMC are tied to these multiple repositions to the airport which incurs two additional overflights of the neighborhood for each patient flight.

3. Question: Why is there an additional route shown for use in high winds?

   Answer: The approaches and departures to the helipad are the same as current. The pilot in command always has the final decision on approach and departure paths to maintain safety. The added approach is to maintain safety in certain wind conditions and codifies the planned route for non-normal wind conditions. Based on years of use, we expect that the standard approach and departures will continue to be the normal operation.

4. Question: How different is the sound profile going to be with the new helipad location?

   Answer: MMC and LifeFlight had an aviation sound study conducted in preparation for the submission to the City. The sound study used exactly the same test locations as the previous studies for the initial helipad. The study concluded with the exception of two test sites immediately adjacent to the hospital campus that the new sound profile will essentially be similar to the current helipads. It is also important to note that the new helipads will be almost 100' higher than the current helipad and the structures of the buildings will reflect sound up both of which will also mitigate the sound.

5. Question: Will the helipads continue to be solely used for patients and how is access to the helipads controlled?

Answer: Helipad use is solely for critically ill and injured patients being transferred in and out of MMC. The MMC helipad is in Class B airspace which requires all aircraft to be under positive control from the Approach Control at the Jetport. In addition, all use of the helipad is coordinated through LifeFlight MedComm which along with MMC Regional Emergency Management Information System (REMIS) coordinates landing and departures of the medical helicopters from LifeFlight, DHART (Dartmouth Hitchcock), Boston MedFlight, and the USCG / Military.

Maine Medical Center submits these answers in writing so that they may be easily shared with other interested parties.

Maine Medical Center
MaineHealth

Dear Neighbor:

As 2017 draws to a close, I'd like to thank all the members of our community who engaged with Maine Medical Center as we developed and refined our expansion and renovation plans.

The dialogue with our neighbors and community stakeholders made this important plan better for all of us, and I look forward to continued open dialogue in 2018. The coming years will be busy for us, and it will be important to keep open the lines of communication between MMC and our neighbors to ensure things go as smoothly as possible for everyone.

Toward that end, I'd like to invite you to a neighborhood meeting where we will share our Site Plan #1 for the expansion and renovation project:

Meeting Date: January 10, 2018

Meeting Time: 6:00-7:30 PM

Meeting Location: Dana Center Auditorium (Entrance directly across the street from 7 Bramhall St.)

A sign-in sheet will be circulated and minutes of the meeting will be taken. Both the sign-in sheet and minutes will be submitted to the Planning Board.

If you have any questions, please contact us at MMCProjectContact@mmc.org.

For more information and regular updates on the project please visit: http://www.mmc.org/modernization. We are offering a new feature on this page: an option to sign up for regular emails regarding upcoming meetings, construction/traffic notices, etc. We look forward to continuing the dialogue with you.

Respectfully,



Jeff Sanders
Executive Vice President and Chief Operating Officer
Maine Medical Center

Note: Under Section 14-32(C) and 14-524(a)d of the City Code of Ordinances, an applicant for a Level III development, subdivision of over five lots/units, or zone change is required to hold a neighborhood meeting within 30 days of submitting a preliminary application or 21 days of submitting a final site plan application, if a preliminary plans was not submitted. The neighborhood meeting must be held at least seven days prior to the Planning Board public hearing on the proposal. Should you wish to offer additional comments on this proposed development, you may contact the Planning Division at 874-8721 or send written correspondence to the Planning and Urban Development Department, Planning Division 4th Floor, 389 Congress Street Portland, ME 04101 or by email: to bab@portlandmaine.gov

Maine Medical Center
MaineHealth

centered around you

Please Sign In

Name	Neighborhood Affiliation
Jenny Mackenzie	St. John Valley
Alex NEDELJKOVIC	Gilman St
Elizabeth Baird	256 Vaughan
David Humphrey	" "
Rebecca Hatfield	Avesta Housing
ANNE PRINGLE	WPNA
Zack Barowitz	LNA
TIM WELLS	SJV
LIZ PRICE	~~WE~~ PNA
Channing Capuchino	St. John Valley - President

Maine Medical Center
MaineHealth

MINUTES

Attendees		
Jenny Mackenzie	Tim Wells	Jeff Sanders
Alex Nedelokovic	Liz Rice	Dominic Gagnon (Colliers)
Elizabeth Baird	Channing Capuchino	Randy Dunton (Gorrill Palmer)
David Humphrey	Tuck O'Brien	Dick Parsons (Turner)
Rebecca Hatfield	Walter Pochebit	Richard Martineau (Turner)
Anne Pringle	Dennis Morelli	
Zack Barowitz	Al Green	

I. Welcome & Introduction

Jeff Sanders welcomed the group and briefly covered the following:

- A high-level review of what was included in MMC's Institutional Development Plan (IDP) and Regulatory Framework.
- An overview of the project and project timing. Specifically that the East Tower expansion must be completed first in order to relocate the helipad.
- MMC's continuing efforts to engage the neighborhoods.
- An overview of MMC's site plan applications and timing of submittals and City of Portland Planning Board meetings.

II. City Update

Tuck O'Brien thanked the group for attending and shared the following through presentation and question and answer:

- The City has been working to coordinate the process with MMC and stakeholders for approximately 18 months.
- There are many details of MMC's plan that the City is working with MMC to review.
- Because this is a large project, it has been split into three phases. The 1st application was received in December and the first Planning Board meeting is scheduled for January 23rd. The Public Hearing in March will be the final approval of MMC's first of three site plan applications. We expect two workshops per application and the review of all phases of the project will continue through the Spring and is expected to be complete at the end of the Summer. MMC will then be required to seek the appropriate permits from the City.
- The issue that the City and MMC are working through right now is management of construction impacts related with street closures.

- Tuck and his department are available to answer any questions from the public or review the process at any time.
- MMC has excelled at hosting the neighborhood meetings and more will be scheduled.
- When asked about mitigations to public impact and MMC's contributions to the City, Tuck reiterated the neighborhood engagement programs that are in process like the community grant program in which the hospital contributes $30,000 annually, the healthy communities program which is taking shape, and the services that MMC provides as part of its mission. The City's Comprehensive Plan also focuses on the St John St / Congress St area as an important node within the City. Tuck also addressed questions specifically to the overlay zone and offered his or his staffs' time to review details of the new zoning with anyone interested.
- Members of the St John Valley Neighborhood association shared, via comment, they are not in favor of an Avesta housing project in their neighborhood. They already have the Florence house. Also, they are unanimously opposed to a conversion from one- to two-way traffic on Congress St.
- A member of the audience provided feedback on the meeting format. She would prefer more opportunities for two-way communication with MMC.

III. Construction Management Plan

Dick Parson, Turner Construction, introduced himself and his team and proceeded to share the following:

- Turner construction company is an international construction company and the largest healthcare builder in the United States. The company, and specifically the team working on this project, has extensive experience in garage and clinical building overbuild work and work in congested city environment. This makes Turner construction company best suited for MMC's project.
- Turner's approach to this project is to minimize the impacts to surrounding areas, maintain open and transparent communication for the duration of the project, maintain hospital operations, and provide a safe environment for anyone traveling in or near the construction site.
- The East Tower overbuild will require temporary closure of Wescott St between Ellsworth and Crescent. The majority of construction activity will occur within the construction fence. Materials will be delivered from Congress St, up Ellsworth, and directly into the construction fence.
- Contractor parking for all phases of the project will be located at MMC's Scarborough facility on Route 1.

- The Visitor Garage overbuild is a three level addition that will provide MMC with 225 additional parking spaces for patients and visitors. The project requires a temporary closure of Congress St between Weymouth and Forest Ave. The closure will last up to 8 weeks. Turner explored alternatives to closing Congress St that included a two smaller cranes, different position of the crane, and different construction materials. All alternatives were considered to be unfeasible by Turner Construction.
- MMC and Turner Construction are reaching out to business owners and residents in the immediate area to discuss the closure and expected impacts.
- Turner is addressing several challenges with detailed mitigation strategies.
    - Material staging: Staging will occur at off-site facilities.
    - Material delivery: Material will be delivered to the site by the same truck drivers on a just-in-time basis.
    - Emergency Traffic: Turner, MMC, the City, and other stakeholders are evaluating detour routes that maintain a safe and efficient level of service.
- Turner is selecting contractors based on merit and experience. There will be no allegiance to any trade unions.

IV. Design Review

Jeff Keilman, Perkins + Will Architects, introduced himself and shared the following:

- The approach for this phase of the project and the East Tower and Visitor Garage expansions is to extend existing conditions and continue with the vision for the campus.
- The interior of healthcare buildings are highly specialized and regulated. Interior designs drive the exterior of the building which is often different from buildings designed to meet needs of other programs (i.e. offices or classrooms).

V. Question / Answer

Q: Will the Visitor Garage remain parking?
A: Yes. It is not feasible to convert the building into any other use.

Q: What is the timeline for the Congress building?
A: We anticipate submitting the Site Plan application for the Congress Building later this spring.

January 30, 2018
15466

Jean Fraser, City Planner
City of Portland
389 Congress Street
Portland, ME 04101

Response to Peer Review Comments dated January 25, 2018
Maine Medical Center, East Tower and Visitor Parking

Dear Jean:

On behalf of Maine Medical Center we have prepared the following responses and materials addressing engineering peer review comments from Wright Pierce Engineers dated January 25, 2018 on the above referenced project. The text of the comments are provided in italics for reference, followed by our response.

1. *Level III Site Plan applications with the City of Portland must submit a stormwater plan pursuant to the regulations of MaineDEP Chapter 500 Stormwater Management Rules. This includes conformance with the Basic, General, and Flooding Standards (Ref: Technical Manual, Section 5. II. Applicability in Portland. C. a.; and Ref: City of Portland Code of Ordinances Sec. 14-526. Site Plan Standards, (b). 3. b.)*
    a. *Basic Standard: Project Plans and Application should be provided to address erosion and sedimentation requirements, inspection and maintenance requirements, and good housekeeping practices in accordance with MaineDEP Chapter 500, Appendix A, B, and C. The applicant has provided information that the project will have no disturbance. The applicant shall provide information confirming proposed construction practices for concrete installation, including location of concrete washout, and protection for down-gradient storm drain inlets. Construction Management Plan submitted includes mention of sweeping sidewalks to remove trash and debris; storm drain inlets shall be protected in sidewalk locations adjacent to the project. The applicant shall provide information relative to the control of construction equipment mud tracking.*

The project is limited to a vertical expansion of the building. No site work or site disturbance is proposed. As such the Basic Standards of Chapter 500 would not typically apply to the project.

The Construction Management plan has been revised and expanded to identify housekeeping and maintenance plans for the work zone. The revised plan includes the installation of "Silt Sack" inlet projection for catch basins down gradient of the work zone.

b. *General Standard: no additional impervious surfaces are being added to the facility. Applicant shall submit statement and reasoning for the facility not being subject to the General Standard, or report on how the project meets the terms and conditions of the General Standard.*

The proposed project is a vertical expansion of the building. There is no change in impervious area and no disturbed area as defined in the Chapter 500 standards that would trigger the General Standards.

c. *Flooding Standard: No additional impervious surfaces are being added to the facility. Applicant shall submit statement and reasoning for the facility not being subject to the Flooding Standard, or report on how the project meets the terms and conditions of the Flooding Standard.*

The existing building was approved by the Planning Board in 2004. As part of the contract zoning and site plan approvals, a Stormwater Management plan was prepared that included a pre and post development runoff analysis of the entire Bramhall Campus. This analysis addressed the Chapter 500 standards in place at the time including the Flooding Standard. There are no changes in disturbed area, impervious area or drainage patterns on the site proposed as part of the vertical expansion when compared to the 2004 approval.

2. *Connection to Existing System:*
   a. *The existing facility currently discharges to a combined sewer system. The applicant shall provide the following:*
      i. *For floor drains not exposed to roof runoff, an oil-water separator connected to the sanitary sewer. Locations of oil-water separator shall be confirmed on the engineering permitting plans, and detailed.*

There are no floor drains proposed as part of the vertical expansion of the building.

ii. *For floor drains exposed to roof runoff, a proposed connection to the separated storm sewer system on A Street shall be evaluated.*

There are no floor drains proposed as part of the vertical expansion of the building. The existing building's roof runoff is currently connected to the separated storm drain in A Street. The new roof will be connected to the same system.

iii. *The applicant shall address the potential to separate existing combined sanitary and stormwater flows in the East Tower to help reduce the impact of storm drainage on the existing combined sewer system.*

The roof runoff from the East Tower building is fully separated and is tributary to the separated storm drain in A Street. Roof runoff from the East Tower is collected in a storm drain

constructed in 2004 that extends below the Emergency Department entry plaza, then west between the employee garage and the LL Bean Wing to Gilman Street where it is treated in an existing hydrodynamic separator unit, installed as part of the 2004 approved plan, and discharged to the separated storm drain in A Street (See attached Annotated As Built Survey).

The sanitary sewer from the East Tower drains in a sewer line constructed in 2004 below the emergency department entry plaza, then through the Visitor Garage to Congress Street uphill of its intersection with Forest Street.

iv. It is understood that the sewers adjacent to the facility are near capacity to serve new development. Applicant shall demonstrate opportunity to offset proposed new sewer flows.

As indicated in the application, the East Tower expansion is a decompression of facilities and will not increase the number of hospital beds. There will be a slight increase in staff and fixtures (approximately 6 additional staff toilets and 2 additional staff sinks) with a calculated increase in water usage of 2,050 gallons per day, or an average of 0.003 cfs. Because the hospital is a 24 hour operation, peaking factors are expected to be small. Conservatively assuming a peaking factor of four, the maximum expected peak increase in sewer flow from the project is 0.01 cfs. It is our opinion that this increase will not have a measurable impact to the offsite sewer system. In addition, we have not received any evidence of capacity issues in the adjacent sewers.

v. Proposed and existing connections to the sewer and stormwater system shall be indicated on the proposed engineering permitting plans.

There are no new connections to the sewer or storm drainage system. The vertical expansion will connect to the existing building plumbing internal to the building.

Enclosed is a copy of the site survey with the existing storm drain and sanitary sewer connections highlighted.

vi. Details of connections, pipes, structures shall be provided.

There are no proposed pipes, connections or structures. All work is internal to the building.

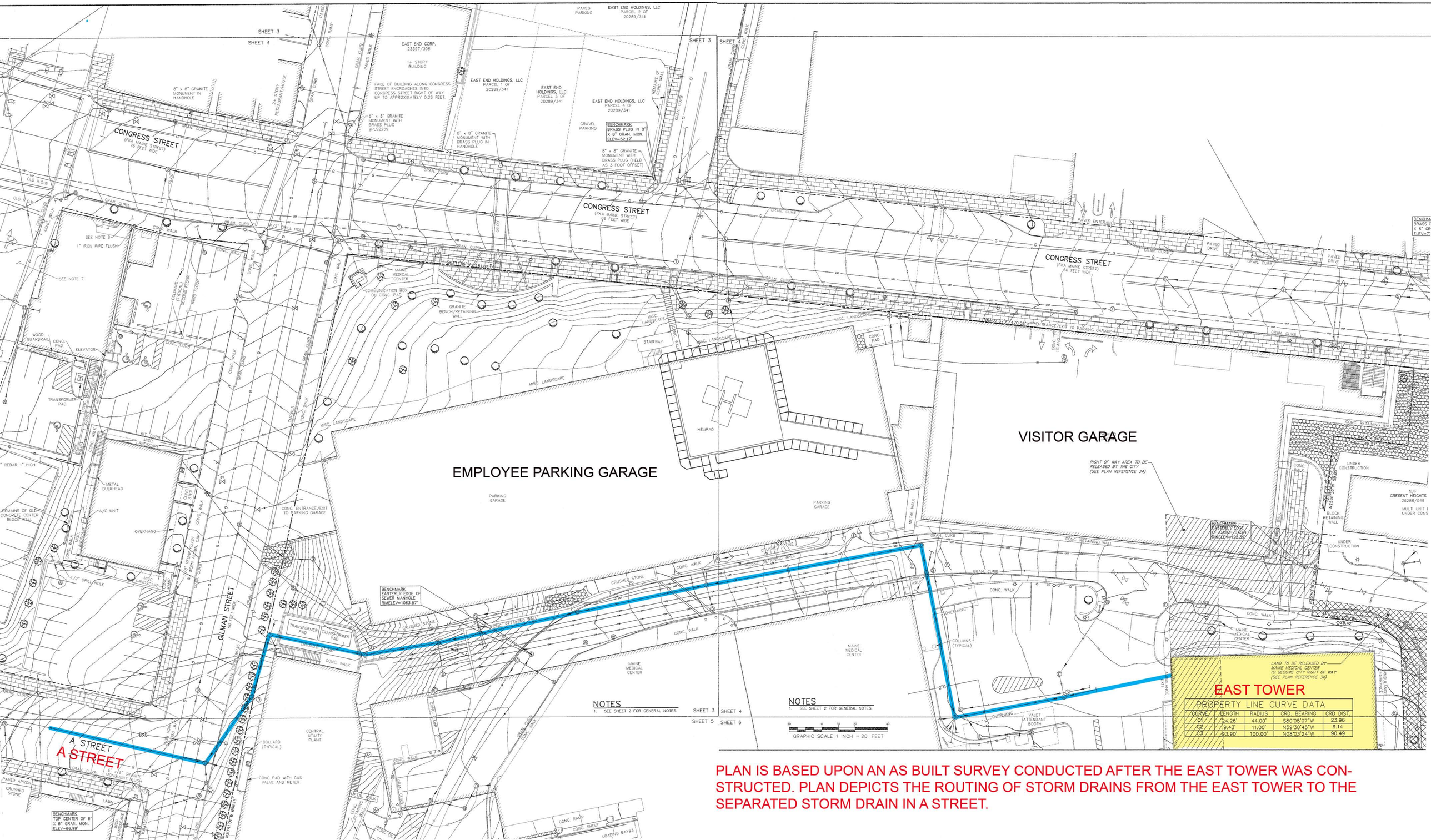
3. *Confirmation of adherence to the Technical Manual and Site Plan Standards regarding storm drain and sewer shall be provided.*

Sincerely,

SEBAGO TECHNICS, INC.

Daniel L. Riley , PE
Vice President, Engineering

DLR:jg
Enc.



PROPERTY LINE CURVE DATA

CURVE	LENGTH	RADIUS	CRD. BEARING	CRD. DIST.
C1	24.28'	44.00'	S80°08'07"W	23.96
C2	9.43'	11.00'	N59°30'45"W	9.14
C3	93.90'	100.00'	N08°03'24"W	90.49

PLAN IS BASED UPON AN AS BUILT SURVEY CONDUCTED AFTER THE EAST TOWER WAS CONSTRUCTED. PLAN DEPICTS THE ROUTING OF STORM DRAINS FROM THE EAST TOWER TO THE SEPARATED STORM DRAIN IN A STREET.

Section 12

Stormwater Management

Section 12

Stormwater Management

General

This stormwater runoff evaluation report has been prepared for the Maine Medical Center (MMC) to evaluate stormwater runoff associated with the comprehensive facilities construction project at its Bramhall Street campus. The hospital is planning the following improvements:

- A four-story, 192,000 square foot building addition for obstetrics and newborn services, referred to as the Charles Street addition. The Charles Street project also includes improvements to the Richards Wing/admitting lobby. In order to construct this addition, Charles Street will be discontinued and Ellsworth Street will be relocated as shown on the project plans.
- A new parking garage to accommodate 512 additional parking spaces for patients and visitors. The new garage will be located immediately east of and connected to the existing parking garage on Congress Street. A pedestrian bridge will lead from both garages to the main hospital building.
- A new central utility plant, located on Gilman Street, which will provide a central heating/cooling facility for the campus.
- A new helicopter landing pad to be constructed on the top level of the existing parking garage on Congress Street.
- Reconfiguration of the main entrances to the hospital and lobbies.

The proposed development of the site will result in a net increase in impervious area of approximately 0.85 acre. This increase in impervious area is primarily attributed to the footprint of the proposed parking garage (27,300 square feet) and the footprint of the proposed central utility plant (7,000 square feet). The remaining increase in impervious area is attributed to the construction of the Charles Street addition, the relocation of Ellsworth Street, and the reconfiguration of the main entrance to the hospital.

Site Characteristics

The project site occupies an area bounded by Congress Street, Wescott Street, Charles Street, Ellsworth Street, Gilman Street and Crescent Street in Portland. The site is located in a densely developed urban setting consisting of hospital and office buildings with their associated parking and landscaped areas, public roadways and multi family residential housing. The undeveloped areas of the site consist of steeply sloped land abutting Congress Street and Gilman Street. Ground cover in this area consists primarily of grass, brush and evergreen tree growth.

The proposed Parking Garage occupies a steeply sloped undeveloped area adjacent to Congress Street, and the Central Utility plant occupies a steeply sloped undeveloped area abutting Gillman Street at a point opposite A Street. The remaining site improvements occur on previously developed areas of the site.

The subject site is located at a high point in the west end of the Portland Peninsula. Runoff from the project site is collected through a series of roof drains and catch basins and conveyed to combined sanitary/stormwater sewers located within public streets abutting the site. There are currently no facilities installed to provide stormwater quality treatment to runoff from the site.

A 15,000-gallon stormwater detention tank was installed in 1983 on the steeply sloped, wooded area adjacent to Gilman Street at the location of the proposed Central Utility Plant. Based on conversations with City of Portland Public Works staff, it is our understanding that this detention tank does not function as intended to provide attenuation of stormwater runoff. This tank is included in the pre-development runoff analysis attached to this report. The hydraulic characteristics of this facility are based on design plans.

The only existing point of connection to the City's separated storm drain system is located at the intersection of A Street and Gilman Street. This sewer was installed by the City of Portland Public Works Department in 2000-2001 as part of the St. John Street Sewer Separation Project. The City of Portland Public Works Department has indicated that this sewer was designed and constructed for the purpose of separating storm drainage and sanitary sewer flow from the Maine Medical Center Campus.

The enclosed pre-development and post-development watershed maps and USGS topographic map depict the general drainage patterns and infrastructure in the project area.

Soils

Soil classifications within the project area were referenced from the Cumberland County Medium Intensity Soil Survey. The site is primarily comprised of Hinckley gravelly sand loam. The project geotechnical evaluation report indicates significant depths of granular fill overlaying glacial till. For modeling purposes of this report, the soils were considered hydraulic soil groups A consistent with the Cumberland County soil survey.

Stormwater Management

In order to evaluate drainage characteristics in pre and post-development conditions, a quantitative analysis was performed to determine peak rates of runoff for the 2, 10 and 25-year storm events. Runoff calculations were performed following the methodology outlined in the USDA Soil Conservation Service's "Urban Hydrology for Small Watersheds, Technical Release #55" and HydroCAD Stormwater Modeling System software.

The 24-hour rainfall values utilized in the hydrologic model are as follows.

Storm Frequency Precipitation (in./24 hr)	
2-year	3.0
10-year	4.7
25-year	5.5

Nineteen watersheds were analyzed in the pre-development condition, and twenty-one watersheds in the post-developed condition. The watershed delineations are based on the topography of the site, record drawings, and field surveys of the drainage infrastructure. Watershed delineations along the hospital building rooftops are based on visible roof drain locations and record design drawings. Due to the age of a number of buildings, records indicating the locations of roof drain connections to the surrounding sewer system are not available. In these cases, the assumed watershed delineations were made based observations of the rooflines and the surrounding topography and sewer infrastructure.

Seven Study Points, identified on the attached watershed plans and hydrologic model output as points SP-1 through SP-7, were selected for the evaluation pre and post-developed runoff conditions. The Study Points represent locations where stormwater runoff from the project site enters the public drainage infrastructure system. In most cases, the capacity of the existing combined sewers is small relative the area draining to them under existing conditions. In these cases, the study point represents the total stormwater discharge at the study point, including both gutter flow and flow in the sewer.

Study Point SP-1 represents the point where stormwater runoff from the site enters a combined sewer at the intersection of Wescott Street and Crescent Street. The study point represents runoff at a manhole identified as DMH-99 on the project plans. The sewer outlet from this manhole is a 12" cement line that drains in a westerly direction along Crescent Street, eventually draining to Park Avenue via sewers in Ellsworth Street, Congress Street and Weymouth Street.

Study Point SP-2 represents the point where runoff from the existing Maine Medical Center parking garage enters a combined sewer at the intersection of Congress Street and Forest Street. The study point represents runoff at manhole SMH-13 on the project plans. The sewer outlet from this manhole is an 18" reinforced concrete pipe that drains in a northerly direction along Forest Street to Park Avenue.

Study Point SP-3 represents the point where runoff from areas of the project site east of the existing emergency room enters the combined sewer system at the intersection of Gilman Street and Congress Street. At this point, runoff within the sewer system discharges in a northerly direction along Gilman Street to Park Avenue. Runoff in the roadway that bypasses the catch basins at the intersection discharges in a westerly direction along Congress Street to St. John Street.

Study Point SP-4 represents runoff at the intersection of Gilman Street and A Street at the upstream end of an existing 15" separate storm drainage system constructed by the City of Portland in 2001 as part of the St. John Street sewer separation project. The storm drain was extended along A Street from its intersection with St. John Street to a drainage manhole in Gilman Street opposite the location of the proposed central utility plant. This manhole is identified as SMH-27 on the project existing conditions plan. It is our understanding that this storm drain was extended to the hospital property specifically for the purpose of providing a point of connection for separated stormwater runoff from the hospital. Under existing conditions, this storm drain only conveys runoff entering two catch basins draining Gilman Street south of its intersection with A Street. Under post-development conditions, runoff from areas of the site, including the existing emergency room parking area, L. L. Bean wing, and service areas abutting the proposed central utility plant are directed to the A Street storm drain.

Study Point SP-5 represents the point where runoff from the site enters the combined sewer system at the intersection of Bramhall Street and Chadwick Street. The proposed development of the site does not affect runoff at this point. The study point represents runoff at a manhole structure identified as SMH-8; the sewer outlet from this manhole is a 15 cement line that drains in an easterly direction along Bramhall Street to Brackett Street.

Study Point SP-6 represents runoff at the intersection of Ellsworth Street and Wescott Street. Runoff currently enters the combined sewer system via manholes in Ellsworth Street and drains in an easterly direction along Ellsworth Street towards its intersection with Congress Street.

Study Point SP-7 represents runoff at the intersection of Russell Street and Brackett Street. Runoff entering the combined sewer system drains in a southeasterly direction along Brackett Street.

The areas and times of concentration of the post-development watersheds vary from the existing conditions based on the proposed site development. Due to the highly developed nature of the site, the time of concentration in some watersheds is less than five minutes. A minimum time of concentration of five minutes was used in these cases.

Table 1 summarizes the results of the hydrologic analysis of the project under pre-development and post-development conditions.

Table 1 - Stormwater Runoff Summary Table: Pre-Development vs. Post-Development

Study Point	Total Watershed Area (Ac)		Avg. Weighted Curve No. (Cn)		Peak Rates of Runoff (cfs)								
					2-Year			10-Year			25-Year		
						Post			Post			Post	
	Pre	Post	Pre	Post	Pre	wo/d	w/d	Pre	wo/d	w/d	Pre	wo/d	w/d
1P	0.54	.77	88	82	1.2	1.3		2.1	2.6		2.6	3.2	
2P	9.70	7.71	88	91	18.7	15.5		33.0	27.2		39.7	32.6	
3P	6.10	1.40	86	70	11.6	1.3		23.6	3.1		27.2	4.0	
4P	2.20	8.60	62	85	<1	16.8		3.0	29.9		4.3	33.6	
5P	2.00	2.00	92	92	5.1	5.1		8.7	8.7		10.3	10.3	
6P	1.18	1.39	90	92	2.7	3.2		4.8	5.6		5.7	6.7	
7P	0.25	0.10	84	98	<1	<1		<1	<1		1.1	<1	

Stormwater modeling results indicate that the peak rates of runoff in the developed condition will be reduced from pre-developed runoff rates in the combined sewers at Study Points SP-2, SP-3, SP-5 and SP-7 during the 2-year, 10-year and 25-year storm events. This reduction is due primarily to the realignment of the public roadways on the site and the separation of stormwater runoff from existing developed areas to the dedicated storm drain line at the intersection of Gilman Street and A Street (Study Point SP-4).

The stormwater modeling results indicate minor increases in the peak rate of runoff at Study Points SP-1 and SP-6 during the 2, 10, and 25-year storm events. This increase in the post-development runoff is due to the proposed vacation of Charles Street and realignment of Ellsworth Street and the resulting alteration to existing drainage patterns.

The stormwater analysis results indicate an increase in runoff at Study Point SP-4 which represents runoff in the A Street storm sewer at the intersection of Gilman Street and A Street. This existing storm sewer was specifically designed and constructed for a future separation of storm drainage from the hospital property. Under proposed condition, this storm drain conveys runoff from the existing emergency room parking area, the L. L. Bean Wing and the service drive providing access from Crescent Street to Gilman Street at the rear of the L. L. Bean Wing. This design is consistent with improvements planned as part of the St. John Street sewer separation project, but not completed as part of the City's sewer construction project. The proposed development also directs rooftop runoff from the proposed Charles Street building to the separate storm drainage system in A Street. This design provides stormwater separation for approximately 6.3 acres of existing development that is currently tributary to combined sewers in Crescent Street and Congress Street.

Stormwater Quality

The project site is not located within a watershed at risk from development as defined by the Maine Department of Environmental Protection. Stormwater quality treatment is, therefore, not required under State stormwater regulations. However, stormwater quality treatment is required by the City of Portland's stormwater design criteria related to proposed parking areas and to replace the existing stormwater quantity detention tank which will be removed as part of the Central Utility Plant construction.

To meet the stormwater quality treatment requirements for the site, two Hydro-International Downstream Defender stormwater treatment units are proposed to treat runoff from both proposed and existing impervious surfaces.

A 6-foot diameter Downstream Defender Unit is proposed to treat runoff generated from the paved surface of the proposed parking garage. Runoff from the parking garage will be collected in the structure's roof drainage system and directed to a treatment unit installed at the Congress Street parking level. The treated stormwater will discharge to an existing 15" combined sewer located on hospital property adjacent to Congress Street and tributary to Study Point SP2.

A 10-foot diameter Downstream Defender Unit is proposed to treat runoff tributary to Study Point SP-4. The unit is proposed at a location adjacent to Gilman Street and discharges to the separated storm sewer manhole at the intersection of Gilman Street and A Street. This unit provides stormwater quality treatment to runoff from approximately 4.93 acres of previously untreated impervious surfaces.

The proposed treatment units have been sized based on the Maine Department of Environmental Protection (MDEP) criteria to provide a 60% total suspended solids (TSS) removal efficiency for runoff generated by a 1-year storm. The units have also been sized such that the 25-year discharge to each unit is less than the manufacturer's published capacity flow rate. Table 2 below summarizes the design flow rates for the stormwater treatment units.

Table 2 Stormwater Treatment Unit Summary

Unit	Downstream Defender Treatment Unit Capacity (cfs)			Post Development Flow rates (cfs)	
	50% TSS Removal ($Q_{1\text{-year}}$)	60% TSS Removal ($Q_{1\text{-year}}$)	Unit Capacity ($Q_{25\text{-year}}$)	1year	25-year
6-ft (SP-2)	3.86	3.58	8.0	1.51	3.38
10-ft (SP-4)	13.84	12.85	25.0	10.66	22.85

Summary

The proposed development of the Maine Medical Center Bramhall Campus will result in significant reductions in the stormwater runoff entering the existing combined sewers within the public right-of-ways surrounding the site. The analysis indicates that the peak rate of runoff in the developed condition will be less than pre-developed runoff rates at four of the seven project study points (Study Points for Study Points SP-2, SP-3, SP-5 and SP-7).

Insignificant increases in stormwater water runoff are anticipated at Study Point SP-1 representing the intersection of Crescent street and Wescott Street and at Study Point SP-6 representing the intersection Ellsworth Street and Wescott Street. The increases are considered insignificant based on the relatively small flow rates involved.

The proposed development will direct runoff from approximately 6.3 acres of existing urban development away from the combined sewers in Crescent Street, Ellsworth Street and Congress Street to a separate storm drainage system in A Street. This storm drain, identified as Study Point SP-4 in the hydrologic model, was designed and constructed as part of the City of Portland's St. John Street sewer separation project for the purpose of providing a fully separated storm sewer to drain the hospital campus site. The drainage infrastructure proposed as part of the Maine Medical Center expansion project is consistent with the design plans for the sewer separation project.

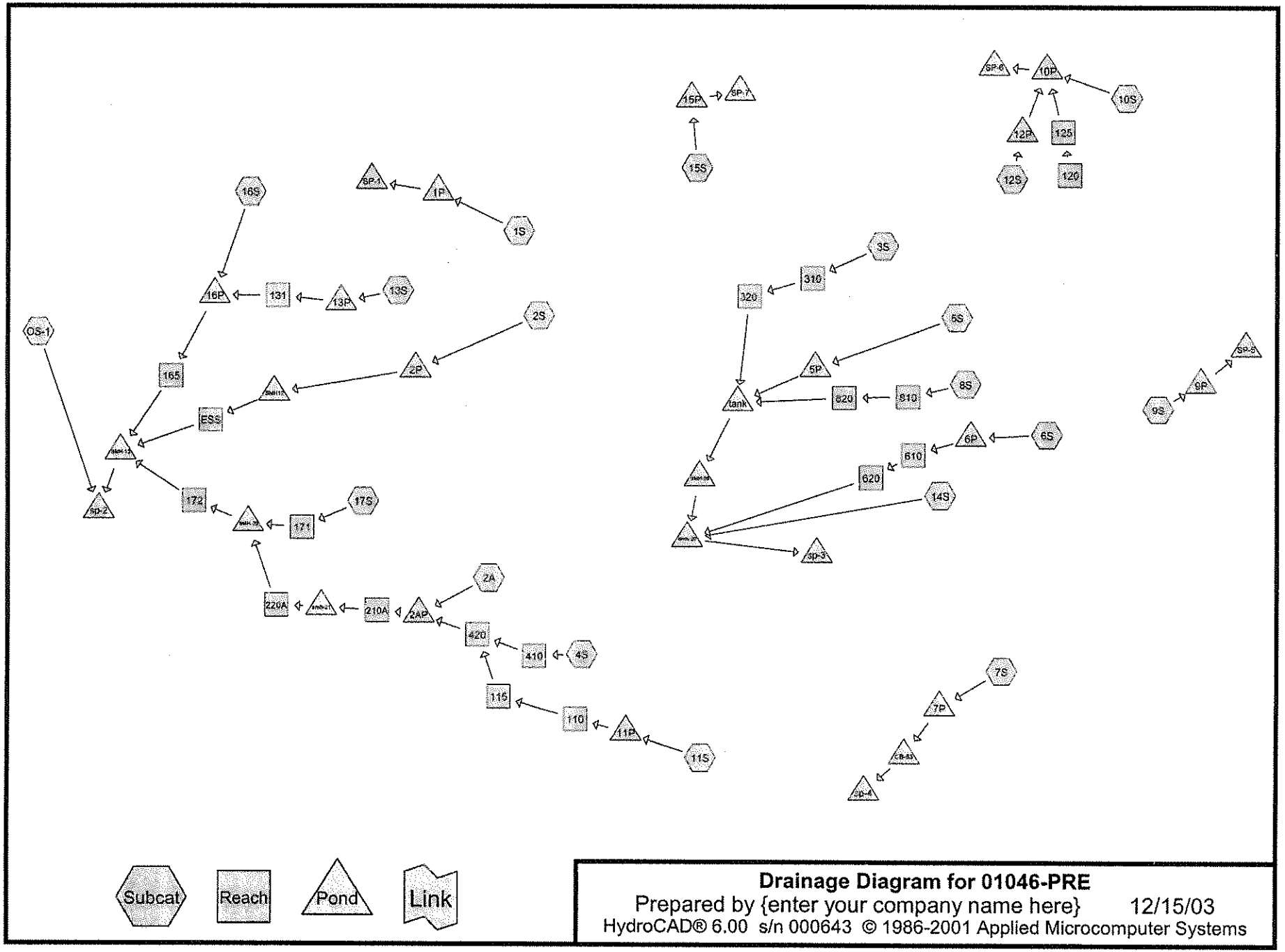
Stormwater quality treatment for the site is provided by two Downstream Defender treatment units. A 6-foot unit is proposed to treat the impervious area associated with the proposed parking garage. A 10-foot diameter unit is proposed to provide stormwater treatment for runoff tributary to the A Street sewer. This unit provides treatment to approximately 4.93 acres of previously untreated impervious surfaces from the northeastern portion of the site, which are currently tributary to the City's combined sewer system.

Prepared by:

SEBAGO TECHNICS, INC.

Daniel L. Riley, P.E.
Senior Project Manager

DLR/APP:app/jc
Enclosure



Drainage Diagram for 01046-PRE

Prepared by {enter your company name here} 12/15/03

HydroCAD® 6.00 s/n 000643 © 1986-2001 Applied Microcomputer Systems

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Type III 24-hr Rainfall=3.00"
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: (new node)
Tc=5.0 min CN=88 Area=0.539 ac Runoff= 1.15 cfs 0.076 af

Subcatchment 2A: (new node)
Tc=5.0 min CN=98 Area=0.576 ac Runoff= 1.69 cfs 0.124 af

Subcatchment 2S: (new node)
Tc=5.0 min CN=89 Area=0.672 ac Runoff= 1.49 cfs 0.100 af

Subcatchment 3S: (new node)
Tc=5.0 min CN=98 Area=0.401 ac Runoff= 1.17 cfs 0.087 af

Subcatchment 4S: (new node)
Tc=5.0 min CN=98 Area=0.528 ac Runoff= 1.54 cfs 0.114 af

Subcatchment 5S: (new node)
Tc=5.0 min CN=94 Area=2.860 ac Runoff= 7.63 cfs 0.529 af

Subcatchment 6S: (new node)
Tc=5.0 min CN=43 Area=0.250 ac Runoff= 0.00 cfs 0.000 af

Subcatchment 7S: (new node)
Tc=5.0 min CN=62 Area=2.216 ac Runoff= 0.64 cfs 0.064 af

Subcatchment 8S: (new node)
Tc=5.0 min CN=89 Area=1.150 ac Runoff= 2.55 cfs 0.171 af

Subcatchment 9S: (new node)
Tc=5.0 min CN=92 Area=2.030 ac Runoff= 5.07 cfs 0.345 af

Subcatchment 10S: (new node)
Tc=5.0 min CN=86 Area=0.767 ac Runoff= 1.50 cfs 0.099 af

Subcatchment 11S: (new node)
Tc=5.0 min CN=98 Area=0.216 ac Runoff= 0.63 cfs 0.047 af

Subcatchment 12S: (new node)
Tc=5.0 min CN=98 Area=0.415 ac Runoff= 1.21 cfs 0.090 af

Subcatchment 13S: (new node)
Tc=5.0 min CN=43 Area=0.210 ac Runoff= 0.00 cfs 0.000 af

Subcatchment 14S: (new node)
Tc=5.0 min CN=71 Area=1.390 ac Runoff= 1.11 cfs 0.079 af

Subcatchment 15S: (new node)
Tc=5.0 min CN=84 Area=0.254 ac Runoff= 0.45 cfs 0.030 af

Subcatchment 16S: (new node)
Tc=5.0 min CN=61 Area=0.506 ac Runoff= 0.12 cfs 0.013 af

Subcatchment 17S: (new node)
Tc=5.0 min CN=98 Area=0.918 ac Runoff= 2.69 cfs 0.198 af

Subcatchment OS-1: OS-1
Tc=10.0 min CN=89 Area=6.030 ac Runoff= 11.55 cfs 0.894 af

Reach 110: (new node)
Inflow= 0.63 cfs 0.047 af
Length= 60.0' Max Vel= 3.6 fps Capacity= 3.86 cfs Outflow= 0.62 cfs 0.047 af

Reach 115: (new node)
Inflow= 0.62 cfs 0.047 af
Length= 50.0' Max Vel= 3.6 fps Capacity= 3.86 cfs Outflow= 0.62 cfs 0.047 af

Reach 120: (new node)
Length= 55.0' Max Vel= 0.0 fps Capacity= 5.65 cfs Outflow= 0.00 cfs 0.000 af

Reach 125: (new node)
Inflow= 0.00 cfs 0.000 af
Length= 172.0' Max Vel= 0.0 fps Capacity= 0.92 cfs Outflow= 0.00 cfs 0.000 af

Reach 131: (new node)
Inflow= 0.00 cfs 0.000 af
Length= 30.0' Max Vel= 0.4 fps Capacity= 0.21 cfs Outflow= 0.00 cfs 0.000 af

Reach 165: (new node)
Inflow= 0.14 cfs 0.013 af
Length= 215.0' Max Vel= 4.3 fps Capacity= 3.01 cfs Outflow= 0.12 cfs 0.013 af

Reach 171: (new node)
Inflow= 2.69 cfs 0.198 af
Length= 31.0' Max Vel= 14.8 fps Capacity= 29.32 cfs Outflow= 2.68 cfs 0.198 af

Reach 172: (new node)
Inflow= 6.35 cfs 0.483 af
Length= 32.0' Max Vel= 18.8 fps Capacity= 28.85 cfs Outflow= 6.35 cfs 0.483 af

Reach 210A: (new node)
Inflow= 3.78 cfs 0.285 af
Length= 150.0' Max Vel= 20.3 fps Capacity= 39.83 cfs Outflow= 3.77 cfs 0.285 af

Reach 220A: (new node)
Inflow= 3.77 cfs 0.285 af
Length= 168.0' Max Vel= 9.5 fps Capacity= 13.64 cfs Outflow= 3.73 cfs 0.285 af

Reach 310: (new node)
Inflow= 1.17 cfs 0.087 af
Length= 195.0' Max Vel= 5.0 fps Capacity= 4.73 cfs Outflow= 1.14 cfs 0.086 af

Reach 320.: (new node)
Inflow= 1.14 cfs 0.086 af
Length= 56.0' Max Vel= 19.2 fps Capacity= 32.06 cfs Outflow= 1.14 cfs 0.086 af

Reach 410: (new node) Inflow= 1.54 cfs 0.114 af
Length= 110.0' Max Vel= 4.6 fps Capacity= 3.86 cfs Outflow= 1.51 cfs 0.114 af

Reach 420: (new node) Inflow= 2.13 cfs 0.160 af
Length= 14.0' Max Vel= 8.4 fps Capacity= 24.14 cfs Outflow= 2.12 cfs 0.160 af

Reach 610: (new node) Inflow= 0.00 cfs 0.000 af
Length= 28.0' Max Vel= 0.3 fps Capacity= 26.83 cfs Outflow= 0.00 cfs 0.000 af

Reach 620: (new node) Inflow= 0.00 cfs 0.000 af
Length= 265.0' Max Vel= 0.1 fps Capacity= 0.75 cfs Outflow= 0.00 cfs 0.000 af

Reach 810: (new node) Inflow= 2.55 cfs 0.171 af
Length= 169.0' Max Vel= 15.4 fps Capacity= 16.82 cfs Outflow= 2.53 cfs 0.171 af

Reach 820: (new node) Inflow= 2.53 cfs 0.171 af
Length= 141.0' Max Vel= 13.3 fps Capacity= 13.70 cfs Outflow= 2.52 cfs 0.171 af

Reach ESS: (new node) Inflow= 1.34 cfs 0.100 af
Length= 265.0' Max Vel= 8.5 fps Capacity= 3.10 cfs Outflow= 1.33 cfs 0.100 af

Pond 1P: (new node) Inflow= 1.15 cfs 0.076 af
Primary= 1.15 cfs 0.076 af

Pond 2AP: (new node) Inflow= 3.78 cfs 0.285 af
Primary= 3.78 cfs 0.285 af

Pond 2P: (new node) Peak Storage= 131 cf Inflow= 1.49 cfs 0.100 af
Primary= 1.34 cfs 0.100 af Secondary= 0.00 cfs 0.000 af Outflow= 1.34 cfs 0.100 af

Pond 5P: (new node) Inflow= 7.63 cfs 0.529 af
Primary= 7.63 cfs 0.529 af

Pond 6P: (new node) Inflow= 0.00 cfs 0.000 af
Primary= 0.00 cfs 0.000 af

Pond 7P: (new node) Inflow= 0.64 cfs 0.064 af
Primary= 0.64 cfs 0.064 af

Pond 9P: (new node) Inflow= 5.07 cfs 0.345 af
Primary= 5.07 cfs 0.345 af

Pond 10P: (new node) Inflow= 2.72 cfs 0.189 af
Primary= 2.72 cfs 0.189 af

Pond 11P: (new node) Inflow= 0.63 cfs 0.047 af
Primary= 0.63 cfs 0.047 af

Pond 12P: (new node)
Inflow= 1.21 cfs 0.090 af
Primary= 1.21 cfs 0.090 af

Pond 13P: (new node)
Inflow= 0.00 cfs 0.000 af
Primary= 0.00 cfs 0.000 af

Pond 15P: (new node)
Inflow= 0.45 cfs 0.030 af
Primary= 0.45 cfs 0.030 af

Pond 16P: (new node) Peak Storage= 10 cf Inflow= 0.12 cfs 0.013 af
Primary= 0.14 cfs 0.013 af Secondary= 0.00 cfs 0.000 af Outflow= 0.14 cfs 0.013 af

Pond CB-63: (new node)
Inflow= 0.64 cfs 0.064 af
Primary= 0.64 cfs 0.064 af

Pond dmh-20: (new node)
Inflow= 11.64 cfs 0.862 af
Primary= 11.64 cfs 0.862 af

Pond SMH-13: (new node)
Inflow= 7.65 cfs 0.596 af
Primary= 7.65 cfs 0.596 af

Pond SMH-20: (new node)
Inflow= 6.35 cfs 0.483 af
Primary= 6.35 cfs 0.483 af

Pond smh-21: (new node)
Inflow= 3.77 cfs 0.285 af
Primary= 3.77 cfs 0.285 af

Pond SMH-26: (new node) Peak Storage= 102 cf Inflow= 10.73 cfs 0.783 af
Primary= 10.58 cfs 0.783 af Secondary= 0.00 cfs 0.000 af Outflow= 10.58 cfs 0.783 af

Pond SMH12: (new node)
Inflow= 1.34 cfs 0.100 af
Primary= 1.34 cfs 0.100 af

Pond SP-1: (new node)
Inflow= 1.15 cfs 0.076 af
Primary= 1.15 cfs 0.076 af

Pond sp-2: (new node)
Inflow= 18.67 cfs 1.490 af
Primary= 18.67 cfs 1.490 af

Pond sp-3: (new node)
Inflow= 11.64 cfs 0.862 af
Primary= 11.64 cfs 0.862 af

Pond sp-4: (new node)
Inflow= 0.64 cfs 0.064 af
Primary= 0.64 cfs 0.064 af

Pond SP-5: (new node)
Inflow= 5.07 cfs 0.345 af
Primary= 5.07 cfs 0.345 af

Pond SP-6: (new node)
Inflow= 2.72 cfs 0.189 af
Primary= 2.72 cfs 0.189 af

Pond SP-7: (new node)
Inflow= 0.45 cfs 0.030 af
Primary= 0.45 cfs 0.030 af

Pond tank: (new node) Peak Storage= 1,461 cf Inflow= 11.18 cfs 0.787 af
Primary= 10.73 cfs 0.783 af Secondary= 0.00 cfs 0.000 af Outflow= 10.73 cfs 0.783 af

Runoff Area = 21.928 ac Volume = 3.060 af Average Depth = 1.67"

Subcatchment 1S: (new node)

Runoff = 1.15 cfs @ 12.08 hrs, Volume= 0.076 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
0.036	39	>75% Grass cover, Good, HSG A
0.061	48	Brush, Poor, HSG A
0.442	98	Paved parking & roofs
0.539	88	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	40	0.0250	1.2		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
0.9	195	0.0300	3.5		**Shallow Concentrated Flow, SHALLOW B TO C** Paved Kv= 20.3 fps
3.6					**Direct Entry, DIRECT**
5.0	235	Total			

Subcatchment 2A: (new node)

Runoff = 1.69 cfs @ 12.07 hrs, Volume= 0.124 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
0.576	98	Paved parking & roofs

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	40	0.0430	1.5		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
0.6	170	0.0520	4.6		**Shallow Concentrated Flow, SHALLOW B TO C** Paved Kv= 20.3 fps
0.6	140	0.0100	3.8	1.31	**Circular Channel (pipe), PIPE C TO D** Diam= 8.0" Area= 0.3 sf Perim= 2.1' r= 0.17' n= 0.012
0.0	14	0.0450	13.7	24.14	**Circular Channel (pipe), PIPE D TO E** Diam= 18.0" Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
3.4					**Direct Entry, DIRECT**
5.0	364	Total			

Subcatchment 2S: (new node)

Runoff = 1.49 cfs @ 12.08 hrs, Volume= 0.100 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
0.568	98	Paved parking & roofs
0.104	39	>75% Grass cover, Good, HSG A
0.672	89	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	40	0.0250	1.2		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
1.0	283	0.0580	4.9		**Shallow Concentrated Flow, SHALLOW B TO C** Paved Kv= 20.3 fps
0.1	16	0.0100	4.9	3.86	**Circular Channel (pipe), PIPE C TO D** Diam= 12.0" Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
3.4					**Direct Entry, DIRECT**
5.0	339	Total			

Subcatchment 3S: (new node)

Runoff = 1.17 cfs @ 12.07 hrs, Volume= 0.087 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
0.401	98	Paved parking & roofs

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	40	0.0875	2.0		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
0.7	218	0.0690	5.3		**Shallow Concentrated Flow, SHALLOW B TO C** Paved Kv= 20.3 fps
0.4	205	0.0370	9.5	7.42	**Circular Channel (pipe), PIPE C TO D** Diam= 12.0" Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
3.6					**Direct Entry, DIRECT**
5.0	463	Total			

Subcatchment 4S: (new node)

Runoff = 1.54 cfs @ 12.07 hrs, Volume= 0.114 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
0.528	98	Paved parking & roofs

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	50	0.0050	0.7		**Sheet Flow, SHEET A TO B**
					Smooth surfaces n= 0.011 P2= 3.00"
1.3	110	0.0050	1.4		**Shallow Concentrated Flow, SHALLOW B TO C**
					Paved Kv= 20.3 fps
2.4					**Direct Entry, DIRECT**
5.0	160	Total			

Subcatchment 5S: (new node)

Runoff = 7.63 cfs @ 12.07 hrs, Volume= 0.529 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
2.664	98	Paved parking & roofs
0.196	39	>75% Grass cover, Good, HSG A
2.860	94	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	35	0.0050	0.6		**Sheet Flow, SHEET A TO B**
					Smooth surfaces n= 0.011 P2= 3.00"
2.2	355	0.0050	2.7	0.93	**Circular Channel (pipe), PIPE B TO C**
					Diam= 8.0" Area= 0.3 sf Perim= 2.1' r= 0.17' n= 0.012
0.4	63	0.0050	2.7	0.93	**Circular Channel (pipe), PIPE C TO D**
					Diam= 8.0" Area= 0.3 sf Perim= 2.1' r= 0.17' n= 0.012
1.5					**Direct Entry, DIRECT**
5.0	453	Total			

Subcatchment 6S: (new node)

Runoff = 0.00 cfs @ 20.00 hrs, Volume= 0.000 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
0.250	43	Woods/grass comb., Fair, HSG A

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.4	40	0.3500	0.2		**Sheet Flow, SHEET A TO B** Woods: Light underbrush n= 0.400 P2= 3.00"
0.3	59	0.3720	3.0		**Shallow Concentrated Flow, SHALLOW B OT C** Woodland Kv= 5.0 fps
1.3					**Direct Entry, DIRECT**
5.0	99	Total			

Subcatchment 7S: (new node)

Runoff = 0.64 cfs @ 12.12 hrs, Volume= 0.064 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
0.456	98	Paved roads w/curbs & sewers
1.354	43	Woods/grass comb., Fair, HSG A
0.079	43	Woods/grass comb., Fair, HSG A
0.327	98	Paved roads w/curbs & sewers
2.216	62	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	75	0.0400	1.7		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
0.5	78	0.0180	2.7		**Shallow Concentrated Flow, SHALLOW B TO C** Paved Kv= 20.3 fps
0.7	219	0.0590	4.9		**Shallow Concentrated Flow, SHALLOW C TO D** Paved Kv= 20.3 fps
0.7	266	0.0930	6.2		**Shallow Concentrated Flow, SHALLOW D TO E** Paved Kv= 20.3 fps
2.3					**Direct Entry, DIRECT**
5.0	638	Total			

Subcatchment 8S: (new node)

Runoff = 2.55 cfs @ 12.08 hrs, Volume= 0.171 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
0.973	98	Paved parking & roofs
0.152	43	Woods/grass comb., Fair, HSG A
0.025	39	>75% Grass cover, Good, HSG A
1.150	89	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	40	0.0050	0.6		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
0.3	93	0.0100	4.9	3.86	**Circular Channel (pipe), PIPE B TO C** Diam= 12.0" Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
0.5	135	0.0100	4.9	3.86	**Circular Channel (pipe), PIPE C TO D** Diam= 12.0" Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
0.4	131	0.0100	4.9	3.86	**Circular Channel (pipe), PIPE D TO E** Diam= 12.0" Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
2.8					**Direct Entry, DIRECT**
5.0	399	Total			

Subcatchment 9S: (new node)

Runoff = 5.07 cfs @ 12.07 hrs, Volume= 0.345 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
0.191	39	>75% Grass cover, Good, HSG A
1.839	98	Paved parking & roofs
2.030	92	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	40	0.0050	0.6		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
1.3	285	0.0100	3.8	1.31	**Circular Channel (pipe), PIPE B TO C** Diam= 8.0" Area= 0.3 sf Perim= 2.1' r= 0.17' n= 0.012
0.3	97	0.0100	4.9	3.86	**Circular Channel (pipe), PIPE C TO D** Diam= 12.0" Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
2.4					**Direct Entry, DIRECT**
5.0	422	Total			

Subcatchment 10S: (new node)

Runoff = 1.50 cfs @ 12.08 hrs, Volume= 0.099 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
0.195	61	1/4 acre lots, 38% imp, HSG A
0.542	98	Paved parking & roofs
0.012	39	>75% Grass cover, Good, HSG A
0.018	39	>75% Grass cover, Good, HSG A
0.767	86	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	40	0.0125	0.9		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
1.3	235	0.0210	2.9		**Shallow Concentrated Flow, SHALLOW B TO C** Paved Kv= 20.3 fps
3.0					**Direct Entry, DIRECT**
5.0	275	Total			

Subcatchment 11S: (new node)

Runoff = 0.63 cfs @ 12.07 hrs, Volume= 0.047 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
0.216	98	Paved parking & roofs

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	30	0.0050	0.6		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
0.7	60	0.0050	1.4		**Shallow Concentrated Flow, SHALLOW B TO C** Paved Kv= 20.3 fps
3.5					**Direct Entry, DIRECT**
5.0	90	Total			

Subcatchment 12S: (new node)

Runoff = 1.21 cfs @ 12.07 hrs, Volume= 0.090 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
0.415	98	Paved parking & roofs

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	30	0.0050	0.6		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
0.3	24	0.0050	1.4		**Shallow Concentrated Flow, SHALLOW B TO C** Paved Kv= 20.3 fps
3.9					**Direct Entry, DIRECT**
5.0	54	Total			

Subcatchment 13S: (new node)

Runoff = 0.00 cfs @ 20.00 hrs, Volume= 0.000 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
0.210	43	Woods/grass comb., Fair, HSG A

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.9	40	0.2500	0.2		**Sheet Flow, SHEET A TO B** Woods: Light underbrush n= 0.400 P2= 3.00"
0.3	50	0.4400	3.3		**Shallow Concentrated Flow, SHALLOW B TO C** Woodland Kv= 5.0 fps
0.3	43	0.2100	2.3		**Shallow Concentrated Flow, SHALLOW C TO D** Woodland Kv= 5.0 fps
0.5					**Direct Entry, DIRECT**
5.0	133	Total			

Subcatchment 14S: (new node)

Runoff = 1.11 cfs @ 12.09 hrs, Volume= 0.079 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
0.728	98	Paved parking & roofs
0.429	39	>75% Grass cover, Good, HSG A
0.233	43	Woods/grass comb., Fair, HSG A
1.390	71	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.5	40	0.1060	0.3		**Sheet Flow, SHEET A TO B** Grass: Short n= 0.150 P2= 3.00"
0.6	225	0.1940	6.6		**Shallow Concentrated Flow, SHALLOW B TO C** Grassed Waterway Kv= 15.0 fps
0.6	168	0.0625	5.1		**Shallow Concentrated Flow, SHALLOW C TO D** Paved Kv= 20.3 fps
1.3					**Direct Entry, DIRECT**
5.0	433	Total			

Subcatchment 15S: (new node)

Runoff = 0.45 cfs @ 12.08 hrs, Volume= 0.030 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
0.194	98	Paved parking & roofs
0.060	39	>75% Grass cover, Good, HSG A
0.254	84	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.4	15	0.0600	0.2		**Sheet Flow, SHEET A TO B** Grass: Short n= 0.150 P2= 3.00"
0.2	35	0.0420	3.3		**Shallow Concentrated Flow, SHALLOW B TO C** Unpaved Kv= 16.1 fps
3.4					**Direct Entry, DIRECT**
5.0	50	Total			

Subcatchment 16S: (new node)

Runoff = 0.12 cfs @ 12.12 hrs, Volume= 0.013 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
0.167	98	Paved parking & roofs
0.339	43	Woods/grass comb., Fair, HSG A
0.506	61	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.9	40	0.2500	0.2		**Sheet Flow, SHEET A TO B** Woods: Light underbrush n= 0.400 P2= 3.00"
0.3	71	0.5490	3.7		**Shallow Concentrated Flow, SHALLOW B TO C** Woodland Kv= 5.0 fps
0.5	117	0.0420	4.2		**Shallow Concentrated Flow, SHALLOW C TO D** Paved Kv= 20.3 fps
0.3					**Direct Entry, DIRECT**
5.0	228	Total			

Subcatchment 17S: (new node)

Runoff = 2.69 cfs @ 12.07 hrs, Volume= 0.198 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
0.918	98	Paved parking & roofs

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	40	0.0100	0.8		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
0.1	14	0.0100	2.0		**Shallow Concentrated Flow, SHALLOW B TO C** Paved Kv= 20.3 fps
0.1	134	0.1600	15.0	5.24	**Circular Channel (pipe), PIPE C TO D** Diam= 8.0" Area= 0.3 sf Perim= 2.1' r= 0.17' n= 0.012
4.0					**Direct Entry, DIRECT**
5.0	188	Total			

Subcatchment OS-1: OS-1

Runoff = 11.55 cfs @ 12.14 hrs, Volume= 0.894 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
6.030	89	Urban commercial, 85% imp, HSG A

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.1	60	0.0400	0.2		**Sheet Flow, Sheet flow A-B** Grass: Short n= 0.150 P2= 3.00"
0.9	180	0.0250	3.2		**Shallow Concentrated Flow, Gutter Flow B-C (Russell Street)** Paved Kv= 20.3 fps
0.7	80	0.0100	2.0		**Shallow Concentrated Flow, Gutter Flow C-D (Hill Street)** Paved Kv= 20.3 fps
1.1	375	0.0800	5.7		**Shallow Concentrated Flow, Gutter Flow D-E (Ellsworth Street)** Paved Kv= 20.3 fps
2.2	605	0.0500	4.5		**Shallow Concentrated Flow, Gutter Flow E-F (Congress Street)** Paved Kv= 20.3 fps
10.0	1,300	Total			

Reach 110: (new node)

Inflow = 0.63 cfs @ 12.07 hrs, Volume= 0.047 af
Outflow = 0.62 cfs @ 12.08 hrs, Volume= 0.047 af, Atten= 2%, Lag= 0.6 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.6 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 1.4 fps, Avg. Travel Time= 0.7 min

Peak Depth= 0.27'
Capacity at bank full= 3.86 cfs
12.0" Diameter Pipe n= 0.012 Length= 60.0' Slope= 0.0100 '/'

Reach 115: (new node)

Inflow = 0.62 cfs @ 12.08 hrs, Volume= 0.047 af
Outflow = 0.62 cfs @ 12.09 hrs, Volume= 0.047 af, Atten= 1%, Lag= 0.4 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.6 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 1.4 fps, Avg. Travel Time= 0.6 min

Peak Depth= 0.27'
Capacity at bank full= 3.86 cfs
12.0" Diameter Pipe n= 0.012 Length= 50.0' Slope= 0.0100 '/'

Reach 120: (new node)

Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.0 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 0.0 fps, Avg. Travel Time= 0.0 min

Peak Depth= 0.00'
Capacity at bank full= 5.65 cfs
10.00' x 0.25' deep channel, n= 0.040 Length= 55.0' Slope= 0.0251 '/'

Reach 125: (new node)

Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.0 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 0.0 fps, Avg. Travel Time= 0.0 min

Peak Depth= 0.00'
Capacity at bank full= 0.92 cfs
6.0" Diameter Pipe n= 0.012 Length= 172.0' Slope= 0.0230 '/'

Reach 131: (new node)

Inflow = 0.00 cfs @ 20.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 20.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.4 fps, Min. Travel Time= 1.2 min
Avg. Velocity = 0.4 fps, Avg. Travel Time= 1.4 min

Peak Depth= 0.01'
Capacity at bank full= 0.21 cfs
4.0" Diameter Pipe n= 0.012 Length= 30.0' Slope= 0.0100 '/'

Reach 165: (new node)

Inflow = 0.14 cfs @ 12.11 hrs, Volume= 0.013 af
Outflow = 0.12 cfs @ 12.16 hrs, Volume= 0.013 af, Atten= 15%, Lag= 3.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 4.3 fps, Min. Travel Time= 0.8 min
Avg. Velocity = 2.3 fps, Avg. Travel Time= 1.5 min

Peak Depth= 0.09'
Capacity at bank full= 3.01 cfs
8.0" Diameter Pipe n= 0.012 Length= 215.0' Slope= 0.0530 '/'

Reach 171: (new node)

Inflow = 2.69 cfs @ 12.07 hrs, Volume= 0.198 af
Outflow = 2.68 cfs @ 12.07 hrs, Volume= 0.198 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 14.8 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 5.6 fps, Avg. Travel Time= 0.1 min

Peak Depth= 0.26'
Capacity at bank full= 29.32 cfs
15.0" Diameter Pipe n= 0.012 Length= 31.0' Slope= 0.1755 '/'

Reach 172: (new node)

Inflow = 6.35 cfs @ 12.08 hrs, Volume= 0.483 af
Outflow = 6.35 cfs @ 12.09 hrs, Volume= 0.483 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 18.8 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 7.2 fps, Avg. Travel Time= 0.1 min

Peak Depth= 0.40'
Capacity at bank full= 28.85 cfs
15.0" Diameter Pipe n= 0.012 Length= 32.0' Slope= 0.1700 '/'

Reach 210A: (new node)

Inflow = 3.78 cfs @ 12.08 hrs, Volume= 0.285 af
Outflow = 3.77 cfs @ 12.08 hrs, Volume= 0.285 af, Atten= 0%, Lag= 0.2 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 20.3 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 7.7 fps, Avg. Travel Time= 0.3 min

Peak Depth= 0.26'
Capacity at bank full= 39.83 cfs
15.0" Diameter Pipe n= 0.012 Length= 150.0' Slope= 0.3240 '/'

Reach 220A: (new node)

Inflow = 3.77 cfs @ 12.08 hrs, Volume= 0.285 af
Outflow = 3.73 cfs @ 12.09 hrs, Volume= 0.285 af, Atten= 1%, Lag= 0.5 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 9.5 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 3.6 fps, Avg. Travel Time= 0.8 min

Peak Depth= 0.45'
Capacity at bank full= 13.64 cfs
15.0" Diameter Pipe n= 0.012 Length= 168.0' Slope= 0.0380 '/'

Reach 310: (new node)

Inflow = 1.17 cfs @ 12.07 hrs, Volume= 0.087 af
Outflow = 1.14 cfs @ 12.09 hrs, Volume= 0.086 af, Atten= 3%, Lag= 1.3 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 5.0 fps, Min. Travel Time= 0.7 min
Avg. Velocity = 1.9 fps, Avg. Travel Time= 1.7 min

Peak Depth= 0.34'
Capacity at bank full= 4.73 cfs
12.0" Diameter Pipe n= 0.012 Length= 195.0' Slope= 0.0150 '/'

Reach 320.: (new node)

Inflow = 1.14 cfs @ 12.09 hrs, Volume= 0.086 af
Outflow = 1.14 cfs @ 12.09 hrs, Volume= 0.086 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 19.2 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 7.3 fps, Avg. Travel Time= 0.1 min

Peak Depth= 0.13'
Capacity at bank full= 32.06 cfs
12.0" Diameter Pipe n= 0.012 Length= 56.0' Slope= 0.6900 '/'

Reach 410: (new node)

Inflow = 1.54 cfs @ 12.07 hrs, Volume= 0.114 af
Outflow = 1.51 cfs @ 12.09 hrs, Volume= 0.114 af, Atten= 2%, Lag= 0.9 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 4.6 fps, Min. Travel Time= 0.4 min
Avg. Velocity = 1.8 fps, Avg. Travel Time= 1.0 min

Peak Depth= 0.44'
Capacity at bank full= 3.86 cfs
12.0" Diameter Pipe n= 0.012 Length= 110.0' Slope= 0.0100 '/'

Reach 420: (new node)

Inflow = 2.13 cfs @ 12.09 hrs, Volume= 0.160 af
Outflow = 2.12 cfs @ 12.09 hrs, Volume= 0.160 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 8.4 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 3.2 fps, Avg. Travel Time= 0.1 min

Peak Depth= 0.30'
Capacity at bank full= 24.14 cfs
18.0" Diameter Pipe n= 0.012 Length= 14.0' Slope= 0.0450 '/'

Reach 610: (new node)

Inflow = 0.00 cfs @ 20.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 20.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.3 fps, Min. Travel Time= 1.8 min
Avg. Velocity = 0.3 fps, Avg. Travel Time= 1.8 min

Peak Depth= 0.00'
Capacity at bank full= 26.83 cfs
20.00' x 0.25' deep channel, n= 0.050 Length= 28.0' Slope= 0.2139 '/'

Reach 620: (new node)

Inflow = 0.00 cfs @ 20.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 20.00 hrs, Volume= 0.000 af, Atten= 13%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.1 fps, Min. Travel Time= 33.7 min
Avg. Velocity = 0.1 fps, Avg. Travel Time= 33.7 min

Peak Depth= 0.00'
Capacity at bank full= 0.75 cfs
1.00' x 0.25' deep channel, n= 0.040 Length= 265.0' Slope= 0.0370 '/'
Side Slope Z-value= 3.0 0.0 '/'

Reach 810: (new node)

Inflow = 2.55 cfs @ 12.08 hrs, Volume= 0.171 af
Outflow = 2.53 cfs @ 12.08 hrs, Volume= 0.171 af, Atten= 1%, Lag= 0.4 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 15.4 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 5.6 fps, Avg. Travel Time= 0.5 min

Peak Depth= 0.26'
Capacity at bank full= 16.82 cfs
12.0" Diameter Pipe n= 0.012 Length= 169.0' Slope= 0.1900 '/'

Reach 820: (new node)

Inflow = 2.53 cfs @ 12.08 hrs, Volume= 0.171 af
Outflow = 2.52 cfs @ 12.09 hrs, Volume= 0.171 af, Atten= 0%, Lag= 0.3 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 13.3 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 4.9 fps, Avg. Travel Time= 0.5 min

Peak Depth= 0.29'
Capacity at bank full= 13.70 cfs
12.0" Diameter Pipe n= 0.012 Length= 141.0' Slope= 0.1260 '/'

Reach ESS: (new node)

Inflow = 1.34 cfs @ 12.12 hrs, Volume= 0.100 af
Outflow = 1.33 cfs @ 12.13 hrs, Volume= 0.100 af, Atten= 1%, Lag= 0.7 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 8.5 fps, Min. Travel Time= 0.5 min
Avg. Velocity = 3.3 fps, Avg. Travel Time= 1.3 min

Peak Depth= 0.31'
Capacity at bank full= 3.10 cfs
8.0" Diameter Pipe n= 0.012 Length= 265.0' Slope= 0.0560 '/'

Pond 1P: (new node)

Inflow = 1.15 cfs @ 12.08 hrs, Volume= 0.076 af
Primary = 1.15 cfs @ 12.08 hrs, Volume= 0.076 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond 2AP: (new node)

Inflow = 3.78 cfs @ 12.08 hrs, Volume= 0.285 af
Primary = 3.78 cfs @ 12.08 hrs, Volume= 0.285 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond 2P: (new node)

Inflow = 1.49 cfs @ 12.08 hrs, Volume= 0.100 af
Outflow = 1.34 cfs @ 12.12 hrs, Volume= 0.100 af, Atten= 10%, Lag= 2.8 min
Primary = 1.34 cfs @ 12.12 hrs, Volume= 0.100 af
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Peak Elev= 119.92' Storage= 131 cf
Plug-Flow detention time= 0.7 min calculated for 0.100 af (100% of inflow)
Storage and wetted areas determined by Prismatic sections

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
109.00	12	0	0
123.00	12	168	168
124.00	12	12	180

Primary OutFlow (Free Discharge)
└─1=Culvert

Secondary OutFlow (Free Discharge)
└─2=Broad-Crested Rectangular Weir

#	Routing	Invert	Outlet Devices
1	Primary	109.00'	**4.0" x 113.0' long Culvert** RCP, square edge headwall, Ke= 0.500 Outlet Invert= 67.75' S= 0.3650 '/' n= 0.012 Cc= 0.900
2	Secondary	123.00'	**4.0' long x 4.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.7

Pond 5P: (new node)

Inflow = 7.63 cfs @ 12.07 hrs, Volume= 0.529 af
Primary = 7.63 cfs @ 12.07 hrs, Volume= 0.529 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond 6P: (new node)

Inflow = 0.00 cfs @ 20.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 20.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond 7P: (new node)

Inflow = 0.64 cfs @ 12.12 hrs, Volume= 0.064 af
Primary = 0.64 cfs @ 12.12 hrs, Volume= 0.064 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond 9P: (new node)

Inflow = 5.07 cfs @ 12.07 hrs, Volume= 0.345 af
Primary = 5.07 cfs @ 12.07 hrs, Volume= 0.345 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond 10P: (new node)

Inflow = 2.72 cfs @ 12.07 hrs, Volume= 0.189 af
Primary = 2.72 cfs @ 12.07 hrs, Volume= 0.189 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond 11P: (new node)

Inflow = 0.63 cfs @ 12.07 hrs, Volume= 0.047 af
Primary = 0.63 cfs @ 12.07 hrs, Volume= 0.047 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond 12P: (new node)

Inflow = 1.21 cfs @ 12.07 hrs, Volume= 0.090 af
Primary = 1.21 cfs @ 12.07 hrs, Volume= 0.090 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond 13P: (new node)

Inflow = 0.00 cfs @ 20.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 20.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond 15P: (new node)

Inflow = 0.45 cfs @ 12.08 hrs, Volume= 0.030 af
Primary = 0.45 cfs @ 12.08 hrs, Volume= 0.030 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond 16P: (new node)

Inflow = 0.12 cfs @ 12.12 hrs, Volume= 0.013 af
Outflow = 0.14 cfs @ 12.11 hrs, Volume= 0.013 af, Atten= 0%, Lag= 0.0 min
Primary = 0.14 cfs @ 12.11 hrs, Volume= 0.013 af
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Peak Elev= 62.30' Storage= 10 cf
Plug-Flow detention time= 5.8 min calculated for 0.013 af (99% of inflow)
Storage and wetted areas determined by Prismatic sections

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
61.50	12	0	0
62.00	12	6	6
66.00	12	48	54
67.00	12	12	66

Primary OutFlow (Free Discharge)
└─1=Culvert

Secondary OutFlow (Free Discharge)
└─2=Broad-Crested Rectangular Weir

#	Routing	Invert	Outlet Devices
1	Primary	62.00'	**4.0" x 21.0' long Culvert** RCP, square edge headwall, Ke= 0.500 Outlet Invert= 61.79' S= 0.0100 '/' n= 0.012 Cc= 0.900
2	Secondary	65.50'	**4.0' long x 4.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.7

Pond CB-63: (new node)

Inflow = 0.64 cfs @ 12.12 hrs, Volume= 0.064 af
Primary = 0.64 cfs @ 12.12 hrs, Volume= 0.064 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond dmh-20: (new node)

Inflow = 11.64 cfs @ 12.12 hrs, Volume= 0.862 af
Primary = 11.64 cfs @ 12.12 hrs, Volume= 0.862 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond SMH-13: (new node)

Inflow = 7.65 cfs @ 12.09 hrs, Volume= 0.596 af
Primary = 7.65 cfs @ 12.09 hrs, Volume= 0.596 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond SMH-20: (new node)

Inflow = 6.35 cfs @ 12.08 hrs, Volume= 0.483 af
Primary = 6.35 cfs @ 12.08 hrs, Volume= 0.483 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond smh-21: (new node)

Inflow = 3.77 cfs @ 12.08 hrs, Volume= 0.285 af
Primary = 3.77 cfs @ 12.08 hrs, Volume= 0.285 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond SMH-26: (new node)

Inflow	=	10.73 cfs @	12.11 hrs,	Volume=	0.783 af
Outflow	=	10.58 cfs @	12.12 hrs,	Volume=	0.783 af, Atten= 1%, Lag= 0.5 min
Primary	=	10.58 cfs @	12.12 hrs,	Volume=	0.783 af
Secondary	=	0.00 cfs @	5.00 hrs,	Volume=	0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Peak Elev= 52.46' Storage= 102 cf
Plug-Flow detention time= 0.2 min calculated for 0.783 af (100% of inflow)
Storage and wetted areas determined by Prismatic sections

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
44.00	12	0	0
53.42	12	113	113
55.00	12	19	132

Primary OutFlow (Free Discharge)
↑—1=Culvert

Secondary OutFlow (Free Discharge)
↑—2=Broad-Crested Rectangular Weir

#	Routing	Invert	Outlet Devices
1	Primary	44.20'	**12.0" x 209.0' long Culvert** RCP, square edge headwall, Ke= 0.500 Outlet Invert= 31.99' S= 0.0584 '/' n= 0.012 Cc= 0.900
2	Secondary	53.40'	**4.0' long x 4.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.7

Pond SMH12: (new node)

Inflow	=	1.34 cfs @	12.12 hrs,	Volume=	0.100 af
Primary	=	1.34 cfs @	12.12 hrs,	Volume=	0.100 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond SP-1: (new node)

Inflow	=	1.15 cfs @	12.08 hrs,	Volume=	0.076 af
Primary	=	1.15 cfs @	12.08 hrs,	Volume=	0.076 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond sp-2: (new node)

Inflow = 18.67 cfs @ 12.12 hrs, Volume= 1.490 af
Primary = 18.67 cfs @ 12.12 hrs, Volume= 1.490 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond sp-3: (new node)

Inflow = 11.64 cfs @ 12.12 hrs, Volume= 0.862 af
Primary = 11.64 cfs @ 12.12 hrs, Volume= 0.862 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond sp-4: (new node)

Inflow = 0.64 cfs @ 12.12 hrs, Volume= 0.064 af
Primary = 0.64 cfs @ 12.12 hrs, Volume= 0.064 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond SP-5: (new node)

Inflow = 5.07 cfs @ 12.07 hrs, Volume= 0.345 af
Primary = 5.07 cfs @ 12.07 hrs, Volume= 0.345 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond SP-6: (new node)

Inflow = 2.72 cfs @ 12.07 hrs, Volume= 0.189 af
Primary = 2.72 cfs @ 12.07 hrs, Volume= 0.189 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond SP-7: (new node)

Inflow = 0.45 cfs @ 12.08 hrs, Volume= 0.030 af
Primary = 0.45 cfs @ 12.08 hrs, Volume= 0.030 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond tank: (new node)

Inflow = 11.18 cfs @ 12.08 hrs, Volume= 0.787 af
Outflow = 10.73 cfs @ 12.11 hrs, Volume= 0.783 af, Atten= 4%, Lag= 2.1 min
Primary = 10.73 cfs @ 12.11 hrs, Volume= 0.783 af
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Peak Elev= 69.50' Storage= 1,461 cf
Plug-Flow detention time= 5.1 min calculated for 0.783 af (100% of inflow)
Storage and wetted areas determined by Prismatic sections

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
63.00	225	0	0
72.00	225	2,025	2,025
73.00	225	225	2,250

Primary OutFlow (Free Discharge)
1=Culvert
2=Orifice/Grate

Secondary OutFlow (Free Discharge)
3=Broad-Crested Rectangular Weir

#	Routing	Invert	Outlet Devices
1	Primary	63.50'	**12.0" x 168.0' long Culvert** RCP, square edge headwall, Ke= 0.500 Outlet Invert= 44.97' S= 0.1103 '/' n= 0.012 Cc= 0.900
2	Primary	68.00'	**8.0" Vert. Orifice/Grate** C= 0.600
3	Secondary	72.00'	**4.0' long x 4.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.7

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Type III 24-hr Rainfall=4.70"
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: (new node)
Tc=5.0 min CN=88 Area=0.539 ac Runoff= 2.11 cfs 0.143 af

Subcatchment 2A: (new node)
Tc=5.0 min CN=98 Area=0.576 ac Runoff= 2.66 cfs 0.199 af

Subcatchment 2S: (new node)
Tc=5.0 min CN=89 Area=0.672 ac Runoff= 2.69 cfs 0.184 af

Subcatchment 3S: (new node)
Tc=5.0 min CN=98 Area=0.401 ac Runoff= 1.85 cfs 0.139 af

Subcatchment 4S: (new node)
Tc=5.0 min CN=98 Area=0.528 ac Runoff= 2.44 cfs 0.182 af

Subcatchment 5S: (new node)
Tc=5.0 min CN=94 Area=2.860 ac Runoff= 12.64 cfs 0.903 af

Subcatchment 6S: (new node)
Tc=5.0 min CN=43 Area=0.250 ac Runoff= 0.02 cfs 0.005 af

Subcatchment 7S: (new node)
Tc=5.0 min CN=62 Area=2.216 ac Runoff= 2.98 cfs 0.210 af

Subcatchment 8S: (new node)
Tc=5.0 min CN=89 Area=1.150 ac Runoff= 4.61 cfs 0.315 af

Subcatchment 9S: (new node)
Tc=5.0 min CN=92 Area=2.030 ac Runoff= 8.66 cfs 0.607 af

Subcatchment 10S: (new node)
Tc=5.0 min CN=86 Area=0.767 ac Runoff= 2.85 cfs 0.192 af

Subcatchment 11S: (new node)
Tc=5.0 min CN=98 Area=0.216 ac Runoff= 1.00 cfs 0.075 af

Subcatchment 12S: (new node)
Tc=5.0 min CN=98 Area=0.415 ac Runoff= 1.92 cfs 0.143 af

Subcatchment 13S: (new node)
Tc=5.0 min CN=43 Area=0.210 ac Runoff= 0.02 cfs 0.004 af

Subcatchment 14S: (new node)
Tc=5.0 min CN=71 Area=1.390 ac Runoff= 3.04 cfs 0.202 af

Subcatchment 15S: (new node)
Tc=5.0 min CN=84 Area=0.254 ac Runoff= 0.89 cfs 0.060 af

Subcatchment 16S: (new node)
Tc=5.0 min CN=61 Area=0.506 ac Runoff= 0.64 cfs 0.045 af

Subcatchment 17S: (new node)
Tc=5.0 min CN=98 Area=0.918 ac Runoff= 4.25 cfs 0.317 af

Subcatchment OS-1: OS-1
Tc=10.0 min CN=89 Area=6.030 ac Runoff= 20.76 cfs 1.651 af

Reach 110: (new node)
Inflow= 1.00 cfs 0.075 af
Length= 60.0' Max Vel= 4.1 fps Capacity= 3.86 cfs Outflow= 0.98 cfs 0.075 af

Reach 115: (new node)
Inflow= 0.98 cfs 0.075 af
Length= 50.0' Max Vel= 4.1 fps Capacity= 3.86 cfs Outflow= 0.98 cfs 0.075 af

Reach 120: (new node)
Length= 55.0' Max Vel= 0.0 fps Capacity= 5.65 cfs Outflow= 0.00 cfs 0.000 af

Reach 125: (new node)
Inflow= 0.00 cfs 0.000 af
Length= 172.0' Max Vel= 0.0 fps Capacity= 0.92 cfs Outflow= 0.00 cfs 0.000 af

Reach 131: (new node)
Inflow= 0.02 cfs 0.004 af
Length= 30.0' Max Vel= 1.5 fps Capacity= 0.21 cfs Outflow= 0.02 cfs 0.004 af

Reach 165: (new node)
Inflow= 0.60 cfs 0.049 af
Length= 215.0' Max Vel= 6.7 fps Capacity= 3.01 cfs Outflow= 0.59 cfs 0.049 af

Reach 171: (new node)
Inflow= 4.25 cfs 0.317 af
Length= 31.0' Max Vel= 16.9 fps Capacity= 29.32 cfs Outflow= 4.24 cfs 0.317 af

Reach 172: (new node)
Inflow= 10.07 cfs 0.773 af
Length= 32.0' Max Vel= 21.3 fps Capacity= 28.85 cfs Outflow= 10.07 cfs 0.773 af

Reach 210A: (new node)
Inflow= 5.98 cfs 0.456 af
Length= 150.0' Max Vel= 23.2 fps Capacity= 39.83 cfs Outflow= 5.97 cfs 0.456 af

Reach 220A: (new node)
Inflow= 5.97 cfs 0.456 af
Length= 168.0' Max Vel= 10.7 fps Capacity= 13.64 cfs Outflow= 5.92 cfs 0.456 af

Reach 310: (new node)
Inflow= 1.85 cfs 0.139 af
Length= 195.0' Max Vel= 5.6 fps Capacity= 4.73 cfs Outflow= 1.80 cfs 0.138 af

Reach 320.: (new node)
Inflow= 1.80 cfs 0.138 af
Length= 56.0' Max Vel= 22.0 fps Capacity= 32.06 cfs Outflow= 1.80 cfs 0.138 af

Reach 410: (new node) Inflow= 2.44 cfs 0.182 af
Length= 110.0' Max Vel= 5.2 fps Capacity= 3.86 cfs Outflow= 2.39 cfs 0.182 af

Reach 420: (new node) Inflow= 3.37 cfs 0.257 af
Length= 14.0' Max Vel= 9.6 fps Capacity= 24.14 cfs Outflow= 3.36 cfs 0.257 af

Reach 610: (new node) Inflow= 0.02 cfs 0.005 af
Length= 28.0' Max Vel= 0.3 fps Capacity= 26.83 cfs Outflow= 0.02 cfs 0.005 af

Reach 620: (new node) Inflow= 0.02 cfs 0.005 af
Length= 265.0' Max Vel= 0.6 fps Capacity= 0.75 cfs Outflow= 0.02 cfs 0.005 af

Reach 810: (new node) Inflow= 4.61 cfs 0.315 af
Length= 169.0' Max Vel= 18.1 fps Capacity= 16.82 cfs Outflow= 4.55 cfs 0.315 af

Reach 820: (new node) Inflow= 4.55 cfs 0.315 af
Length= 141.0' Max Vel= 15.6 fps Capacity= 13.70 cfs Outflow= 4.53 cfs 0.315 af

Reach ESS: (new node) Inflow= 2.85 cfs 0.184 af
Length= 265.0' Max Vel= 10.0 fps Capacity= 3.10 cfs Outflow= 2.63 cfs 0.184 af

Pond 1P: (new node) Inflow= 2.11 cfs 0.143 af
Primary= 2.11 cfs 0.143 af

Pond 2AP: (new node) Inflow= 5.98 cfs 0.456 af
Primary= 5.98 cfs 0.456 af

Pond 2P: (new node) Peak Storage= 171 cf Inflow= 2.69 cfs 0.184 af
Primary= 1.36 cfs 0.171 af Secondary= 1.49 cfs 0.013 af Outflow= 2.85 cfs 0.184 af

Pond 5P: (new node) Inflow= 12.64 cfs 0.903 af
Primary= 12.64 cfs 0.903 af

Pond 6P: (new node) Inflow= 0.02 cfs 0.005 af
Primary= 0.02 cfs 0.005 af

Pond 7P: (new node) Inflow= 2.98 cfs 0.210 af
Primary= 2.98 cfs 0.210 af

Pond 9P: (new node) Inflow= 8.66 cfs 0.607 af
Primary= 8.66 cfs 0.607 af

Pond 10P: (new node) Inflow= 4.77 cfs 0.335 af
Primary= 4.77 cfs 0.335 af

Pond 11P: (new node) Inflow= 1.00 cfs 0.075 af
Primary= 1.00 cfs 0.075 af

Pond 12P: (new node) Inflow= 1.92 cfs 0.143 af
Primary= 1.92 cfs 0.143 af

Pond 13P: (new node) Inflow= 0.02 cfs 0.004 af
Primary= 0.02 cfs 0.004 af

Pond 15P: (new node) Inflow= 0.89 cfs 0.060 af
Primary= 0.89 cfs 0.060 af

Pond 16P: (new node) Peak Storage= 42 cf Inflow= 0.64 cfs 0.049 af
Primary= 0.60 cfs 0.049 af Secondary= 0.00 cfs 0.000 af Outflow= 0.60 cfs 0.049 af

Pond CB-63: (new node) Inflow= 2.98 cfs 0.210 af
Primary= 2.98 cfs 0.210 af

Pond dmh-20: (new node) Inflow= 23.60 cfs 1.559 af
Primary= 23.60 cfs 1.559 af

Pond SMH-13: (new node) Inflow= 13.22 cfs 1.006 af
Primary= 13.22 cfs 1.006 af

Pond SMH-20: (new node) Inflow= 10.07 cfs 0.773 af
Primary= 10.07 cfs 0.773 af

Pond smh-21: (new node) Inflow= 5.97 cfs 0.456 af
Primary= 5.97 cfs 0.456 af

Pond SMH-26: (new node) Peak Storage= 124 cf Inflow= 20.78 cfs 1.352 af
Primary= 10.93 cfs 1.280 af Secondary= 9.67 cfs 0.072 af Outflow= 20.60 cfs 1.352 af

Pond SMH12: (new node) Inflow= 2.85 cfs 0.184 af
Primary= 2.85 cfs 0.184 af

Pond SP-1: (new node) Inflow= 2.11 cfs 0.143 af
Primary= 2.11 cfs 0.143 af

Pond sp-2: (new node) Inflow= 32.95 cfs 2.657 af
Primary= 32.95 cfs 2.657 af

Pond sp-3: (new node) Inflow= 23.60 cfs 1.559 af
Primary= 23.60 cfs 1.559 af

Pond sp-4: (new node) Inflow= 2.98 cfs 0.210 af
Primary= 2.98 cfs 0.210 af

Pond SP-5: (new node) Inflow= 8.66 cfs 0.607 af
Primary= 8.66 cfs 0.607 af

Pond SP-6: (new node) Inflow= 4.77 cfs 0.335 af
Primary= 4.77 cfs 0.335 af

Pond SP-7: (new node) Inflow= 0.89 cfs 0.060 af
Primary= 0.89 cfs 0.060 af

Pond tank: (new node) Peak Storage= 2,181 cf Inflow= 18.80 cfs 1.356 af
Primary= 14.66 cfs 1.327 af Secondary= 6.13 cfs 0.025 af Outflow= 20.78 cfs 1.352 af

Runoff Area = 21.928 ac Volume = 5.576 af Average Depth = 3.05"

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Type III 24-hr Rainfall=5.50"
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: (new node)
Tc=5.0 min CN=88 Area=0.539 ac Runoff= 2.56 cfs 0.176 af

Subcatchment 2A: (new node)
Tc=5.0 min CN=98 Area=0.576 ac Runoff= 3.12 cfs 0.234 af

Subcatchment 2S: (new node)
Tc=5.0 min CN=89 Area=0.672 ac Runoff= 3.25 cfs 0.225 af

Subcatchment 3S: (new node)
Tc=5.0 min CN=98 Area=0.401 ac Runoff= 2.17 cfs 0.163 af

Subcatchment 4S: (new node)
Tc=5.0 min CN=98 Area=0.528 ac Runoff= 2.86 cfs 0.214 af

Subcatchment 5S: (new node)
Tc=5.0 min CN=94 Area=2.860 ac Runoff= 14.97 cfs 1.079 af

Subcatchment 6S: (new node)
Tc=5.0 min CN=43 Area=0.250 ac Runoff= 0.06 cfs 0.009 af

Subcatchment 7S: (new node)
Tc=5.0 min CN=62 Area=2.216 ac Runoff= 4.34 cfs 0.296 af

Subcatchment 8S: (new node)
Tc=5.0 min CN=89 Area=1.150 ac Runoff= 5.57 cfs 0.385 af

Subcatchment 9S: (new node)
Tc=5.0 min CN=92 Area=2.030 ac Runoff= 10.34 cfs 0.732 af

Subcatchment 10S: (new node)
Tc=5.0 min CN=86 Area=0.767 ac Runoff= 3.49 cfs 0.237 af

Subcatchment 11S: (new node)
Tc=5.0 min CN=98 Area=0.216 ac Runoff= 1.17 cfs 0.088 af

Subcatchment 12S: (new node)
Tc=5.0 min CN=98 Area=0.415 ac Runoff= 2.25 cfs 0.169 af

Subcatchment 13S: (new node)
Tc=5.0 min CN=43 Area=0.210 ac Runoff= 0.05 cfs 0.008 af

Subcatchment 14S: (new node)
Tc=5.0 min CN=71 Area=1.390 ac Runoff= 4.06 cfs 0.268 af

Subcatchment 15S: (new node)
Tc=5.0 min CN=84 Area=0.254 ac Runoff= 1.10 cfs 0.074 af

Subcatchment 16S: (new node)
Tc=5.0 min CN=61 Area=0.506 ac Runoff= 0.94 cfs 0.064 af

Subcatchment 17S: (new node)
Tc=5.0 min CN=98 Area=0.918 ac Runoff= 4.98 cfs 0.373 af

Subcatchment OS-1: OS-1
Tc=10.0 min CN=89 Area=6.030 ac Runoff= 25.09 cfs 2.017 af

Reach 110: (new node)
Inflow= 1.17 cfs 0.088 af
Length= 60.0' Max Vel= 4.3 fps Capacity= 3.86 cfs Outflow= 1.15 cfs 0.088 af

Reach 115: (new node)
Inflow= 1.15 cfs 0.088 af
Length= 50.0' Max Vel= 4.3 fps Capacity= 3.86 cfs Outflow= 1.14 cfs 0.088 af

Reach 120: (new node)
Length= 55.0' Max Vel= 0.0 fps Capacity= 5.65 cfs Outflow= 0.00 cfs 0.000 af

Reach 125: (new node)
Inflow= 0.00 cfs 0.000 af
Length= 172.0' Max Vel= 0.0 fps Capacity= 0.92 cfs Outflow= 0.00 cfs 0.000 af

Reach 131: (new node)
Inflow= 0.05 cfs 0.008 af
Length= 30.0' Max Vel= 1.9 fps Capacity= 0.21 cfs Outflow= 0.05 cfs 0.008 af

Reach 165: (new node)
Inflow= 1.10 cfs 0.072 af
Length= 215.0' Max Vel= 7.9 fps Capacity= 3.01 cfs Outflow= 1.00 cfs 0.072 af

Reach 171: (new node)
Inflow= 4.98 cfs 0.373 af
Length= 31.0' Max Vel= 17.7 fps Capacity= 29.32 cfs Outflow= 4.97 cfs 0.373 af

Reach 172: (new node)
Inflow= 11.82 cfs 0.908 af
Length= 32.0' Max Vel= 22.3 fps Capacity= 28.85 cfs Outflow= 11.81 cfs 0.908 af

Reach 210A: (new node)
Inflow= 7.02 cfs 0.536 af
Length= 150.0' Max Vel= 24.3 fps Capacity= 39.83 cfs Outflow= 7.00 cfs 0.536 af

Reach 220A: (new node)
Inflow= 7.00 cfs 0.536 af
Length= 168.0' Max Vel= 11.2 fps Capacity= 13.64 cfs Outflow= 6.95 cfs 0.536 af

Reach 310: (new node)
Inflow= 2.17 cfs 0.163 af
Length= 195.0' Max Vel= 5.9 fps Capacity= 4.73 cfs Outflow= 2.11 cfs 0.163 af

Reach 320.: (new node)
Inflow= 2.11 cfs 0.163 af
Length= 56.0' Max Vel= 23.1 fps Capacity= 32.06 cfs Outflow= 2.11 cfs 0.163 af

Reach 410: (new node) Inflow= 2.86 cfs 0.214 af
Length= 110.0' Max Vel= 5.3 fps Capacity= 3.86 cfs Outflow= 2.80 cfs 0.214 af

Reach 420: (new node) Inflow= 3.95 cfs 0.302 af
Length= 14.0' Max Vel= 10.0 fps Capacity= 24.14 cfs Outflow= 3.95 cfs 0.302 af

Reach 610: (new node) Inflow= 0.06 cfs 0.009 af
Length= 28.0' Max Vel= 0.5 fps Capacity= 26.83 cfs Outflow= 0.06 cfs 0.009 af

Reach 620: (new node) Inflow= 0.06 cfs 0.009 af
Length= 265.0' Max Vel= 0.9 fps Capacity= 0.75 cfs Outflow= 0.06 cfs 0.009 af

Reach 810: (new node) Inflow= 5.57 cfs 0.385 af
Length= 169.0' Max Vel= 19.0 fps Capacity= 16.82 cfs Outflow= 5.50 cfs 0.385 af

Reach 820: (new node) Inflow= 5.50 cfs 0.385 af
Length= 141.0' Max Vel= 16.4 fps Capacity= 13.70 cfs Outflow= 5.47 cfs 0.385 af

Reach ESS: (new node) Inflow= 3.53 cfs 0.225 af
Length= 265.0' Max Vel= 10.1 fps Capacity= 3.10 cfs Outflow= 3.15 cfs 0.225 af

Pond 1P: (new node) Inflow= 2.56 cfs 0.176 af
Primary= 2.56 cfs 0.176 af

Pond 2AP: (new node) Inflow= 7.02 cfs 0.536 af
Primary= 7.02 cfs 0.536 af

Pond 2P: (new node) Peak Storage= 172 cf Inflow= 3.25 cfs 0.225 af
Primary= 1.36 cfs 0.202 af Secondary= 2.17 cfs 0.023 af Outflow= 3.53 cfs 0.225 af

Pond 5P: (new node) Inflow= 14.97 cfs 1.079 af
Primary= 14.97 cfs 1.079 af

Pond 6P: (new node) Inflow= 0.06 cfs 0.009 af
Primary= 0.06 cfs 0.009 af

Pond 7P: (new node) Inflow= 4.34 cfs 0.296 af
Primary= 4.34 cfs 0.296 af

Pond 9P: (new node) Inflow= 10.34 cfs 0.732 af
Primary= 10.34 cfs 0.732 af

Pond 10P: (new node) Inflow= 5.74 cfs 0.406 af
Primary= 5.74 cfs 0.406 af

Pond 11P: (new node) Inflow= 1.17 cfs 0.088 af
Primary= 1.17 cfs 0.088 af

Pond 12P: (new node) Inflow= 2.25 cfs 0.169 af
Primary= 2.25 cfs 0.169 af

Pond 13P: (new node) Inflow= 0.05 cfs 0.008 af
Primary= 0.05 cfs 0.008 af

Pond 15P: (new node) Inflow= 1.10 cfs 0.074 af
Primary= 1.10 cfs 0.074 af

Pond 16P: (new node) Peak Storage= 50 cf Inflow= 0.97 cfs 0.072 af
Primary= 0.66 cfs 0.069 af Secondary= 0.44 cfs 0.002 af Outflow= 1.10 cfs 0.072 af

Pond CB-63: (new node) Inflow= 4.34 cfs 0.296 af
Primary= 4.34 cfs 0.296 af

Pond dmh-20: (new node) Inflow= 27.22 cfs 1.899 af
Primary= 27.22 cfs 1.899 af

Pond SMH-13: (new node) Inflow= 15.90 cfs 1.205 af
Primary= 15.90 cfs 1.205 af

Pond SMH-20: (new node) Inflow= 11.82 cfs 0.908 af
Primary= 11.82 cfs 0.908 af

Pond smh-21: (new node) Inflow= 7.00 cfs 0.536 af
Primary= 7.00 cfs 0.536 af

Pond SMH-26: (new node) Peak Storage= 126 cf Inflow= 23.27 cfs 1.622 af
Primary= 10.98 cfs 1.493 af Secondary= 12.21 cfs 0.129 af Outflow= 23.19 cfs 1.622 af

Pond SMH12: (new node) Inflow= 3.53 cfs 0.225 af
Primary= 3.53 cfs 0.225 af

Pond SP-1: (new node) Inflow= 2.56 cfs 0.176 af
Primary= 2.56 cfs 0.176 af

Pond sp-2: (new node) Inflow= 39.74 cfs 3.222 af
Primary= 39.74 cfs 3.222 af

Pond sp-3: (new node) Inflow= 27.22 cfs 1.899 af
Primary= 27.22 cfs 1.899 af

Pond sp-4: (new node) Inflow= 4.34 cfs 0.296 af
Primary= 4.34 cfs 0.296 af

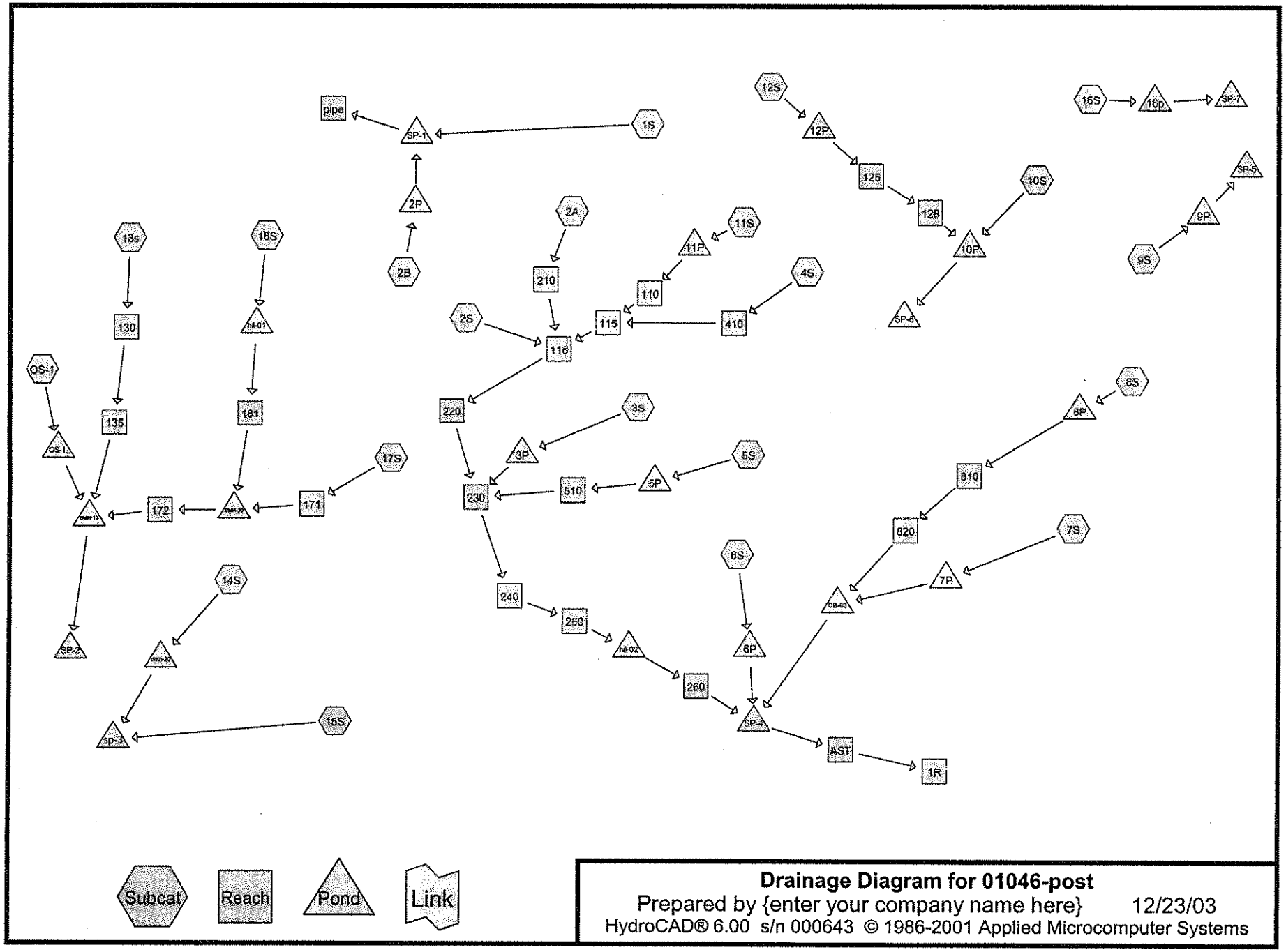
Pond SP-5: (new node) Inflow= 10.34 cfs 0.732 af
Primary= 10.34 cfs 0.732 af

Pond SP-6: (new node) Inflow= 5.74 cfs 0.406 af
Primary= 5.74 cfs 0.406 af

Pond SP-7: (new node) Inflow= 1.10 cfs 0.074 af
Primary= 1.10 cfs 0.074 af

Pond tank: (new node) Peak Storage= 2,218 cf Inflow= 22.36 cfs 1.626 af
Primary= 14.83 cfs 1.560 af Secondary= 8.44 cfs 0.063 af Outflow= 23.27 cfs 1.622 af

Runoff Area = 21.928 ac Volume = 6.810 af Average Depth = 3.73"



Drainage Diagram for 01046-post

Prepared by {enter your company name here} 12/23/03

HydroCAD® 6.00 s/n 000643 © 1986-2001 Applied Microcomputer Systems

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Type III 24-hr Rainfall=3.00"
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: (new node)
Tc=5.0 min CN=84 Area=0.448 ac Runoff= 0.80 cfs 0.053 af

Subcatchment 2A: (new node)
Tc=5.0 min CN=98 Area=0.568 ac Runoff= 1.66 cfs 0.123 af

Subcatchment 2B: (new node)
Tc=5.0 min CN=80 Area=0.320 ac Runoff= 0.46 cfs 0.031 af

Subcatchment 2S: (new node)
Tc=5.0 min CN=98 Area=0.384 ac Runoff= 1.12 cfs 0.083 af

Subcatchment 3S: (new node)
Tc=5.0 min CN=89 Area=0.347 ac Runoff= 0.77 cfs 0.052 af

Subcatchment 4S: (new node)
Tc=5.0 min CN=98 Area=0.528 ac Runoff= 1.54 cfs 0.114 af

Subcatchment 5S: (new node)
Tc=5.0 min CN=91 Area=2.860 ac Runoff= 6.89 cfs 0.465 af

Subcatchment 6S: (new node)
Tc=5.0 min CN=91 Area=0.251 ac Runoff= 0.60 cfs 0.041 af

Subcatchment 7S: (new node)
Tc=5.0 min CN=62 Area=2.216 ac Runoff= 0.64 cfs 0.064 af

Subcatchment 8S: (new node)
Tc=5.0 min CN=89 Area=1.150 ac Runoff= 2.55 cfs 0.171 af

Subcatchment 9S: (new node)
Tc=5.0 min CN=92 Area=2.030 ac Runoff= 5.07 cfs 0.345 af

Subcatchment 10S: (new node)
Tc=5.0 min CN=87 Area=0.853 ac Runoff= 1.74 cfs 0.116 af

Subcatchment 11S: (new node)
Tc=5.0 min CN=98 Area=0.249 ac Runoff= 0.73 cfs 0.054 af

Subcatchment 12S: (new node)
Tc=5.0 min CN=98 Area=0.533 ac Runoff= 1.56 cfs 0.115 af

Subcatchment 13s: (new node)
Tc=6.2 min CN=78 Area=0.146 ac Runoff= 0.18 cfs 0.013 af

Subcatchment 14S: (new node)
Tc=5.0 min CN=76 Area=1.140 ac Runoff= 1.30 cfs 0.088 af

Subcatchment 15S: (new node)
Tc=5.0 min CN=43 Area=0.241 ac Runoff= 0.00 cfs 0.000 af

Subcatchment 16S: (new node)
Tc=5.0 min CN=98 Area=0.093 ac Runoff= 0.27 cfs 0.020 af

Subcatchment 17S: (new node)
Tc=5.0 min CN=98 Area=0.918 ac Runoff= 2.69 cfs 0.198 af

Subcatchment 18S: (new node)
Tc=5.0 min CN=98 Area=0.623 ac Runoff= 1.82 cfs 0.134 af

Subcatchment OS-1: OS-1
Tc=10.0 min CN=89 Area=6.030 ac Runoff= 11.55 cfs 0.894 af

Reach 1R: (new node)
Inflow= 15.90 cfs 1.164 af
Length= 10.0' Max Vel= 7.7 fps Capacity= 22.37 cfs Outflow= 15.88 cfs 1.164 af

Reach 110: (new node)
Inflow= 0.73 cfs 0.054 af
Length= 51.0' Max Vel= 3.8 fps Capacity= 1.31 cfs Outflow= 0.72 cfs 0.054 af

Reach 115: (new node)
Inflow= 2.24 cfs 0.168 af
Length= 83.0' Max Vel= 5.1 fps Capacity= 7.00 cfs Outflow= 2.22 cfs 0.168 af

Reach 118: (new node)
Inflow= 4.93 cfs 0.373 af
Length= 66.0' Max Vel= 5.9 fps Capacity= 10.76 cfs Outflow= 4.90 cfs 0.373 af

Reach 125: (new node)
Inflow= 1.56 cfs 0.115 af
Length= 113.0' Max Vel= 6.0 fps Capacity= 5.59 cfs Outflow= 1.53 cfs 0.115 af

Reach 128: (new node)
Inflow= 1.53 cfs 0.115 af
Length= 71.0' Max Vel= 3.5 fps Capacity= 2.71 cfs Outflow= 1.51 cfs 0.115 af

Reach 130: (new node)
Inflow= 0.18 cfs 0.013 af
Length= 74.0' Max Vel= 4.2 fps Capacity= 7.91 cfs Outflow= 0.18 cfs 0.013 af

Reach 135: (new node)
Inflow= 0.18 cfs 0.013 af
Length= 225.0' Max Vel= 4.8 fps Capacity= 3.10 cfs Outflow= 0.17 cfs 0.013 af

Reach 171: (new node)
Inflow= 2.69 cfs 0.198 af
Length= 31.0' Max Vel= 14.8 fps Capacity= 29.32 cfs Outflow= 2.68 cfs 0.198 af

Reach 172: (new node)
Inflow= 4.46 cfs 0.333 af
Length= 32.0' Max Vel= 16.9 fps Capacity= 28.85 cfs Outflow= 4.44 cfs 0.332 af

Reach 181: (new node) Inflow= 1.82 cfs 0.134 af
Length= 125.0' Max Vel= 7.7 fps Capacity= 13.83 cfs Outflow= 1.79 cfs 0.134 af

Reach 210: (new node) Inflow= 1.66 cfs 0.123 af
Length= 147.0' Max Vel= 4.1 fps Capacity= 3.23 cfs Outflow= 1.61 cfs 0.122 af

Reach 220: (new node) Inflow= 4.90 cfs 0.373 af
Length= 218.0' Max Vel= 11.4 fps Capacity= 26.19 cfs Outflow= 4.85 cfs 0.373 af

Reach 230: (new node) Inflow= 12.36 cfs 0.889 af
Length= 71.0' Max Vel= 25.9 fps Capacity= 57.69 cfs Outflow= 12.35 cfs 0.889 af

Reach 240: (new node) Inflow= 12.35 cfs 0.889 af
Length= 69.0' Max Vel= 22.9 fps Capacity= 48.44 cfs Outflow= 12.33 cfs 0.889 af

Reach 250: (new node) Inflow= 12.33 cfs 0.889 af
Length= 36.0' Max Vel= 11.9 fps Capacity= 43.43 cfs Outflow= 12.32 cfs 0.889 af

Reach 260: (new node) Inflow= 12.32 cfs 0.889 af
Length= 39.0' Max Vel= 7.5 fps Capacity= 23.22 cfs Outflow= 12.29 cfs 0.889 af

Reach 410: (new node) Inflow= 1.54 cfs 0.114 af
Length= 35.0' Max Vel= 3.6 fps Capacity= 2.77 cfs Outflow= 1.52 cfs 0.114 af

Reach 510: (new node) Inflow= 6.89 cfs 0.465 af
Length= 23.0' Max Vel= 26.2 fps Capacity= 74.96 cfs Outflow= 6.88 cfs 0.465 af

Reach 810: (new node) Inflow= 2.55 cfs 0.171 af
Length= 200.0' Max Vel= 14.5 fps Capacity= 15.48 cfs Outflow= 2.53 cfs 0.171 af

Reach 820: (new node) Inflow= 2.53 cfs 0.171 af
Length= 192.0' Max Vel= 12.2 fps Capacity= 12.21 cfs Outflow= 2.51 cfs 0.171 af

Reach AST: (new node) Inflow= 15.99 cfs 1.164 af
Length= 214.0' Max Vel= 19.8 fps Capacity= 22.39 cfs Outflow= 15.90 cfs 1.164 af

Reach pipe: (new node) Inflow= 1.26 cfs 0.083 af
Length= 10.0' Max Vel= 5.6 fps Capacity= 5.46 cfs Outflow= 1.26 cfs 0.083 af

Pond 2P: (new node) Peak Storage= 4 cf Inflow= 0.46 cfs 0.031 af
Primary= 0.46 cfs 0.031 af Outflow= 0.46 cfs 0.031 af

Pond 3P: (new node) Inflow= 0.77 cfs 0.052 af
Primary= 0.77 cfs 0.052 af

Pond 5P: (new node) Inflow= 6.89 cfs 0.465 af
Primary= 6.89 cfs 0.465 af

Pond 6P: (new node) Inflow= 0.60 cfs 0.041 af
Primary= 0.60 cfs 0.041 af

Pond 7P: (new node) Inflow= 0.64 cfs 0.064 af
Primary= 0.64 cfs 0.064 af

Pond 8P: (new node) Inflow= 2.55 cfs 0.171 af
Primary= 2.55 cfs 0.171 af

Pond 9P: (new node) Inflow= 5.07 cfs 0.345 af
Primary= 5.07 cfs 0.345 af

Pond 10P: (new node) Inflow= 3.24 cfs 0.230 af
Primary= 3.24 cfs 0.230 af

Pond 11P: (new node) Inflow= 0.73 cfs 0.054 af
Primary= 0.73 cfs 0.054 af

Pond 12P: (new node) Inflow= 1.56 cfs 0.115 af
Primary= 1.56 cfs 0.115 af

Pond 16p: (new node) Inflow= 0.27 cfs 0.020 af
Primary= 0.27 cfs 0.020 af

Pond CB-63: (new node) Peak Storage= 15 cf Inflow= 3.13 cfs 0.235 af
Primary= 3.13 cfs 0.235 af Outflow= 3.13 cfs 0.235 af

Pond dmh-20: (new node) Inflow= 1.30 cfs 0.088 af
Primary= 1.30 cfs 0.088 af

Pond hil-01: (new node) Inflow= 1.82 cfs 0.134 af
Primary= 1.82 cfs 0.134 af

Pond hil-02: (new node) Inflow= 12.32 cfs 0.889 af
Primary= 12.32 cfs 0.889 af

Pond OS-1.: (new node) Inflow= 11.55 cfs 0.894 af
Primary= 11.55 cfs 0.894 af

Pond SMH-13: (new node) Inflow= 15.49 cfs 1.239 af
Primary= 15.49 cfs 1.239 af

Pond SMH-20: (new node) Inflow= 4.46 cfs 0.333 af
Primary= 4.46 cfs 0.333 af

Pond SP-1: (new node) Inflow= 1.26 cfs 0.083 af
Primary= 1.26 cfs 0.083 af

Pond SP-2: (new node)
Inflow= 15.49 cfs 1.239 af
Primary= 15.49 cfs 1.239 af

Pond sp-3: (new node)
Inflow= 1.30 cfs 0.088 af
Primary= 1.30 cfs 0.088 af

Pond SP-4: (new node)
Inflow= 15.99 cfs 1.164 af
Primary= 15.99 cfs 1.164 af

Pond SP-5: (new node)
Inflow= 5.07 cfs 0.345 af
Primary= 5.07 cfs 0.345 af

Pond SP-6: (new node)
Inflow= 3.24 cfs 0.230 af
Primary= 3.24 cfs 0.230 af

Pond SP-7: (new node)
Inflow= 0.27 cfs 0.020 af
Primary= 0.27 cfs 0.020 af

Runoff Area = 21.928 ac Volume = 3.171 af Average Depth = 1.74"

Subcatchment 1S: (new node)

Runoff = 0.80 cfs @ 12.08 hrs, Volume= 0.053 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
0.344	98	Paved parking & roofs
0.104	39	>75% Grass cover, Good, HSG A
0.448	84	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.4	40	0.0500	0.2		**Sheet Flow, SHEET A TO B** Grass: Short n= 0.150 P2= 3.00"
0.2	33	0.0500	3.4		**Shallow Concentrated Flow, SHALLOW B TO C** Grassed Waterway Kv= 15.0 fps
0.3	82	0.0420	4.2		**Shallow Concentrated Flow, SHALLOW C TO D** Paved Kv= 20.3 fps
0.1	74	0.0500	11.0	8.63	**Circular Channel (pipe), PIPE D TO E** Diam= 12.0" Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
1.0					**Direct Entry, DIRECT**
5.0	229	Total			

Subcatchment 2A: (new node)

Runoff = 1.66 cfs @ 12.07 hrs, Volume= 0.123 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
0.568	98	Paved parking & roofs

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	30	0.0050	0.6		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
1.3	112	0.0050	1.4		**Shallow Concentrated Flow, SHALLOW B TO C** Paved Kv= 20.3 fps
2.9					**Direct Entry, DIRECT**
5.0	142	Total			

Subcatchment 2B: (new node)

Runoff = 0.46 cfs @ 12.08 hrs, Volume= 0.031 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
0.220	98	Paved parking & roofs
0.100	39	>75% Grass cover, Good, HSG A
0.320	80	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.6	30	0.0100	0.8		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
0.5	123	0.0380	4.0		**Shallow Concentrated Flow, SHALLOW B TO C** Paved Kv= 20.3 fps
2.0	131	0.0005	1.1	0.86	**Circular Channel (pipe), PIPE C TO D** Diam= 12.0" Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
1.9					**Direct Entry, DIRECT**
5.0	284	Total			

Subcatchment 2S: (new node)

Runoff = 1.12 cfs @ 12.07 hrs, Volume= 0.083 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
0.384	98	Paved parking & roofs

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	30	0.0180	1.0		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
0.3	78	0.0370	3.9		**Shallow Concentrated Flow, SHALLOW B TO C** Paved Kv= 20.3 fps
0.4	136	0.0107	5.1	3.99	**Circular Channel (pipe), PIPE C TO D** Diam= 12.0" Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
3.8					**Direct Entry, DIRECT**
5.0	244	Total			

Subcatchment 3S: (new node)

Runoff = 0.77 cfs @ 12.08 hrs, Volume= 0.052 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
0.054	39	>75% Grass cover, Good, HSG A
0.293	98	Paved parking & roofs
0.347	89	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	30	0.0250	1.1		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
0.3	106	0.0810	5.8		**Shallow Concentrated Flow, SHALLOW B TO C** Paved Kv= 20.3 fps
0.2	222	0.0530	14.8	26.20	**Circular Channel (pipe), PIPE C TO D** Diam= 18.0" Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
4.1					**Direct Entry, DIRECT**
5.0	358	Total			

Subcatchment 4S: (new node)

Runoff = 1.54 cfs @ 12.07 hrs, Volume= 0.114 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
0.528	98	Paved parking & roofs

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	50	0.0050	0.7		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
1.3	110	0.0050	1.4		**Shallow Concentrated Flow, SHALLOW B TO C** Paved Kv= 20.3 fps
2.4					**Direct Entry, DIRECT**
5.0	160	Total			

Subcatchment 5S: (new node)

Runoff = 6.89 cfs @ 12.07 hrs, Volume= 0.465 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
2.506	98	Paved parking & roofs
0.354	39	>75% Grass cover, Good, HSG A
2.860	91	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	35	0.0050	0.6		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
2.2	355	0.0050	2.7	0.93	**Circular Channel (pipe), PIPE B TO C** Diam= 8.0" Area= 0.3 sf Perim= 2.1' r= 0.17' n= 0.012
0.1	35	0.0300	8.5	6.69	**Circular Channel (pipe), PIPE C TO D** Diam= 12.0" Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
0.2	85	0.0160	6.2	4.88	**Circular Channel (pipe), PIPE D TO E** Diam= 12.0" Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
1.6					**Direct Entry, DIRECT**
5.0	510	Total			

Subcatchment 6S: (new node)

Runoff = 0.60 cfs @ 12.07 hrs, Volume= 0.041 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
0.049	61	>75% Grass cover, Good, HSG B
0.202	98	Paved parking & roofs
0.251	91	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.6	30	0.0100	0.8		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
0.3	64	0.0100	3.8	1.31	**Circular Channel (pipe), PIPE B TO C (ROOF DRAIN)** Diam= 8.0" Area= 0.3 sf Perim= 2.1' r= 0.17' n= 0.012
0.0	27	0.0740	10.2	3.56	**Circular Channel (pipe), PIPE C TO D** Diam= 8.0" Area= 0.3 sf Perim= 2.1' r= 0.17' n= 0.012
4.1					**Direct Entry, DIRECT**
5.0	121	Total			

Subcatchment 7S: (new node)

Runoff = 0.64 cfs @ 12.12 hrs, Volume= 0.064 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
0.456	98	Paved roads w/curbs & sewers
1.354	43	Woods/grass comb., Fair, HSG A
0.079	43	Woods/grass comb., Fair, HSG A
0.327	98	Paved roads w/curbs & sewers
2.216	62	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	75	0.0400	1.7		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
0.5	78	0.0180	2.7		**Shallow Concentrated Flow, SHALLOW B TO C** Paved Kv= 20.3 fps
0.7	219	0.0590	4.9		**Shallow Concentrated Flow, SHALLOW C TO D** Paved Kv= 20.3 fps
0.2	72	0.0970	6.3		**Shallow Concentrated Flow, SHALLOW D TO E** Paved Kv= 20.3 fps
0.2	190	0.1020	15.7	12.33	**Circular Channel (pipe), PIPE E TO F** Diam= 12.0" Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
2.6					**Direct Entry, DIRECT**
5.0	634	Total			

Subcatchment 8S: (new node)

Runoff = 2.55 cfs @ 12.08 hrs, Volume= 0.171 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
0.973	98	Paved parking & roofs
0.152	43	Woods/grass comb., Fair, HSG A
0.025	39	>75% Grass cover, Good, HSG A
1.150	89	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	40	0.0050	0.6		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
0.3	93	0.0100	4.9	3.86	**Circular Channel (pipe), PIPE B TO C** Diam= 12.0" Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
0.5	135	0.0100	4.9	3.86	**Circular Channel (pipe), PIPE C TO D** Diam= 12.0" Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
0.4	131	0.0100	4.9	3.86	**Circular Channel (pipe), PIPE D TO E** Diam= 12.0" Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
2.8					**Direct Entry, DIRECT**
5.0	399	Total			

Subcatchment 9S: (new node)

Runoff = 5.07 cfs @ 12.07 hrs, Volume= 0.345 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
0.191	39	>75% Grass cover, Good, HSG A
1.839	98	Paved parking & roofs
2.030	92	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	40	0.0050	0.6		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
1.3	285	0.0100	3.8	1.31	**Circular Channel (pipe), PIPE B TO C** Diam= 8.0" Area= 0.3 sf Perim= 2.1' r= 0.17' n= 0.012
0.3	97	0.0100	4.9	3.86	**Circular Channel (pipe), PIPE C TO D** Diam= 12.0" Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
2.4					**Direct Entry, DIRECT**
5.0	422	Total			

Subcatchment 10S: (new node)

Runoff = 1.74 cfs @ 12.08 hrs, Volume= 0.116 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
0.157	39	>75% Grass cover, Good, HSG A
0.696	98	Paved parking & roofs
0.853	87	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	30	0.0400	1.4		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
0.1	37	0.0540	4.7		**Shallow Concentrated Flow, SHALLOW B TO C** Paved Kv= 20.3 fps
0.4	75	0.0200	2.9		**Shallow Concentrated Flow, SHALLOW C TO D** Paved Kv= 20.3 fps
0.3	113	0.0210	7.1	5.59	**Circular Channel (pipe), PIPE D TO E** Diam= 12.0" Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
0.3	71	0.0050	3.5	2.73	**Circular Channel (pipe), PIPE E TO F** Diam= 12.0" Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
3.5					**Direct Entry, DIRECT**
5.0	326	Total			

Subcatchment 11S: (new node)

Runoff = 0.73 cfs @ 12.07 hrs, Volume= 0.054 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
0.249	98	Paved parking & roofs

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	30	0.0050	0.6		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
0.7	60	0.0050	1.4		**Shallow Concentrated Flow, SHALLOW B TO C** Paved Kv= 20.3 fps
3.5					**Direct Entry, DIRECT**
5.0	90	Total			

Subcatchment 12S: (new node)

Runoff = 1.56 cfs @ 12.07 hrs, Volume= 0.115 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
0.533	98	Paved parking & roofs

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	30	0.0050	0.6		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
0.9	80	0.0050	1.4		**Shallow Concentrated Flow, SHALLOW B TO C** Paved Kv= 20.3 fps
0.4	90	0.0100	3.8	1.31	**Circular Channel (pipe), PIPE C TO D** Diam= 8.0" Area= 0.3 sf Perim= 2.1' r= 0.17' n= 0.012
2.9					**Direct Entry, DIRECT**
5.0	200	Total			

Subcatchment 13s: (new node)

Runoff = 0.18 cfs @ 12.10 hrs, Volume= 0.013 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
0.093	98	Paved parking & roofs
0.053	43	Woods/grass comb., Fair, HSG A
0.146	78	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.6	40	0.1000	0.1		**Sheet Flow, SHEET A TO B** Woods: Light underbrush n= 0.400 P2= 3.00"
0.2	51	0.6400	4.0		**Shallow Concentrated Flow, SHALLOW B TO C** Woodland Kv= 5.0 fps
0.4	105	0.0420	4.2		**Shallow Concentrated Flow, SHALLOW C TO D** Paved Kv= 20.3 fps
6.2	196	Total			

Subcatchment 14S: (new node)

Runoff = 1.30 cfs @ 12.09 hrs, Volume= 0.088 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
0.711	98	Paved parking & roofs
0.429	39	>75% Grass cover, Good, HSG A
1.140	76	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.3	45	0.0680	0.2		**Sheet Flow, SHEET A TO B** Grass: Short n= 0.150 P2= 3.00"
1.0	217	0.0320	3.6		**Shallow Concentrated Flow, SHALLOW B TO C** Paved Kv= 20.3 fps
0.7					**Direct Entry, DIRECT**
5.0	262	Total			

Subcatchment 15S: (new node)

Runoff = 0.00 cfs @ 20.00 hrs, Volume= 0.000 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
0.225	39	>75% Grass cover, Good, HSG A
0.016	98	Paved parking & roofs
0.241	43	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	18	0.2770	0.3		**Sheet Flow, SHEET A TO B** Grass: Short n= 0.150 P2= 3.00"
0.5	190	0.1920	6.6		**Shallow Concentrated Flow, SHALLOW B TO C** Grassed Waterway Kv= 15.0 fps
0.5	176	0.0760	5.6		**Shallow Concentrated Flow, SHALLOW C TO D** Paved Kv= 20.3 fps
3.1					**Direct Entry, DIRECT**
5.0	384	Total			

Subcatchment 16S: (new node)

Runoff = 0.27 cfs @ 12.07 hrs, Volume= 0.020 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
0.093	98	Paved parking & roofs

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.6	30	0.0100	0.8		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
0.2	28	0.0100	2.0		**Shallow Concentrated Flow, SHALLOW B TO C** Paved Kv= 20.3 fps
0.0	11	0.0125	5.5	4.32	**Circular Channel (pipe), PIPE C TO D** Diam= 12.0" Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
4.2					**Direct Entry, DIRECT**
5.0	69	Total			

Subcatchment 17S: (new node)

Runoff = 2.69 cfs @ 12.07 hrs, Volume= 0.198 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
0.918	98	Paved parking & roofs

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	40	0.0100	0.8		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
0.1	14	0.0100	2.0		**Shallow Concentrated Flow, SHALLOW B TO C** Paved Kv= 20.3 fps
0.1	134	0.1600	15.0	5.24	**Circular Channel (pipe), PIPE C TO D** Diam= 8.0" Area= 0.3 sf Perim= 2.1' r= 0.17' n= 0.012
4.0					**Direct Entry, DIRECT**
5.0	188	Total			

Subcatchment 18S: (new node)

Runoff = 1.82 cfs @ 12.07 hrs, Volume= 0.134 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
0.623	98	Paved parking & roofs

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	40	0.0100	0.8		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
0.3	141	0.2000	9.1		**Shallow Concentrated Flow, SHALLOW B TO C** Paved Kv= 20.3 fps
0.4	135	0.0110	5.2	4.05	**Circular Channel (pipe), PIPE C TO D** Diam= 12.0" Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
3.5					**Direct Entry, DIRECT**
5.0	316	Total			

Subcatchment OS-1: OS-1

Runoff = 11.55 cfs @ 12.14 hrs, Volume= 0.894 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
6.030	89	Urban commercial, 85% imp, HSG A

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.1	60	0.0400	0.2		**Sheet Flow, Sheet flow A-B** Grass: Short n= 0.150 P2= 3.00"
0.9	180	0.0250	3.2		**Shallow Concentrated Flow, Gutter Flow B-C (Russell Street)** Paved Kv= 20.3 fps
0.7	80	0.0100	2.0		**Shallow Concentrated Flow, Gutter Flow C-D (Hill Street)** Paved Kv= 20.3 fps
1.1	375	0.0800	5.7		**Shallow Concentrated Flow, Gutter Flow D-E (Ellsworth Street)** Paved Kv= 20.3 fps
2.2	605	0.0500	4.5		**Shallow Concentrated Flow, Gutter Flow E-F (Congress Street)** Paved Kv= 20.3 fps
10.0	1,300	Total			

Reach 1R: (new node)

Inflow = 15.90 cfs @ 12.10 hrs, Volume= 1.164 af
Outflow = 15.88 cfs @ 12.10 hrs, Volume= 1.164 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 7.7 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 3.0 fps, Avg. Travel Time= 0.1 min

Peak Depth= 1.25'
Capacity at bank full= 22.37 cfs
24.0" Diameter Pipe n= 0.011 Length= 10.0' Slope= 0.0070 '/'

Reach 110: (new node)

Inflow = 0.73 cfs @ 12.07 hrs, Volume= 0.054 af
Outflow = 0.72 cfs @ 12.08 hrs, Volume= 0.054 af, Atten= 2%, Lag= 0.5 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.8 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 1.5 fps, Avg. Travel Time= 0.6 min

Peak Depth= 0.35'
Capacity at bank full= 1.31 cfs
8.0" Diameter Pipe n= 0.012 Length= 51.0' Slope= 0.0100 '/'

Reach 115: (new node)

Inflow = 2.24 cfs @ 12.08 hrs, Volume= 0.168 af
Outflow = 2.22 cfs @ 12.09 hrs, Volume= 0.168 af, Atten= 1%, Lag= 0.6 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 5.1 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 1.9 fps, Avg. Travel Time= 0.7 min

Peak Depth= 0.49'
Capacity at bank full= 7.00 cfs
15.0" Diameter Pipe n= 0.012 Length= 83.0' Slope= 0.0100 '/'

Reach 118: (new node)

Inflow = 4.93 cfs @ 12.08 hrs, Volume= 0.373 af
Outflow = 4.90 cfs @ 12.09 hrs, Volume= 0.373 af, Atten= 1%, Lag= 0.3 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 5.9 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 2.3 fps, Avg. Travel Time= 0.5 min

Peak Depth= 0.71'
Capacity at bank full= 10.76 cfs
18.0" Diameter Pipe n= 0.012 Length= 66.0' Slope= 0.0089 '/'

Reach 125: (new node)

Inflow = 1.56 cfs @ 12.07 hrs, Volume= 0.115 af
Outflow = 1.53 cfs @ 12.08 hrs, Volume= 0.115 af, Atten= 2%, Lag= 0.7 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 6.0 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 2.3 fps, Avg. Travel Time= 0.8 min

Peak Depth= 0.36'
Capacity at bank full= 5.59 cfs
12.0" Diameter Pipe n= 0.012 Length= 113.0' Slope= 0.0210 '/'

Reach 128: (new node)

Inflow = 1.53 cfs @ 12.08 hrs, Volume= 0.115 af
Outflow = 1.51 cfs @ 12.09 hrs, Volume= 0.115 af, Atten= 1%, Lag= 0.6 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.5 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 1.4 fps, Avg. Travel Time= 0.8 min

Peak Depth= 0.54'
Capacity at bank full= 2.71 cfs
12.0" Diameter Pipe n= 0.012 Length= 71.0' Slope= 0.0049 '/'

Reach 130: (new node)

Inflow = 0.18 cfs @ 12.10 hrs, Volume= 0.013 af
Outflow = 0.18 cfs @ 12.11 hrs, Volume= 0.013 af, Atten= 1%, Lag= 0.4 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 4.2 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 1.7 fps, Avg. Travel Time= 0.7 min

Peak Depth= 0.11'
Capacity at bank full= 7.91 cfs
12.0" Diameter Pipe n= 0.012 Length= 74.0' Slope= 0.0420 '/'

Reach 135: (new node)

Inflow = 0.18 cfs @ 12.11 hrs, Volume= 0.013 af
Outflow = 0.17 cfs @ 12.13 hrs, Volume= 0.013 af, Atten= 5%, Lag= 1.5 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 4.8 fps, Min. Travel Time= 0.8 min
Avg. Velocity = 2.0 fps, Avg. Travel Time= 1.9 min

Peak Depth= 0.11'
Capacity at bank full= 3.10 cfs
8.0" Diameter Pipe n= 0.012 Length= 225.0' Slope= 0.0560 '/'

Reach 171: (new node)

Inflow = 2.69 cfs @ 12.07 hrs, Volume= 0.198 af
Outflow = 2.68 cfs @ 12.07 hrs, Volume= 0.198 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 14.8 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 5.6 fps, Avg. Travel Time= 0.1 min

Peak Depth= 0.26'
Capacity at bank full= 29.32 cfs
15.0" Diameter Pipe n= 0.012 Length= 31.0' Slope= 0.1755 '/'

Reach 172: (new node)

Inflow = 4.46 cfs @ 12.07 hrs, Volume= 0.333 af
Outflow = 4.44 cfs @ 12.08 hrs, Volume= 0.332 af, Atten= 1%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 16.9 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 6.4 fps, Avg. Travel Time= 0.1 min

Peak Depth= 0.33'
Capacity at bank full= 28.85 cfs
15.0" Diameter Pipe n= 0.012 Length= 32.0' Slope= 0.1700 '/'

Reach 181: (new node)

Inflow = 1.82 cfs @ 12.07 hrs, Volume= 0.134 af
Outflow = 1.79 cfs @ 12.08 hrs, Volume= 0.134 af, Atten= 2%, Lag= 0.6 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 7.7 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 2.9 fps, Avg. Travel Time= 0.7 min

Peak Depth= 0.31'
Capacity at bank full= 13.83 cfs
15.0" Diameter Pipe n= 0.012 Length= 125.0' Slope= 0.0390 '/'

Reach 210: (new node)

Inflow = 1.66 cfs @ 12.07 hrs, Volume= 0.123 af
Outflow = 1.61 cfs @ 12.09 hrs, Volume= 0.122 af, Atten= 3%, Lag= 1.2 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 4.1 fps, Min. Travel Time= 0.6 min
Avg. Velocity = 1.6 fps, Avg. Travel Time= 1.5 min

Peak Depth= 0.51'
Capacity at bank full= 3.23 cfs
12.0" Diameter Pipe n= 0.012 Length= 147.0' Slope= 0.0070 '/'

Reach 220: (new node)

Inflow = 4.90 cfs @ 12.09 hrs, Volume= 0.373 af
Outflow = 4.85 cfs @ 12.10 hrs, Volume= 0.373 af, Atten= 1%, Lag= 0.5 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 11.4 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 4.3 fps, Avg. Travel Time= 0.8 min

Peak Depth= 0.44'
Capacity at bank full= 26.19 cfs
18.0" Diameter Pipe n= 0.012 Length= 218.0' Slope= 0.0530 '/'

Reach 230: (new node)

Inflow = 12.36 cfs @ 12.08 hrs, Volume= 0.889 af
Outflow = 12.35 cfs @ 12.09 hrs, Volume= 0.889 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 25.9 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 9.5 fps, Avg. Travel Time= 0.1 min

Peak Depth= 0.47'
Capacity at bank full= 57.69 cfs
18.0" Diameter Pipe n= 0.012 Length= 71.0' Slope= 0.2570 '/'

Reach 240: (new node)

Inflow = 12.35 cfs @ 12.09 hrs, Volume= 0.889 af
Outflow = 12.33 cfs @ 12.09 hrs, Volume= 0.889 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 22.9 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 8.4 fps, Avg. Travel Time= 0.1 min

Peak Depth= 0.52'
Capacity at bank full= 48.44 cfs
18.0" Diameter Pipe n= 0.012 Length= 69.0' Slope= 0.1812 '/'

Reach 250: (new node)

Inflow = 12.33 cfs @ 12.09 hrs, Volume= 0.889 af
Outflow = 12.32 cfs @ 12.09 hrs, Volume= 0.889 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 11.9 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 4.4 fps, Avg. Travel Time= 0.1 min

Peak Depth= 0.73'
Capacity at bank full= 43.43 cfs
24.0" Diameter Pipe n= 0.011 Length= 36.0' Slope= 0.0264 '/'

Reach 260: (new node)

Inflow = 12.32 cfs @ 12.09 hrs, Volume= 0.889 af
Outflow = 12.29 cfs @ 12.09 hrs, Volume= 0.889 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 7.5 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 2.8 fps, Avg. Travel Time= 0.2 min

Peak Depth= 1.04'
Capacity at bank full= 23.22 cfs
24.0" Diameter Pipe n= 0.012 Length= 39.0' Slope= 0.0090 '/'

Reach 410: (new node)

Inflow = 1.54 cfs @ 12.07 hrs, Volume= 0.114 af
Outflow = 1.52 cfs @ 12.08 hrs, Volume= 0.114 af, Atten= 1%, Lag= 0.4 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.6 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 1.4 fps, Avg. Travel Time= 0.4 min

Peak Depth= 0.53'
Capacity at bank full= 2.77 cfs
12.0" Diameter Pipe n= 0.012 Length= 35.0' Slope= 0.0051 '/'

Reach 510: (new node)

Inflow = 6.89 cfs @ 12.07 hrs, Volume= 0.465 af
Outflow = 6.88 cfs @ 12.07 hrs, Volume= 0.465 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 26.2 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 9.4 fps, Avg. Travel Time= 0.0 min

Peak Depth= 0.31'
Capacity at bank full= 74.96 cfs
18.0" Diameter Pipe n= 0.012 Length= 23.0' Slope= 0.4339 '/'

Reach 810: (new node)

Inflow = 2.55 cfs @ 12.08 hrs, Volume= 0.171 af
Outflow = 2.53 cfs @ 12.08 hrs, Volume= 0.171 af, Atten= 1%, Lag= 0.5 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 14.5 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 5.3 fps, Avg. Travel Time= 0.6 min

Peak Depth= 0.28'
Capacity at bank full= 15.48 cfs
12.0" Diameter Pipe n= 0.012 Length= 200.0' Slope= 0.1608 '/'

Reach 820: (new node)

Inflow = 2.53 cfs @ 12.08 hrs, Volume= 0.171 af
Outflow = 2.51 cfs @ 12.09 hrs, Volume= 0.171 af, Atten= 1%, Lag= 0.5 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 12.2 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 4.5 fps, Avg. Travel Time= 0.7 min

Peak Depth= 0.31'
Capacity at bank full= 12.21 cfs
12.0" Diameter Pipe n= 0.012 Length= 192.0' Slope= 0.1000 '/'

Reach AST: (new node)

Inflow = 15.99 cfs @ 12.09 hrs, Volume= 1.164 af
Outflow = 15.90 cfs @ 12.10 hrs, Volume= 1.164 af, Atten= 1%, Lag= 0.3 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 19.8 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 7.6 fps, Avg. Travel Time= 0.5 min

Peak Depth= 0.78'
Capacity at bank full= 22.39 cfs
15.0" Diameter Pipe n= 0.011 Length= 214.0' Slope= 0.0860 '/'

Reach pipe: (new node)

Inflow = 1.26 cfs @ 12.08 hrs, Volume= 0.083 af
Outflow = 1.26 cfs @ 12.08 hrs, Volume= 0.083 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 5.6 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 2.2 fps, Avg. Travel Time= 0.1 min

Peak Depth= 0.33'
Capacity at bank full= 5.46 cfs
12.0" Diameter Pipe n= 0.012 Length= 10.0' Slope= 0.0200 '/'

Pond 2P: (new node)

Inflow = 0.46 cfs @ 12.08 hrs, Volume= 0.031 af
Outflow = 0.46 cfs @ 12.08 hrs, Volume= 0.031 af, Atten= 0%, Lag= 0.1 min
Primary = 0.46 cfs @ 12.08 hrs, Volume= 0.031 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Peak Elev= 107.29' Storage= 4 cf
Plug-Flow detention time= 0.3 min calculated for 0.031 af (100% of inflow)
Storage and wetted areas determined by Prismatic sections

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
107.00	13	0	0
120.00	13	169	169

Primary OutFlow (Free Discharge)
└1=Culvert

#	Routing	Invert	Outlet Devices
1	Primary	107.00'	**18.0" x 50.0' long Culvert** RCP, square edge headwall, Ke= 0.500 Outlet Invert= 106.50' S= 0.0100 '/' n= 0.011 Cc= 0.900

Pond 3P: (new node)

Inflow = 0.77 cfs @ 12.08 hrs, Volume= 0.052 af
Primary = 0.77 cfs @ 12.08 hrs, Volume= 0.052 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond 5P: (new node)

Inflow = 6.89 cfs @ 12.07 hrs, Volume= 0.465 af
Primary = 6.89 cfs @ 12.07 hrs, Volume= 0.465 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond 6P: (new node)

Inflow = 0.60 cfs @ 12.07 hrs, Volume= 0.041 af
Primary = 0.60 cfs @ 12.07 hrs, Volume= 0.041 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond 7P: (new node)

Inflow = 0.64 cfs @ 12.12 hrs, Volume= 0.064 af
Primary = 0.64 cfs @ 12.12 hrs, Volume= 0.064 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond 8P: (new node)

Inflow = 2.55 cfs @ 12.08 hrs, Volume= 0.171 af
Primary = 2.55 cfs @ 12.08 hrs, Volume= 0.171 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond 9P: (new node)

Inflow = 5.07 cfs @ 12.07 hrs, Volume= 0.345 af
Primary = 5.07 cfs @ 12.07 hrs, Volume= 0.345 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond 10P: (new node)

Inflow = 3.24 cfs @ 12.08 hrs, Volume= 0.230 af
Primary = 3.24 cfs @ 12.08 hrs, Volume= 0.230 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond 11P: (new node)

Inflow = 0.73 cfs @ 12.07 hrs, Volume= 0.054 af
Primary = 0.73 cfs @ 12.07 hrs, Volume= 0.054 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond 12P: (new node)

Inflow = 1.56 cfs @ 12.07 hrs, Volume= 0.115 af
Primary = 1.56 cfs @ 12.07 hrs, Volume= 0.115 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond 16p: (new node)

Inflow = 0.27 cfs @ 12.07 hrs, Volume= 0.020 af
Primary = 0.27 cfs @ 12.07 hrs, Volume= 0.020 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond CB-63: (new node)

Inflow = 3.13 cfs @ 12.10 hrs, Volume= 0.235 af
Outflow = 3.13 cfs @ 12.10 hrs, Volume= 0.235 af, Atten= 0%, Lag= 0.1 min
Primary = 3.13 cfs @ 12.10 hrs, Volume= 0.235 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Peak Elev= 60.98' Storage= 15 cf
Plug-Flow detention time= 0.2 min calculated for 0.235 af (100% of inflow)
Storage and wetted areas determined by Prismatic sections

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
59.80	13	0	0
66.00	13	81	81

Primary OutFlow (Free Discharge)
└1=Culvert

#	Routing	Invert	Outlet Devices
1	Primary	59.80'	**12.0" x 10.0' long Culvert** RCP, square edge headwall, Ke= 0.500 Outlet Invert= 58.46' S= 0.1340 '/' n= 0.012 Cc= 0.900

Pond dmh-20: (new node)

Inflow = 1.30 cfs @ 12.09 hrs, Volume= 0.088 af
Primary = 1.30 cfs @ 12.09 hrs, Volume= 0.088 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond hil-01: (new node)

Inflow = 1.82 cfs @ 12.07 hrs, Volume= 0.134 af
Primary = 1.82 cfs @ 12.07 hrs, Volume= 0.134 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond hil-02: (new node)

Inflow = 12.32 cfs @ 12.09 hrs, Volume= 0.889 af
Primary = 12.32 cfs @ 12.09 hrs, Volume= 0.889 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond OS-1.: (new node)

Inflow = 11.55 cfs @ 12.14 hrs, Volume= 0.894 af
Primary = 11.55 cfs @ 12.14 hrs, Volume= 0.894 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond SMH-13: (new node)

Inflow = 15.49 cfs @ 12.12 hrs, Volume= 1.239 af
Primary = 15.49 cfs @ 12.12 hrs, Volume= 1.239 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond SMH-20: (new node)

Inflow = 4.46 cfs @ 12.07 hrs, Volume= 0.333 af
Primary = 4.46 cfs @ 12.07 hrs, Volume= 0.333 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond SP-1: (new node)

Inflow = 1.26 cfs @ 12.08 hrs, Volume= 0.083 af
Primary = 1.26 cfs @ 12.08 hrs, Volume= 0.083 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond SP-2: (new node)

Inflow = 15.49 cfs @ 12.12 hrs, Volume= 1.239 af
Primary = 15.49 cfs @ 12.12 hrs, Volume= 1.239 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond sp-3: (new node)

Inflow = 1.30 cfs @ 12.09 hrs, Volume= 0.088 af
Primary = 1.30 cfs @ 12.09 hrs, Volume= 0.088 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond SP-4: (new node)

Inflow = 15.99 cfs @ 12.09 hrs, Volume= 1.164 af
Primary = 15.99 cfs @ 12.09 hrs, Volume= 1.164 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond SP-5: (new node)

Inflow = 5.07 cfs @ 12.07 hrs, Volume= 0.345 af
Primary = 5.07 cfs @ 12.07 hrs, Volume= 0.345 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond SP-6: (new node)

Inflow = 3.24 cfs @ 12.08 hrs, Volume= 0.230 af
Primary = 3.24 cfs @ 12.08 hrs, Volume= 0.230 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond SP-7: (new node)

Inflow = 0.27 cfs @ 12.07 hrs, Volume= 0.020 af
Primary = 0.27 cfs @ 12.07 hrs, Volume= 0.020 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Type III 24-hr Rainfall=4.70"
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: (new node)
Tc=5.0 min CN=84 Area=0.448 ac Runoff= 1.57 cfs 0.105 af

Subcatchment 2A: (new node)
Tc=5.0 min CN=98 Area=0.568 ac Runoff= 2.63 cfs 0.196 af

Subcatchment 2B: (new node)
Tc=5.0 min CN=80 Area=0.320 ac Runoff= 0.99 cfs 0.066 af

Subcatchment 2S: (new node)
Tc=5.0 min CN=98 Area=0.384 ac Runoff= 1.78 cfs 0.133 af

Subcatchment 3S: (new node)
Tc=5.0 min CN=89 Area=0.347 ac Runoff= 1.39 cfs 0.095 af

Subcatchment 4S: (new node)
Tc=5.0 min CN=98 Area=0.528 ac Runoff= 2.44 cfs 0.182 af

Subcatchment 5S: (new node)
Tc=5.0 min CN=91 Area=2.860 ac Runoff= 11.97 cfs 0.832 af

Subcatchment 6S: (new node)
Tc=5.0 min CN=91 Area=0.251 ac Runoff= 1.05 cfs 0.073 af

Subcatchment 7S: (new node)
Tc=5.0 min CN=62 Area=2.216 ac Runoff= 2.98 cfs 0.210 af

Subcatchment 8S: (new node)
Tc=5.0 min CN=89 Area=1.150 ac Runoff= 4.61 cfs 0.315 af

Subcatchment 9S: (new node)
Tc=5.0 min CN=92 Area=2.030 ac Runoff= 8.66 cfs 0.607 af

Subcatchment 10S: (new node)
Tc=5.0 min CN=87 Area=0.853 ac Runoff= 3.25 cfs 0.220 af

Subcatchment 11S: (new node)
Tc=5.0 min CN=98 Area=0.249 ac Runoff= 1.15 cfs 0.086 af

Subcatchment 12S: (new node)
Tc=5.0 min CN=98 Area=0.533 ac Runoff= 2.46 cfs 0.184 af

Subcatchment 13s: (new node)
Tc=6.2 min CN=78 Area=0.146 ac Runoff= 0.41 cfs 0.028 af

Subcatchment 14S: (new node)
Tc=5.0 min CN=76 Area=1.140 ac Runoff= 3.06 cfs 0.202 af

Subcatchment 15S: (new node)
Tc=5.0 min CN=43 Area=0.241 ac Runoff= 0.02 cfs 0.005 af

Subcatchment 16S: (new node)
Tc=5.0 min CN=98 Area=0.093 ac Runoff= 0.43 cfs 0.032 af

Subcatchment 17S: (new node)
Tc=5.0 min CN=98 Area=0.918 ac Runoff= 4.25 cfs 0.317 af

Subcatchment 18S: (new node)
Tc=5.0 min CN=98 Area=0.623 ac Runoff= 2.88 cfs 0.215 af

Subcatchment OS-1: OS-1
Tc=10.0 min CN=89 Area=6.030 ac Runoff= 20.76 cfs 1.651 af

Reach 1R: (new node)
Inflow= 22.39 cfs 2.120 af
Length= 10.0' Max Vel= 8.1 fps Capacity= 22.37 cfs Outflow= 22.39 cfs 2.120 af

Reach 110: (new node)
Inflow= 1.15 cfs 0.086 af
Length= 51.0' Max Vel= 4.2 fps Capacity= 1.31 cfs Outflow= 1.13 cfs 0.086 af

Reach 115: (new node)
Inflow= 3.54 cfs 0.268 af
Length= 83.0' Max Vel= 5.7 fps Capacity= 7.00 cfs Outflow= 3.51 cfs 0.268 af

Reach 118: (new node)
Inflow= 7.81 cfs 0.597 af
Length= 66.0' Max Vel= 6.6 fps Capacity= 10.76 cfs Outflow= 7.77 cfs 0.597 af

Reach 125: (new node)
Inflow= 2.46 cfs 0.184 af
Length= 113.0' Max Vel= 6.8 fps Capacity= 5.59 cfs Outflow= 2.42 cfs 0.184 af

Reach 128: (new node)
Inflow= 2.42 cfs 0.184 af
Length= 71.0' Max Vel= 3.9 fps Capacity= 2.71 cfs Outflow= 2.40 cfs 0.184 af

Reach 130: (new node)
Inflow= 0.41 cfs 0.028 af
Length= 74.0' Max Vel= 5.3 fps Capacity= 7.91 cfs Outflow= 0.41 cfs 0.028 af

Reach 135: (new node)
Inflow= 0.41 cfs 0.028 af
Length= 225.0' Max Vel= 6.1 fps Capacity= 3.10 cfs Outflow= 0.39 cfs 0.028 af

Reach 171: (new node)
Inflow= 4.25 cfs 0.317 af
Length= 31.0' Max Vel= 16.9 fps Capacity= 29.32 cfs Outflow= 4.24 cfs 0.317 af

Reach 172: (new node)
Inflow= 7.06 cfs 0.532 af
Length= 32.0' Max Vel= 19.2 fps Capacity= 28.85 cfs Outflow= 7.02 cfs 0.532 af

Reach 181: (new node) Inflow= 2.88 cfs 0.215 af
Length= 125.0' Max Vel= 8.8 fps Capacity= 13.83 cfs Outflow= 2.83 cfs 0.215 af

Reach 210: (new node) Inflow= 2.63 cfs 0.196 af
Length= 147.0' Max Vel= 4.6 fps Capacity= 3.23 cfs Outflow= 2.56 cfs 0.196 af

Reach 220: (new node) Inflow= 7.77 cfs 0.597 af
Length= 218.0' Max Vel= 12.9 fps Capacity= 26.19 cfs Outflow= 7.69 cfs 0.597 af

Reach 230: (new node) Inflow= 20.79 cfs 1.523 af
Length= 71.0' Max Vel= 29.9 fps Capacity= 57.69 cfs Outflow= 20.77 cfs 1.523 af

Reach 240: (new node) Inflow= 20.77 cfs 1.523 af
Length= 69.0' Max Vel= 26.3 fps Capacity= 48.44 cfs Outflow= 20.74 cfs 1.523 af

Reach 250: (new node) Inflow= 20.74 cfs 1.523 af
Length= 36.0' Max Vel= 13.6 fps Capacity= 43.43 cfs Outflow= 20.72 cfs 1.523 af

Reach 260: (new node) Inflow= 20.72 cfs 1.523 af
Length= 39.0' Max Vel= 8.3 fps Capacity= 23.22 cfs Outflow= 20.68 cfs 1.523 af

Reach 410: (new node) Inflow= 2.44 cfs 0.182 af
Length= 35.0' Max Vel= 4.0 fps Capacity= 2.77 cfs Outflow= 2.41 cfs 0.182 af

Reach 510: (new node) Inflow= 11.97 cfs 0.832 af
Length= 23.0' Max Vel= 30.8 fps Capacity= 74.96 cfs Outflow= 11.96 cfs 0.832 af

Reach 810: (new node) Inflow= 4.61 cfs 0.315 af
Length= 200.0' Max Vel= 17.0 fps Capacity= 15.48 cfs Outflow= 4.54 cfs 0.315 af

Reach 820: (new node) Inflow= 4.54 cfs 0.315 af
Length= 192.0' Max Vel= 14.4 fps Capacity= 12.21 cfs Outflow= 4.51 cfs 0.315 af

Reach AST: (new node) Inflow= 29.21 cfs 2.121 af
Length= 214.0' Max Vel= 20.7 fps Capacity= 22.39 cfs Outflow= 22.39 cfs 2.120 af

Reach pipe: (new node) Inflow= 2.55 cfs 0.170 af
Length= 10.0' Max Vel= 6.8 fps Capacity= 5.46 cfs Outflow= 2.55 cfs 0.170 af

Pond 2P: (new node) Peak Storage= 6 cf Inflow= 0.99 cfs 0.066 af
Primary= 0.99 cfs 0.066 af Outflow= 0.99 cfs 0.066 af

Pond 3P: (new node) Inflow= 1.39 cfs 0.095 af
Primary= 1.39 cfs 0.095 af

Pond 5P: (new node) Inflow= 11.97 cfs 0.832 af
Primary= 11.97 cfs 0.832 af

Pond 6P: (new node)
Inflow= 1.05 cfs 0.073 af
Primary= 1.05 cfs 0.073 af

Pond 7P: (new node)
Inflow= 2.98 cfs 0.210 af
Primary= 2.98 cfs 0.210 af

Pond 8P: (new node)
Inflow= 4.61 cfs 0.315 af
Primary= 4.61 cfs 0.315 af

Pond 9P: (new node)
Inflow= 8.66 cfs 0.607 af
Primary= 8.66 cfs 0.607 af

Pond 10P: (new node)
Inflow= 5.61 cfs 0.404 af
Primary= 5.61 cfs 0.404 af

Pond 11P: (new node)
Inflow= 1.15 cfs 0.086 af
Primary= 1.15 cfs 0.086 af

Pond 12P: (new node)
Inflow= 2.46 cfs 0.184 af
Primary= 2.46 cfs 0.184 af

Pond 16p: (new node)
Inflow= 0.43 cfs 0.032 af
Primary= 0.43 cfs 0.032 af

Pond CB-63: (new node)
Peak Storage= 58 cf Inflow= 7.50 cfs 0.525 af
Primary= 7.51 cfs 0.525 af Outflow= 7.51 cfs 0.525 af

Pond dmh-20: (new node)
Inflow= 3.06 cfs 0.202 af
Primary= 3.06 cfs 0.202 af

Pond hil-01: (new node)
Inflow= 2.88 cfs 0.215 af
Primary= 2.88 cfs 0.215 af

Pond hil-02: (new node)
Inflow= 20.72 cfs 1.523 af
Primary= 20.72 cfs 1.523 af

Pond OS-1.: (new node)
Inflow= 20.76 cfs 1.651 af
Primary= 20.76 cfs 1.651 af

Pond SMH-13: (new node)
Inflow= 27.15 cfs 2.211 af
Primary= 27.15 cfs 2.211 af

Pond SMH-20: (new node)
Inflow= 7.06 cfs 0.532 af
Primary= 7.06 cfs 0.532 af

Pond SP-1: (new node)
Inflow= 2.55 cfs 0.170 af
Primary= 2.55 cfs 0.170 af

Pond SP-2: (new node)
Inflow= 27.15 cfs 2.211 af
Primary= 27.15 cfs 2.211 af

Pond sp-3: (new node)
Inflow= 3.06 cfs 0.206 af
Primary= 3.06 cfs 0.206 af

Pond SP-4: (new node)
Inflow= 29.21 cfs 2.121 af
Primary= 29.21 cfs 2.121 af

Pond SP-5: (new node)
Inflow= 8.66 cfs 0.607 af
Primary= 8.66 cfs 0.607 af

Pond SP-6: (new node)
Inflow= 5.61 cfs 0.404 af
Primary= 5.61 cfs 0.404 af

Pond SP-7: (new node)
Inflow= 0.43 cfs 0.032 af
Primary= 0.43 cfs 0.032 af

Runoff Area = 21.928 ac Volume = 5.754 af Average Depth = 3.15"

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Type III 24-hr Rainfall=5.50"
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: (new node)
Tc=5.0 min CN=84 Area=0.448 ac Runoff= 1.95 cfs 0.131 af

Subcatchment 2A: (new node)
Tc=5.0 min CN=98 Area=0.568 ac Runoff= 3.08 cfs 0.231 af

Subcatchment 2B: (new node)
Tc=5.0 min CN=80 Area=0.320 ac Runoff= 1.25 cfs 0.083 af

Subcatchment 2S: (new node)
Tc=5.0 min CN=98 Area=0.384 ac Runoff= 2.08 cfs 0.156 af

Subcatchment 3S: (new node)
Tc=5.0 min CN=89 Area=0.347 ac Runoff= 1.68 cfs 0.116 af

Subcatchment 4S: (new node)
Tc=5.0 min CN=98 Area=0.528 ac Runoff= 2.86 cfs 0.214 af

Subcatchment 5S: (new node)
Tc=5.0 min CN=91 Area=2.860 ac Runoff= 14.34 cfs 1.007 af

Subcatchment 6S: (new node)
Tc=5.0 min CN=91 Area=0.251 ac Runoff= 1.26 cfs 0.088 af

Subcatchment 7S: (new node)
Tc=5.0 min CN=62 Area=2.216 ac Runoff= 4.34 cfs 0.296 af

Subcatchment 8S: (new node)
Tc=5.0 min CN=89 Area=1.150 ac Runoff= 5.57 cfs 0.385 af

Subcatchment 9S: (new node)
Tc=5.0 min CN=92 Area=2.030 ac Runoff= 10.34 cfs 0.732 af

Subcatchment 10S: (new node)
Tc=5.0 min CN=87 Area=0.853 ac Runoff= 3.97 cfs 0.271 af

Subcatchment 11S: (new node)
Tc=5.0 min CN=98 Area=0.249 ac Runoff= 1.35 cfs 0.101 af

Subcatchment 12S: (new node)
Tc=5.0 min CN=98 Area=0.533 ac Runoff= 2.89 cfs 0.216 af

Subcatchment 13s: (new node)
Tc=6.2 min CN=78 Area=0.146 ac Runoff= 0.52 cfs 0.036 af

Subcatchment 14S: (new node)
Tc=5.0 min CN=76 Area=1.140 ac Runoff= 3.95 cfs 0.261 af

Subcatchment 15S: (new node)
Tc=5.0 min CN=43 Area=0.241 ac Runoff= 0.06 cfs 0.009 af

Subcatchment 16S: (new node)
Tc=5.0 min CN=98 Area=0.093 ac Runoff= 0.50 cfs 0.038 af

Subcatchment 17S: (new node)
Tc=5.0 min CN=98 Area=0.918 ac Runoff= 4.98 cfs 0.373 af

Subcatchment 18S: (new node)
Tc=5.0 min CN=98 Area=0.623 ac Runoff= 3.38 cfs 0.253 af

Subcatchment OS-1: OS-1
Tc=10.0 min CN=89 Area=6.030 ac Runoff= 25.09 cfs 2.017 af

Reach 1R: (new node)
Inflow= 22.39 cfs 2.592 af
Length= 10.0' Max Vel= 8.1 fps Capacity= 22.37 cfs Outflow= 22.43 cfs 2.592 af

Reach 110: (new node)
Inflow= 1.35 cfs 0.101 af
Length= 51.0' Max Vel= 4.3 fps Capacity= 1.31 cfs Outflow= 1.33 cfs 0.101 af

Reach 115: (new node)
Inflow= 4.15 cfs 0.315 af
Length= 83.0' Max Vel= 5.9 fps Capacity= 7.00 cfs Outflow= 4.12 cfs 0.315 af

Reach 118: (new node)
Inflow= 9.15 cfs 0.702 af
Length= 66.0' Max Vel= 6.8 fps Capacity= 10.76 cfs Outflow= 9.11 cfs 0.702 af

Reach 125: (new node)
Inflow= 2.89 cfs 0.216 af
Length= 113.0' Max Vel= 7.1 fps Capacity= 5.59 cfs Outflow= 2.84 cfs 0.216 af

Reach 128: (new node)
Inflow= 2.84 cfs 0.216 af
Length= 71.0' Max Vel= 3.9 fps Capacity= 2.71 cfs Outflow= 2.81 cfs 0.216 af

Reach 130: (new node)
Inflow= 0.52 cfs 0.036 af
Length= 74.0' Max Vel= 5.7 fps Capacity= 7.91 cfs Outflow= 0.52 cfs 0.036 af

Reach 135: (new node)
Inflow= 0.52 cfs 0.036 af
Length= 225.0' Max Vel= 6.6 fps Capacity= 3.10 cfs Outflow= 0.51 cfs 0.036 af

Reach 171: (new node)
Inflow= 4.98 cfs 0.373 af
Length= 31.0' Max Vel= 17.7 fps Capacity= 29.32 cfs Outflow= 4.97 cfs 0.373 af

Reach 172: (new node)
Inflow= 8.28 cfs 0.626 af
Length= 32.0' Max Vel= 20.1 fps Capacity= 28.85 cfs Outflow= 8.26 cfs 0.626 af

Reach 181: (new node) Inflow= 3.38 cfs 0.253 af
Length= 125.0' Max Vel= 9.2 fps Capacity= 13.83 cfs Outflow= 3.32 cfs 0.253 af

Reach 210: (new node) Inflow= 3.08 cfs 0.231 af
Length= 147.0' Max Vel= 4.7 fps Capacity= 3.23 cfs Outflow= 3.00 cfs 0.231 af

Reach 220: (new node) Inflow= 9.11 cfs 0.702 af
Length= 218.0' Max Vel= 13.5 fps Capacity= 26.19 cfs Outflow= 9.03 cfs 0.701 af

Reach 230: (new node) Inflow= 24.73 cfs 1.824 af
Length= 71.0' Max Vel= 31.3 fps Capacity= 57.69 cfs Outflow= 24.70 cfs 1.824 af

Reach 240: (new node) Inflow= 24.70 cfs 1.824 af
Length= 69.0' Max Vel= 27.4 fps Capacity= 48.44 cfs Outflow= 24.68 cfs 1.824 af

Reach 250: (new node) Inflow= 24.68 cfs 1.824 af
Length= 36.0' Max Vel= 14.2 fps Capacity= 43.43 cfs Outflow= 24.65 cfs 1.824 af

Reach 260: (new node) Inflow= 24.65 cfs 1.824 af
Length= 39.0' Max Vel= 8.4 fps Capacity= 23.22 cfs Outflow= 24.59 cfs 1.824 af

Reach 410: (new node) Inflow= 2.86 cfs 0.214 af
Length= 35.0' Max Vel= 4.0 fps Capacity= 2.77 cfs Outflow= 2.82 cfs 0.214 af

Reach 510: (new node) Inflow= 14.34 cfs 1.007 af
Length= 23.0' Max Vel= 32.4 fps Capacity= 74.96 cfs Outflow= 14.33 cfs 1.007 af

Reach 810: (new node) Inflow= 5.57 cfs 0.385 af
Length= 200.0' Max Vel= 17.9 fps Capacity= 15.48 cfs Outflow= 5.49 cfs 0.385 af

Reach 820: (new node) Inflow= 5.49 cfs 0.385 af
Length= 192.0' Max Vel= 15.1 fps Capacity= 12.21 cfs Outflow= 5.46 cfs 0.385 af

Reach AST: (new node) Inflow= 35.64 cfs 2.593 af
Length= 214.0' Max Vel= 20.8 fps Capacity= 22.39 cfs Outflow= 22.39 cfs 2.592 af

Reach pipe: (new node) Inflow= 3.18 cfs 0.214 af
Length= 10.0' Max Vel= 7.2 fps Capacity= 5.46 cfs Outflow= 3.18 cfs 0.214 af

Pond 2P: (new node) Peak Storage= 6 cf Inflow= 1.25 cfs 0.083 af
Primary= 1.25 cfs 0.083 af Outflow= 1.25 cfs 0.083 af

Pond 3P: (new node) Inflow= 1.68 cfs 0.116 af
Primary= 1.68 cfs 0.116 af

Pond 5P: (new node) Inflow= 14.34 cfs 1.007 af
Primary= 14.34 cfs 1.007 af

Pond 6P: (new node)
Inflow= 1.26 cfs 0.088 af
Primary= 1.26 cfs 0.088 af

Pond 7P: (new node)
Inflow= 4.34 cfs 0.296 af
Primary= 4.34 cfs 0.296 af

Pond 8P: (new node)
Inflow= 5.57 cfs 0.385 af
Primary= 5.57 cfs 0.385 af

Pond 9P: (new node)
Inflow= 10.34 cfs 0.732 af
Primary= 10.34 cfs 0.732 af

Pond 10P: (new node)
Inflow= 6.72 cfs 0.487 af
Primary= 6.72 cfs 0.487 af

Pond 11P: (new node)
Inflow= 1.35 cfs 0.101 af
Primary= 1.35 cfs 0.101 af

Pond 12P: (new node)
Inflow= 2.89 cfs 0.216 af
Primary= 2.89 cfs 0.216 af

Pond 16p: (new node)
Inflow= 0.50 cfs 0.038 af
Primary= 0.50 cfs 0.038 af

Pond CB-63: (new node)
Peak Storage= 94 cf Inflow= 9.80 cfs 0.681 af
Primary= 9.83 cfs 0.681 af Outflow= 9.83 cfs 0.681 af

Pond dmh-20: (new node)
Inflow= 3.95 cfs 0.261 af
Primary= 3.95 cfs 0.261 af

Pond hil-01: (new node)
Inflow= 3.38 cfs 0.253 af
Primary= 3.38 cfs 0.253 af

Pond hil-02: (new node)
Inflow= 24.65 cfs 1.824 af
Primary= 24.65 cfs 1.824 af

Pond OS-1.: (new node)
Inflow= 25.09 cfs 2.017 af
Primary= 25.09 cfs 2.017 af

Pond SMH-13: (new node)
Inflow= 32.63 cfs 2.678 af
Primary= 32.63 cfs 2.678 af

Pond SMH-20: (new node)
Inflow= 8.28 cfs 0.626 af
Primary= 8.28 cfs 0.626 af

Pond SP-1: (new node)
Inflow= 3.18 cfs 0.214 af
Primary= 3.18 cfs 0.214 af

Pond SP-2: (new node)
Inflow= 32.63 cfs 2.678 af
Primary= 32.63 cfs 2.678 af

Pond sp-3: (new node)
Inflow= 3.98 cfs 0.270 af
Primary= 3.98 cfs 0.270 af

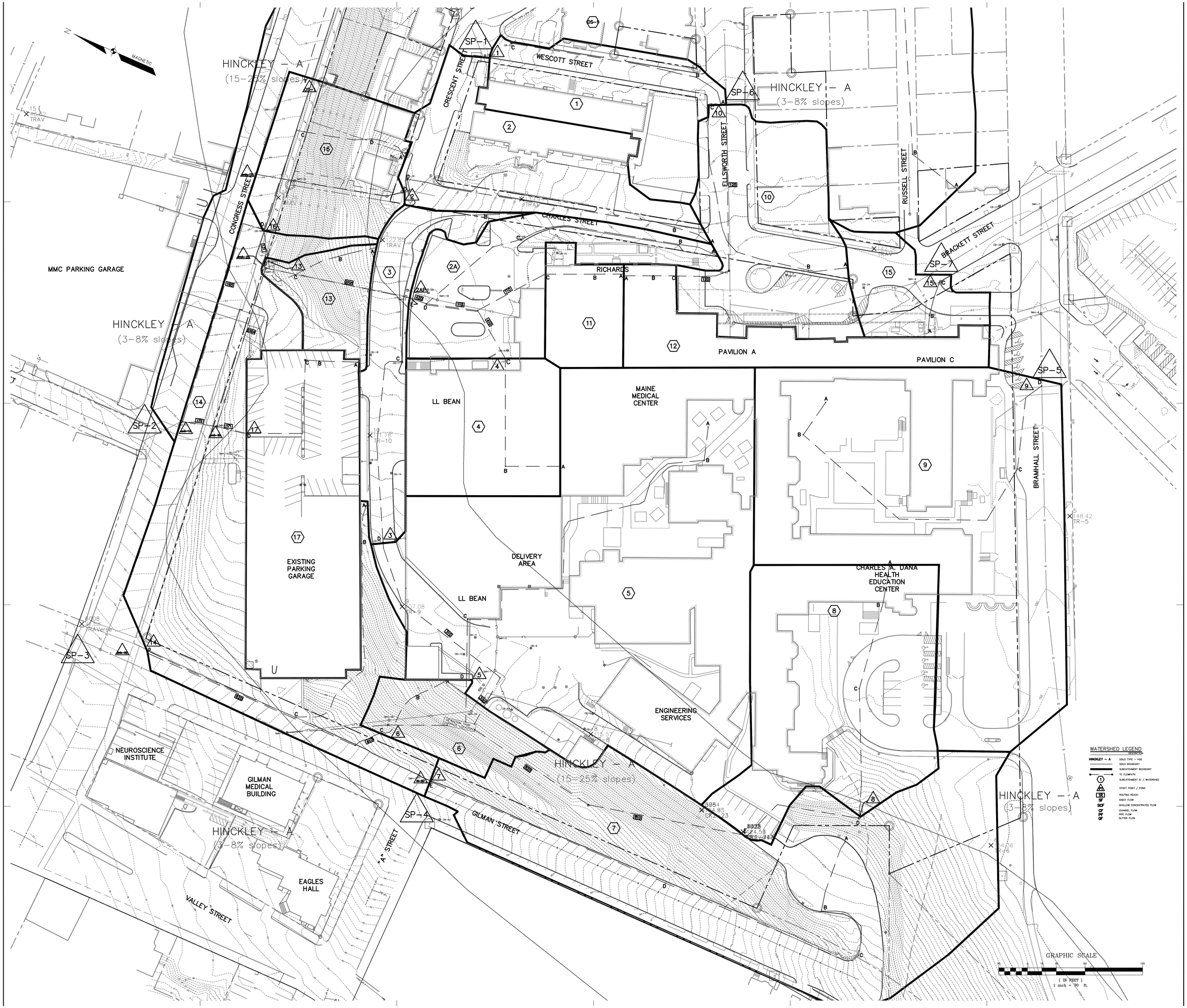
Pond SP-4: (new node)
Inflow= 35.64 cfs 2.593 af
Primary= 35.64 cfs 2.593 af

Pond SP-5: (new node)
Inflow= 10.34 cfs 0.732 af
Primary= 10.34 cfs 0.732 af

Pond SP-6: (new node)
Inflow= 6.72 cfs 0.487 af
Primary= 6.72 cfs 0.487 af

Pond SP-7: (new node)
Inflow= 0.50 cfs 0.038 af
Primary= 0.50 cfs 0.038 af

Runoff Area = 21.928 ac Volume = 7.014 af Average Depth = 3.84"



General Notes:

CITY REVIEW

MARK	ISSUE DATE	DESCRIPTION
	1–6–04	CITY REVIEW

Issue Log

Key Plan

TRO
ARCHITECTURE
PLANNING
ENGINEERING
INTERIOR DESIGN
The Ritchie Organization
80 Bridge Street
Newton, MA 02458-1134
617-969-9400

Maine Medical Center

Bramhall Street Campus
Portland, Maine

Drawing Title

PRE DEVELOPMENT WATERSHED PLAN

0 15 30 60 120

Commission No.	–	Date Issued	1–6–04
Scale	1"=30'	Sheet Number	C700
Drawn By	APP		
Approved By	WTC		
Filename	01046PRE.DWG		

Copyright (C) 2003 The Ritchie Organization

HINCKLEY – A
(15–25% slopes)

HINCKLEY – A
(3–8% slopes)

HINCKLEY – A
(3–8% slopes)

HINCKLEY – A
(3–8% slopes)

HINCKLEY – A
(15–25% slopes)

MAGNETIC

WESCOTT STREET

ELLSWORTH

CONGRESS STREET

RUSSELL STREET

BRACKETT STREET

BRAMHALL STREET

CHADWICK

GILMAN STREET

"A" STREET

VALLEY STREET

PROPOSED CHARLES STREET BUILDING

PROPOSED PARKING GARAGE

MMC PARKING GARAGE

PROPOSED SERVICE TUNNEL

RICHARDS

PAVILION A

PAVILION C

LL BEAN

MAINE MEDICAL CENTER

DELIVERY AREA

CHARLES A. DANA HEALTH EDUCATION CENTER

EXISTING PARKING GARAGE

LL BEAN

PROPOSED CENTRAL UTILITY PLANT

ENGINEERING SERVICES

NEUROSCIENCE INSTITUTE

GILMAN MEDICAL BUILDING

EAGLES HALL

6" DIAMETER DOWN STREAM DEFENDER TREATMENT UNIT

10" DIAMETER DOWN STREAM DEFENDER TREATMENT UNIT

SP–1 SP–2 SP–3 SP–4 SP–5 SP–6 SP–7

WATERSHED LEGEND

HINCKLEY – A — SOILS TYPE – HSG
SOILS BOUNDARY
SUBCATCHMENT BOUNDARY
TC FLOWPATH
SUBCATCHMENT ID / WATERSHED
STUDY POINT / POND
ROUTING REACH
SHEET FLOW
SCF — SHALLOW CONCENTRATED FLOW
CF — CHANNEL FLOW
PF — PIPE FLOW
GF — GUTTER FLOW

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

General Notes:

CITY REVIEW

MARK	ISSUE DATE	DESCRIPTION
	1–6–04	CITY REVIEW

Issue Log

Key Plan

TRO
ARCHITECTURE
PLANNING
ENGINEERING
INTERIOR DESIGN
The Ritchie Organization
80 Bridge Street
Newton, MA 02458-1134
617-969-9400

Maine Medical Center
Bramhall Street Campus
Portland, Maine

Drawing Title
POST DEVELOPMENT WATERSHED PLAN

0 15 30 60 120

Commission No.	–	Date Issued	1–6–04
Scale	1"=30'	Sheet Number	C701
Drawn By	APP		
Approved By	WTC		
Filename	01046POST.DWG		

Copyright (C) 2003 The Ritchie Organization

CITY OF PORTLAND WASTEWATER CAPACITY APPLICATION

Department of Public Services,
55 Portland Street,
Portland, Maine 04101-2991

Bradley Roland, P.E.
Water Resources Division

Date: February 2 2018

1. Please, Submit Utility, Site, and Locus Plans.

Site Address: Maine Medical Center 22 Bramhall St

Chart Block Lot Number: 053D007 / 054H001 / 064C001

Proposed Use: HOSPITAL
Previous Use: HOSPITAL
Existing Sanitary Flows: TBD GPD
Existing Process Flows: 0 GPD
Description and location of City sewer that is to receive the proposed building sewer lateral.

Congress Street

Site Category:
- Commercial *(see part 4 below)* ☐
- Industrial *(complete part 5 below)* ☐
- Governmental ☐
- Residential ☐
- Other *(specify)* HOSPITAL ☒

Clearly, indicate the proposed connections, on the submitted plans.

2. Please, Submit Contact Information.

City Planner's Name: Jean Fraser Phone: _____
Owner/Developer Name: _____
Owner/Developer Address: _____
Phone: _____ Fax: _____ E-mail: _____
Engineering Consultant Name: Will Conway, Sebago Technics
Engineering Consultant Address: _____
Phone: 200 2055 Fax: _____ E-mail: wconway@sebagotechnics.com

Note: Consultants and Developers should allow +/- 15 days, for capacity status, prior to Planning Board Review.

3. Please, Submit Domestic Wastewater Design Flow Calculations.

Estimated Domestic Wastewater Flow Generated: 2050 GPD
Peaking Factor/ Peak Times: _____
Specify the source of design guidelines: *(i.e.__"Handbook of Subsurface Wastewater Disposal in Maine," __"Plumbers and Pipe Fitters Calculation Manual," __ Portland Water District Records, Other (specify)* _____

Note: Please submit calculations showing the derivation of your design flows, either on the following page, in the space provided, or attached, as a separate sheet.

(6) STAFF TOILETS @ 325 GPD = 1950 GPD
(2) STAFF SINKS @ 50 GPD = 100 GPD

2050 TOTAL GPD

4. Please, Submit External Grease Interceptor Calculations.

Total Drainage Fixture Unit (DFU) Values: N/A

Size of External Grease Interceptor: _____

Retention Time: _____

Peaking Factor/ Peak Times: _____

Note: In determining your restaurant process water flows, and the size of your external grease interceptor, please use The Uniform Plumbing Code. Note: In determining the retention time, sixty (60) minutes is the minimum retention time. Note: Please submit detailed calculations showing the derivation of your restaurant process water design flows, and please submit detailed calculations showing the derivation of the size of your external grease interceptor, either in the space provided below, or attached, as a separate sheet.

5. Please, Submit Industrial Process Wastewater Flow Calculations N/A

Estimated Industrial Process Wastewater Flows Generated: _____ GPD

Do you currently hold Federal or State discharge permits? Yes ___ No ___

Is the process wastewater termed categorical under CFR 40? Yes ___ No ___

OSHA Standard Industrial Code (SIC): *(http://www.osha.gov/oshstats/sicser.html)*

Peaking Factor/Peak Process Times: _____

Note: On the submitted plans, please show where the building's domestic sanitary sewer laterals, as well as the building's industrial-commercial process wastewater sewer laterals exits the facility. Also, show where these building sewer laterals enter the city's sewer. Finally, show the location of the wet wells, control manholes, or other access points; and, the locations of filters, strainers, or grease traps.

Note: Please submit detailed calculations showing the derivation of your design flows, either in the space provided, or attached, as a separate sheet.

From:	Cough, Jamie
To:	Troidl, Adam
Subject:	CMP Ability to Provide Service-MMC Upgrades
Date:	Monday, February 5, 2018 9:32:59 AM
Attachments:	Easement_Information_Worksheet.doc Standard Easement Sample.pdf

2/02/18

Adam Troidl
Colliers International
*Sent via email to:*adam.troidl@colliers.com

RE: CMP Ability to Serve Letter for upgrades at MMC

Project Description:

Maine Medical Center is planning for a Vertical Expansion of the East Tower (60,000 sf), Heliport, and Visitor Garage Expansion (80,000 sf) on the existing primary metered campus on Congress Street. In preparation for this phase and additional projected work, CMP has completed design work in coordination with your team.

CMP has the ability to serve the proposed project in accordance with our CMP Handbook (web link below). We can provide you the desired pad or pole mounted transformers per your request and city approval, in accordance with our CMP Standards Handbook. If you have any questions on the process, or need help in completion of the documents, please feel free to contact CMP. For reference, here are the CMP New Service Milestones. We have completed through Step 7 in our process.

New Service Milestones

1. Call 1-800-565-3181 to establish a new account and an SAP work order.
2. Submit any electronic drawings (PDF (preferred) or DWG files) of the site layout and proposed electrical connections if you have them.
3. Submit Load information. Please complete this CMP spreadsheet using load information
4. Submit the easement information worksheet. Please complete this CMP form and either email or fax back to us.
5. Preliminary meetings with CMP to determine the details of job
6. Field planner design appointment to cost out job and develop CMP Invoice.
7. Submit invoice for payment.
8. Easements signed and payment received.
9. Job scheduled for completion after the electrical inspection has been received.

This process can take several months, depending upon several factors including transformer delivery, potential substation upgrades, return of completed paperwork, and other jobs in the system that may be ahead of yours. In addition, contact with the other utilities, including telephone and cable, should be commenced as soon as practical. They may have additional work or charges in addition to the CMP work required to bring your project on line.

For your convenience, here is a link to the CMP Website which contains our Handbook with details on most service requirements:

CMP Handbook of Standard Requirements
(http://www.cmpco.com/MediaLibrary/3/6/Content%20Management/YourAccount/PDFs%20and%20Docs/handbook.pdf)

Please be advised that if you plan to install solar/wind/hydro generation, you must complete an application under the MPUC mandated Chapter 324 Interconnection Standards. If you go to http://www.cmpco.com/YourAccount/puc324.html and follow the instructions for the Small Generator Interconnection Procedures, CMP can do this work in parallel to your service request that will be handled by me. If you project is under 660 KW You will be able to have a Customer Net Energy Billing contract. Information concerning Chapter 313 (

Customer Net Energy Billing) can be accessed thru the Chapter 324 website or by clicking here: Net Energy Billing .

If you have any questions, please contact us.

Attachments:
Easement Worksheet and Sample Standard Easement

Regards,

Jamie

Jamie Cough
Energy Services Advisor
Central Maine Power Company
162 Canco Road
Portland, ME 04103
207-842-2367 office
207-458-0382 cell
207-626-4082 fax



==========

Please consider the environment before printing this email.

If you have received this message in error, please notify the sender and immediately delete this message and any attachment hereto and/or copy hereof, as such message contains confidential information intended solely for the individual or entity to whom it is addressed. The use or disclosure of such information to third parties is prohibited by law and may give rise to civil or criminal liability.

The views presented in this message are solely those of the author(s) and do not necessarily represent the opinion of Avangrid Networks, Inc. or any company of its group. Neither Avangrid Networks, Inc. nor any company of its group guarantees the integrity, security or proper receipt of this message. Likewise, neither Avangrid Networks, Inc. nor any company of its group accepts any liability whatsoever for any possible damages arising from, or in connection with, data interception, software viruses or manipulation by third parties.

==========

Maine Medical Center
MaineHealth

PERKINS+WILL

MMC East Tower Expansion – City Design Comments

To:	City of Portland Planning Department
From:	Jeffrey Keilman, Perkins+Will; Al Green, MMC
Date:	January 19, 2018
Subject:	**MMC East Tower Expansion – Phase 1 Design Narrative**
Attachments	
	Slides shared with City Staff on January 16, 2018

Campus Vision

The campus transformation of Maine Medical Center draws its inspiration from its site, history, programmatic needs and most importantly the desire to create a sense of place. Specifically, the hospital will reflect its location within Portland and the state of Maine. The goal is to preserve the historic character of the existing campus yet provide the opportunity for new design identities to develop that represent the modern delivery of healthcare and the future of Maine Medical Center.

Many key design drivers and interventions envisioned for Maine Medical Center's campus transformation balance the clinical needs of the hospital with the campus' place within the city of Portland. Included is a primary effort to improve the built environment of MMC's campus relationship with the city. This goal is balanced with the clinical needs of the patients served by MMC. Healthcare design has to start with the internal program and layout to ensure a successful and functional design. From there, the exterior design can begin to take shape and be informed by the internal concepts.

The ultimate success of the project will be to provide a positive patient and visitor experience. The creation of healing environments is an essential element to the design of the submitted projects. This is through the incorporation of nature, natural light, and the blending of interior and exterior. Access to views and light are proven to improve positive patient outcomes. Proper location and use of glass and transparency provides connections to the exterior to improve patient experience but also to further reinforce wayfinding.

The current projects submitted within this Site Plan application were developed as a continuation of existing conditions. The façade of the East Tower expansion will relate to the existing conditions and massing of the East Tower by utilizing metal panel and glass.

The internal planning strategies, critical for a clinically driven building, aimed to blend the exterior with the interior through strategic planning that enabled the interiors to be opened up to and expressed on the exterior through the large corner windows.

The East Tower Expansion is conceived as the next phase in the campus replacement and modernization that will continue to blend and blur the new and existing campus architecture. The

addition will continue to link the vision started with the Bean 2 surgical expansion and will culminate with the Congress St. addition.

Context

The East Tower and Visitor Garage expansions are extensions of existing conditions, and as such derive many of the material choices from the existing adjacent construction.

Through the design process, the team explored the impact of the structures from various viewpoints understanding the additions scale within the urban context. Multiple angles and views were analyzed by the design team in conjunction with Maine Medical Center, including long-views, which influenced the decisions of various fenestration patterns and scale. This is particularly important for the East Tower addition which is visible from many points in the city. The design responds to both the long views with the use of scale of fenestration, but also manages to respond to local context through the attention to details, and sensitivity to materials and palate from the campus and neighborhood.

Building Design

The current Site Plan submission outlines (2) projects that are expansions and extensions of existing conditions. Within this context the design process still aimed to express the internal program constraints and create a dialogue between the interior and exterior.

Design is always subjective but the process to reach the current solution was reviewed and vetted by many parties, including critical voices form Maine Medical Center but also internally to Perkins+Will with multiple peer design reviews. The Perkins+Will internal review includes international designers as well as those from across the United States. The proposed design was universally selected as the best option to meet with the campus vision and existing context.

The design team believes the response for the East Tower expansion is in line with the key elements of design outlined through the design guidelines established in MMC's Institutional Development Plan, including the attention to proportion, rhythm, and use of materials. Design iterations were studied and reviewed by multiple stakeholders, including Maine Medical Center. The proposed design was the first solution where all parties agreed that the strategy successfully unifies the existing structure with the new addition while meeting the stringent interior requirements for advanced patient care in a healthcare setting.

By maximizing and utilizing the opportunities provided by the massing and proportions, the design is unified with the existing structure, but also creates urban scale gestures recognizing the prominence within the city. In particular, the scale of multistory fenestration and use of rhythm provided by the interior program.

One key design approach was to limit the current idiosyncrasies that are on the existing East Tower building that are not represented by any of the adjacent structures on the Maine Medical campus. In particular, the pavilions, Richards, and Bean are buildings that have a minimalist approach to massing and detailing on their exterior facades. In essence, the proposed design is more compatible with the existing campus and future goals outlined within the previously approved IDP. This was achieved by

simplifying the palate of materials and utilizing the existing materials on the structure. Introduction of new materials or further reinforcing the banding would have the opposite effect of creating a larger impact of the massing within the city and the campus.

The Visitor Garage expansion will match the current rhythm and proportions of the existing garage. The street façade of the Visitor Garage is an existing condition however opportunities for activation are being considered currently.

Building Materials

The selected materials for each addition are derived from the existing materials on the building and are as follows:

- East Tower – White Aluminum Composite Panels and Glass Curtain Wall
- Visitor Garage – Precast Concrete Panels with imbedded brick

Design Constraints

As with any building addition or expansion, existing conditions and real world constraints are critical in determining the final design solution. In particular, constructability for both the East Tower and Visitor Garage were important design drivers. Capacity within the existing structure, feasibility of installation of façade systems, and schedule were considered in selecting the final design solution.

hcc: Project File
Chuck Siconolfi – P+W
Romeo Moreira – P+W
Rashid Ashraf – P+W
Adam Troidl - Colliers
Mark Harris - MMC
Walter Pochebit – MMC
Al Green – MMC
Dennis Morelli - MMC

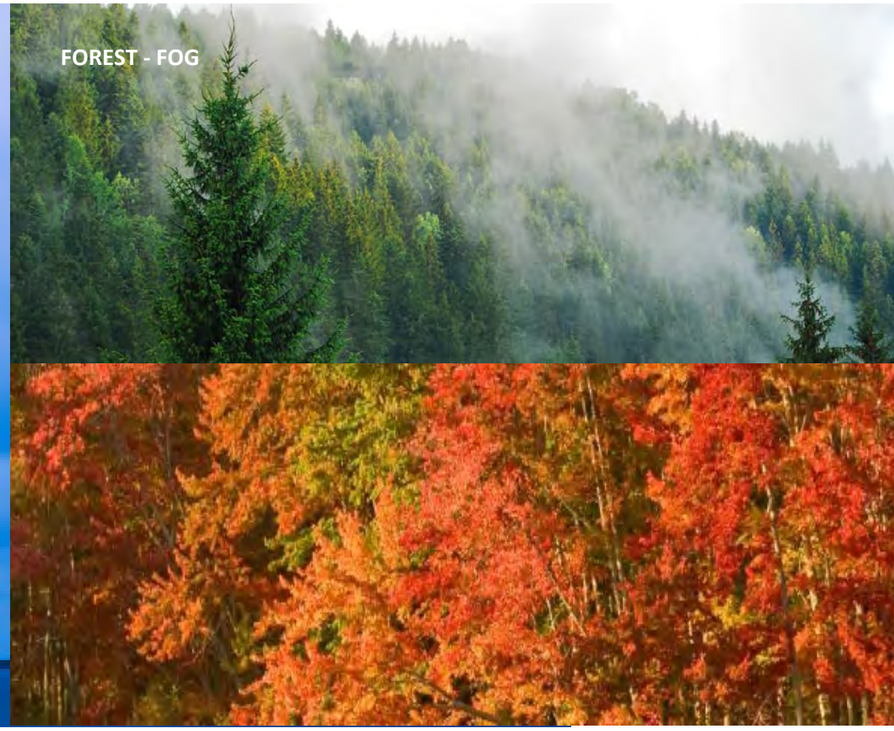
MMC SITE PLAN SUBMISSION

EAST TOWER & VISITOR GARAGE

CONCEPT DIAGRAMS







SOLID HEAVY



SOLID / LIGHT



ETHEREAL







INTEGRATION OF INSIDE AND OUTSIDE



Blurring the lines between the inside and the outside to bring the garden into the hospital.





CIRCULATION













MATERIALS INSPIRED BY MAINE









50 YEAR PALETTE

Use of natural materials take clues from nature to create a timeless environment.













50 PALETTE



Sky



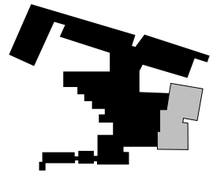
Sea



Land

COLOR OPTIONS

FLOOR PLAN



Views to White Mountains



Views to Casco Bay



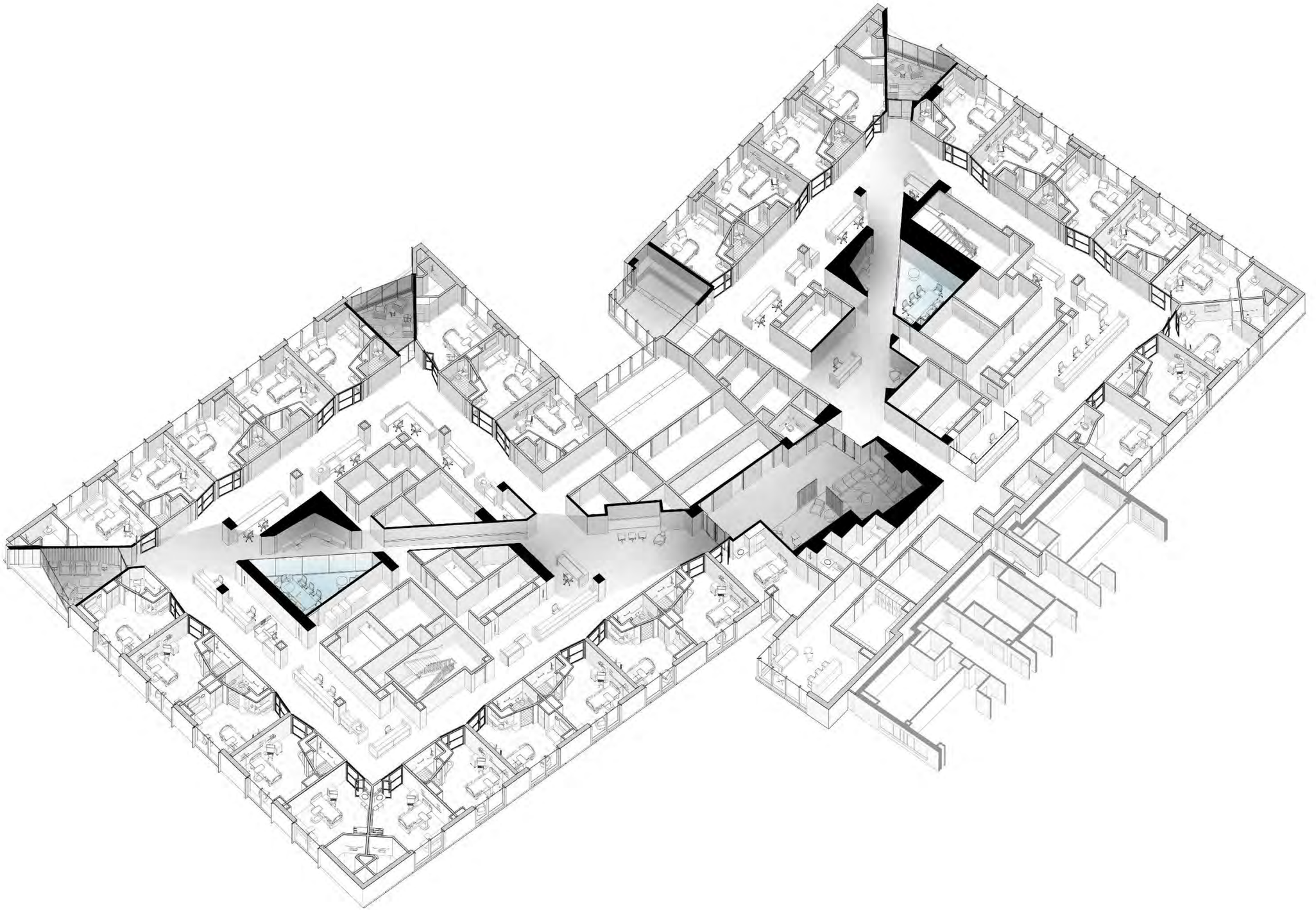
Views to Portland Water Front



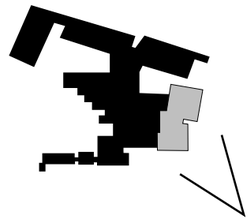


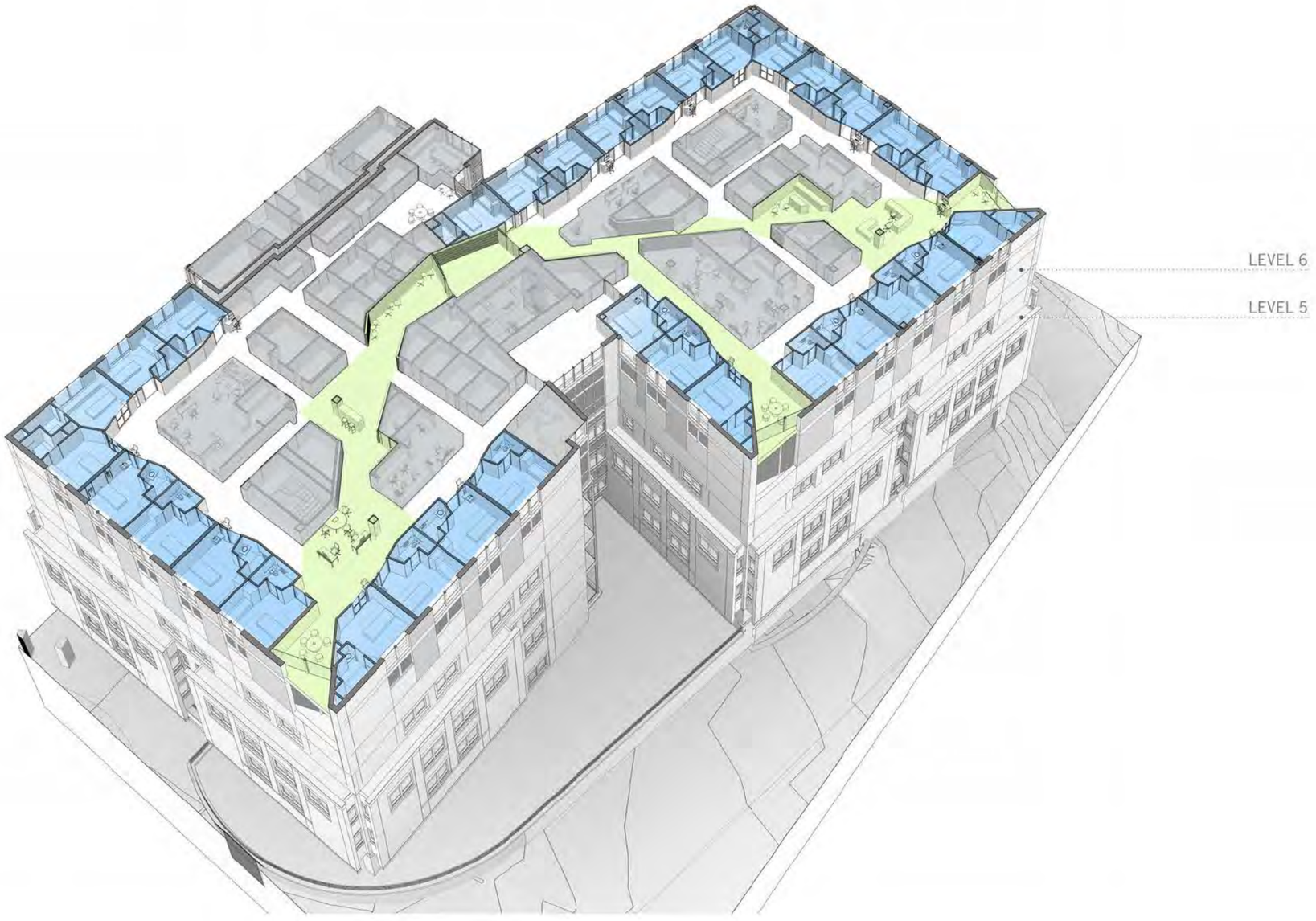
0 10 20 50

AXONOMETRIC



AXONOMETRIC



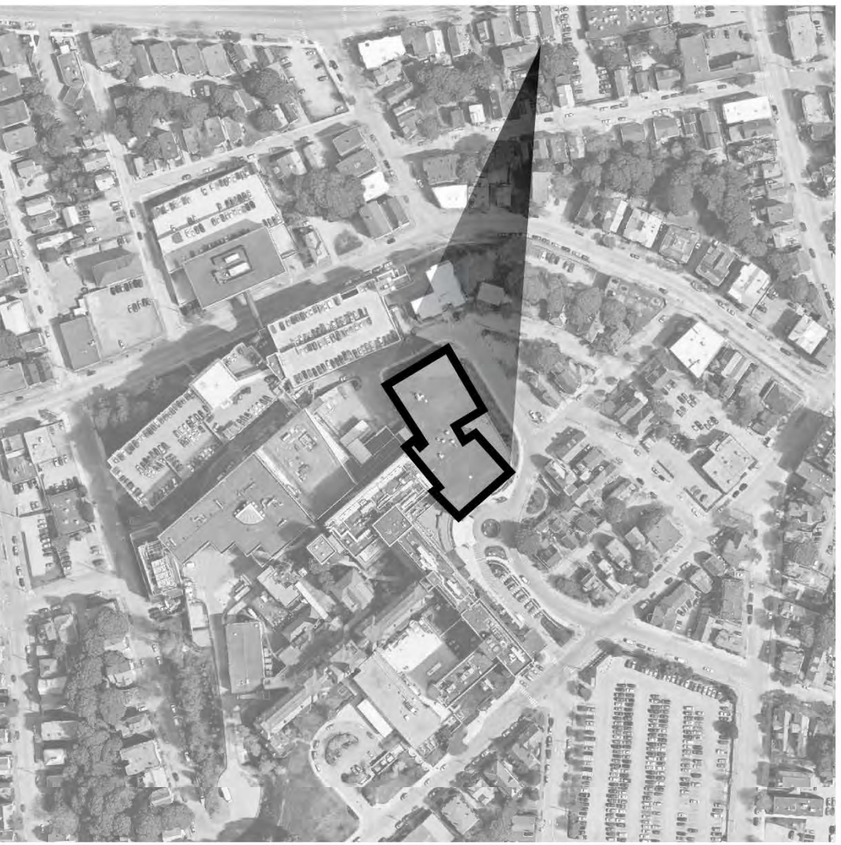


CAMPUS AERIAL





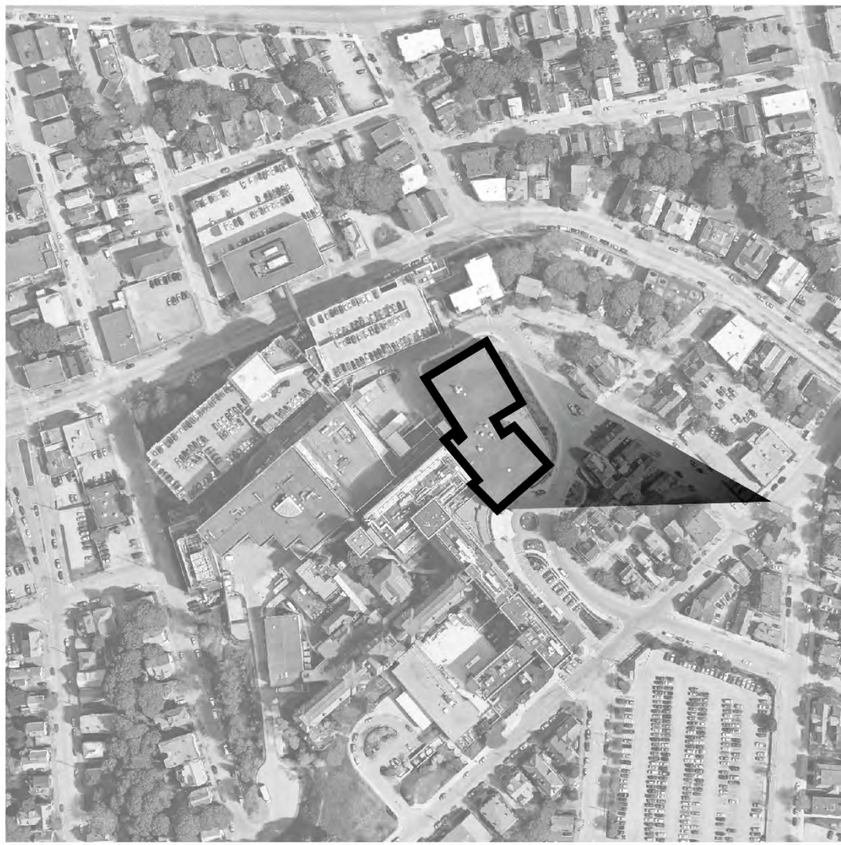




AERIAL VIEW



VIEW FROM BRAMHALL ST



VIEW FROM HILL ST


AERIAL VIEW
South West



South West





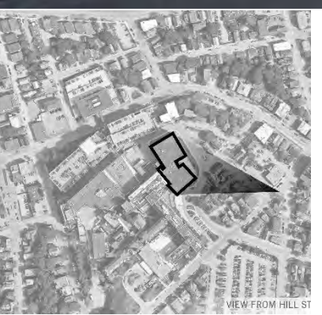




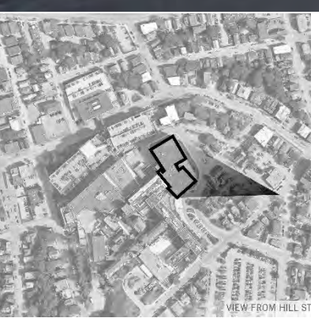
Bramhall and Chadwick Street



Bramhall and Chadwick Street

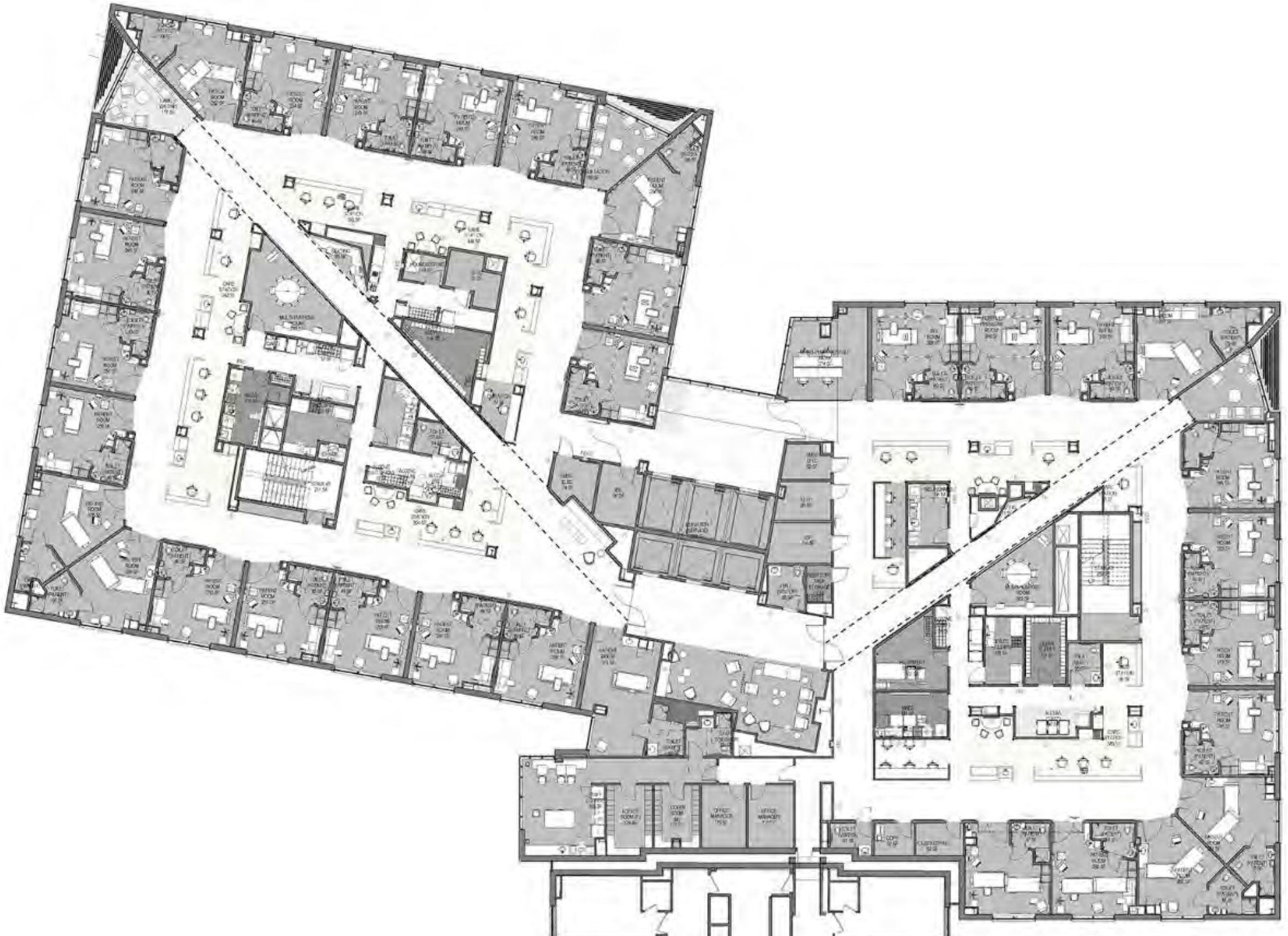


Bramhall and Hill Street



Bramhall and Hill Street

TYPICAL FLOOR PLAN



EAST ELEVATION



NORTH ELEVATION



SOUTH ELEVATION



WEST ELEVATION

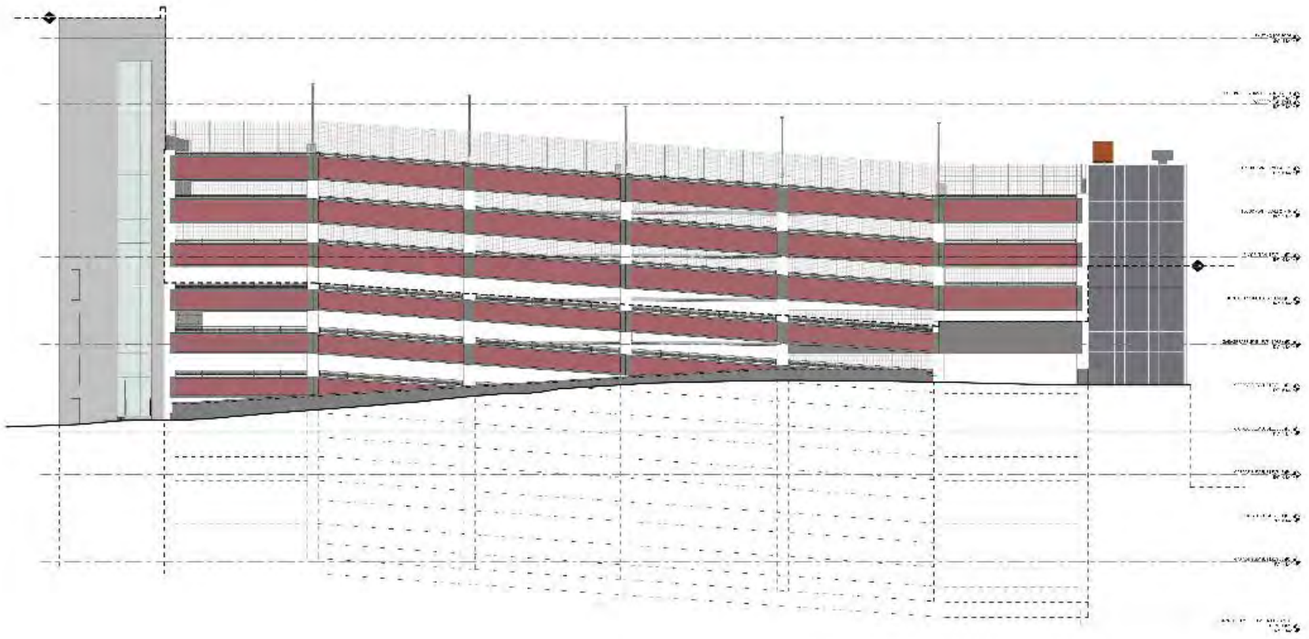


Visitor Garage Expansion

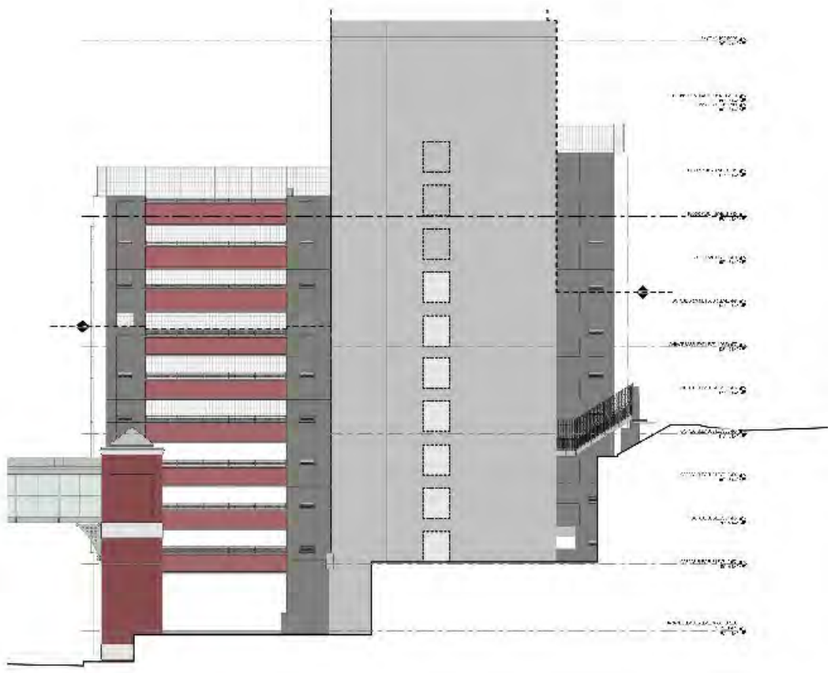
EXISTING



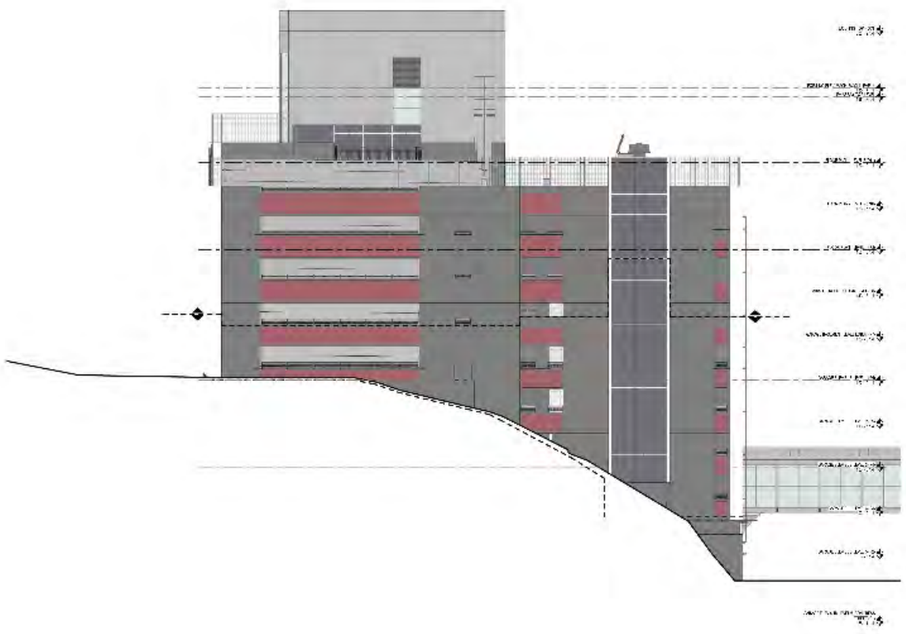
SOUTH ELEVATION



WEST ELEVATION



EAST ELEVATION



NORTH ELEVATION



APPENDIX




US-1
Hide imagery




GROVER C
EDITH C. RICHARDS
MEMORIAL
MAIN




WESCOTT ST
ELLSWORTH ST
STOP
NO PARKING ANY TIME
Maine Medical Center
EMERGENCY
Trauma Center
Parking Garage
Main Entrance
South Entrance
South Lot








Medical Center
Maine

Maine Medical Center
MaineHealth

PERKINS+WILL

MMC East Tower Expansion – City Design Comments

To:	Al Green
From:	Jeffrey Keilman
Date:	February 20, 2018
Subject:	**MMC East Tower Expansion – City Design Comments**
Attachments	N/A

The purpose of this memorandum is to document and provide design team responses to the Design Comments provided by City of Portland Staff and comments made by the Planning Board on 01.23.2018.

#1 Comment

Mixed feelings about use of white panels - too sterile or stark contrast, not recessive enough? Provide renderings showing options for material choices, grey or silver were specifically mentioned

Respond to question about re-cladding existing white on building

Address request for integration: Integration of existing building elements and new - looks like an addition

Additional Staff Comments: aligned with PB comment, continue to have some concern about the facade integration of the new and existing - especially in overall facade composition, proportion, and articulation. The existing building has a high level of articulation while the proposed new is much more minimal. Please clarify where new metal panel is proposed and where existing to remain and the strategy around getting those to match or blend. Staff suggest you consider articulation strategies in the new section that address these integration concerns whether that is a horizontal band, dimensional elements, color or other strategies.

Response

The design team appreciates the comments and understands the concerns. After careful consideration and reviewing past designs and studies, MMC and the Design Team feels strongly that the decision to continue the existing white metal panel on the East Tower expansion is still the correct design decision. This decision is based first on the fact that all the existing conditions on, surrounding, and below the East Tower utilize white metal panels. This is highlighted in the context photos of campus indicating areas of white panels existing including the bays and cap of East Tower,

the ED Entrance, and the Bean connectors and addition (see Figure 1). Along with the use of metal panel, the continuation of curtain wall from the existing reveals in the mass are continued up into the new addition, effectively helping to stitch the buildings together. Deviations in materials from the existing campus palate will create more discrepancy of new versus old.



FIGURE 1 – East Tower Context photos

Along with the referencing the existing context of the MMC Campus, the East Tower addition's use of white panel is also due to the fact that this will have the most atmospheric transitions in conjunction with the ever changing environment of Maine. White panels will shift in tone and color depending upon bright sunlight, overcast skies, or even fog, not unlike the white light house illustrated as a precedent example (see Figure 2). Other colors and materials will not have this same effect and will in essence create a more dominant massing.

February 20, 2018

Re: **MMC East Tower Expansion – City Design Comments**



FIGURE 2 – Light House Precedent Example

In healthcare design, the interior program drives the exterior of the building which is different than in residential or office construction. All aspects of the building are designed around meeting patient needs. At a detail level, articulation strategies to blend the design have been incorporated into the design including recessed bands/reveals to alleviate concerns as the building transitions from new to old. The detailing of key fenestration (spacing of windows) and other areas are also sensitive to the existing building's detail without being too wrought to allow for the addition to work at both a localized scale and at the urban scale. In particular, the scale of the windows relates specifically to the interior program of private patient rooms with a focus on connection to views and nature for patients and families. Strategies to intervene onto the existing building with specific material changes are not recommended because of a significant impact to patient care and compromises to the integrity of the building envelope. The new East Tower Addition will function mechanically as an independent building and the building envelope is designed to perform in conjunction with this. Modifications to lower levels of the existing building would require significant reengineering of the building science to ensure that the integrity of the envelope is not comprised, and in turn the patient care experience is not compromised.

February 20, 2018
Re: **MMC East Tower Expansion – City Design Comments**

#2 Comment

Clarify integration of East Tower and Visitor Garage proposal related to future campus design
Integration into neighborhood (especially at the edges, entrances, blank walls, retail)
Long-term plan for Congress Street retail facade improvements
How will streetscape at South Entrance change when new entrance is added on Congress Street?

Response

Aerial images (Figure 3) highlight how the East Tower design is an extension of the existing East Tower and is an element that links with recent additions such as Bean 2 addition and future phases including the Congress St. patient care tower. Key in this approach is how the architecture reflects to the MMC mission and represents the delivery of modern healthcare.

This phase of the project specifically with the overbuild of East Tower does not envision any changes to the campus edges of streetscape for the South or Bramhall entrances. Clinical services will still exist at these locations and MMC, being an urban campus, will still require entrances to serve those patient populations.



FIGURE 3 – Ariel Image of Proposed and Future Developments

February 20, 2018

Re: **MMC East Tower Expansion – City Design Comments**

#3 Comment

Screening of mechanicals on garage

Response

The existing garage only has a small rooftop fan unit that serves the eastern glass egress stair. Based on size and location, this unit is not visible. The Visitor Garage expansion is relocating this unit on top of the expand stair tower raising its height and further limiting any site lines to the unit.

February 20, 2018
Re: **MMC East Tower Expansion – City Design Comments**

#4 Comment

Concerns with parking garage design - rooftop fence quality, facade improvements

City Staff: There are two opportunities to update or improve the design character of the garage - the fall protection fence, especially on the top level, and the metal screens.

Response

The existing fall protection fencing on the Visitor Garage is planned to be relocated to the upper level of the addition. Photos have been provided that indicate the details of the system (Figure 4). The current system is a tight mesh that is painted white with limited vertical supports as required to meet the programmatic requirements of a fall protection system. Fall protection requires that the element be a tight mesh to limit abilities for individuals to easily climb the system, providing greater security. The system as currently installed has a minimal visual impact.



FIGURE 4 – Visitor Garage Fencing System

The current screens on the garage are a white grid that aims to add articulation and reduce the scale of some of the larger proportional elements of the garage. The addition replicates this design element to further refine and connect the new with the old so as to eliminate any discrepancies between the phases.

The garage is an open, naturally ventilated garage and the percentage of open air needs to be maintained or else the garage will not meet code.

MAINE MEDICAL CENTER LEVEL III SITE PLAN APPLICATION
EAST TOWER / VISITOR GARAGE VERTICAL EXPANSIONS
WRITTEN SUBMISSION S – 12 SITE LIGHTING NARRATIVE

A LIGHTING PLAN FOR THE VISITOR GARAGE IS FILED IN EPLAN AS PLAN 10A.
THE APPLICANT PROPOSES TO SIMPLY RELOCATE THE EXISTING LIGHT FIXTURES CURRENTLY AT THE TOP LEVEL TO THE NEW TOP LEVEL. THESE FIXTURES ARE LED FULL CUTOFF FIXTURES – CUT SHEET FROM THE 2005 CONSTRUCTION FILES IS ATTACHED , AND IS DIFFICULT TO READ – ALSO SEE ATTACHED PHOTOGRAPH. BECAUSE THESE FIXTURES ARE LOCATED IN THE CENTER OF THE STRUCTURE, THEY WILL NOT BE VISIBLE FROM ADJACENT GROUND LEVEL VIEW AREAS.

A LIGHTING PLAN FOR THE HELIPORT IS FILED IN EPLAN AS PLAN 10B. THE FIXTURES ON THE HELIPORT ARE NAVIGATIONAL FIXTURES AS REQUIRED AND REGULATED BY THE FAA. THESE FIXTURES WILL ONLY BE ILLUMINTAED DURING ARRIVAL AND DEPARTURE TIMES FOR AIRCRAFT.

LED AREA LIGHT - MEDIUM (XAM)

Crossover SOLID-STATE LIGHTING

LUMINAIRE ORDERING INFORMATION

TYPICAL ORDER EXAMPLE: **XAM 2 LED 119 CW UE WHT PCI120**

Prefix	Distribution	Light Source	# of LEDs	LED Color Temperature	Line Voltage	Luminaire Finish	Options
XAM - Area Medium	2 - Type 2 3 - Type 3 FT - Forward Throw 5 - Type 5	LED	119	CW - Cool White (5700°K nom.)	UE - Universal Voltage (100-277) 347 480	SLV - Black BRZ - Bronze BLP - Bull GPT - Graphite MSV - Metallic Silver PCP - Platinum Plus SVG - Satin Verde Green WHT - White	Button Type Photocells PCI 120 - 120v PCI 208 - 208v PCI 240 - 240v PCI 277 - 277v PCI 347 - 347v PCR - Twistlock Photoelectric Control Receptacle TB - Terminal Block

LUMINAIRE EPA CHART* - XAM

Single	1.2
2180°	2.4
090°	2.8
780°	3.4
TW120°	3.4
090°	4.8

ACCESSORY ORDERING INFORMATION

(Accessories are field installed)

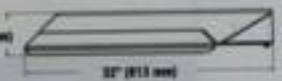
Description	Order Number
BKA-XSO-(C)-(-CLR - 6" Extension Arm	
BKC-XSO-WM-* - CLR - Wall Mounting Bracket	
DVS - Direct View Shield (visor mount only)	
5.5APP Round Pole Plate for 4" Poles	
3.5APP Round Pole Plate for 3" Poles	
PC 120 - Photocell for use w/ PCI option (120V)	
PC 208-277 - Photocell for use w/ PCR option (208V, 240V or 277V)	
PC 347 - Photocell for use w/ PCR option (347V)	
PC 480 - Photocell for use w/ PCR option (480V)	

NOTES:
1. Replace "CLR" with desired color (ex. 360186BRZ).
2. Direct View Shield adds to fixture EPA. Consult factory.

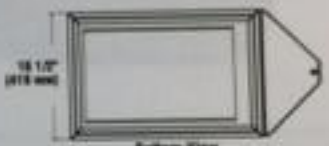
DIMENSIONS



Front View

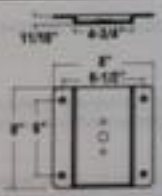


Side View



Bottom View

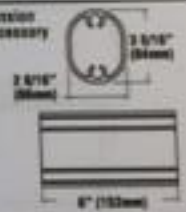
Wall Bracket



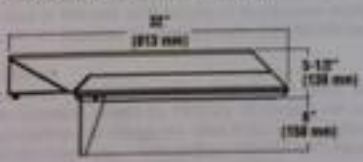
Round Pole Plate Accessory



5" Extension Arm Accessory



DVS - Direct View Shield (300867CLR)



© 2010 LSI INDUSTRIES INC.

Project Name: mmc Parking Garage Fixture Type: F2

Catalog #: XAM-2-LED-119-CW-UE-MSV

LSI

LED AREA LIGHT - MEDIUM (XAM)

Crossover SOLID STATE LIGHTING



U.S. and international patents pending

EXPECTED LIFE - Minimum 60,000 hours to 100,000 hours depending upon the ambient temperature of the installation location. See LSI web site for specific guidance.

LEDS - Select high-brightness LEDs. 5750°K color temperature (nominal).

DISTRIBUTION/PERFORMANCE - Types 2, 3, FT*, and 5. Exceptional uniformity with full cutoff creates bright environment at lower light levels. Improved backlight cutoff minimizes light trespass.

HOUSING - Housing is die-formed aluminum. Weather-tight housing contains factory prewired driver and field connections. Wiring access door is located underneath and utilizes tool-less thumbscrew fastener.

OPTICAL UNIT - Lens is clear, flat tempered glass, sealed to aluminum optics housing to create an IP67 rated, sealed optical unit.

MOUNTING - Tapered rear design allows fixtures to be mounted in a quad pattern without the need for extension arms. Use with Crossover steel round and steel square poles. See separate data sheets.

ELECTRICAL - Universal voltage power supply 120-277 VAC. (50/60 Hz) input. Also available in 347 volt and 480 volt. Supply voltage must be specified for use with optional button-type photocells. PCI is available in 120, 208, 240, 277 or 347 volt. Optional twistlock photocell receptacle is also available. Photocell must be ordered separately. See accessories.

DRIVER - State-of-the-art driver technology designed specifically for LSI LED light sources provides unsurpassed system efficiency. Components are fully encased in potting material for moisture resistance. Driver complies with IEC and FCC standards.

OPERATING TEMPERATURE - -40°C to +50°C (-40°F to +122°F).

FINISH - Fixtures are finished with LSI's DuraGrip® polyester powder coat finishing process. The DuraGrip finish withstands extreme weather changes without cracking or peeling, and is guaranteed for five full years. Standard colors include bronze, black, platinum plus, buff, graphite, satin verde green, metallic silver and white.

WARRANTY - LSI LED fixtures carry a limited 5-year warranty.

PHOTOMETRICS - Application layouts are available upon request. Contact LSI Applications Group at lighting.apps@lsi-industries.com

SHIPPING WEIGHT - 27.0 lbs (12.7 kg)

LISTING - ETL listed to U.S. and International safety standards. Suitable for wet locations.

* FT distribution is classified as semi-cutoff.

lighting facts™

Light Output (Lumens)	9896
Watts	139.5
Lumens per Watt (Efficacy)	71
Color Accuracy	70
Light Color	5750 (Daylight)

Visit www.lightingfacts.com for the Label Reference Guide.

This "Lighting Facts Label" represents LSI's commitment, through participation in the Department of Energy's SSL Quality Advocates program, to accurately report performance criteria of our LED fixtures. **This label represents a single test of a single fixture. Input power below represents rated values for the family.** Color temperature and lumen output for each variation of this Crossover® fixture can be found in the ordering information below as well as at www.lightingfacts.com.

IP67 CE ETL Intertek Suitable for wet locations RoHS COMPLIANT FC

American Innovation American Made

IDA

LIGHT OUTPUT		
Fixture	Distribution	Lumens (Nominal)
XAM	Type 2	9900
	Type 3	9400
	Type FT	10,200
	Type 5	9000
	Input Power of 137 watts	

06/07/10

© 2010 LSI INDUSTRIES INC.

Project Name _____ Fixture Type F2

Catalog # _____

LSI Industries


RKING
NO PARKING

U.S. Department of Transportation
Federal Aviation Administration

OMB CONTROL NUMBER: 2120-0036
EXPIRATION DATE: 4/30/2017

NOTICE FOR CONSTRUCTION, ALTERATION AND DEACTIVATION OF AIRPORTS

A. Airport Owner ☑ Check if this is also the Property Owner

1. Name and Address ☑ Check if this is the Airport's Physical Address

Maine Medical Center
22 Bramhall Street
Portland, ME 04102

2. Phone: (732) 870-8883
3. Email: ray@heliexp.com

B. Airport Manager (Complete if different than the Airport Owner)

1. Name and Address ☐ Check if this is the Airport's Physical Address

HeliExperts
489 Broadway
Long Branch, NJ 07740

2. Phone: (732) 870-8883
3. Email: ray@heliexp.com

C. Purpose of Notification (Answer all questions that apply)

1. Construct or Establish an: ☐ Airport ☐ Ultralight Flightpark ☐ Balloonport ☒ Heliport ☐ Seaplane Base ☐ Other
2. Construct, Alter or Realign a: ☐ Runway ☒ Helipad(s) ☐ Other ☐ Taxiway (Public Use Airports only)
3. Change Status From/To: ☐ VFR to IFR ☐ IFR to VFR ☐ Private Use to Public Use ☐ Public Use to Other
4. Change Traffic Pattern: ☐ Direction _____ ☐ Altitude _____ ☐ Other (Describe Below)
5. Deactivate: ☐ Airport ☐ RWY _____ ☐ TWY _____
6. Description:
Establishment of a new Hospital, Private, PPR rooftop heliport at the Maine Medical Center in Portland, Maine

D. Name, Location, Use and Type of Landing Area

1. Name of Landing Area: Maine Medical Center
2. Loc ID (for existing):
3. Associated City and State: Portland, ME
4. Distance from City: 0 (nm)
5. County (Physical Location): Cumberland
6. Direction from City: W
7. Latitude: 43° 39' 14.3800"
8. Longitude: 70° 16' 32.6300"
9. Elevation: 240
10. Current Use: ☒ Private ☐ Public ☐ Private Use of Public Lands
11. Ownership: ☒ Private ☐ Public ☐ Military (Branch) _____
12. Airport Type: ☐ Airport ☐ Ultralight Flightpark ☐ Balloonport ☑ Heliport ☐ Seaplane Base ☐ Other

E. Landing Area Data (List any Proposed, New or Unregistered Runways, Helipads etc.)

1. Airport, Seaplane Base or Ultralight Flightpark (use second page if needed)			2. Heliport, Balloonport or other Landing Area (use second page if needed)		
RWY ID	/	/	Helipad ID	H1	H2
Lat. & Long.	Show on attachment(s)	Show on attachment(s)	Lat. & Long.	Show on attachment(s)	Show on attachment(s)
Surface Type			Surface Type	Concrete	Concrete
Length (feet)			TLOF Dimensions	54' Diameter	40' Diameter
Width (feet)			FATO Dimensions	97.2' Diameter	68.1' Diameter
Lighting (if any)			Lighting (if any)	Perimeter	Perimeter
Right Traffic (Y/N)	/	/	Ingress/Egress (Degrees)	085/265, 253/073, 251/071	085/265, 253/073, 251/071
Elevation (AMSL)	Show on attachment(s)	Show on attachment(s)	Elevation (AMSL)	Show on attachment(s)	Show on attachment(s)
VFR or IFR	/	/	Elevated Height (AGL)	120	120

F. Operational Data (Indicate if the number provided is Actual or Estimated)

	1. Number of Based Aircraft		2. Average Number of Monthly Landings	
	Present or Estimated	Estimated in 5 Years	Present or Estimated	Estimated in 5 Years
Single Engine	0	0	0	0
Multi Engine	0	0	0	0
Jet	0	0	0	0
Helicopter	0	0	38	63
Glider	0	0	0	0
Military	0	0	0	0
Ultralight	0	0	0	0

3. What is the Most Demanding Aircraft that operates or will operate at the Airport? (Provide approach speed, rotor diameter, etc. if known)
Design Helicopter: Coast Guard MH-60 J-Hawk // Rotor Diameter = 53.8' // Overall Length = 64.8' // Max Gross Weight = 22,000 lbs.

4. Are IFR Procedures for the Airport Anticipated? ☒ **Yes** ☐ **No** **if Yes, Within** 2 **Years**

G. CERTIFICATION: I hereby certify that all of the above statements made by me are true and complete to the best of my knowledge.

1. Name, title of person filing this notice (type or print)
Raymond A. Syms
Authorized Agent

2. Signature (in ink):

3. Date: 02/08/2018
4. Phone: (732) 870-8883
5. Email: ray@heliexp.com

MMC Responses to City's Helipad Questions
02/22/2018

QUESTION: The original study conducted by consultants for MMC in 2004(by Resource Systems Engineering) noted that the location of the helipad on the top of the employee garage was beneficial regarding noise as this location would "...enable the existing and proposed buildings to block sound propagation to noise sensitive areas to the west and south." Could you ask your consultants to advise as to whether relocation of the helipad (albeit higher) out from "behind" those buildings will increase sound levels in different community locations than were studied in 2004. *(FROM EMAIL DATED 2/16/2018)*

ANSWER: Refer to MMC submission to the City on 1/31/2018 titled WS – S – 6A Heliport Memo

The attached memo dated February 2, 2018 from Russell Acoustics seeks to recreate two tables from the 2004 noise study that summarizes the sound study by comparing average ambient noise with average flight test noise – tables 2 and 3. It is impossible to recreate the 2004 study because the environment has changed significantly. In addition to the developments that have occurred since 2004, the City has seen an increase in population which results in more traffic and more ambient noise.

1. Construction of Crescent Heights apartment building;
2. Construction of the East Tower; and,
3. Construction of the Visitor Garage.

Therefore, rather than comparing the 2017 study to the 2004 study, the attached memo from Russell Acoustics compares average ambient to average flight test.

As stated in the memo, the proposed change has a varying affect to the 9 monitoring positions.

In order to simplify the City's review, MMC has directly compared the 2004 study with the 2017 study.

	Ambient Average		Flight Test Average		Change in Sound Level (2003 to 2017)	
	2003	2017	2003	2017	Ambient	Flight Test
CP1	79	84	82	77	5	-5
CP2	79	93	88	88	14	0
CP3	71	92	80	96	21	16
CP4	69	89	79	89	20	10
CP5	83	88	66	66	5	0
CP6	75	79	71	72	4	1
CP7	68	81	71	86	13	15
CP8	78	89	63	63	11	0
CP9	74	92	65	70	18	5

Direct comparison between studies is inappropriate due to changes in the environment between 2003 and 2017.
This is provided solely for the benefit of City Staff.

QUESTION: The City's sound consultant at that time (2004) noted that the direction the helicopter was facing when on the pad could make a significant difference in the sound levels nearby. Could you please confirm that the orientation of the helicopter on the relocated pad will be the same as for the current pad. *(FROM EMAIL DATED 2/16/2018)*

ANSWER: The direction of the helicopter will be the same.

RUSSELL ACOUSTICS, LLC
Consulting Engineers in Sound and Vibration

1525-A BEAVER DAM ROAD
POINT PLEASANT, NJ 08742
973.283.0001
973.464.9724 (CELL)

2 February 2018

Mr. Dennis Morelli, AIA
Manager of Facilities Development
Maine Medical Center
22 Bramhall Street
Portland, ME 04102

Re: Heliport Relocation Project
Sound Exposure Comparison

Dear Mr. Morelli:

Regarding the various sound tests of ambient and helicopter flights we did last year, you asked that we put the results in a format like that used in the previous report, specifically Tables 2 and 3 of the 30 October 2003 report you provided us. This report describes the process we followed to do this and the results.

The sound measurements we conducted were made over three calendar days at nine test locations (CP1 to CP9); from 12:00 to 12:00 (noon to noon) on 1 to 2 May 2017, and 14:00 to 15:00 on 2 and 3 May. The locations were chosen to reproduce the locations used in the 2003 report. The first set of measurements included ambient sounds only; there were no helicopter operations of any type. Test flights were flown on the afternoon of 2 May, between 17:00 and 18:00, but the rest of the time there were no helicopter flights of any type. The flight tests were done within the one hour (i.e., not split across the on-the-hour times) to make working with the data easier. By removing all the sounds during the hour of flight testing we were more easily able to analyze the other 48 hours of ambient measurements. All of our measurements are A-weighted decibels, or "dBA."

Recall that in the 30 October 2003 sound study report by Resource Systems Engineering (RSE) comparisons were made between the ambient community sound levels and the levels during the flight tests. Page 6 of the report stated:

> *Summary tables of results were prepared based on review of sound level readings from the Figure Sets. There are many comparisons that could be made to quantify the differences between ambient (non-helicopter) sound levels and sound levels measured during the flight testing. Considering that each of the four flight tests was a distinct and relatively short-term event, we chose to compare the four flight test events with the four loudest non-helicopter community events based on a 5-second basis first and then one a one-minute basis.*

The report then presented two tables (Tables 2 and 3) for the loudest 5-second and 1-minute Leq sound measurements for the ambient sounds and the helicopter tests. We are doing the same for the 1-3 May 2017 measurements to enable a direct comparison.

The following process was used:

- From the original instrument data files from our measurements, spreadsheets with 5-second and 1-minute duration Leqs were generated for the two different sets of measurements. (Recall Leqs of these durations were used in the first sound study; we wanted to compare "apples to apples".)
- For the second set of spreadsheets the data for the flight test time from 17:00 to 18:00 were moved to another location so the ambient-only measurements were together.
- The time history of the 5-second and 1-minute Leqs in the 18 different files (nine locations for two days) were individually sorted by their Leq values, highest to lowest.
- Where the instrument indicated an "overload" condition or at the beginning of some of the measurements made on the first day when we were setting up a few of the instruments and interfered with the measurements, we excluded the unnaturally high ambient levels.
- For each of the nine locations we took the four highest of the 5-second and 1-minute ambient Leqs (ignoring any of the discarded high levels). When levels in the highest four were close together in time (implying they were part of the same sound event) we skipped the lesser levels in the set and continued down the list to include other events in the top four. (This has the more conservative effect of lowering the bottom range of the ambient sounds.)
- For the flight tests we took the four highest maximum levels for the different passes. While some of the events were clearly defined when one looks at a graph of sound level over time for the test hour, others were difficult to pick out because the other sounds in the area during this time were significant. We made our best estimate of the different events and used timing information to try to identify the helicopter events from other fluctuating sounds.
- Both the "Ambient Range" and "Flight Test Range" values show the lowest to highest levels from the four highest levels for the data. The "Average" values are the arithmetic average of the two numbers for the corresponding "Range" values. (The RSE report used arithmetic average.)

Table 2 Replicate

Position	Ambient Range	Ambient Average	5-Second Leq Flight Test Range	Flight Test Average	Sound Level Change of Averages
CP1	83-84.1	83.5	76.1-77.3	76.7	-6.8
CP2	92-94.1	93	85.8-89.2	87.5	-5.5
CP3	84.1-99	91.5	95.1-97.2	96.2	4.7
CP4	78.1-81.5	79.8	88.3-89.6	89	9.2
CP5	84.6-92	88.3	65.8-66.8	66.2	-22.1
CP6	76.3-82.3	79.3	71.1-73	72.4	-6.9
CP7	77.8-83.4	80.6	84.7-87.7	86.2	5.6
CP8	85.2-91.9	88.5	58.7-68.1	63.4	-25.1
CP9	89.9-94.8	92.4	68.8-71.1	70	-22.4

Table 3 Replicate

Position	Ambient Range	Ambient Average	1-Minute Leq Flight Test Range	Flight Test Average	Sound Level Change of Averages
CP1	75.3-76.1	75.7	69.4-71.2	70.3	-5.4
CP2	82.2-84.4	83.3	82.8-86.4	84.6	1.3
CP3	73.7-78.3	76	88-90.1	89	13
CP4	71-74.1	72.6	79.5-82.7	81.1	8.5
CP5	75.6-83.3	79.4	56.8-58.8	57.8	-21.6
CP6	70.4-75.2	72.8	64.5-67.3	65.9	-6.9
CP7	70.5-75.6	73	79.8-82.7	81.2	8.2
CP8	78-83.3	80.6	55.4-62	58.7	-21.9
CP9	81.5-88	84.8	62.6-64.6	63.6	-21.2

An obvious question is "How do these changes compare to the changes in sound levels in the 2003 study?" The tables below compares the changes:

5-Second Sound Level Comparisons

Position	Sound Level Change of Averages	Sound Level Change of Averages (2003)
CP1	-6.8	3
CP2	-5.5	8
CP3	4.7	9
CP4	9.2	10
CP5	-22.1	-17
CP6	-6.9	-4
CP7	5.6	3
CP8	-25.1	-15
CP9	-22.4	-11

1-Minute Sound Level Comparisons

Position	Sound Level Change of Averages	Sound Level Change of Averages (2003)
CP1	-5.4	5
CP2	1.3	12
CP3	13	11
CP4	8.5	10
CP5	-21.6	-14
CP6	-6.9	-2
CP7	8.2	6
CP8	-21.9	-13
CP9	-21.2	-6

The green highlights show where the change in sound level vs. ambient was less of an increase or more of a decrease compared to the 2003 study. This was the case for 15 of the 18 comparisons. The red highlight shows where the changes were less favorable than in 2003. There were three of the 18 comparisons where this was the case, with the maximum difference being 2.6 dBA.

We realize there are differences in structures around the hospital than might affect past and present sound level comparisons. All we can do is look at the past and present sounds and present them, as we have done above.

From our several decades of experience with aircraft sounds in general and helicopters in particular, we would not expect substantial changes in sound levels due to moving the pad from one rooftop to that of another nearby building, and I believe the two comparison tables above show this to be the case. In a built-up area in and around an urban area it is not at all unusual to find ambient sound levels for the many other sounds sources in the area to be comparable to or even higher than the sound from the helicopter, and, as the measurements show, that is the case here.

When assessing community sounds the U.S. Department of Housing and Urban Development (HUD) in fact uses the annual average day-night sound level, abbreviated Ldn or DNL. With an average of about one flight in and out of the hospital per day, with the "duration" of the approach or departure event lasting about 30 seconds (there are 86,400 seconds in one day), the effect on the annual DNL is insignificant.

Yours truly,



Norman R. Dotti, PE, PP, INCE
Principal

NRD/me

SOUTH REDDING 6-LANE PROJECT

LOUDNESS COMPARISON CHART (dBA)

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
Jet Fly-over at 1000 ft	110	Rock Band
	100	
Gas Lawn Mower at 3 ft	90	Food Blender at 3 ft
		Garbage Disposal at 3 ft
Diesel Truck at 50 ft at 50 mph	80	
Noisy Urban Area, Daytime		Vacuum Cleaner at 10 ft
Gas Lawn Mower at 100 ft	70	
Commercial Area		Normal Speech at 3 ft
Heavy Traffic at 300 ft	60	
		Large Business Office
Quiet Urban, Daytime	50	Dishwasher Next Room
Quiet Urban, Nighttime		
Quiet Suburban, Nighttime	40	Theater, Large Conference Room (Background)
	30	Library
Quiet Rural, Nighttime		Bedroom at Night, Concert Hall (Background)
	20	Broadcast/Recording Studio
	10	
Lowest Threshold of Human Hearing	0	Lowest Threshold of Human Hearing

An increase of 3 dBA is barely perceptible to the human ear.

City of Redding, California · Shasta County Regional Transportation Planning Agency · Caltrans

Will Conway

From: Will Conway
Sent: Wednesday, February 21, 2018 3:56 PM
To: 'Jean Fraser'
Cc: 'Alexander M. Green'
Subject: Stormwater Comment Responses

Hello Jean, we have the following responses to the Wright Pierce Review Memo dated 2/7/18 :

- Comment 1a – 1 c correctly state that Stormwater Basic, General and Flooding Standards do not apply to this project.
- Comment 3 (a) ii (1) requests that we submit an updated boundary survey with utility elevations, pipe sizes, and pipe materials added – that information is attached.
- Comment 3 (a) ii (2) Al will discuss this with Tuck.
- Comment 5(b) Regarding snow storage, MMC currently removes all snow from the site, and this will be the case in the future.

A copy of this email is saved in EPlan under documents / WSL- 3 Stormwater Comment Responses February 21, 2018

The updated boundary survey is saved in EPlan under plans / Plan2K Boundary Survey February 21

Regards,

Will

William T. Conway, RLA, LEED-AP
Vice President, Landscape Architecture

SEBAGO
TECHNICS
www.sebagotechnics.com
An Employee Owned Company

Office: 207.200.2100
Fax: 207.856.2206

This notice and disclaimer regards the transmittal and use of electronic files generated and forwarded by Sebago Technics, Inc. This message contains confidential information and is intended only for the individual named. If you are not the named addressee, you should not disseminate, distribute or copy this email. Please notify the sender immediately by email if you have received this email by mistake and delete this email from your system. Email transmission cannot be guaranteed to be secure or error-free, as information could be intercepted, corrupted, lost, destroyed, arrive late or incomplete, or contain viruses. The sender, therefore, does not accept liability for any errors or omissions in the contents of this message which arise as a result of email transmission. If verification is required, please request a hard-copy version. The information contained in these electronic files is privileged and confidential and is intended only for the use of the individual or entity stated in the address above. Any dissemination, distribution or copying of these electronic files is strictly prohibited. The recipient of the electronic file acknowledges and consents to the fact that the sender, Sebago Technics, Inc. makes no claim that electronic files are current, accurate or correct. Any use or reuse of the electronic file in any manner whatsoever is at the user's sole risk and the user agrees, to the fullest extent permitted by law, to hold Sebago Technics, Inc. harmless and to indemnify it from all claims, losses, damages, expenses and costs including all reasonable attorneys fees that may arise from its use or reuse.

Memorandum
Planning and Urban Development Department
Planning Division

To: Sean Dundon, Chair and Members of the Portland Planning Board

From: Jean Fraser, Planner

Date: February 23, 2018

Re: MMC East Tower and Visitor Garage Vertical Expansion
22 Bramhall Street
Maine Medical Center (MMC)

Project #: 2017-289 CBL: 053D007/054H001/064C001

Meeting Date: February 27, 2018 (Second Workshop)

I. INTRODUCTION

This is the second Workshop held to consider the preliminary Level III Site Plan application from Maine Medical Center (MMC) which proposes to extend the existing East Tower vertically by two stories (approx. 60,000 sq ft) to accommodate 64 single-occupancy inpatient beds, and to extend the existing Visitor's Garage on Congress Street by 3 stories vertically to provide an additional 225 parking spaces. The applicant has confirmed that the application and review does not include the Central Utility Plant.

It is understood that the 64 single-occupancy bedrooms will not add patient capacity as they would allow existing double-occupancy patient rooms elsewhere to be single-occupancy.

The application is the first of three Site Plan applications associated with the short-term MMC expansion plans. The proposals follow on from the City's recent adoption of an MMC Institutional Overlay Zone and the associated Institutional Development Plan and Regulatory Framework (both attached to this Memo). The review includes aspects of the MMC IOZ Regulatory Framework that required action at the time of the first site plan (TDM and Signage Plans).

This first Workshop was held on 1.23.18 and addressed the following topics:

- Design, including Street Activation
- Helipad
- Construction Management Plan overview, plus East Tower

This second Workshop will focus on the following topics:

- Construction Management Plan and associated Traffic Control (Detour) Plans
- Design Update
- Utilities including stormwater and wastewater capacity
- Other Updates eg helipad

Applicant: Maine Medical Center; Alexander Green, Director of system Planning and Regulatory Compliance
Agent and Engineer: Sebago Technics Inc
Architect: Perkins + Will; Jeffrey Keilman, Senior Project Manager, Senior Associate

Required Reviews:

Applicant's Proposal	*Applicable Standards*
Addition of 60,940 sq ft to the East Tower; addition of 77,021 sq ft to the Visitor Garage	Level III Site Plan Review 14-526
Additions that would increase height; helipad	MMC IOZ Regulatory Framework

Waiver Requests: None identified at this time.

II. PROJECT DATA

SUBJECT	*DATA for EAST TOWER*	*DATA for VISITORS GARAGE*
Existing Zoning	IOZ	
Existing Use	Hospital	Hospital parking garage
Proposed Use	Hospital- adding single rooms for 64 patient beds	Hospital parking garage – 3-story addition for 225 parking spaces
Parcel Size	12.52 acres	
Impervious Surface Area **--Existing** **--Proposed** **--Net Change**	 415,220 sq ft 0 sq ft 0 sq ft	 415,220 sq ft 0 sq ft 0 sq ft
Total Disturbed Area	0	0
Building Footprint **--Existing** **--Proposed** **--Net Change**	 30,470 sq ft 0 sq ft 0 sq ft	 25,674 sq ft 0 sq ft 0 sq ft
Building Floor Area **--Existing** **--Proposed** **--Net Change**	 152,350 sq ft 213,290 sq ft 60,940 sq ft	 200,000 sq ft 277,021 sq ft 77,021 sq ft
Parking Spaces **--Existing** **--Proposed** **--Net change** **--# of handicapped spaces**	 2,328 (entire campus) 2,553 225 6	
Bicycle parking Spaces **--Existing** **--Proposed** **--Net change**	 193 (entire campus) 0 0	
Estimated Cost of the Project	TBD	

III. First Planning Board workshop 1.23.2018

The following table summarizes the PB comments and the responses to date:

PB comment	Response
Design - comments regarding the East Tower such as: • Looks like new building on top; Looks glaringly institutional; Seeking more cohesive- more integration • Would like more info on how the white wall of the ET expansion will relate to other new buildings • Would like to see renderings with other colors (?silver)/options for Board to consider	Staff met with MMC on 2/8/18 and encouraged them to address comments with additional information. The applicant has submitted a "*Design Review Update*" (WS Q -2 2.23.18 under Second Workshop Applicants Submittal) and Section VII below provides an update. No additional renderings of the proposals or alternatives have been submitted.
How was visitor garage constructed?	See photo of the garage under construction in section VI below.
Would like to see details of visitor garage fencing and other fall protection	Included in "*Design Review Update*" (WS Q -2 2.23.18 under Second Workshop Applicants Submittal)
How is MMC addressing the loss of parking in visitors garage while under construction	Displaces visitors parking spaces will be relocated into employee garage. Access to visitors garage will be via the employee garage during construction.
Does Westcott Street need to be closed for such a long period of time?	
What upgrading is planned for retail units under garage?	Fitting out for Turners but will anticipate future retail uses.

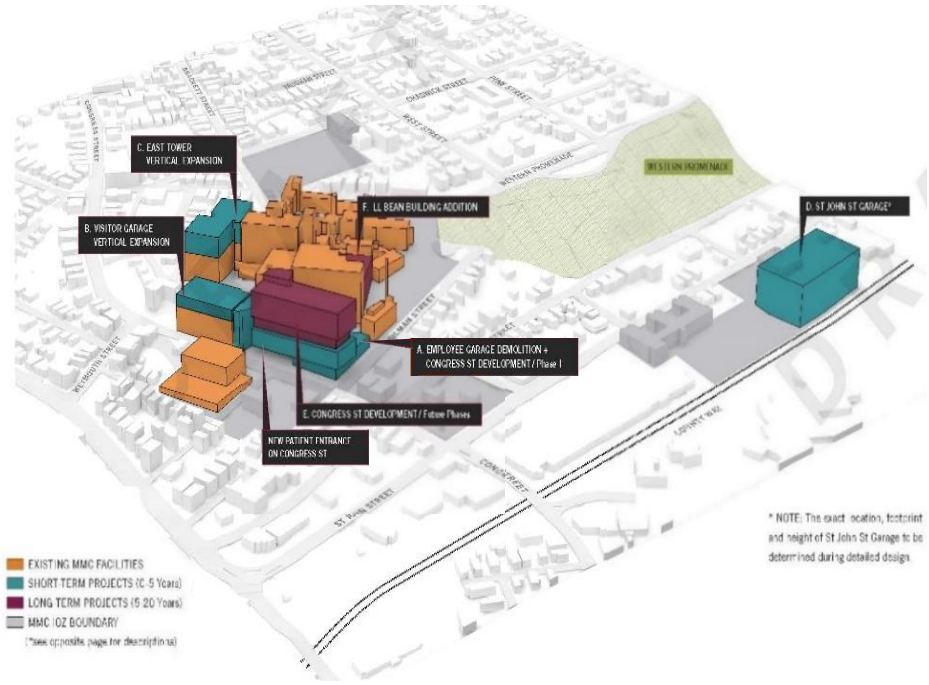
Interested in the 2-way Park Avenue option	Discussed a large "check -in" meeting between staff and MMC and concluded that this was too complicated to do safely and correctly in the time available (would need to be designed and implemented by May 8).
Disappointed not relating the buildings better to local streets to be part of neighborhood	No further information submitted.
Parking garage needs more visual interest – more creative way that doesn't reinforce massing	No revisions or options submitted. No rendering from Congress Street submitted.

IV. SITE AND CONTEXT

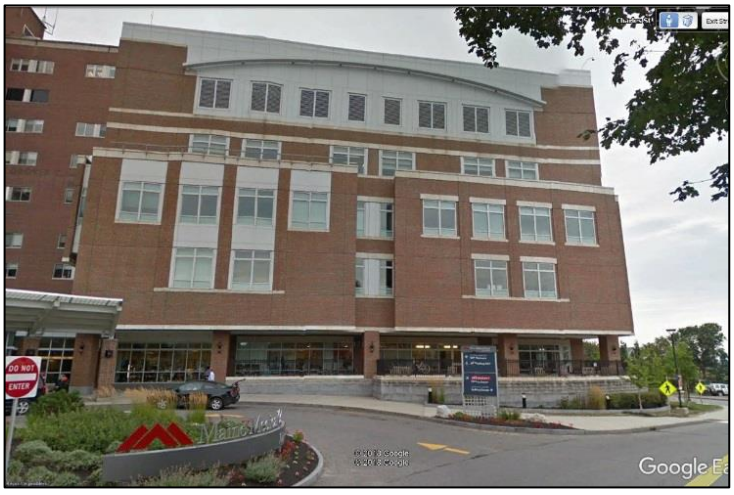
The approved Institutional Development Plan (IDP) (Attachment 4.) provides information regarding the hospital site and its development over the years, along with context information. Photographs of the existing buildings (to be expanded) are included below.

V. PROPOSALS

The submissions include a description of the proposals and plans and graphics of the proposed "overbuild". The graphic to right is extracted from the IDP in Att.4 (pages 44/45)



East Tower: Addition of two floors (64 patient rooms, single-occupancy):



Existing from south



Proposed, comparable rendering (see WSQ – 1)

Visitor Garage: 3 additional floors of parking spaces: (renderings not submitted)



Existing as viewed looking west

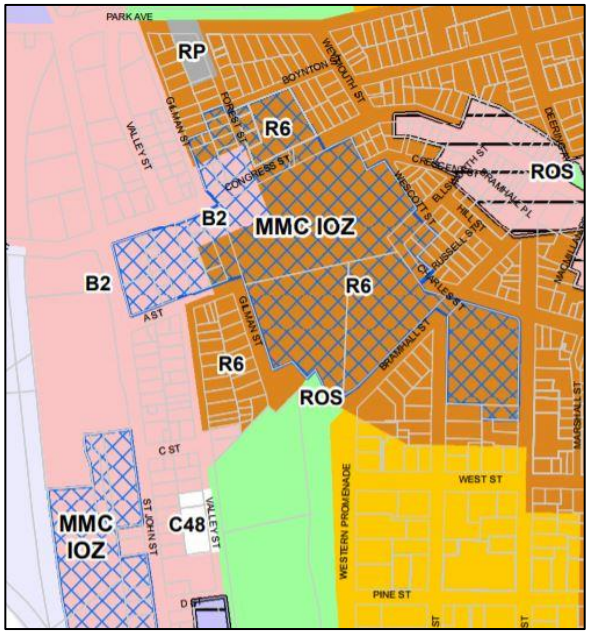


Proposed west elevation

VI. ZONING ANALYSIS and REVIEW

Overview

The zoning map at right shows the recently adopted MMC IOZ in blue cross hatch:



The MMC IOZ *Regulatory Framework* (Attachment 5) is the zoning ordinance that applies to the proposed site plan projects; this was reviewed by the Planning Board in early 2017 and adopted by the City Council in December 2017.

The proposed additions to the East Tower and the Visitors Garage were included in the IDP background material for the zoning amendment, and the proposals now under site plan review are consistent with what was discussed during that review.

Table 1 below summarizes the Regulatory Framework provisions that apply to the current review and includes staff comments:

TABLE 1 RELEVANT EXTRACTS FROM MMC IOZ REGULATORY FRAMEWORK (entire document is in Att. 5)

MMC IOZ Regulatory Framework provisions	*MMC Site Plan submissions to address the RF provisions, as updated in CAPITALS*	*Staff Comments for first PB Workshop*	*Staff comments (summary) for second PB Workshop*
(c) Uses: Note under list: 1. Mixed Uses: In recognition that Maine Medical Center is part of a mixed-use area of the City, with important existing services and businesses that serve the local and wider community, healthcare facility development fronting onto Congress Street and St. John Street shall activate the public realm, to the extent able, with uses such as service and retail/restaurant, landscaping, active building entrances, pocket parks, etc., on the ground or other publicly accessible level, consistent with the design intent contained in the	The current submission does not include proposals for the existing empty retail units along the base of the Visitors Garage.	Staff consider that the entire building is subject to the review and therefore MMC needs to develop strategies to address any "blank walls' along Congress Street in	Use of these units by Turners as construction base is welcomed; confirmation of this and the longer term intention is requested

approved Institutional Development Plan (IDP). In areas identified in the IDP as "Priority zone for commercially oriented/retail uses," usable ground floor retail, restaurant, or comparable community-oriented use that provides services to local residents and employees both during the day and evening hours is required. In areas labeled "Street activation through location of windows, entrances, etc.," usable ground floor retail, restaurant, or community oriented use is encouraged to the extent practicable. Such uses, where constructed or facilitated as part of a healthcare related development, are expressly permitted whether ancillary or supporting the healthcare facility or not, and shall be open and welcoming to the general public in addition to employees or visitors of Maine Medical Center.	IT IS UNDERSTOOD FROM MEETINGS THAT TURNER WILL BE FITTING OUT THESE UNITS SO THAT THE FILM WILL BE REMOVED & NEW INFRA-STRUCTURE (EG BATHROOMS) WILL BE DESIGNED TO ANTICIPATE FUTURE RETAIL USE. NO WRITTEN SUBMISSION RECEIVED.	accordance with the Regulatory Framework and the IDP Design Guidelines/Fig 5.15 re Street Activation (p117 of IDP in Att. 4 to this Memo)	for the final submission.
Maximum Building Height: East Tower: 150 feet (the IDP indicated a future height of 141 ft including helipad)	Submitted proposals indicate a height of just over 146 ft but part of the helipad appears to be higher	Clarification required as to helipad height compared to the average grades identified in the IDP.	Additional information received; it confirms height including the helipad is 142 feet
Maximum Building Height: Visitors Garage: 125 feet (the IDP indicated a future height of 119 ft)	Submitted proposals indicate a height of 119 ft excluding part of the stair tower	Appears to meet dimensional requirements as stair and elevator overruns are considered appurtenances.	Additional information received: it confirms height is 119 feet
Transition Zones – none at these locations	N/A	N/A	N/A
Setbacks: East Tower - 20 ft Visitors Garage - up to 40 ft	N/A	N/A	N/A
Design Guidelines	MMC submitted architectural narrative and graphics for inclusion in PB Memo for first PB workshop and presented it at the workshop.	Urban Design Review comments included in first workshop PB Memo	Staff and PB requested additional information at the first PB workshop, as reiterated to MMC at a 2.8.18 meeting and 2.15.18 e-mail. The submitted "*Design Review Update*" (WS Q -2 2.23.18 under Second Workshop Applicants Submittal) partially addressees comments (see Section VII).
(f) Signs: 1. At the time of first site plan review following IDP approval, a unified campus-wide Signage Plan shall be submitted for review and approval by the Planning Authority. Any update to such plan due to a change in name or logo shall not require amendment to the IDP. 2. Signs shall be designed in accordance with the campus-wide Signage Plan. All signs shall be designed in proportion and character with building facades and adjacent street typology. All signs shall be coordinated with the building and landscaping design and be constructed of appropriate permanent, high quality materials and finishes.	The applicant has submitted the Signage Plan (Plan 11) that illustrates how the existing signage fits into the campus. The current proposals for the East Tower and Visitors Garage do not necessitate any additional signage, so this plan comprises the current Signage Plan.	Staff anticipate that this Strategy would be updated to take account of the signage needs of the new St Johns Garage and new hospital building (future site plans).	No further comments.
(g) Transportation: (TDM) 1. Transportation Demand Management (TDM):		This is currently under review and detailed	

a. At the time of the first site plan review following IDP approval, MMC shall submit a campus- wide TDM Plan substantially in accordance with those TDM objectives and strategies identified in the approved Institutional Development Plan. The TDM Plan may be phased into short-,mid-, and long-term actions to allow for progressive implementation over time. b. The TDM Plan shall be designed to provide transportation choice with the goal of reducing parking demand and single-occupancy vehicle trips to and from MMC by employees and visitors. c. The TDM Plan shall establish parking and trip reduction targets associated with the short-term (0-2 years), mid-term (2-5 years), and the long-term (5+ years), as well as a data collection plan.	The applicant submitted a TDM Plan (Att. WS S-7) on 12.15.17 AN UPDATED TDM (ATTACHMENT X) WAS SUBMITTED ON 2.13.18 IN RESPONSE TO THE STAFF COMMENTS SENT 2.13.18 (ATT. 8)	comments will be forwarded to the applicant this week, and this will be a topic for the second PB workshop. DETAILED COMMENTS SENT 1.24.18.	Discussions are continuing; this does not need to be finalized as part of this site plan review.
(g) Transportation: (Parking) 2. Parking: a. Parking requirements in the IOZ shall be established at the time of site plan review based on a parking study that includes a campus-wide analysis of demand and supply. The parking demand study shall determine parking requirements and shall be sufficient to alleviate parking pressure on surrounding neighborhoods. b. Parking studies developed by MMC shall integrate parking and trip reduction achievements and data contained in the TDM Plan.	The applicant submitted a Parking Demand Study (Att WS S-8) that identifies shortfalls in both visitor and employee parking supply and elaborates on the background information in the approved IDP. The proposals will temporarily remove 2 levels of parking during construction, but will result in a net increase of 225 visitor parking spaces when complete. STAFF HAVE BEEN ADVISED VERBALLY THAT SPACES IN THE EMPLOYEE GARAGE WILL BE RE-ALLOCATED TO VISITORS; SOME EMPLOYEES THEN REALLOCATED TO OTHER LOTS	Tom Errico, City's consultant traffic engineering reviewer, comments: *During the construction of the Visitor parking garage, the top two floors of the existing garage will be taken out of service. The applicant should provide parking management details addressing the loss of the noted parking spaces.* Staff note that 6 handicapped spaces are included in the 225 new spaces, and request confirmation that this meets ADA requirements	Request that the updated information, that responds to the Traffic Engineer comments, be documented as part of the final submissions.
(h) Environment. Development proposed by MMC shall be designed to integrate with the surrounding context, including open space and pedestrian networks and infrastructure.		Staff would like to understand how the Visitor Garage integrates into the surrounding pedestrian network both during construction and after it is completed.	Staff request CPTED review by applicant- see Section X regarding other Site Plan Standards.
(i) Mitigation measures. MMC shall mitigate site plan impacts to off-premise infrastructure in a manner proportionate to those impacts. Mitigation may include financial or in-kind contributions to existing or planned City projects focused on mitigating the impacts of MMC development. Mitigation contribution shall be determined based on the City's standard procedure in effect at the time of site plan review.		The Construction Management Plan may have impacts on off-premise infrastructure; this is under review.	CMP/Traffic Detours agreed in principle subject to staff review comments and further detailed discussions.
			Stormwater/Sewer capacity & impacts on combined sewer

			infrastructure under discussion
Helipad. MMC shall be governed by the provisions of the Helistop Overlay Zone with the following exceptions: a. Setback requirements of Section 14-327(3); and b. Fencing requirements of Section 14-327(4).	Partial noise info provided in original submissions. ADDITIONAL HELIPAD SOUND INFORMATION SUBMITTED 2.23.18	Request info re sound impacts of former helipad location and proposed and updated FAA application	Staff have not been able to review the additional technical information in time for comments to be included in this Memo; these will be provided at the Workshop.

VI Construction Management Plan and Associated Detours

a. *Review meetings with MMC:*
At the first PB workshop the applicant provided an overview of the Construction Management Plan (CMP) (prepared by Turner, the contractor for this project). Since then there have been three meetings between the MMC team/contractor and City staff/site plan reviewers (including Traffic Engineers, representatives from DPW, Police, Fire Department and the City's Parking Manager) to understand the construction constraints and consider what detour options were available if Congress Street was unavoidably closed. The summary notes of these meetings are included in Attachment 6 but City representatives have also provided comments (see below and Attachments 11, 13, and 14) to help the Board evaluate the CMP and associated traffic implications.

b. *Third Party Review of MMC construction approach:*
In parallel with these discussions the Planning Division commissioned a firm with experience of large-scale construction projects (Kleinfelders) to provide an independent review the "constructability" of the MMC proposals and Turners CMP, with a view to determining if it might be possible to avoid or minimize the closure of Congress Street.

The Kleinfelder Review (see Attachment 16) did not consider major changes to the overall phasing of the MMC expansion project, but did consider options that would necessitate significant reconsideration of phasing and the current access to the hospital. Their review took account not only of construction feasibility, but also questions of alternative types of construction and crane sizes/types, public safety, impacts on the ongoing use of the garage and local utilities, access to the ER, and work scheduling. The Review concluded that:

> *Closing Congress Street for an 8 week duration is the recommendation that Kleinfelder fully supports and would have proposed if developing this type of project independently for a client. It is recommended that the City work with Maine Medical Center to tighten up the schedule, as previously mentioned in this memo, with the use of incentive/disincentives, liquated damages associated with possible street damage, proper detour signing, and proper public outreach campaign.*

c. CMP for East Tower and Visitor Garage (Second Workshop Plan WSI-5 CM Plan)
The CMP for these expansions is particularly challenging because in both cases the hospital seeks to maintain current activity on the lower floors (patients in the East Tower and parking in the garage) plus maintain safe and efficient access for emergency vehicles to the ER.
.

The original garage was constructed largely from inside the site; see photo below from the contractor (then Reed and Reed) as included in their 2018 calendar:



Since the first PB Workshop MMC and Turner has submitted a revised CMP (*Second Workshop Plan WSI-5 CM Plan*) that has been revised as follows:

- Access for ambulances has been revised to remain as existing by relocating the site fencing and modifying the curb to provide ambulance access to the bays under East Tower
- References to converting Ellsworth to two way have been removed
- Precast and steel delivery routes added
- Location of concrete washout areas added per Wright Pierce Peer Engineer comments (Att. 9, 1.25.18)

At the review "check in" meetings (Att. 6) there was general agreement that the 8 week closure of Congress Street presented the safest approach with the fewest "unknowns", but there remain some concerns that require further discussion:

- The feasiblity of the pedestrian route alongside the crane in Congress Street (the crane at right is the type of crane that will be needed)
- The delivery route for the steel for the East Tower is proposed to go via Washington Avenue and Congress Street
- Delivery hours to avoid peak traffic times
- Enforcement of contractor employee parking not to be on local streets
- Introduction of penalties and other measures to ensure the closure is reopened prior the July 4th holiday weekend.



d. Traffic Control/ Detours and associated signage, signals and parking restrictions (See Plan GP Traffic Analysis)

The Turner CMP discussed above has addressed the need for some parking and traffic restrictions plus signage on the local streets near the East Tower construction site, and these are shown in the graphics referenced above.

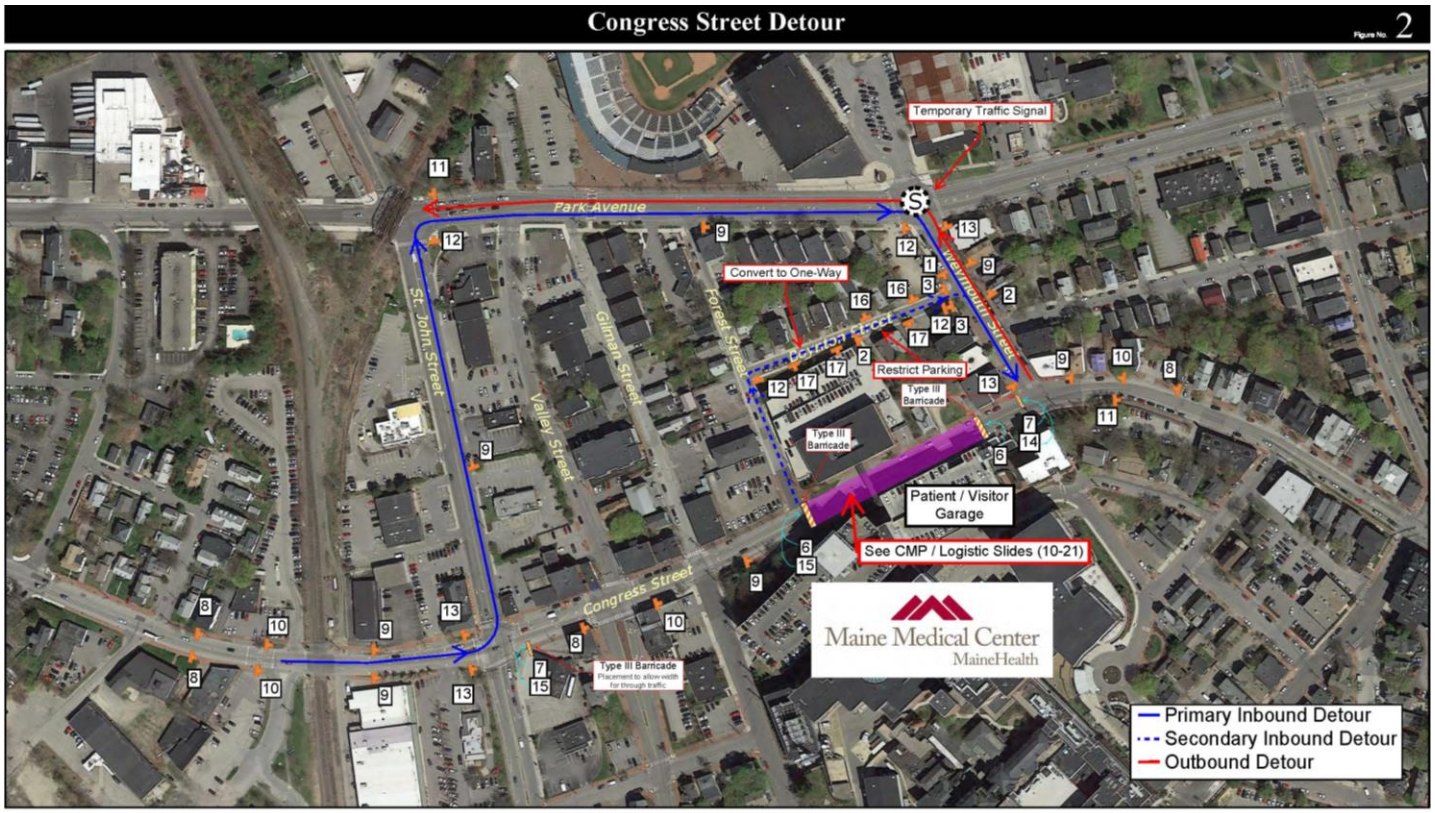
MMC has engaged Gorrill-Palmer to explore traffic management options to facilitate the closure of Congress Street to allow for the overbuild of the visitors garage. The "check-in" meeting notes of 2.1.18 and 2.15.18 document the issues that have been raised by City staff and reviewers which MMC and the consultants were asked to consider as the proposed detours were developed. One of the key concerns was the scope for congestion on the detour routes which would hamper emergency service vehicles being able to get through.

The detour options had included conversion of Park Avenue to two way which would take pressure off of the Congress/St Johns intersection, but the intersection with the Fore River Parkway and the need to install signals facing west at the railway overpass appeared to require more time to resolve than was available.

The proposals and associated details are outlined in *GP Traffic Analysis* (under Second Workshop Plans) and are based on a three -level approach to traffic diversions:

- Signage (eg variable message signs) outside central Portland to encourage different routes
- Barricades at Congress/St Johns and at Weymouth/Congress to re-route the bulk of traffic
- Local traffic to use Forest/Boynton (Boynton one way inbound)

The Police, Fire and DPW Traffic Departments were initially concerned that closure of Congress Street was not workable. As information regarding the constraints of the construction process and the options to facilitate detours was provided and discussed, the proposals were more broadly supported subject to many caveats regarding the need for bringing detour streets up to standard so they can support the additional traffic (Attachment 14), street/lane/signal and pedestrian crossing modifications, communications strategies, and monitoring (Attachment 13) during the closure (see Second memo Attachments 11, 13 and 14).



Maine Medical Center Expansion
PORTLAND, MAINE

VII. Design update

Following the first workshop discussion, Caitlin Cameron, the City's Urban Designer, met with the applicants on Feb 8th to consider the issues raised by the Planning Board and the Preliminary Design Review Memo (Attachment 3) (notes in Attachment 6).

Staff articulated the key issues from that meeting in an e-mail sent 2/15/18 as quoted below:

> ***1) Design submission for Planning Board workshop 2/27*** *- Staff suggest the PB workshop submission include at least a written narrative addressing the design points below which may also include some visual examples of past design iterations. The PB workshop presentation should definitely include visual responses to some of these points as we discussed in the meeting last week.*
>
> *The following comments/questions from the Planning Board should be addressed regarding design:*
>
> - *Mixed feelings about use of white panels - too sterile or stark contrast, not recessive enough?*
>
> 1. *Provide renderings showing options for material choices, grey or silver were specifically mentioned*
> 2. *Respond to question about re-cladding existing white on building*

- *Address request for integration:*

    1. *Integration of existing building elements and new - looks like an addition*
    2. *Clarify integration of East Tower proposal related to future campus design*
    3. *Integration into neighborhood (especially at the edges, entrances, blank walls, retail)*
- *Long-term plan for Congress Street retail facade improvements*
- *How will streetscape at South Entrance change when new entrance is added on Congress Street?*
- *Screening of mechanicals on garage*
- *Concerns with parking garage design - rooftop fence quality, facade improvements*

***2) Design Comments** - Based on the design meeting last week, staff continue to have the following comments/questions on the current proposal:*

- ***East Tower:** Staff, aligned with PB comment, continue to have some concern about the facade integration of the new and existing - especially in overall facade composition, proportion, and articulation. The existing building has a high level of articulation while the proposed new is much more minimal. Please clarify where new metal panel is proposed and where existing to remain and the strategy around getting those to match or blend. Staff suggest you consider articulation strategies in the new section that address these integration concerns whether that is a horizontal band, dimensional elements, color or other strategies.*
- ***Garage:** There are two opportunities to update or improve the design character of the garage - the fall protection fence, especially on the top level, and the metal screens.*

The applicant has submitted an illustrated Design Narrative (Attachment WSQ-2 Design Review Update 2.23.18 under Second Workshop Applicants Submittal) that partially addresses the Planning Board comments; however, revised renderings or other options have not been submitted. The Board is requested to clarify to MMC what, if any, further information it would like to have submitted for the final review.

VIII. Helipad Update

At the first PB Workshop the applicant and a representative from LifeFlight clarified regarding the operation of the proposed helipads and indicated that further sound information would be provided. Three new documents have been submitted:

- Revised FAA application (WS -S-6B Second Workshop Applicants Submittal) which confirms the likely number of flights as up to 63 per month (38 per month at present)
- Memo from MMC (WS-S-6A Second Workshop Applicants Submittal) documenting the information that was presented at the first PB Workshop, including one summary paragraph regarding sound
- Comment Responses (WS S-6C 2.23.18) to the staff e-mail of 2.16.18 (Att.15) (which requested comparative data as between ambient, current flight sounds and future sound levels when helipad is relocated). The Comment Response includes a narrative and associated data; however there has not been time for it to be reviewed prior to the completion of this Memo. Comments will be provided at the PB Workshop.

IX. Stormwater/Sewer issues

The original submission did not address stormwater management on the basis that there is no increase in the impervious surface associated with the proposed overbuilds. The Peer Engineer's first Memo (Attachment 9, January) primarily requested further information and this was provided and discussed at a "check in" meeting on 2.1.18 (notes in Attachment 6).

Following that meeting the Peer Engineer provided a second comment Memo (also Attachment 9, dated 2.7.18) that include a request for MMC to remove some of the stormwater currently discharging into the Congress Street combined sewer and convey it to the separated system in nearby A Street.

Staff understand that MMC are questioning this request and staff have provided a Memo (Attachment 14 from the City Engineer Keith Gray) outlining the City's ordinances and obligations that aim to reduce the stormwater flows into the combined system, with the Congress Street system noted as of particular

importance because it is a tributary to a CSO that overflows at Marginal Way/Preble Street. The DPW city engineer will be at the PB Workshop to answer questions.

The Peer Engineer request is also supported by the Site Plan Standards (extracted in Attachment 7) which include provisions wherein the reviewing authority can require improvements "to connect or continue off-premises public infrastructure" and specify that "The development shall not overburden sanitary sewers and storm drains, water lines or other public infrastructure and utilities".

X. Update on other Site Plan standards

The focus of the review has been on the construction issues and impacts, and design. The review is of site plan applications for vertical expansions of buildings that received site plan approval in 2005, so in addition to the Regulatory Framework reviewers have considered the proposals to ensure that they meet all current site plan standards as noted below. It is anticipated that detailed discussions on some of these issues will take place between staff and the MMC team at "check-in" meetings so that they are addressed in the final submissions.

- *Bicycle parking:* See comments from the Transportation Program Manager Bruce Hyman (Attachment 12) which note that while the number of bicycle parking spaces meets the standards, they do not meet Technical Standards regarding the design and location. Reviewers request an inventory showing that a combination of existing and proposed bike racks will meet the number and design standard for location and design.
- *CPTED (Crime Prevention Through Environmental Design):* The original site plan approval for the Visitors Garage included a public pedestrian access between Crescent Street and Congress Street that partially used the garage stair tower. It is understood that this created security issues. The applicant should assess the access and lighting arrangements for the garage and confirm what improvements for public safety and security will be included in this site plan proposal eg improved or new lighting; signage; relocated pedestrian links etc.
- *Exterior lighting:* The applicant has provided photometric studies of the helipad lighting and the top level lights on the garage (Attachments First Workshop Submission), but these did not include any specifications or information as to whether these would be visible to neighbors. More information was submitted (WS S-12 Site Lighting narrative) which clarifies the proposals in respect of these upper level lights. As part of the CPTED review the exterior ground level and internal garage lighting should be reviewed.
- *ROW: Street Lighting and ADA Sidewalks:* The Transportation Program Manager Bruce Hyman (Attachment 12) has noted that the existing street lights and sidewalk construction does not fully comply with the City's Technical Standards. In view of the increased activity in this area generated by the MMC expansion, he recommends that the lighting be upgraded (to add the street level light), and the ADA deficiencies be addressed, by the applicant. This may also tie in with the CPTED review.
- *Signage and Wayfinding-* In the first PB memo staff requested further consideration be given to the pedestrian access/routes and associated wayfinding along Congress Street in conjunction with addressing the street activation.
- *Land Transfers ref submitted "recording plats":* The original submission included two "recording plats" that identified street transfers and discontinuances that relate to the two buildings under review. After some research, staff agree that a procedural step (post PB approval of the initial site plan) may not have been completed at that time. This is under review and staff will update the Board when further information is available.

XI. NEXT STEPS - The final submissions will need to address the staff and Planning Board comments.

ATTACHMENTS

First Workshop - Memo Attachments

1. Initial Traffic Comments
2. Fire Department Comments on CMP
3. Preliminary Design Review Comments
4. MMC Institutional Development Plan (IDP) as approved by PB
5. MMC IOZ Regulatory Framework (Ordinance 14-282) as adopted by CC

Second Workshop Memo Attachments

6. "Check In" meeting notes
7. Extract from Site Plan Ordinance regarding stormwater and sewer infrastructure
8. City comments on submitted TDM
9. Peer Engineer Review comments Jan 25, 2018 and Feb 7, 2018
10. Design E-mail re further info requested
11. Fire Department comments
12. Transportation Program Manager re bike parking, lighting and ADA access in ROW
13. Police Department re CMP and Detours
14. DPW re CMP/Detours and Drainage Infrastructure
15. Staff clarification re relocated helipad sound analysis
16. Kleinfelder third party review of "constructability" and closure of Congress Street

Public comments (none received to date)

First Workshop Applicants Submittal (numbering as per applicant)

WS - 1 Cover Letter
WS A Application Form
WS A -1 East Tower Data Sheet
WS A -2 Visitor Garage Data Sheet
WS B Right Title Interest
WS C State and Federal Approvals
WS D Zoning Assessment
WS E Easements
WS G Financial and Technical Ability
WS H - Boundary Survey
WS I - 3 CM Plan January 18
WS J Traffic Study
WS M City Master Plans
WS N Utilities
WS O Solid Waste
WS Q - 1 Design Review Update January 18
WS Q Design Review
WS R HVAC
WS S - 2 Bicycle Parking
WS S - 3 East Tower Code Report
WS S - 4 Visitor Garage Code Report
WS S - 5 Heliport FAA Submittal
WS S - 6 Heliport Noise Study
WS S - 7 TDM Plan
WS S - 8 Parking Demand Study
WS S - 9B CM East Tower MOT January 18
WS S-10 Project Description

Second Workshop Applicants Submittal (numbering as per applicant)

WS - 7A TDM Plan Update February 13
WS - S- 6A Heliport Memo January 31
WS A-3 Neighborhood Meeting Info February 21
WS L Stormwater Management Plan
WS L-1 2004 Stormwater Management Plan
WS L-2 2004 Watershed Plans
WS N-1 Wastewater Capacity Request
WS N-2 CMP Ability to Serve
WS Q - 1 Design Review Update January 18
WS Q - 2 Design Review Update February 23
WS S - 12 Site Lighting Narrative
WS S-6B Heliport FAA Application February 8
WS S-6C Heliport Comment Responses 2.23.18
WSL - 3 Stormwater Comment Responses 2.21 (1)

First Workshop Plans (numbering as per applicant)

Plan 1 Boundary Survey (8 sheets)
Plan 2I Recording Plan
Plan 2J Recording Plan
Plan 5 Site Plan
Plan 10A Visitor Garage Lighting Plan
Plan 10B Heliport Lighting Plan
Plan 11 Signage Plan
Plan 13 Shadow Analysis
Plan 14A East Tower Level 6 Floor Plan
Plan 14B East Tower Level 7 Floor Plan
Plan 14C East Tower East Elevation Janua...
Plan 14D East Tower North Elevation Jan...
Plan 14E East Tower West Elevation Janu...
Plan 14F East Tower South Elevation Janu...
Plan 14G Visitor Garage Level P8 Floor Pl...
Plan 14H Visitor Garage Level p8 Floor Pl...
Plan 14I Visitor Garage Level P10 Floor Pl...
Plan 14J Visitor Garage Level P11 Floor Pl...
Plan 14K Vistitor Garage East Elevation Ja...
Plan 14L Visitor Garage North Elevation J...
Plan 14M Visitor Garage West Elevation J...
Plan 14N Visitor Garage South Elevation J...
WS Q - 1 Design Review incl renderings1....

Second Workshop Plans

a. CMP/Detours

GP Traffic Analysis 2.14.18
WS I - 5 CM Plan February 13

b. Other Plans

Plan 2K Boundary Survey February 21
PLAN 14O ET Elevations February 22
Plan 14P VG Elevations February 22

GORRILL PALMER

707 Sable Oaks Drive, Suite 30
South Portland, Maine 04106
207.772.2515

DRAFT

Evaluation of Congress Street Detour
Maine Medical Center (MMC) – Bramhall Campus
Portland, Maine

February 14, 2018

Proposed Detour:

The MMC Team met with City staff (including Fire and Police representatives) on January 25th, 2018 to discuss various detour options for the closure of Congress Street between Forest Street and Weymouth Street. Based on those discussions, there was general consensus that the best approach was to combine different aspects of the alternatives into one alternative to create a multi-layered approach.

The currently proposed traffic control plan (TCP) is intended to operate as a three layered approach. The purpose of the multi-layer approach is to gradually decrease the volume of traffic that approaches the closure location, such that traffic is less concentrated at one specific location. A more detailed description of the three layers is as follows, with plans of the TCP attached:

Layer 1 (Figure 1 of attached plans)

The first, or outer most, layer involves the use of four Variable Message Boards (VMB). The current detour plan identifies the use of three mobile units and the use of one of MaineDOTs permanent VMB. The locations are as follows:

- St. John Street southbound prior to the intersection with Park Avenue (mobile unit)
- Outer Congress Street inbound prior to Fore River Parkway (mobile unit)
- Upper Congress Street outbound prior to Mellen Street (mobile unit)
- I-295 northbound prior to the Exit 4 ramp toward the waterfront (permanent VMB) – MaineDOT permission will be required for this use

The VMBs will flash "Lower Congress Closed" "Seek Alt Route". The VMBs are specifically located such that it provides notice to drivers as they enter the downtown such that they have alternate routes to take to avoid the Lower Congress Street closure.

Prior to closure – We recommend that the VMBs be placed and utilized a week in advance of the actual closure to inform drivers of the upcoming closure.

Additional Mitigation beyond that shown on the plans: None anticipated

Layer 2 (Figure 2 of attached plans)

For drivers on Congress Street that are approaching the general area, a primary detour will be established. Inbound traffic on Congress Street will be directed to use St. John Street to Park Avenue to Weymouth Street and back up to Congress Street. A Type III barricade will be placed on Congress Street to discourage through traffic, but will provide enough roadway width such that through traffic will still be allowed to reach local destinations such as the Gilman garage, MOB garage, and local businesses.

For outbound Congress Street traffic, the primary detour will direct traffic onto Weymouth Street to Park Avenue to the intersection with St. John Street. The end detour will be at the intersection with St. John Street because based on our evaluation of the roadway network and traffic patterns, it does not appear to make sense to detour all the traffic back to the Congress Street / St. John Street intersection.

Additional Mitigation beyond that shown on the plans:

- Potential retiming of the traffic signals. We recommend that any exclusive pedestrian timing of the signals involved be changed to concurrent pedestrian timing to maximize capacity while still providing accommodations for pedestrians.

Layer 3 (Figure 2 of attached plans)

For what is expected to be minimal inbound traffic that manages to reach the actual Congress Street closure, rather than try to turn them around, the third secondary layer provides a route. This route would direct traffic onto Forest Street to Boynton Street to Weymouth Street. The current plan is to convert Boynton to one-way inbound which will minimize the potential of outbound traffic trying to use this route. Instead, all outbound traffic will be required to use the primary route described in Layer 2.

To allow emergency vehicles adequate width to maneuver, we recommend that some on-street parking be eliminated while the Congress Street closure is in effect (approximately 8 weeks). This would eliminate approximately four on-street parking spaces on Forest Street and 14 on-street parking spaces on Boynton Street. MMC is working with the residents along Boynton Street to provide alternative parking arrangements such as within the MOB parking garage.

Additional Mitigation beyond that shown on the plans: None anticipated

Capacity Analysis:

To further evaluate the options, key intersections were evaluated using Synchro/SimTraffic computer analysis software. Level of service rankings are similar to the academic ranking system, where an 'A' is good with little control delay and an 'F' represents poor traffic conditions. If levels of service fall below a 'D', an evaluation should be made to determine if mitigation should be implemented. The following tables summarize the relationship between level of service and control delay per vehicle for unsignalized and signalized intersections:

DRAFT

Level of Service Criteria for Unsignalized Intersections

Level of Service	Control Delay per Vehicle (sec)
A	Less than 10.0
B	10.1 to 15.0
C	15.1 to 25.0
D	25.1 to 35.0
E	35.1 to 50.0
F	Greater than 50.0

Level of Service Criteria for Signalized Intersections

Level of Service	Control Delay per Vehicle (sec)
A	Less than 10.0
B	10.1 to 20.0
C	20.1 to 35.0
D	35.1 to 55.0
E	55.1 to 80.0
F	Greater than 80.0

The results are based on the average of five SimTraffic runs. The following summarizes the capacity analysis results.

The key intersections for this detour option have been identified as the following:

- Park Avenue / Weymouth Street
- St. John Street / Park Avenue
- Congress Street / St. John Street

The following table summarizes the forecast operation of the key intersections for existing conditions and with the detour in place. Detailed results are attached.

Level of Service Summary

Approach*	Existing Conditions		With Detour	
	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
Park / Weymouth (Existing = U, Detour = S)				
Park EB	A	A	B	D
Park WB	A	A	B	B
Weymouth NB	C	E	C	D
Parking Lot SB	B	B	A	B
Overall	**N/A**	**N/A**	**B**	**C**
St. John / Park (S)				
Park WB	C	B	C	C
St. John NB	B	D	B	C
St. John SB	B	C	C	C
Overall	**B**	**C**	**C**	**C**

DRAFT

Congress / St. John (S)				
Congress EB	C	C	B	C
Congress WB	B	B	B	B
St. John NB	C	C	C	C
St. John SB	C	C	C	C
Overall	**C**	**C**	**C**	**C**

*(U) = Unsignalized, (S) = Signalized

As shown in the table, the intersections of St. John Street with Park Avenue and Congress Street with St. John Street are forecast to operate at similar levels of service to the existing conditions if the detour is implemented. Additionally, the three key intersections are forecast to operate at acceptable levels of service if the detour is implemented. It should be noted that at the intersection of Park Avenue with Weymouth Street, the eastbound and westbound approaches are forecast to operate at lower levels of service with the detour in place than with the existing conditions. This is due to the temporary signalization of the intersection while the detour is operational, which increases the delay of the traffic that is free-flowing in the existing condition. Although the levels of service on Park Avenue are forecast to be lower than the existing conditions, the levels of service on the Weymouth Street approach and the Parking Lot approach are forecast to be maintained or improve from the existing conditions.

Visitor / Patient Garage

Since the Congress Street access to the Visitor / Patient garage will be unavailable during the Congress Street closure, MMC is proposing a plan (attached) to provide access to the Visitor / Patient garage through the Gilman Street access to the employee garage. The two garages are already connected on the base level. The attached plans show the layout that includes an entrance lane for employees and a separate entrance for visitors / patients. Both entrances will be well signed as to who uses which lane. To avoid any crossing of entrance traffic, employees would be required to access the garage from the direction of A Street, while visitors / patients would be expected to use the entrance via Congress Street direction. To get employees in the habit of entering from the A Street direction, the new set up would be implemented a minimum of one week prior to the actual closure of the Congress Street access.

Once in the garage, employees would continue into the employee section of the garage and visitors / patients would continue to the other garage. Exiting traffic from both garages would merge into one exit lane. A flagger(s) would be stationed within the merge area during busy times to ensure proper guidance. MMC is committed to safety so if additional flaggers or additional time periods are required they will be supplied as needed.

METRO Impacts:

The MMC Team has met with METRO to provide advance notice of the closure of a short section of Congress Street. Based on discussions with them, their preference in dealing with road closures is to stay outside of the detours and to change their routes accordingly. They expect that regardless of the specific closure chosen, travel times will be increased and additional buses / drivers will be required to ensure headways and schedules are maintained.

If the City would like to move forward with this detour as proposed, we would have a follow up meeting with METRO to go over the detour with them and receive their feedback.

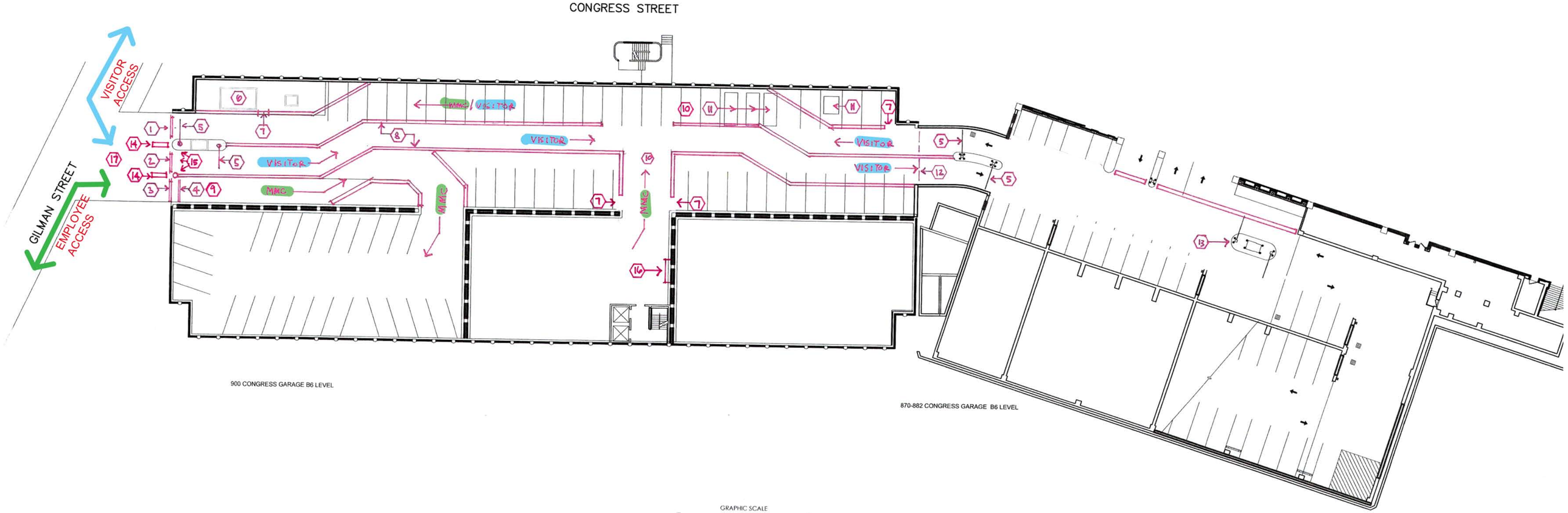
DRAFT

Construction related Deliveries, Delivery Routes, and Parking Restrictions:

Turner Construction will be the responsible party for the actual construction and will be providing number, type (size), and routes for deliveries under separate cover. It should be noted, that additional on-street parking restrictions may be identified when delivery routes are reviewed in the field to ensure proper turning of larger delivery vehicles can be accommodated.

Parking for construction workers will be provided off-site at satellite parking areas, such as the MMC Scarborough Campus, and workers will be shuttled to the work site. Any non-essential vehicles not critical to the work site will be restricted from the site. Any parking by workers in the immediate area reported to MMC or Turner Construction will be taken seriously and addressed by Turner Construction.

DRAFT



Maine Medical Center - Garage Access During Congress Street Closure

LEGEND :

1 - “Exit Only” Sign Facing Gilman Street
2 - “ Visitor Entry Only ” Sign Facing Gilman Street
3 - “Employee Entry Only ” Sign Facing Gilman Street
4 - Add horizontal pvc pipe over employee entry lane
5 - Gate arms to remain in upright position
6 - Temporary office to remain
7- 5 Foot opening in barrier for pedestrian access
8 - Jersey Barriers, typical
9 - Temporary gate arm to conttrol employee access lane
10- Stop sign and staff person at this location during peak times
11 - Remove storage containers
12- Remove chain link fence gates
13 - Visitor access booth to remain as currently functioning
14 - One jersey barrier section on driveway apron
15 - Activate traffic signal lights
16 - Stop Ahead sign
17 - Staff person at Gilman Street Entrance at peak times

Patient / Visitor Garage Traffic Control Plan

Figure No. 1



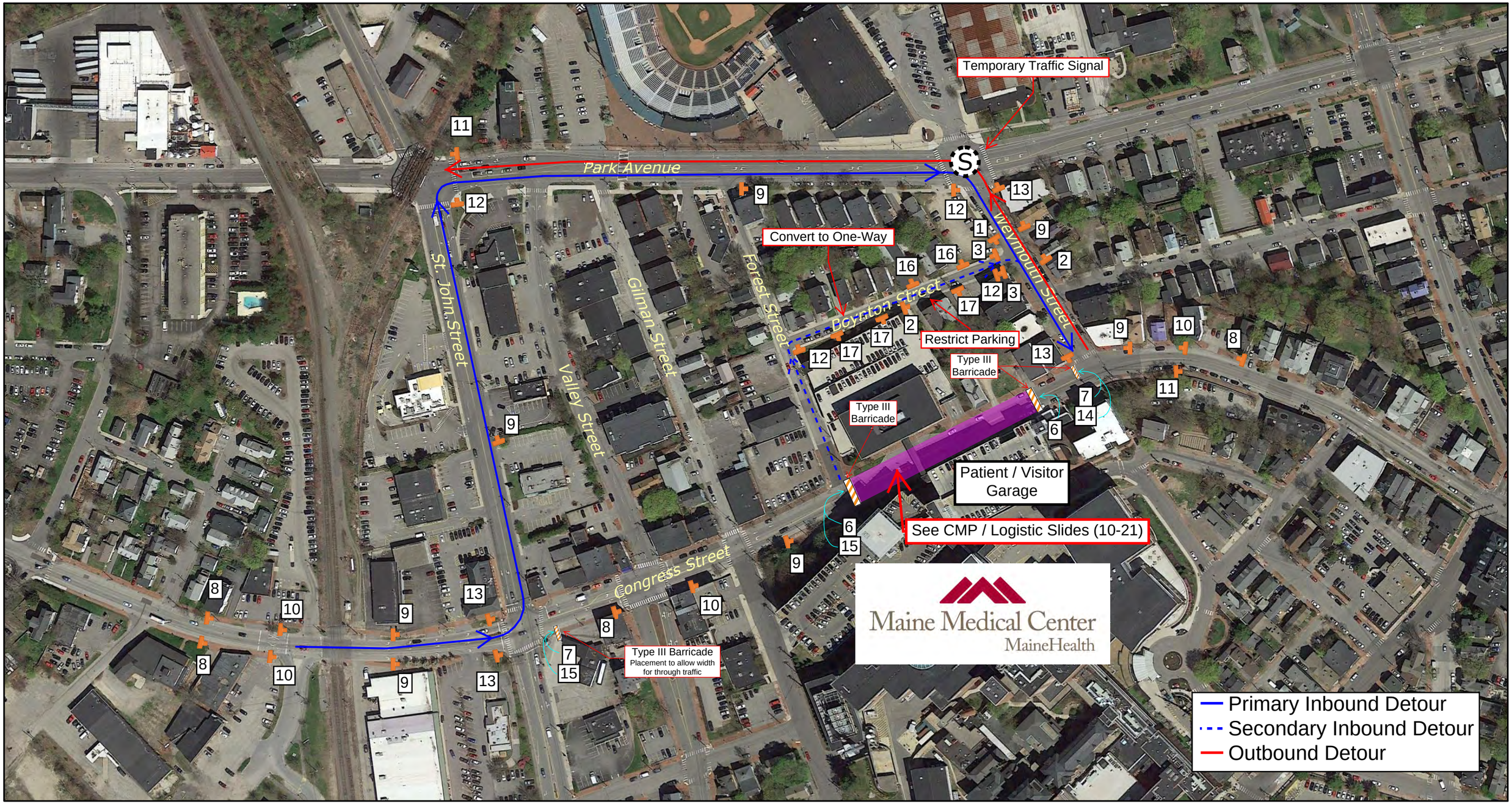
Maine Medical Center Expansion
PORTLAND, MAINE

Design: ET
Draft:
Checked: RED
Scale: NONE
Date: JAN 2018
File Name: 2866-01-TRAFF.dwg

GORRILL PALMER
Relationships. Responsiveness. Results.
www.gorrillpalmer.com
207.772.2515

Congress Street Detour

Figure No. 2



Maine Medical Center Expansion
PORTLAND, MAINE

Design: ET
Draft:
Checked: RED
Scale: NONE
Date: JAN 2018
File Name: 2866-01-TRAFF.dwg

GORRILL PALMER
Relationships. Responsiveness. Results.
www.gorrillpalmer.com
207.772.2515

General Notes and Sign Specifications

Figure No. 3

GENERAL NOTES:

1. ALL TRAFFIC CONTROL SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREET AND HIGHWAYS (MUTCD), USDOT, FHWA, LATEST EDITION, AND CITY STANDARDS.
2. SIGN LOCATIONS SHOWN ARE APPROXIMATE. ACTUAL LOCATIONS SHALL BE DETERMINED IN THE FIELD AND APPROVED BY THE CITY.
3. OTHER SIGNS MAY BE NEEDED AS DIRECTED BY THE CITY.
4. ALL CONTROL DEVICES SHALL BE PLACED IN HIGHLY VISIBLE LOCATIONS.
5. ALL CONSTRUCTION RELATED TRAFFIC CONTROL SIGNS NOT IN EFFECT SHALL BE COVERED OR TURNED FROM TRAFFIC VIEW UNTIL THEY ARE MADE ACTIVE. SIGNS SHALL BE COVERED OR REMOVED WHEN THE WORK IS NOT ACTIVE.
6. ANY EXISTING SIGNS OR PAVEMENT MARKINGS DAMAGED DURING CONTRUCTION SHALL BE RESTORED TO THEIR ORIGINAL CONDITIONS OR REPLACED AS NEEDED.
7. ANY CONFLICTING SIGNS OR PAVEMENT MARKINGS SHALL BE COVERED OR REMOVED AS NEEDED.
8. CHANNELIZING DEVICES SHALL BE PLACED PER MUTCD.
9. POST-MOUNTED SIGNS SHALL BE A MINIMUM HEIGHT OF 7 FEET (TO THE BOTTOM OF THE SIGN) AND MUST BE CRASHWORTHY.

SIGN SPECIFICATIONS:


R3-1
24" x 24"
1


R3-2
24" x 24"
2



R5-1
30" x 30"
3


R8-3
24" x 24"
4



R9-9 Modified
24" x 12"
5



R11-2
48" x 30"
6



R11-3a
60" x 30"
7



W20-1
36" x 36"
8



W20-2
36" x 36"
9



W20-3
36" x 36"
10



M4-8a
24" x 18"
11



M4-9R
30" x 24"
12



M4-9L
30" x 24"
13



M4-10R
48" x 18"
14



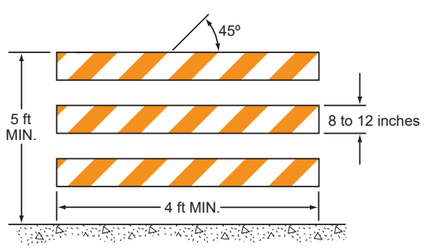
M4-10L
48" x 18"
15



R6-1R
36" x 12"
16



R6-1L
36" x 12"
17



TYPE 3 BARRICADE

TEMPORARY SIGNALIZATION: SIGNAL SHALL BE ON FLASH FOR A MINIMUM OF ONE WEEK PRIOR TO BEING PUT INTO RED-YELLOW-GREEN OPERATION. THE SIGNAL SHALL BE PUT INTO RED-YELLOW-GREEN OPERATION PRIOR TO 6 AM ON A MONDAY MORNING AND SIGNAL CONTRACTOR SHALL REMAIN ON-SITE UNTIL A MINIMUM OF 9 AM TO MAKE ADJUSTMENTS TO SIGNALS / TIMING PER THE DIRECTION OF THE CITY TRAFFIC ENGINEER OR REPRESENTATIVE. THE CONTRACTOR SHALL ALSO BE AVAILABLE FROM 11 AM TO 1 PM AND AGAIN FROM 3 PM TO 6 PM ON THE SAME DAY TO MAKE ADJUSTMENTS AS DIRECTED BY THE CITY ENGINEER OR THEIR REPRESENTATIVE. TWO WEEKS AFTER INITIAL RED-YELLOW-GREEN INITIALIZATION, THE CONTRACTOR SHALL BE AVAILABLE AT THOSE SAME TIMES FOR FURTHER ADJUSTMENTS AS DIRECTED BY THE CITY TRAFFIC ENGINEER OR THEIR REPRESENTATIVE.

NOTE: SIZES OF SIGNS AND LETTERING ON ALL SIGNS SHALL BE VERIFIED THAT THEY MEET MUTCD REQUIREMENTS PRIOR TO ORDERING AND INSTALLATION.

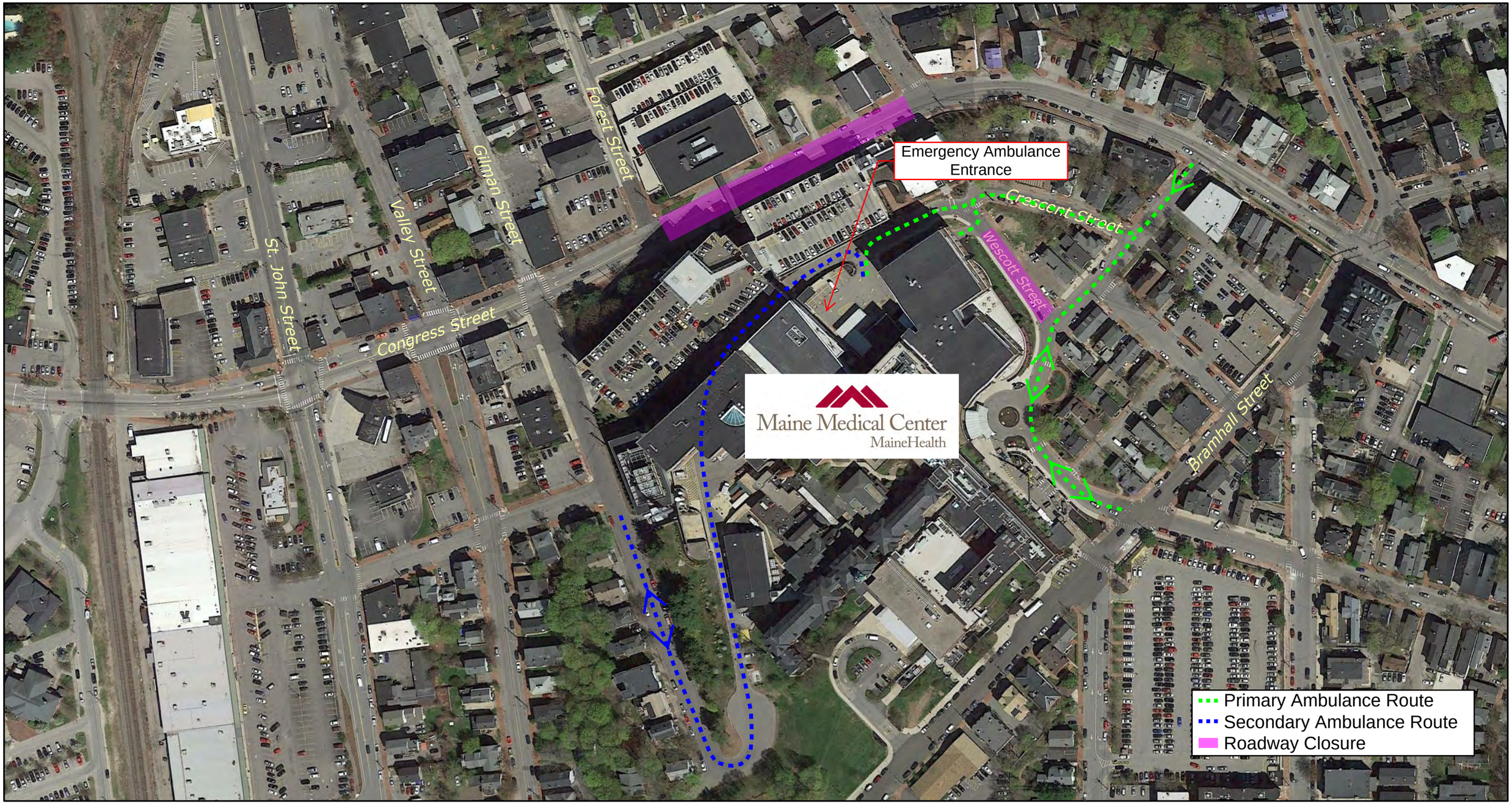
Maine Medical Center Expansion
PORTLAND, MAINE

Design: ET Scale: NONE
Draft: Date: JAN 2018
Checked: RED File Name: 2866-01-TRAFF.dwg

GORRILL PALMER
Relationships. Responsiveness. Results.
www.gorrillpalmer.com
207.772.2515

Ambulance Routes

Figure No. 1



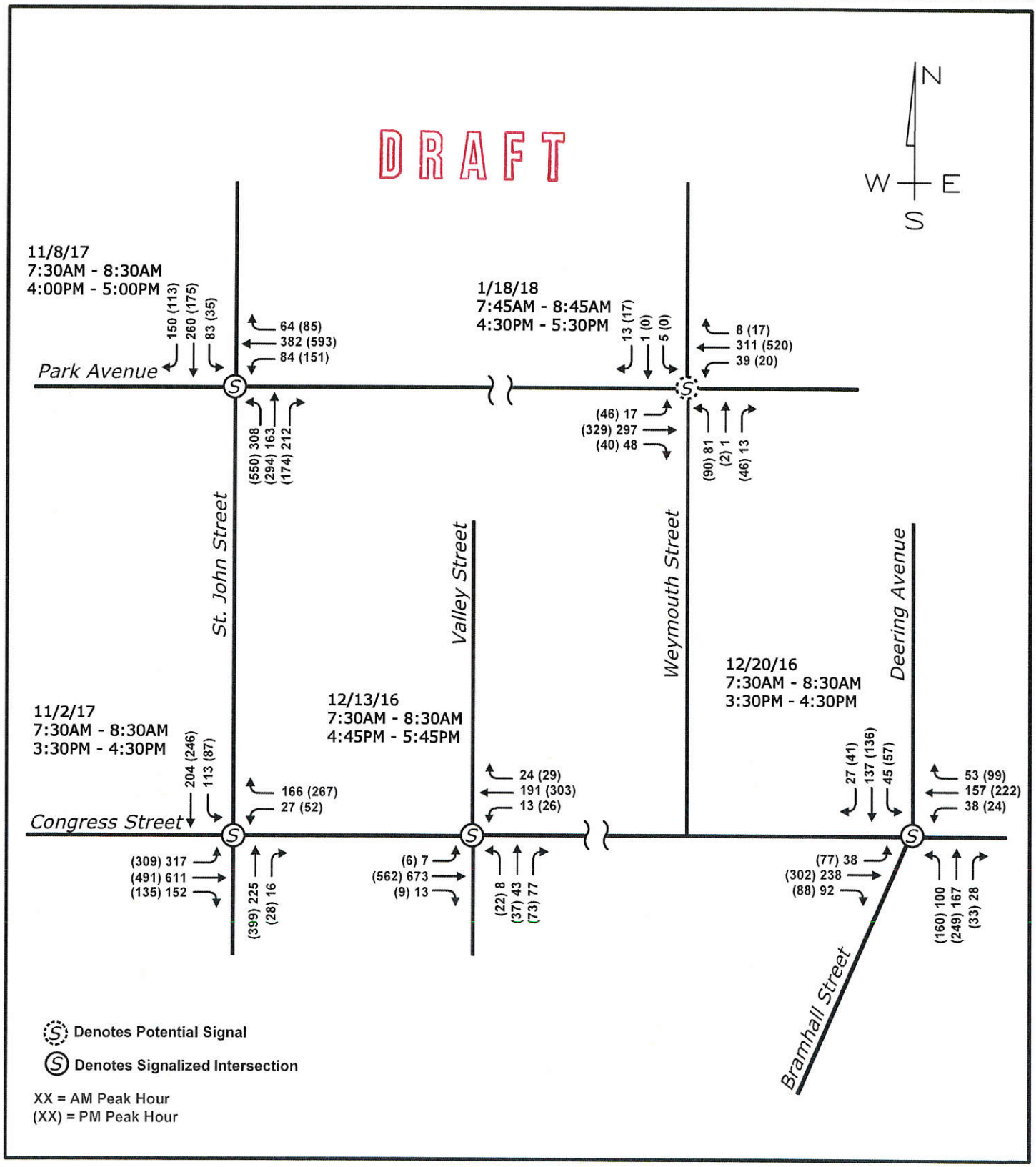
Maine Medical Center Expansion
PORTLAND, MAINE

Design: ET
Draft:
Checked: RED
Scale: NONE
Date: FEB 2018
File Name: 2866-01-TRAFF.dwg

GORRILL PALMER
Relationships. Responsiveness. Results.
www.gorrillpalmer.com
207.772.2515

RAW VOLUMES

Figure No. 1



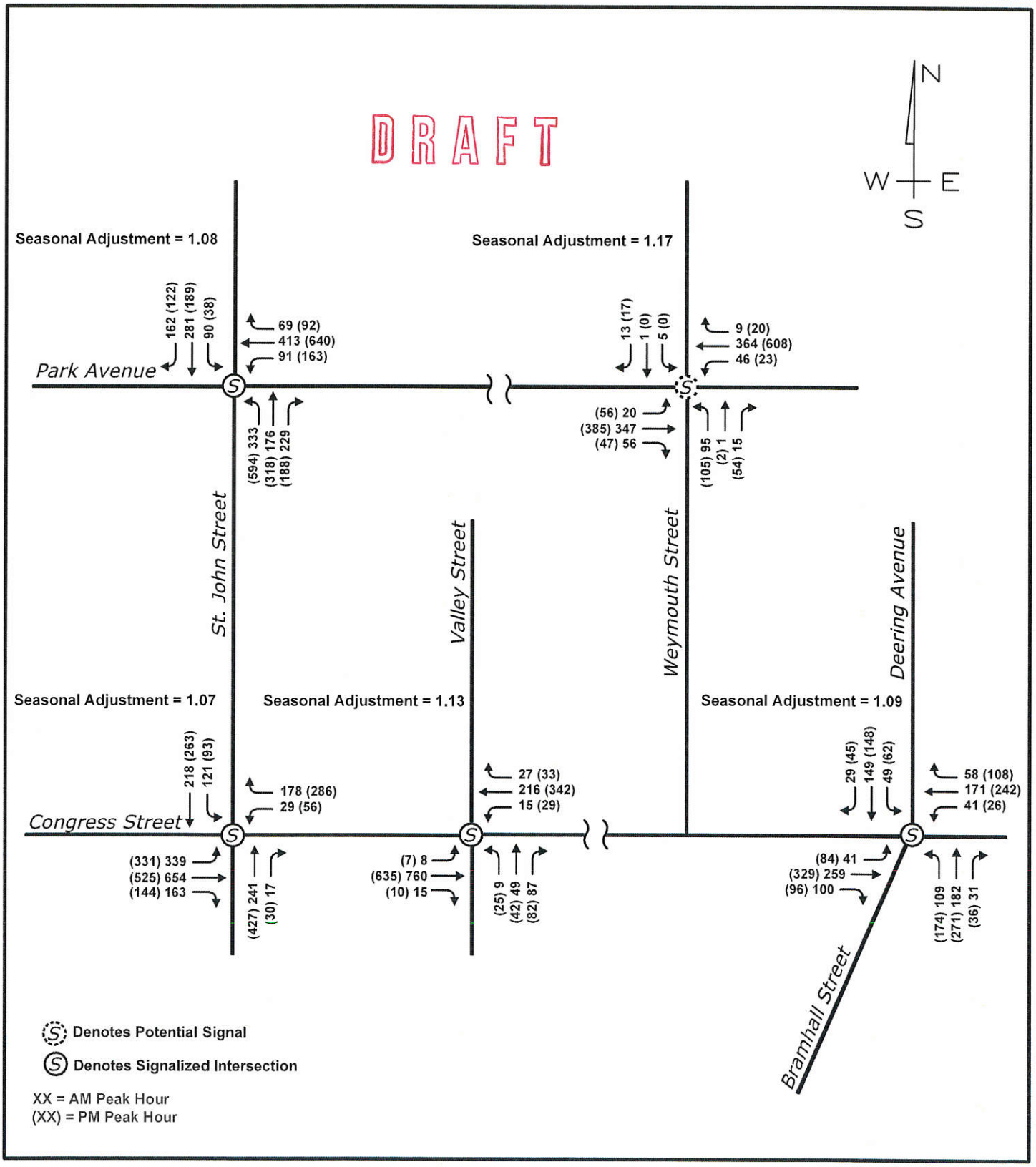
MAINE MEDICAL CENTER EXPANSION
PORTLAND, MAINE

Design: JP
Draft:
Checked: RED
Scale: NONE
Date: FEB 2018
File Name: 2866.01-TRAFF.dwg

GORRILL PALMER
Relationships. Responsiveness. Results.
www.gorrillpalmer.com
207.772.2515

ADJUSTED VOLUMES

Figure No. 2



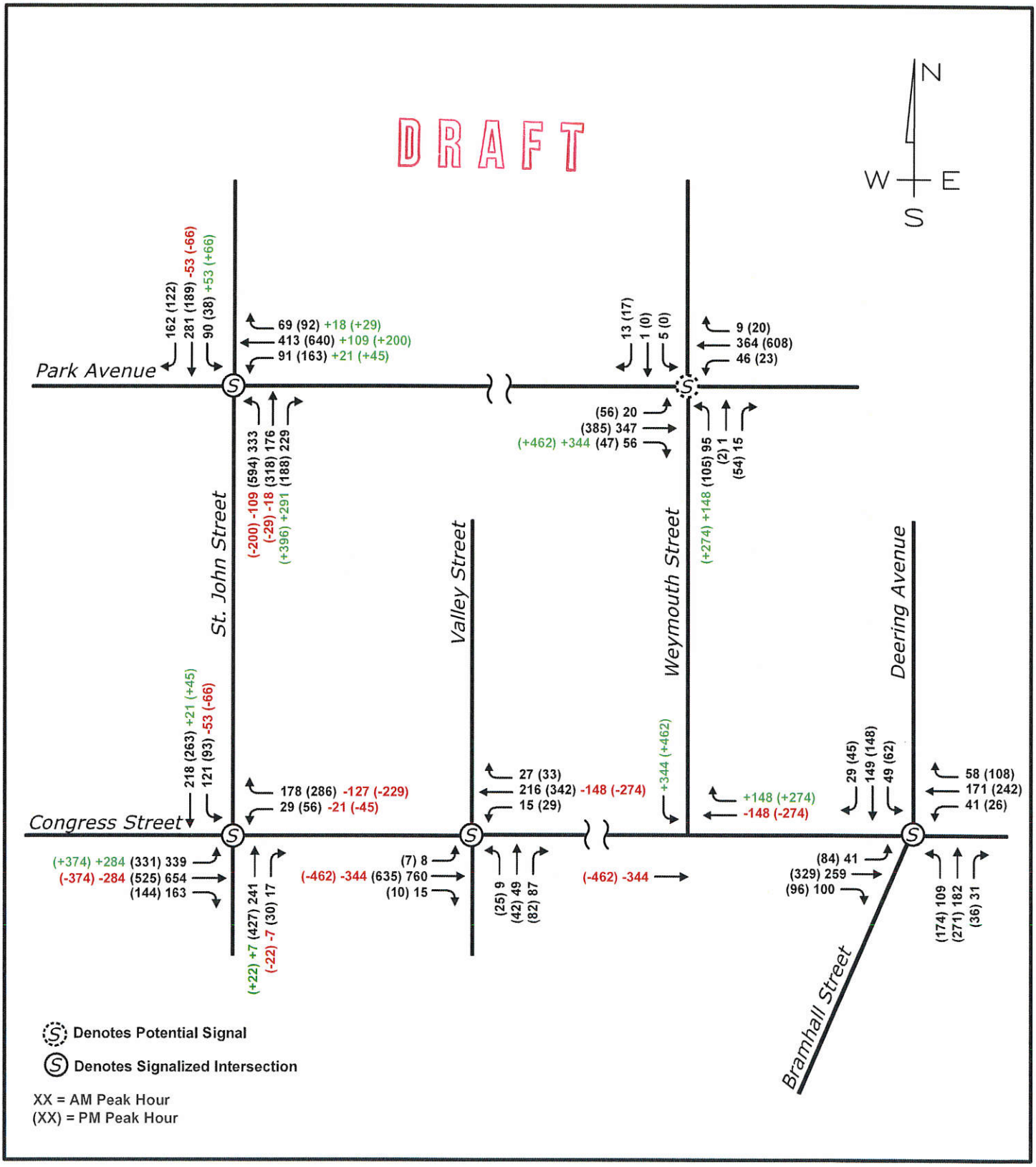
MAINE MEDICAL CENTER EXPANSION
PORTLAND, MAINE

Design: ET
Draft:
Checked: RED
Scale: NONE
Date: FEB 2018
File Name: 2866.01-TRAFF.dwg

GORRILL PALMER
Relationships. Responsiveness. Results.
www.gorrillpalmer.com
207.772.2515

DETOUR VOLUMES

Figure No. 3



MAINE MEDICAL CENTER EXPANSION
PORTLAND, MAINE

Design: ET
Draft:
Checked: RED
Scale: NONE
Date: FEB 2018
File Name: 2866.01-TRAFF.dwg

GORRILL PALMER
Relationships. Responsiveness. Results.
www.gorrillpalmer.com
207.772.2515

MAINE MEDICAL CENTER

Construction Projects at the East Tower, Visitor Garage, Central Utility Plant

Construction Management Plan

December 15, 2017

[Updated for 1/23/18 Planning Board Meeting]
(Updated for 2/27/18 Planning Board Meeting)

Prepared for: Portland Department of Planning & Urban Development Department

Project Proponent: Colliers International

Construction Manager: Turner Construction

TABLE OF CONTENTS

CONSTRUCTION MANAGEMENT PLAN

1.0 CONSTRUCTION MANAGEMENT PLAN 4
2.0 CONSTRUCTION SCHEDULE & WORK HOURS 4
2.1 Work Hours 4
2.2 Construction Timeline 4
2.2.1 Spring 2018 to Fall 2019 4
2.3 Construction Updates Reporting 5
2.4 Construction Logistics 5
2.5 Perimeter Protection / Public Safety 6
2.6 Worker Parking & Traffic Impacts 6
2.7 Truck Routes and Volumes – Refer to Site Logistics Plans 7
3.0 Air Quality & Noise 9
3.1 Dust Control 9
3.2 Noise 9
3.3 Air Monitoring 10
4.0 Communication Strategies 11
4.1 Contacts, Distribution Lists 11
5.0 Vibration Monitoring – Not Applicable 11

MAINE MEDICAL CENTER

Construction Projects at the East Tower, Visitor Garage, Central Utility Plant

Construction Management

Plan 12.15.17 (Updated 02.10.18)

Purpose Statement

The purpose of this document is to provide the details of the first phase of construction for MMC's Master Facility phase IIB. This document outlines Turner Construction's plan for controlling impacts from noise, vibrations, ground movement, truck traffic, and other construction related factors to the surrounding neighborhoods and buildings.

Maintaining normal campus operations and Public Safety are high priorities during the construction phase. This plan will be presented to the appropriate City and Neighborhood representatives. The City of Portland Planning Board will approve the final plan. It has been the goal of these programs to define the construction plan before construction begins. Turner's experience on projects with similar logistic constraints has proven that pre-planning and constant communication are necessary for a smooth efficiently run, incident free project.

It is Turner Construction's full intent to follow the guidelines set by the contract documents.

Turner Construction and its subcontractors shall schedule and conduct operations in a manner that will control the disturbance to the public in areas adjacent to the work and to occupants of buildings in the vicinity.

1.0 CONSTRUCTION MANAGEMENT PLAN

This Construction Management Plan (CMP), submitted to the Portland Department of Planning & Urban Development for approval by the City of Portland Planning Board prior to the start of construction, includes specific mitigation measures and staging plans to minimize impacts to surrounding residences and businesses. The Construction Manager and its trade contractors will be bound by the CMP.

Turner Construction Contacts:

Project Superintendent: Scott Griffin
Email: SGriffin@tcco.com / Cell - 203-943-0950

Project Manager: Adam Parys
Email: AParys@tcco.com / Cell – 617-201-0710

Project Engineer : Rick Martineau
Email: RMartineau@tcco.com / Cell – 617-438-1263

Project Superintendent: Chris Rodenhizer
Email: CRodenhizer@tcco.com / Cell – 617-312-9039

Project Director: Gregg Scholler
Email: GScholler@tcco.com / Cell – 203-219-4022

2.0 CONSTRUCTION SCHEDULE & WORK HOURS

Construction work hours will be in accordance with Section 17-18 and Section 25-129.

2.1 Work Hours

- The construction period for the project is expected to be approximately 19 months in duration.
- It is anticipated that the project is estimated to start on or about Spring 2018 and last through Fall 2019.
- Work hours will be 7AM to 7 PM Monday thru Friday.
- Workers will gather at their workplace from 6 AM to 7AM.
- Saturday work will be required on a periodic basis with hours from 7 AM to 6 PM.

2.2 Construction Timeline

2.2.1 Spring 2018 to Fall 2019

East Tower – Wescott Street

A new 60,000 SF addition is being added to the top of the East Tower. The addition consists of two new floors, level 6 and 7. On the roof is a helipad system capable of landing two helicopters. The exterior wall at Level 5 is being replaced in conjunction with a new exterior wall for Level 6 and 7. This project is expected to start in April 2018 and complete by October 2019. (19 Months)

Visitor Garage- Congress Street

Three new floors of parking are being added to the Visitor Garage. These floors will be Level 8, 9 and 10. The added floors are precast and are being added to a garage which has been designed for this expansion. The added parking capacity is 220 cars. This project is expected to start in May 2018 and complete in November 2018. (6 Months)

Central Utility Plant – Gilman Street

The Central Utility Plant is increasing cooling capacity by adding one 2,400 ton chiller and two cooling towers. This project is expected to start in November 2018 and complete in March 2019. (5 months)

2.3 Construction Updates Reporting

The following shall be reported to Maine Medical as a part of the CMP.

- Monthly "look ahead" schedules and narrative for upcoming construction activities.
- Schedule of over-size deliveries to the site that will impact roadways
- Schedule of deliveries that will be outside the City of Portland's allowable work hours.
- Proposed schedule for utility connection or work in public roadways or sidewalks as a part of Turner work.
- Proposed off-hours or Saturday work.
- Construction activities that may impact the neighborhood in an adverse way, including noise, vibration, dust, on-street parking or work outside construction limits or times. Also, proposed options to mitigate these impacts.
- An estimate of the number of vehicles that will require off-site parking.

2.4 Construction Logistics

The proposed Logistics Plans included in the CMP are designed to isolate the construction while providing safe access for pedestrians, hospital operations, and automobiles during normal day-to-day activities and emergencies. Interaction with the public will occur mainly along Congress Street and Gilman Street. The logistics plan define the timeline of construction activities and the location of cranes, gates, access for each Phase.
Each site will be secured by an 8-foot high fence with privacy screening in accordance with the Logistics Plan.

Logistics plans on the construction sequencing for East Tower Overbuild are Slides 2 to 12.

Logistics plans on the construction sequencing for Visitor Garage Overbuild are Slides 13 to 26.

Logistics plans on the construction sequencing for Central Utility Plant cooling upgrade Slides 27 to 29.

2.5 Perimeter Protection / Public Safety

- Turner Construction will work to ensure the sidewalk protection minimizes impact to pedestrian and vehicular flow.
- The specific configuration of sidewalk protection and pedestrian access around the site will vary depending on the phase of the work being performed.
- In general, secured fencing will be used to isolate construction areas from pedestrian traffic.
- Flagmen or Police Details will be provided at all active gates when there are deliveries.
- Construction procedures will be designed to meet all OSHA safety standards for specific site construction activities.
- Subcontractors will implement and manage their own Health and Safety Program for the project.
- All Subcontractors are required to wear appropriate personal protective equipment.
- Snow removal and ice treatment will be provided on the surrounding area within the construction fence.
- Sidewalks will be cleaned of trash and debris as needed.
- If existing street lights need to be removed for the duration of the project,
- Concrete washout will be in concrete washout bags, collected and placed in a dumpster. Concrete washout area to be located within the site fence. **(Refer to logistics slide 9)**
- Turner Construction will provide sufficient temporary site lighting to ensure the safety of all pedestrians accessing the sidewalks around the site, including lighting at all covered pedestrian walkways, until permanent street lights are installed Light levels will be tested prior to temporary removal of site lighting.

2.6 Worker Parking & Traffic Impacts

- Turner Construction and its subcontractors shall encourage the use of public transportation by their workers.
- Jobsite personnel will be required to park at an offsite parking area to be determined and will be shuttled to the construction site.
    - Jobsite personnel will be required to park at MMC's Scarborough Campus
    - Jobsite personnel will be shuttled to the construction site
    - Subcontractors who violate this requirement will be fined $500 per offense
- Worker parking shall not be allowed on site except for company vehicles required to perform the work.

- Turner will qualify subcontractors' with a legitimate reason to park onsite and manage that parking within the construction fence and not impact parking in the surrounding area.
- No personal vehicles will be allowed to park at the project construction site or in the adjacent residential streets.
- The following language will be included in the contracts with all subcontractors
    - *"Parking: There shall be absolutely no parking on the project site, in the Hospital Parking Garages and / or Hospital Surface Parking lots, and on street parking adjacent to the Hospital. This is including but not limited to employee vehicles, company vehicles, delivery trucks, trucks containing equipment such as welders, etc. Turner to provide remote parking location, and transportation to and from the jobsite. Any workers found in violation of this policy will be subject to permanent removal from the project and the subcontractor shall be assessed a $500 fine per incident."*

The number of workers required during the construction will vary by Construction Phase.

Construction Phase - April 2018 to September 2019

- Spring 2018- Fall 2018 – average workers – 40 to 50
- Fall 2018 – Spring 2019 – average workers – 70 - 90
- Spring 2019- Fall 2019 - average workers – 100

2.7 Truck Routes and Volumes – Refer to Site Logistics Plans

All street opening and occupancy in the public right of way will be in accordance with Chapter 25 of the City of Portland Land Use Code

- Truck traffic will vary throughout the construction period, depending on the activity.
- An offsite marshalling area will be utilized for large deliveries such as precast and structural steel.
- All trucks will be brought to the construction areas at MMC by experienced dedicated drivers from the marshalling lot.
- Radio and cell phones will be utilized to coordinate all trucking.
- Trucks routes must be submitted and approved by the City of Portland and the Owner before the start of construction.
- Truck idling will be held to a minimum on-site, to minimize the impact to adjacent properties..
- Turner Construction and its subcontractors shall ensure that haul routes, debris and soil removal, and staging areas are conducted in a manner that minimizes the impacts to the abutting communities,
- Wheel wash stations will be installed and maintained by Turner and its subcontractors as needed and maintained at construction site exit areas.
- Street sweeping / vacuuming of all impacted City streets and sidewalks shall be performed by Turner Construction and its subcontractors on an as-needed basis.

- Streets, sidewalks, bicycle ways or other means of travel may not be obstructed or closed without permission from the Owner and other authorities having jurisdiction. The Owner shall be notified one week in advance of any such obstructions or closures.

Construction - East Tower Overbuild – (Refer to Logistics Slides 2 thru 12)

All street opening and occupancy in the public right of way will be in accordance with Chapter 25 of the City of Portland Land Use Code

- All truck traffic will be directed to enter the site utilizing Ellsworth Street to Wescott Street. **(Refer to Logistics slides 8-12)**
- Turner will install way finding signage at strategic locations identifying no travel zones for construction vehicles
- All subcontractors and vendors will be provided with pamphlets indicating the appropriate truck routes to access the site.
- Trucks will be brought within the fence line.
- **Ambulance right of way thru East Tower tunnel is identified on logistics slide 9.**
- During crane erection a portion of Ellsworth Street and Wescott will be closed. **(Refer to logistics slide 8)**

Construction Visitor Garage Overbuild – (Refer to Logistics Slides 13-26)

All street opening and occupancy in the public right of way will be in accordance with Chapter 25 of the City of Portland Land Use Code

- All truck traffic will be directed to enter the site utilizing Congress Street
- All detours and paths of travel shown on the Traffic Management Plans will be followed..
- During an eight week period when precast erection is occuring, Congress Street will need to be closed at the location of the Visitor Garage. Detailed logistics plans are included to identify the street closure requirements**.(refer to logistics slides 18-26)**
- This street closing will be coordinated with the City of Portland.
- All subcontractors and vendors will be provided with instructions prior to their project start indicating the appropriate truck routes to access the site.
    - Precast truck routes have been identified. The path is from a marshalling yard on Commercial Street to Valley Street to Park Street to Weymouth Street and backing in the site. **(Refer to slides 25-26)**

Construction - Central Utility Plant – (Refer to Logistics Slides 27-29)

All street opening and occupancy in the public right of way will be in accordance with Chapter 25 of the City of Portland Land Use Code

- All truck traffic will be directed to the Central Utility Plant utilizing a truck path from Congress Street to Gilman Street, and a departing path from A Street. **(refer to logistics slides 27-29)**
- During a two week period when the chillers and cooling towers are installed, trucks and a crane will be set up on Gilman Street. This is expected to occur in Fall/Winter 2018.Police detail will be fulltime during this period. Gilman Street will remain open.
- Lane closing will be coordinated with the City of Portland.
- All subcontractors and vendors will be provided with instructions prior to their project start indicating the appropriate truck routes to access the site.

3.0 Air Quality & Noise

3.1 Dust Control

To reduce emission of dust and minimize impacts on the local environment, the construction contractor will adhere to a number of strictly enforced mitigation measures. These include:

- Wetting agents will be used regularly to control and suppress dust that may come from the construction materials.
- All trucks used for transportation of construction debris will be fully covered with tarps intended to keep material in the truck.
- Construction practices will be monitored to ensure that unnecessary transfers and mechanical disturbances of loose materials are minimized and to ensure that any emissions of dust are negligible.
- Street and sidewalks will be cleaned to minimize dust accumulations as needed.
- Stock piles of soils will be covered with tarps and/or poly when they are not being utilized for current site activities.

3.2 Noise

- The project will require the use of equipment that can be heard from off-site locations. This project will strive to mitigate construction noise impacts, to the extent possible.
- Increased community sound levels are an unavoidable consequence of construction activities.
- Construction will occur during the daytime hours as defined by the City of Portland Code of Ordinances (7:00 a.m. to 6:00 p.m. Monday through Friday).
- In some instances, a second shift, off hour, holiday and weekends may be required.
- When these events arise, all required permits will be obtained and notification will be posted in accordance with section 2.3
- Work shall be performed so as to prevent nuisance noise conditions that are preventable (e.g., unmaintained equipment, brake squeal, etc.).

- Turner Construction and all subcontractors shall use all reasonable efforts to implement noise reduction methods listed below to minimize construction noise emission levels. Noise reduction methods shall include, but not be limited to:

  Use of:
  - Tie to local power grid to reduce the use of on-site generators.
  - Noise-deadening / isolating surrounds around exceptionally noisy work equipment or operations
  - The maintenance of the access roadways to minimize the "bouncing" of construction vehicles within the construction site.
  - Enforcing the site logistics plan, so as to maximize to every extent possible the forward movement of construction vehicles. This will, in turn, minimize the sound of back-up alarms.

  Attaching:
  - Intake / exhaust mufflers, shields or shrouds
  - Noise-deadening material to equipment and fencing

  Maintaining:
  - Equipment mufflers and lubrication
  - Pre-cast decking and plates to avoid rattling
  - Smooth surfaces on construction sites and public ways to prevent unnecessary noise from surface irregularities.

  Minimizing
  - Noise from the use of backup alarms, using measures that meet OSHA regulations. The construction logistics has been designed such that the backing-up of equipment and trucks is limited.
  - Use of self-adjusting ambient-sensitive backup alarms.
  - Manually adjustable alarms on low setting
  - Scheduling of activities so that alarm noise is minimized

3.3 Air Monitoring

- Turner Construction and its subcontractor's shall employ dust, odor, and gas control measures to minimize the creation of airborne dusts, odors, and gases during the entire construction process. At a minimum, standard dust control techniques shall be employed where heavy equipment will be traveling, standing, or loading, such as watering down the site or utilizing dust control measures. All measures shall be taken in accordance with Turner's approved Health & Safety plan.
- Turner Construction and its subcontractors shall perform dustless street sweeping / vacuuming for all construction activities including demolition, excavation, slurry / soil mixing operations on an as needed basis.
- An air monitoring plan shall be developed by the Owner based on site contaminants of concern, particulate quantities / densities, and risk-based evaluations. The plan will be

developed for off-site impacts. Turner Construction and its subcontractors will be responsible for on-site health and safety issues.

- The Owner will engage a qualified consultant to monitor for dust along the perimeter of the construction site. Results of this monitoring that indicate exceedances of air quality criteria will be immediately brought to the attention of Turner Construction. Turner and its subcontractors shall immediately address the site condition, including terminating construction activities to remedy the site conditions to the satisfaction of the Owner.
- Ductwork snorkels will be installed as required on building air intakes surrounding the job-site to minimize the amount of dust and construction vehicle gases being taken in through the air handling systems. The maintenance of the filters is by the individual building managers.

4.0 Communication Strategies

4.1 Contacts, Distribution Lists

- Turner Construction shall develop a project contact list (e-mail addresses, office and cell phone numbers), to be posted by MMC on the project web site and supplied to Maine Medical Center (MMC) for 24/7 contacts.
- Turner Construction will request similar contact lists from the neighborhood associations. (e-mail addresses, and phone numbers) of key contacts for the specific project.
- Turner Construction will set-up a project bulletin board for each Phase. These boards will be used as communication tools to the surrounding community. There will be a project website thru MMC, developed that also will communicate construction related activities to the community.
- Any last minute changes to the project schedule that may impact the neighborhood or Maine Medical Center (MMC) community will be communicated per section 2.3.
- Turner Construction will participate in the neighborhood council meetings as needed to discuss progress and issues.
- Turner shall maintain a log of all construction-related concerns, via the MMC website.
- MMC shall communicate final resolution of all complaints and concerns to the neighborhood, Maine Medical Center (MMC) community, and when appropriate, to the City of Portland.

5.0 Vibration Monitoring – Not Applicable

Maine Medical Center
MaineHealth

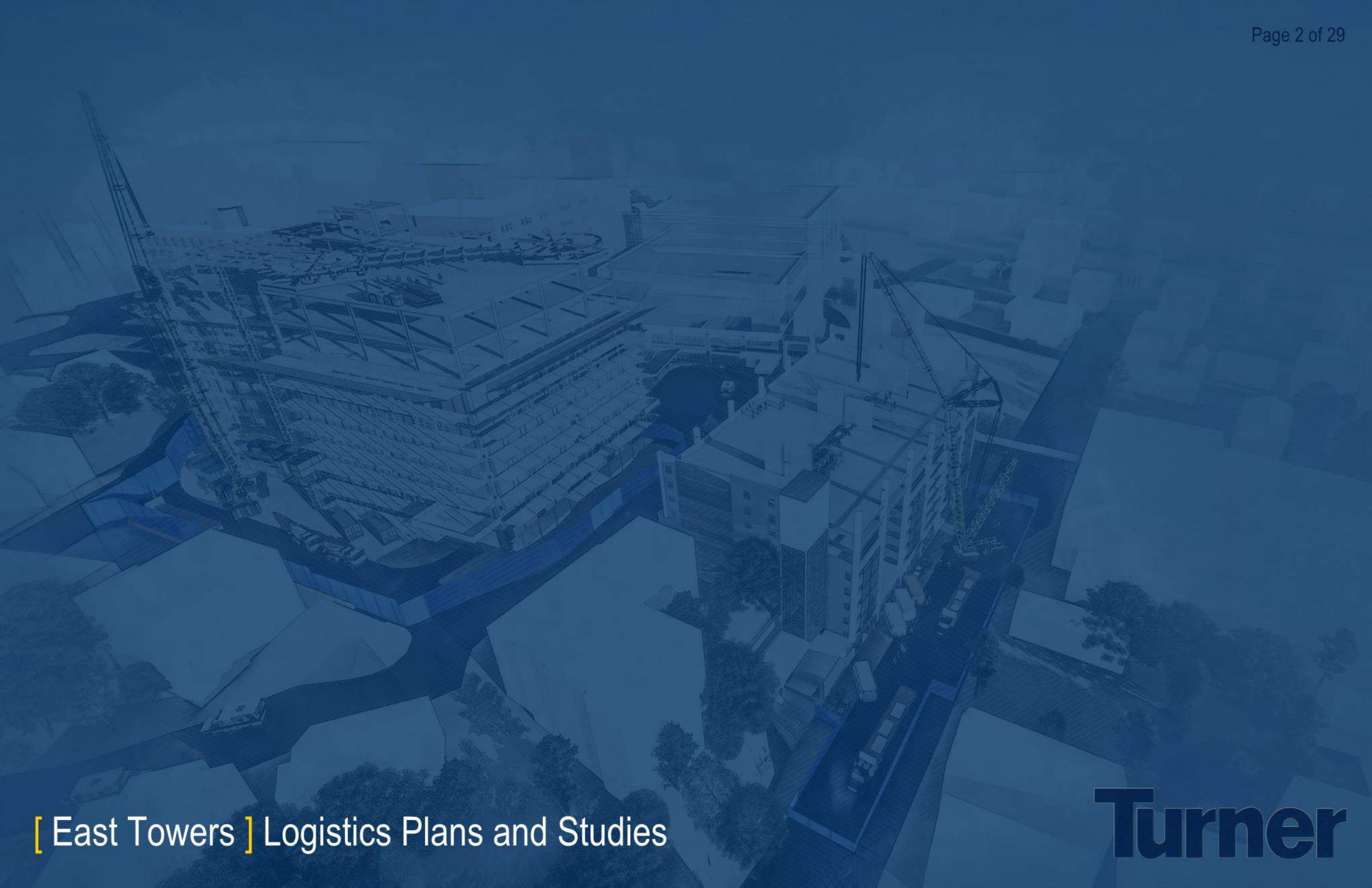
Construction Management Plan

UPDATED: 02-09-18



[Logistics Plans and Studies]
East Towers and Visitors Garage

Turner



[East Towers] Logistics Plans and Studies

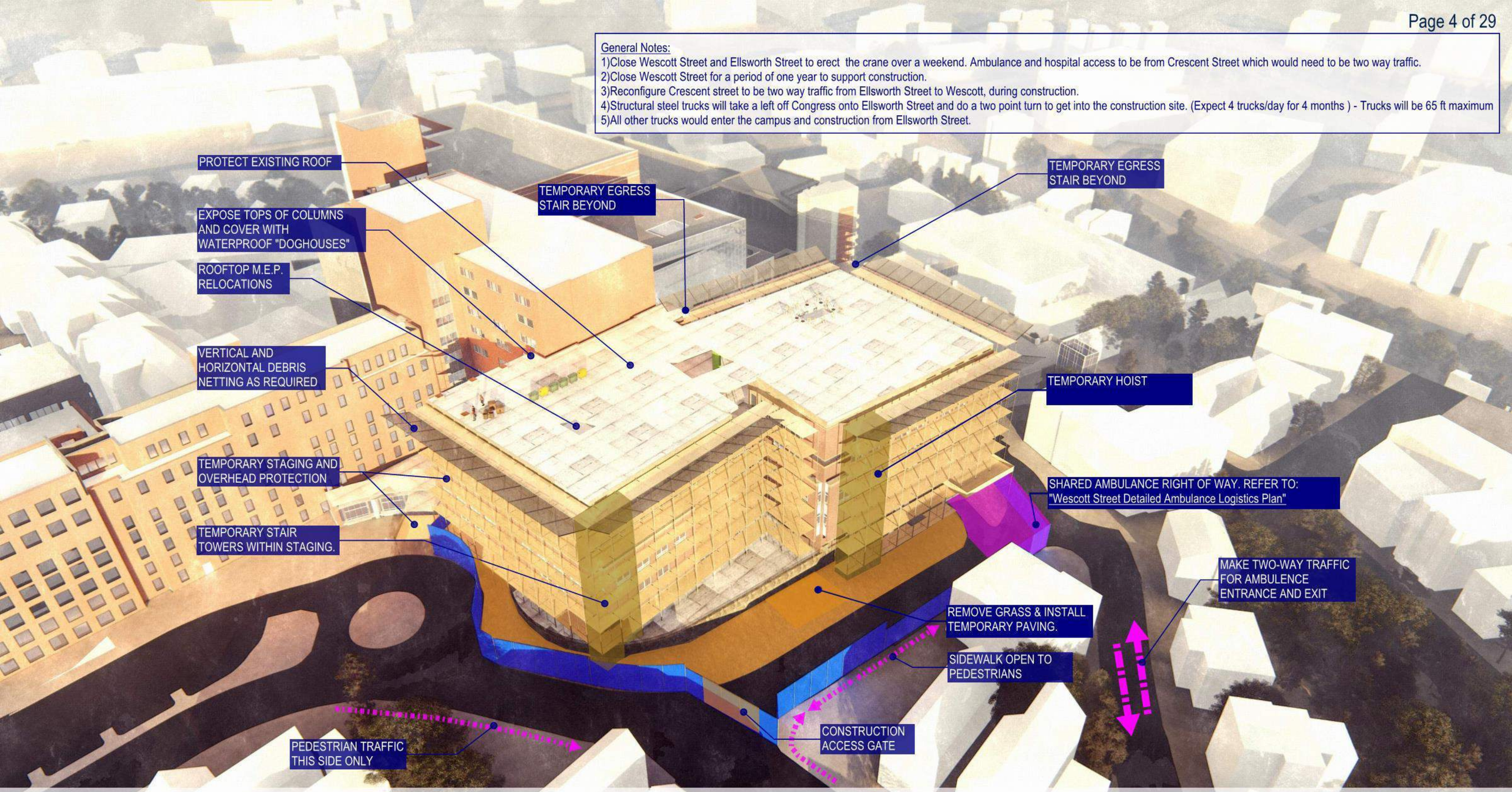
Turner



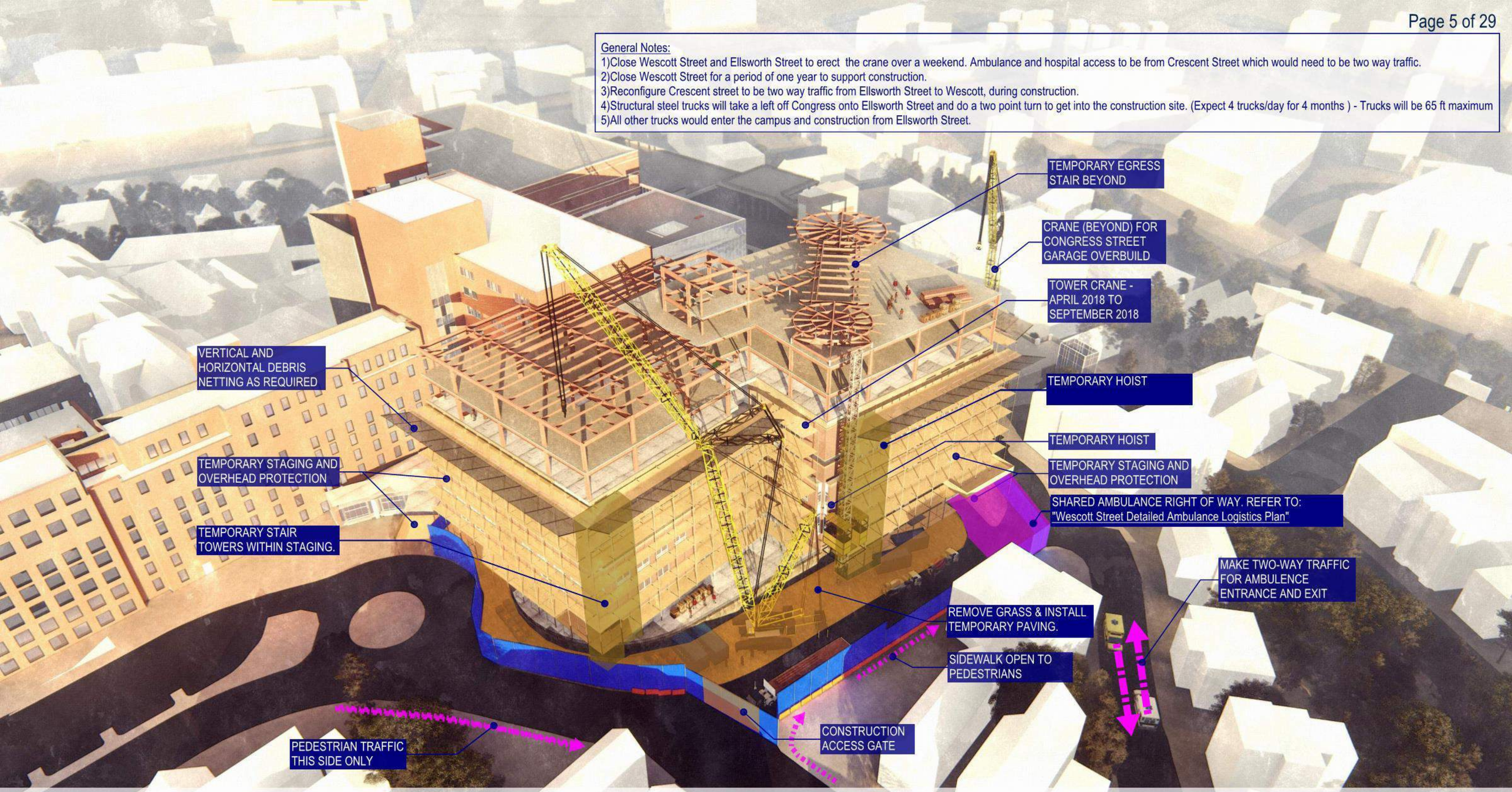
Maine Medical Center
Additions and Renovations [Logistics Plans] EAST TOWERS - EXISTING

Turner

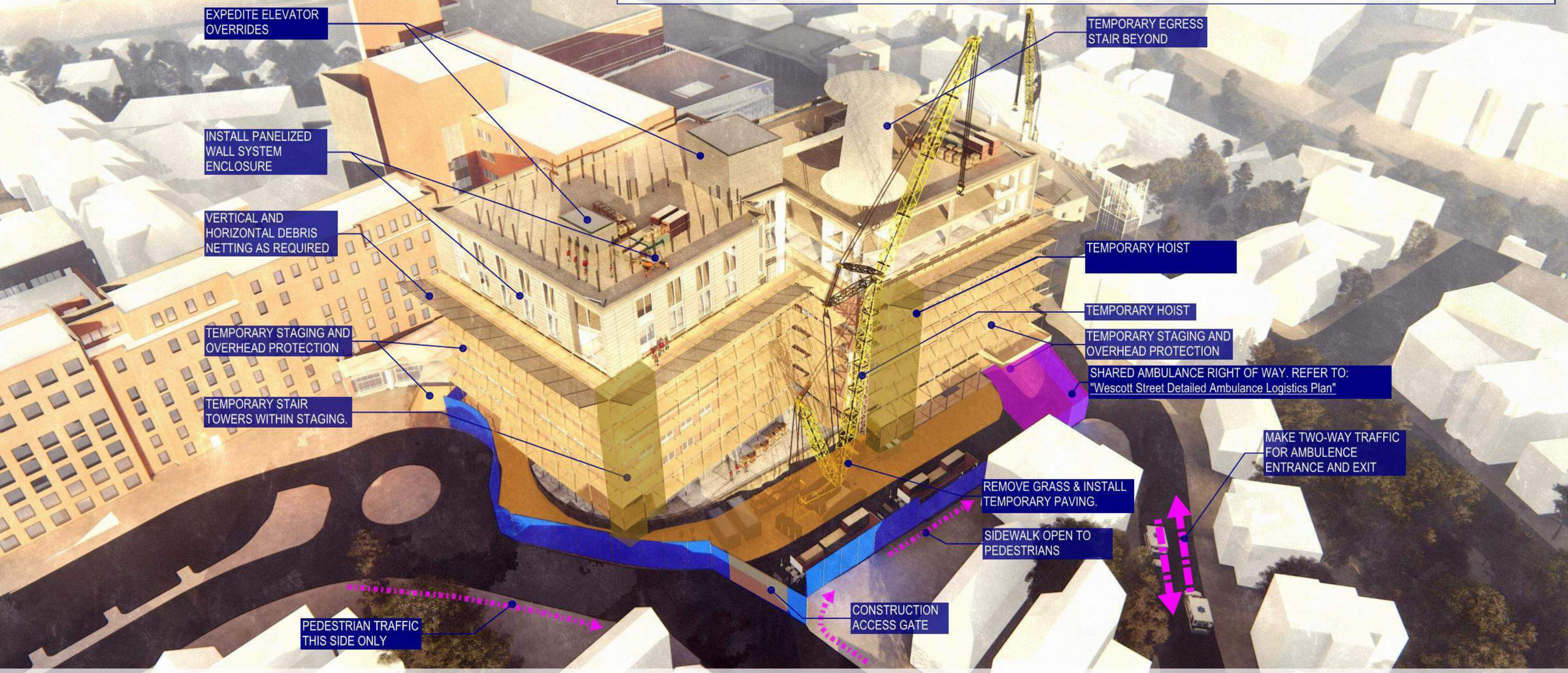
General Notes:
1)Close Wescott Street and Ellsworth Street to erect the crane over a weekend. Ambulance and hospital access to be from Crescent Street which would need to be two way traffic.
2)Close Wescott Street for a period of one year to support construction.
3)Reconfigure Crescent street to be two way traffic from Ellsworth Street to Wescott, during construction.
4)Structural steel trucks will take a left off Congress onto Ellsworth Street and do a two point turn to get into the construction site. (Expect 4 trucks/day for 4 months) - Trucks will be 65 ft maximum
5)All other trucks would enter the campus and construction from Ellsworth Street.



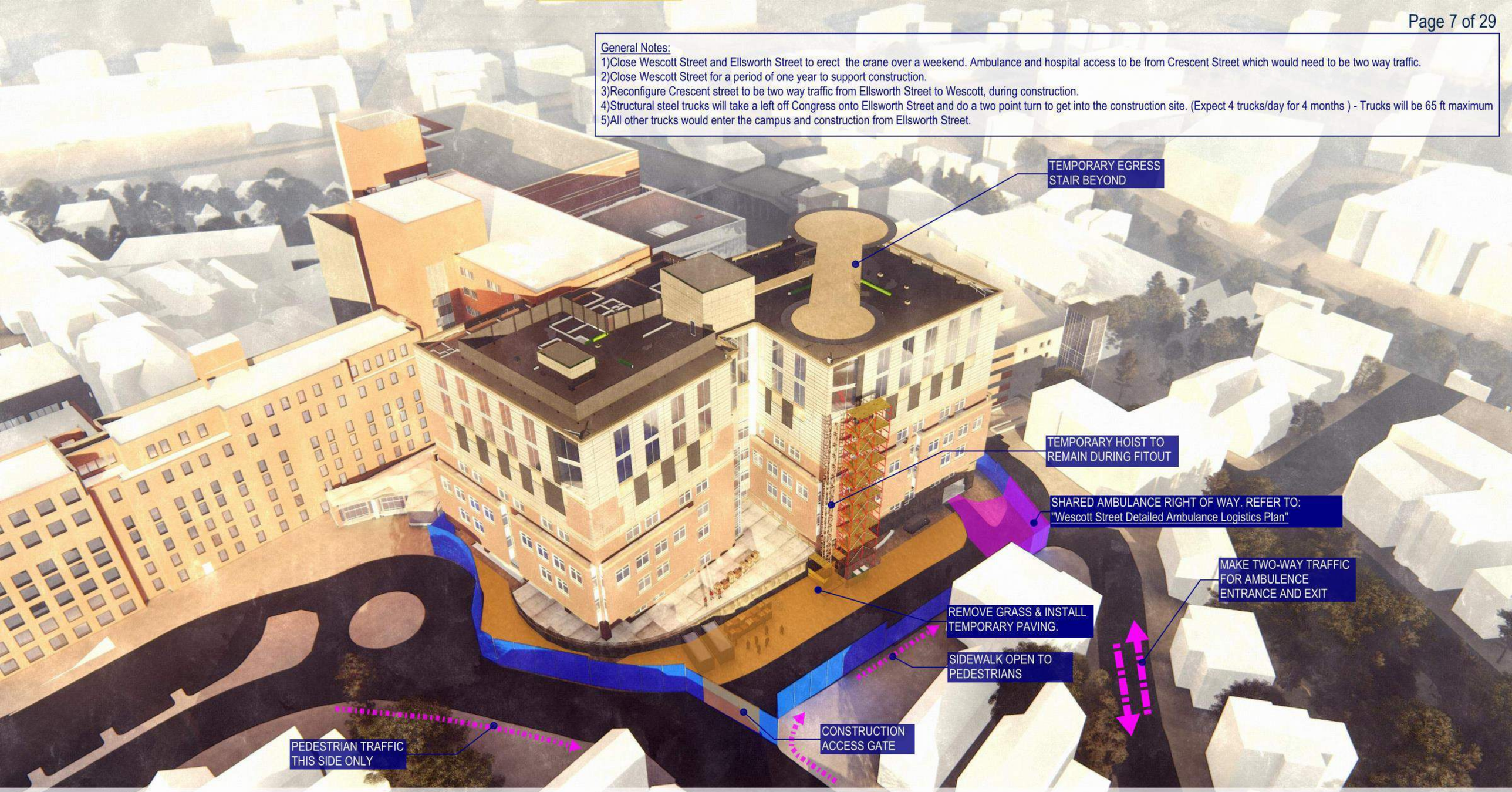
General Notes:
1)Close Wescott Street and Ellsworth Street to erect the crane over a weekend. Ambulance and hospital access to be from Crescent Street which would need to be two way traffic.
2)Close Wescott Street for a period of one year to support construction.
3)Reconfigure Crescent street to be two way traffic from Ellsworth Street to Wescott, during construction.
4)Structural steel trucks will take a left off Congress onto Ellsworth Street and do a two point turn to get into the construction site. (Expect 4 trucks/day for 4 months) - Trucks will be 65 ft maximum
5)All other trucks would enter the campus and construction from Ellsworth Street.

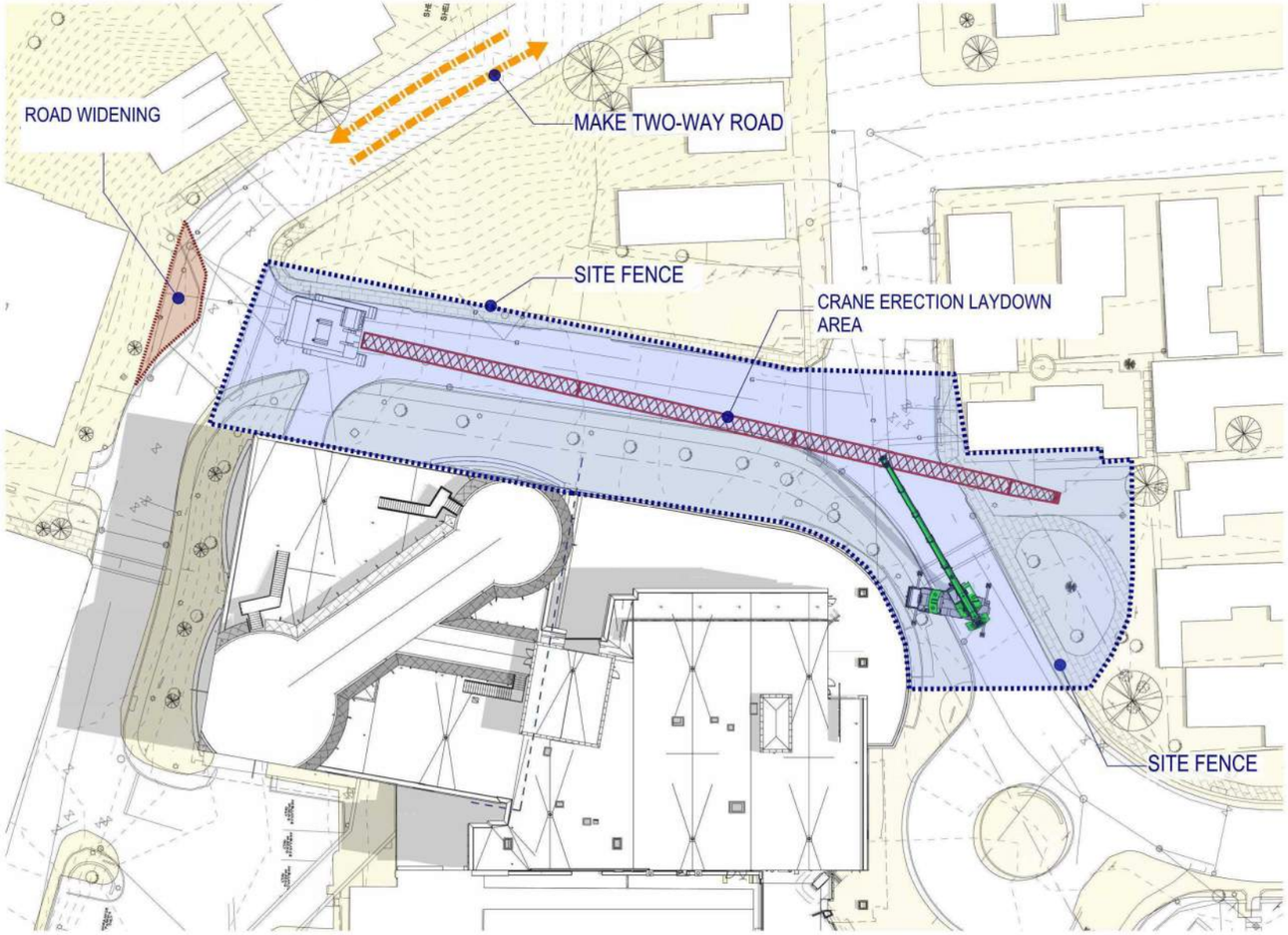


General Notes:
1)Close Wescott Street and Ellsworth Street to erect the crane over a weekend. Ambulance and hospital access to be from Crescent Street which would need to be two way traffic.
2)Close Wescott Street for a period of one year to support construction.
3)Reconfigure Crescent street to be two way traffic from Ellsworth Street to Wescott, during construction.
4)Structural steel trucks will take a left off Congress onto Ellsworth Street and do a two point turn to get into the construction site. (Expect 4 trucks/day for 4 months) - Trucks will be 65 ft maximum
5)All other trucks would enter the campus and construction from Ellsworth Street.

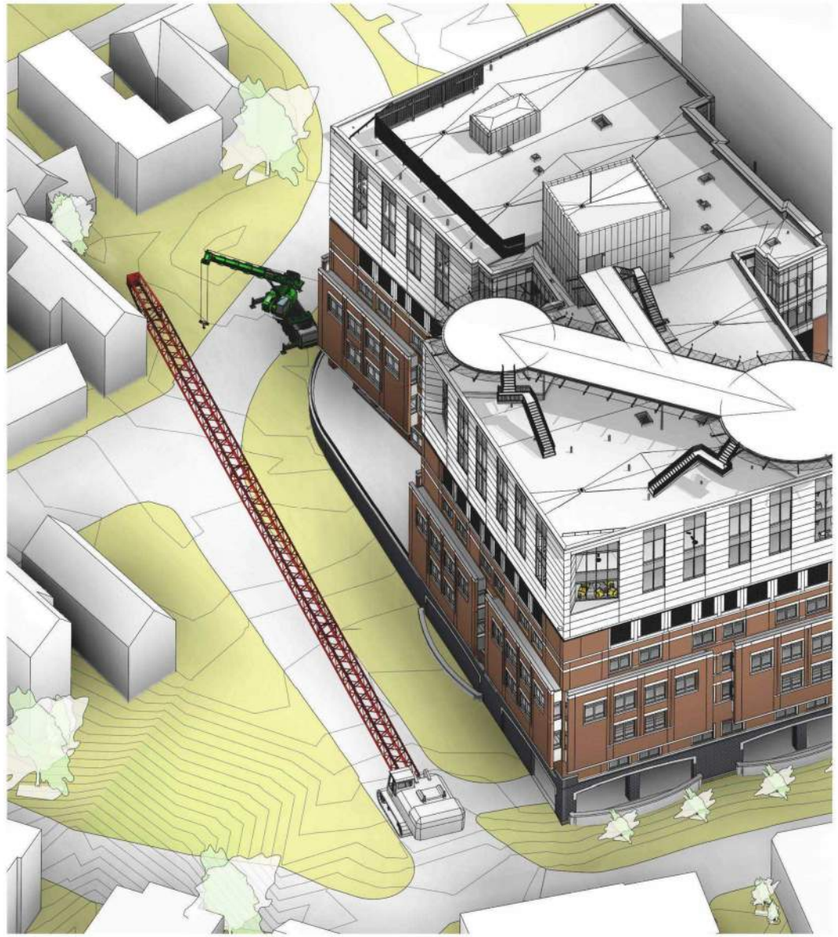


General Notes:
1)Close Wescott Street and Ellsworth Street to erect the crane over a weekend. Ambulance and hospital access to be from Crescent Street which would need to be two way traffic.
2)Close Wescott Street for a period of one year to support construction.
3)Reconfigure Crescent street to be two way traffic from Ellsworth Street to Wescott, during construction.
4)Structural steel trucks will take a left off Congress onto Ellsworth Street and do a two point turn to get into the construction site. (Expect 4 trucks/day for 4 months) - Trucks will be 65 ft maximum
5)All other trucks would enter the campus and construction from Ellsworth Street.



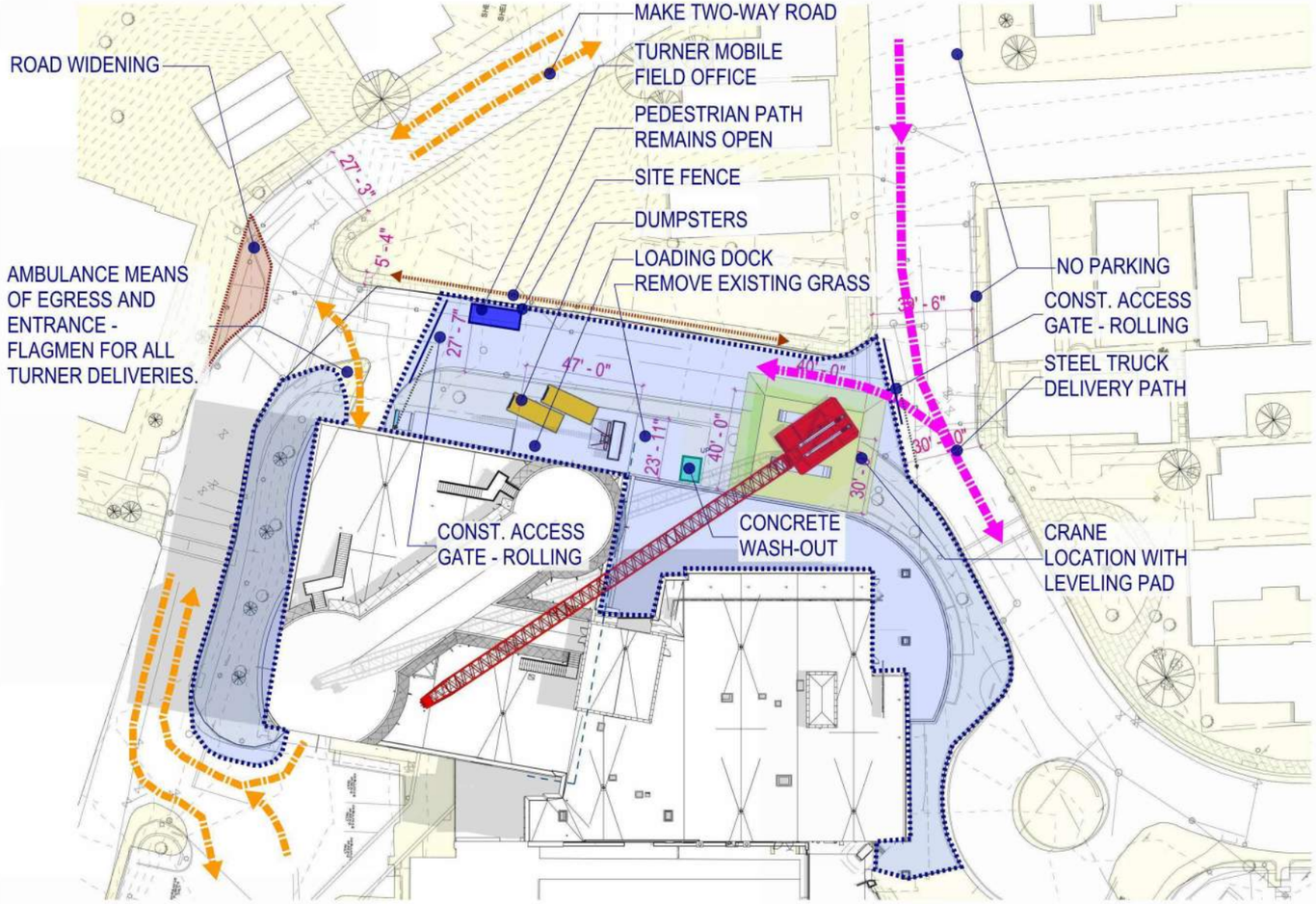


1 EAST TOWERS - CRANE LOGISTICS
3/64" = 1'-0"

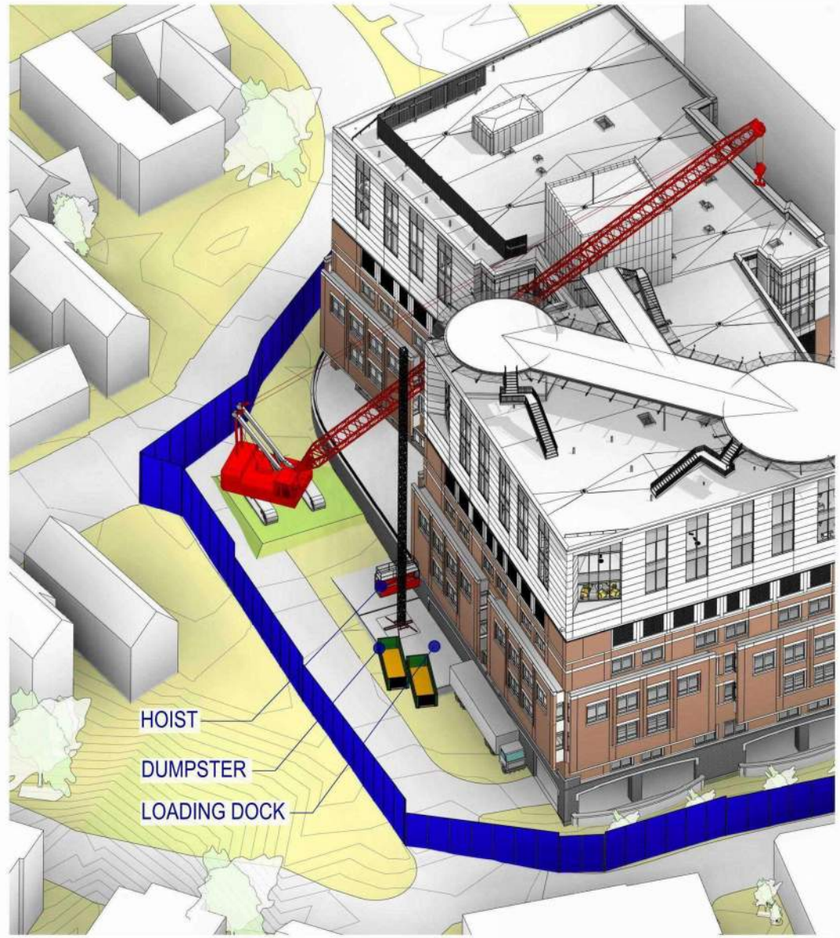


2 EAST TOWERS - CRANE LOGISTICS

General Notes:
1)Close Wescott Street and Ellsworth Street to erect the crane over a weekend. Ambulance and hospital access to be from Crescent Street which would need to be two way traffic.
2)Close Wescott Street for a period of one year to support construction.
3)Reconfigure Crescent street to be two way traffic from Ellsworth Street to Wescott, during construction.
4)Structural steel trucks will take a left off Congress onto Ellsworth Street and do a two point turn to get into the construction site. (Expect 4 trucks/day for 4 months)
- Trucks will be 65 ft maximum
5)All other trucks would enter the campus and construction from Ellsworth Street.



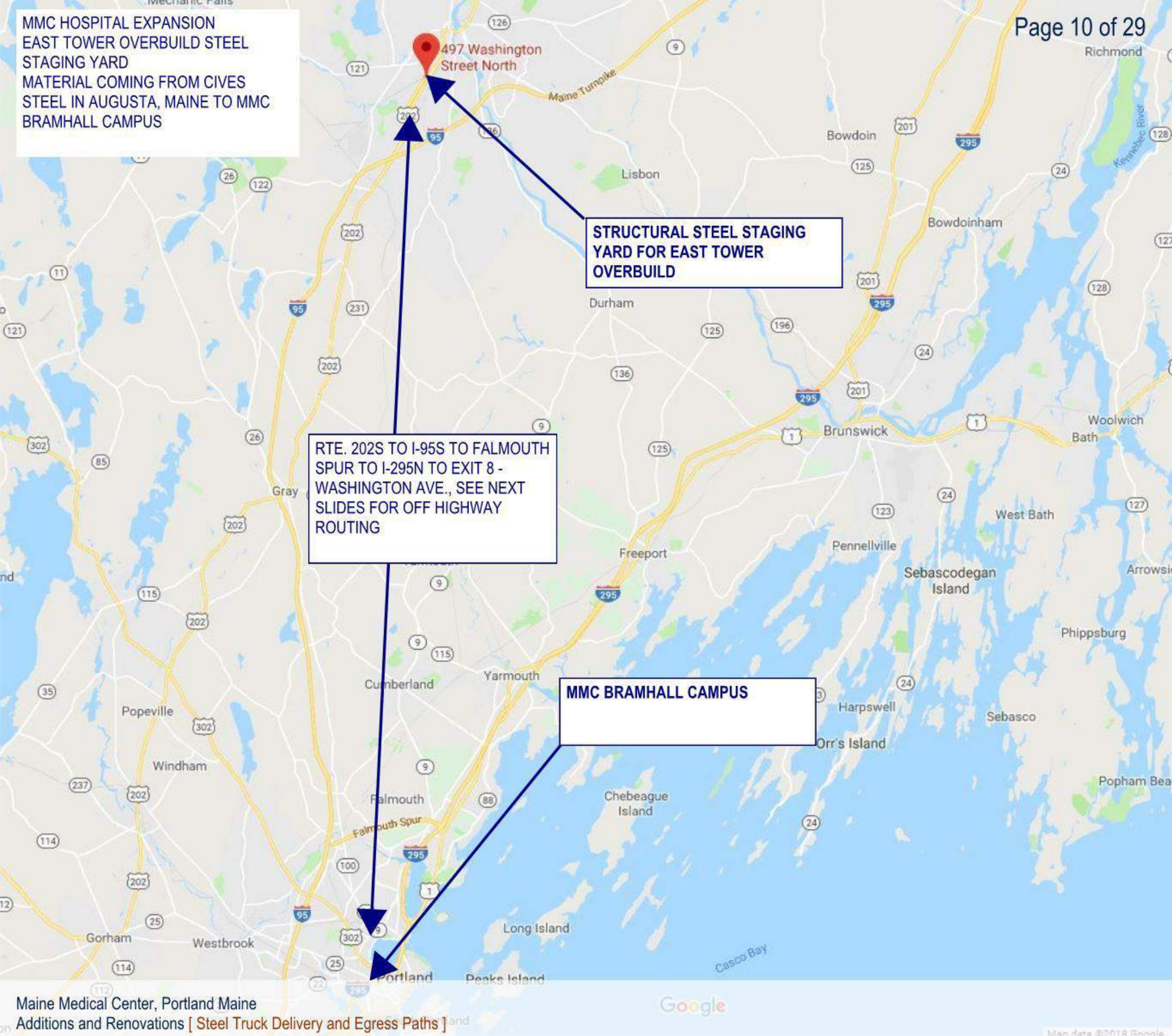
1 EAST TOWERS - CRANE LOGISTICS
3/64" = 1'-0"



2 EAST TOWERS - CRANE LOGISTICS

General Notes:
1)Close Wescott Street and Ellsworth Street to erect the crane over a weekend. Ambulance and hospital access to be from Crescent Street which would need to be two way traffic.
2)Close Wescott Street for a period of one year to support construction.
3)Reconfigure Crescent street to be two way traffic from Ellsworth Street to Wescott, during construction.
4)Structural steel trucks will take a left off Congress onto Ellsworth Street and do a two point turn to get into the construction site. (Expect 4 trucks/day for 4 months) - Trucks will be 65 ft maximum
5)All other trucks would enter the campus and construction from Ellsworth Street.

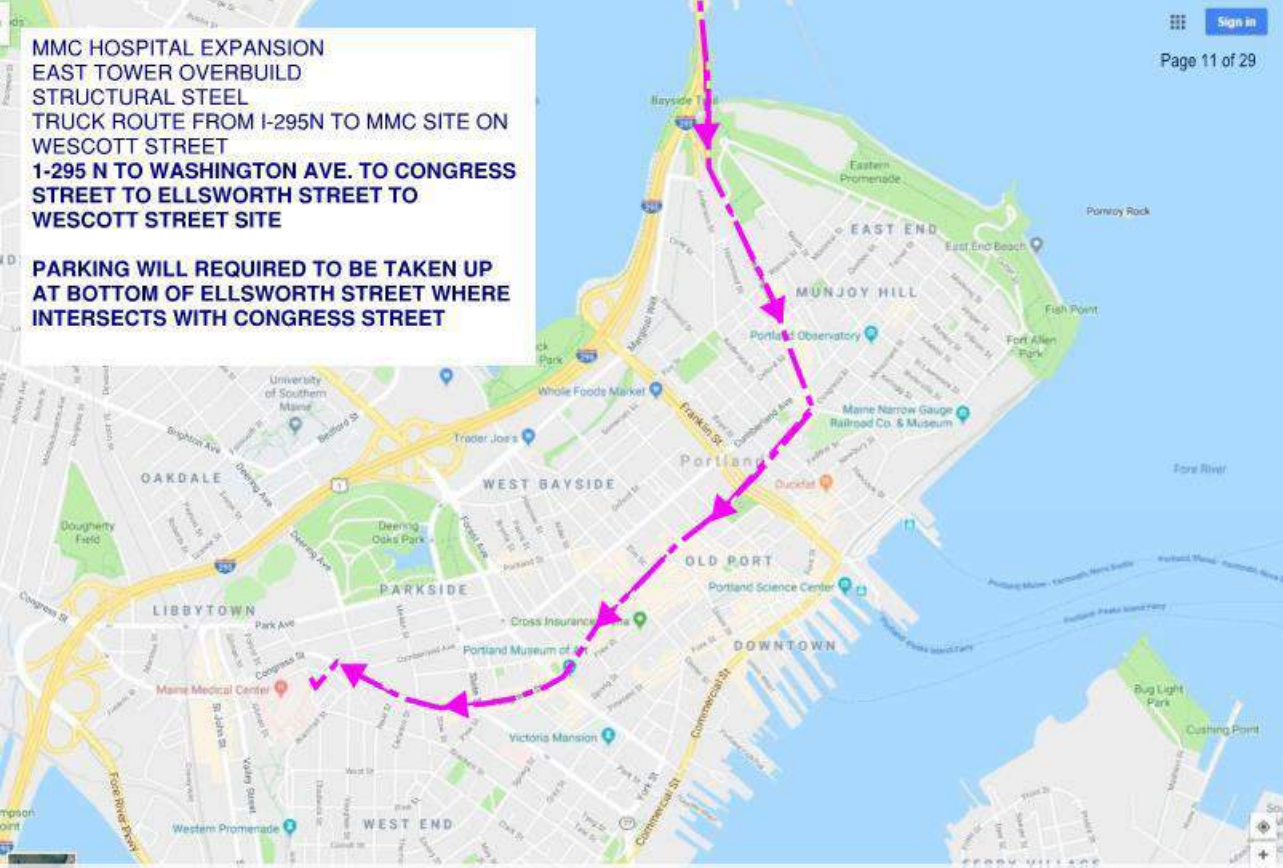
MMC HOSPITAL EXPANSION
EAST TOWER OVERBUILD STEEL
STAGING YARD
MATERIAL COMING FROM CIVES
STEEL IN AUGUSTA, MAINE TO MMC
BRAMHALL CAMPUS



MMC HOSPITAL EXPANSION
EAST TOWER OVERBUILD
STRUCTURAL STEEL
TRUCK ROUTE FROM I-295N TO MMC SITE ON WESCOTT STREET

1-295 N TO WASHINGTON AVE. TO CONGRESS STREET TO ELLSWORTH STREET TO WESCOTT STREET SITE

PARKING WILL REQUIRED TO BE TAKEN UP AT BOTTOM OF ELLSWORTH STREET WHERE INTERSECTS WITH CONGRESS STREET



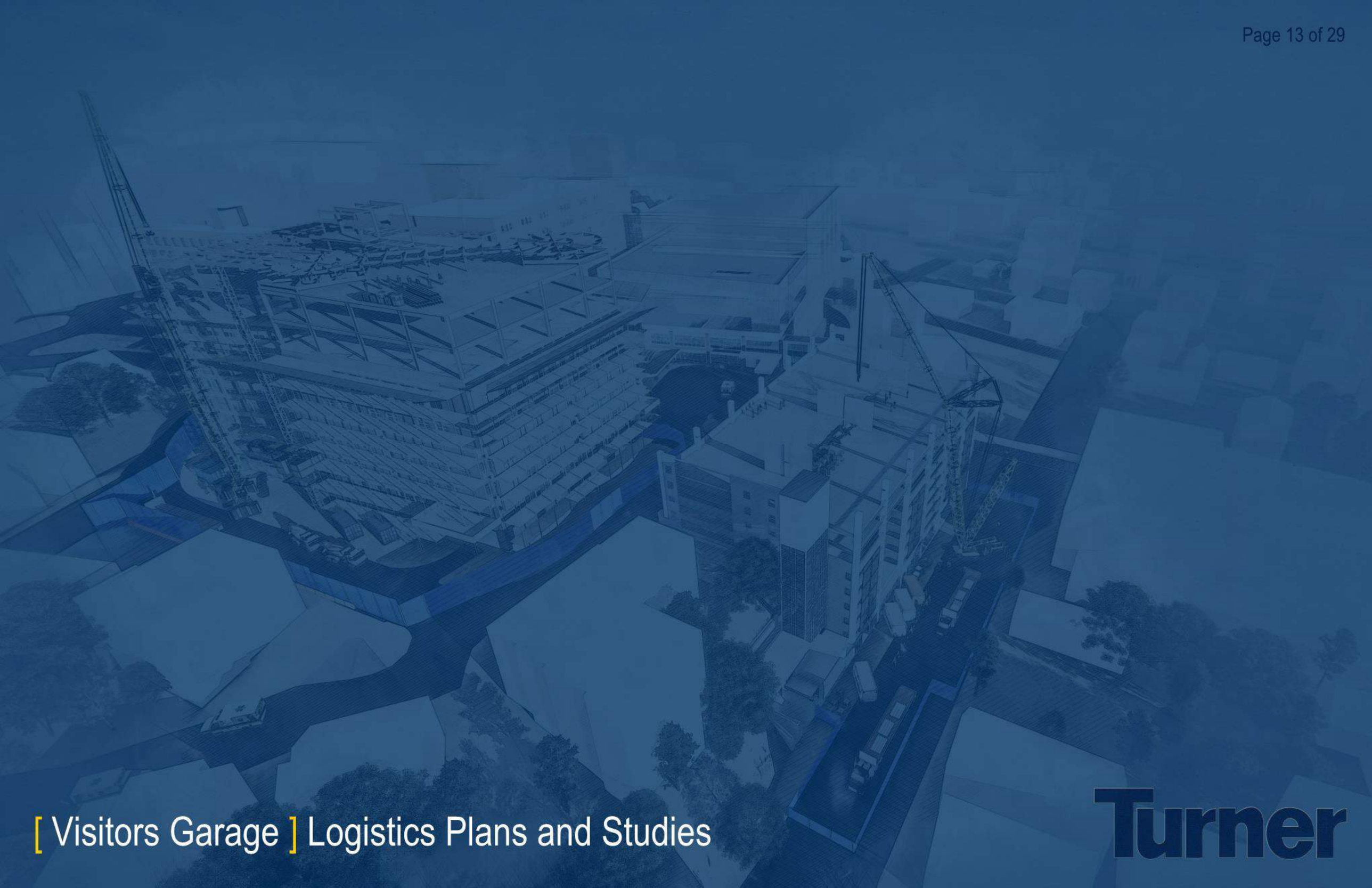
Maine Medical Center, Portland Maine
Additions and Renovations [Steel Truck Delivery and Egress Paths]

EAST TOWER STRUCTURAL STEEL
TRUCK DEPARTURE ROUTE FROM WESCOTT SITE
WESCOTT ST TO CHARLES ST TO BRAMHALL ST TO DEERING AVE TO PARK ST TO I295

PARKING WILL REQUIRED TO BE TAKEN UP AT TOP OF DEERIKNG AVE. WHERE INTERSECTS WITH CUMBERLAND AVE.

SEE TURNER LOGISTICS PLAN FOR BLOW UP OF STEEL DELIVERIES AT SITE

Maine Medical Center, Portland Maine
Additions and Renovations [Steel Truck Delivery and Egress Paths]



[Visitors Garage] Logistics Plans and Studies

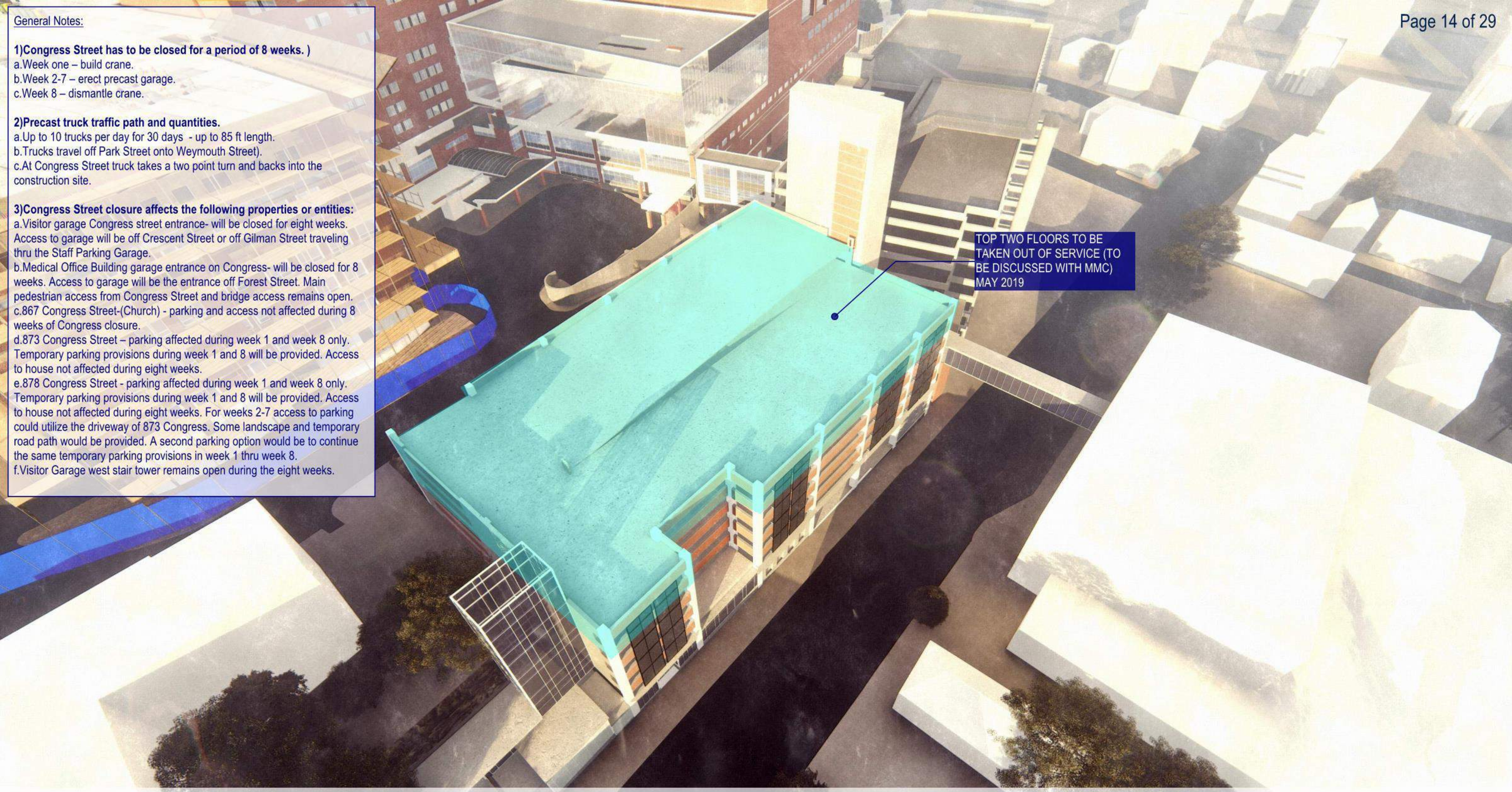
Turner

General Notes:

1)Congress Street has to be closed for a period of 8 weeks.)
a.Week one – build crane.
b.Week 2-7 – erect precast garage.
c.Week 8 – dismantle crane.

2)Precast truck traffic path and quantities.
a.Up to 10 trucks per day for 30 days - up to 85 ft length.
b.Trucks travel off Park Street onto Weymouth Street).
c.At Congress Street truck takes a two point turn and backs into the construction site.

3)Congress Street closure affects the following properties or entities:
a.Visitor garage Congress street entrance- will be closed for eight weeks. Access to garage will be off Crescent Street or off Gilman Street traveling thru the Staff Parking Garage.
b.Medical Office Building garage entrance on Congress- will be closed for 8 weeks. Access to garage will be the entrance off Forest Street. Main pedestrian access from Congress Street and bridge access remains open.
c.867 Congress Street-(Church) - parking and access not affected during 8 weeks of Congress closure.
d.873 Congress Street – parking affected during week 1 and week 8 only. Temporary parking provisions during week 1 and 8 will be provided. Access to house not affected during eight weeks.
e.878 Congress Street - parking affected during week 1 and week 8 only. Temporary parking provisions during week 1 and 8 will be provided. Access to house not affected during eight weeks. For weeks 2-7 access to parking could utilize the driveway of 873 Congress. Some landscape and temporary road path would be provided. A second parking option would be to continue the same temporary parking provisions in week 1 thru week 8.
f.Visitor Garage west stair tower remains open during the eight weeks.

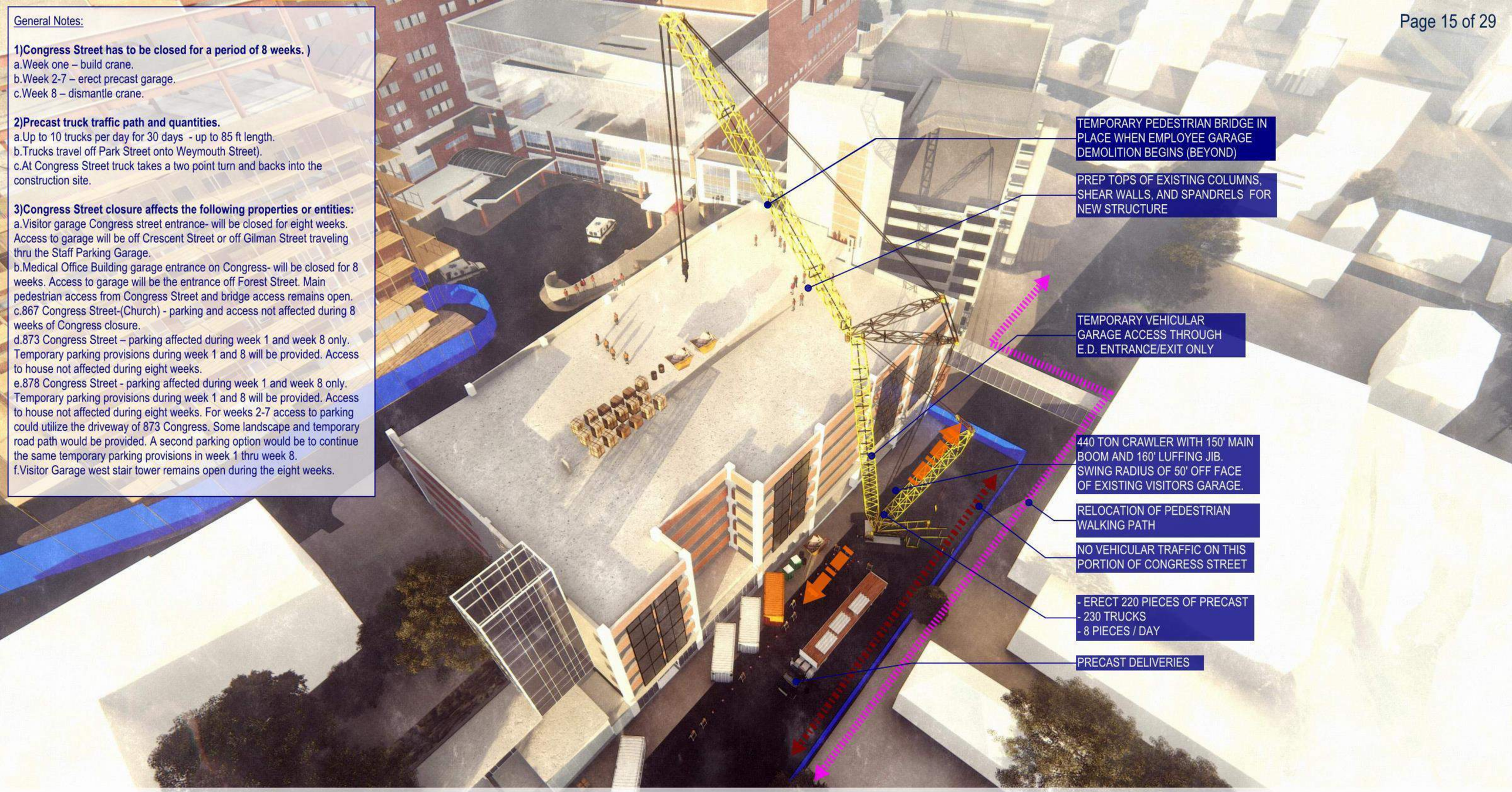


General Notes:

1)Congress Street has to be closed for a period of 8 weeks.)
a.Week one – build crane.
b.Week 2-7 – erect precast garage.
c.Week 8 – dismantle crane.

2)Precast truck traffic path and quantities.
a.Up to 10 trucks per day for 30 days - up to 85 ft length.
b.Trucks travel off Park Street onto Weymouth Street).
c.At Congress Street truck takes a two point turn and backs into the construction site.

3)Congress Street closure affects the following properties or entities:
a.Visitor garage Congress street entrance- will be closed for eight weeks. Access to garage will be off Crescent Street or off Gilman Street traveling thru the Staff Parking Garage.
b.Medical Office Building garage entrance on Congress- will be closed for 8 weeks. Access to garage will be the entrance off Forest Street. Main pedestrian access from Congress Street and bridge access remains open.
c.867 Congress Street-(Church) - parking and access not affected during 8 weeks of Congress closure.
d.873 Congress Street – parking affected during week 1 and week 8 only. Temporary parking provisions during week 1 and 8 will be provided. Access to house not affected during eight weeks.
e.878 Congress Street - parking affected during week 1 and week 8 only. Temporary parking provisions during week 1 and 8 will be provided. Access to house not affected during eight weeks. For weeks 2-7 access to parking could utilize the driveway of 873 Congress. Some landscape and temporary road path would be provided. A second parking option would be to continue the same temporary parking provisions in week 1 thru week 8.
f.Visitor Garage west stair tower remains open during the eight weeks.

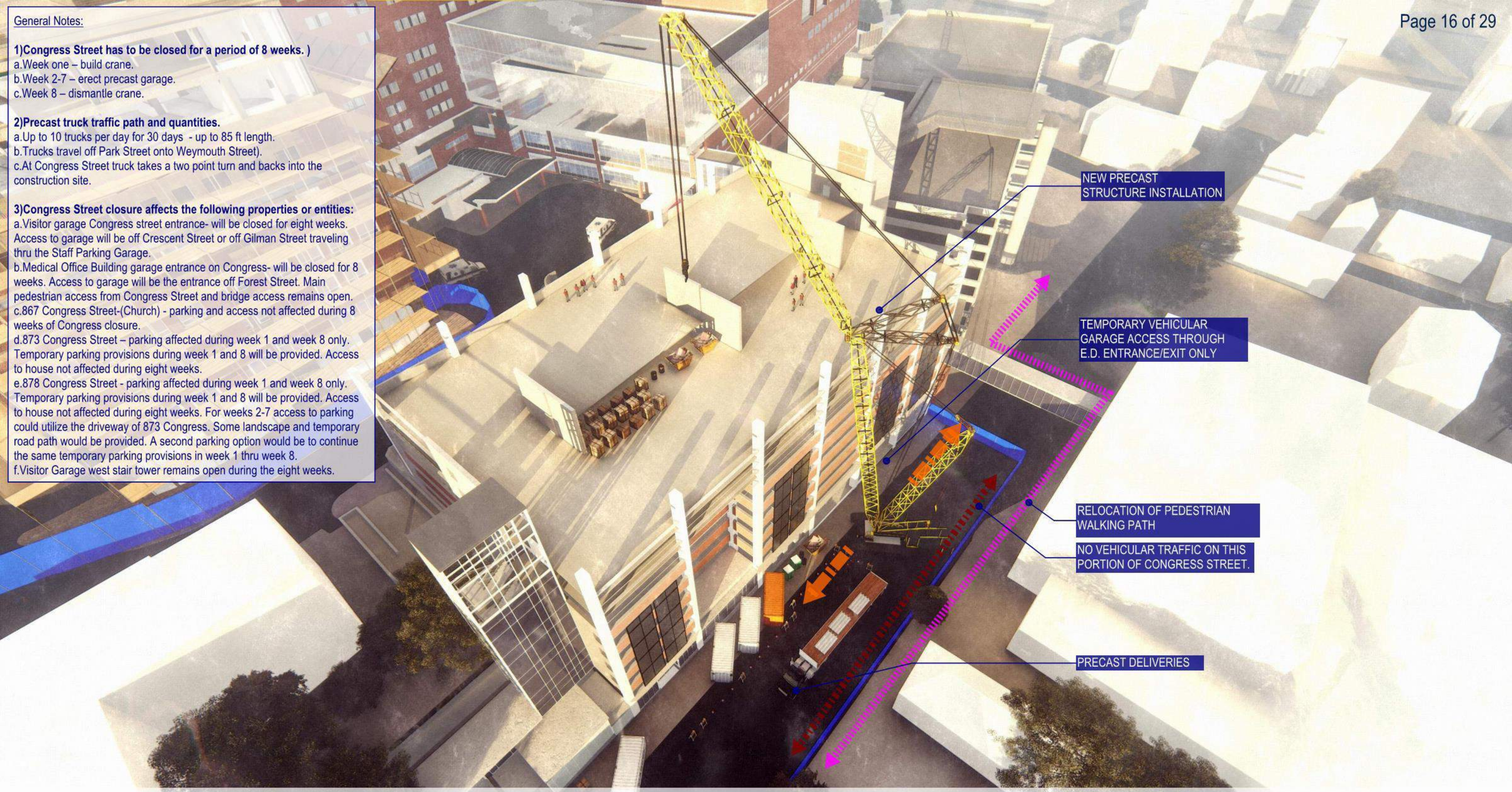


General Notes:

1)Congress Street has to be closed for a period of 8 weeks.)
a.Week one – build crane.
b.Week 2-7 – erect precast garage.
c.Week 8 – dismantle crane.

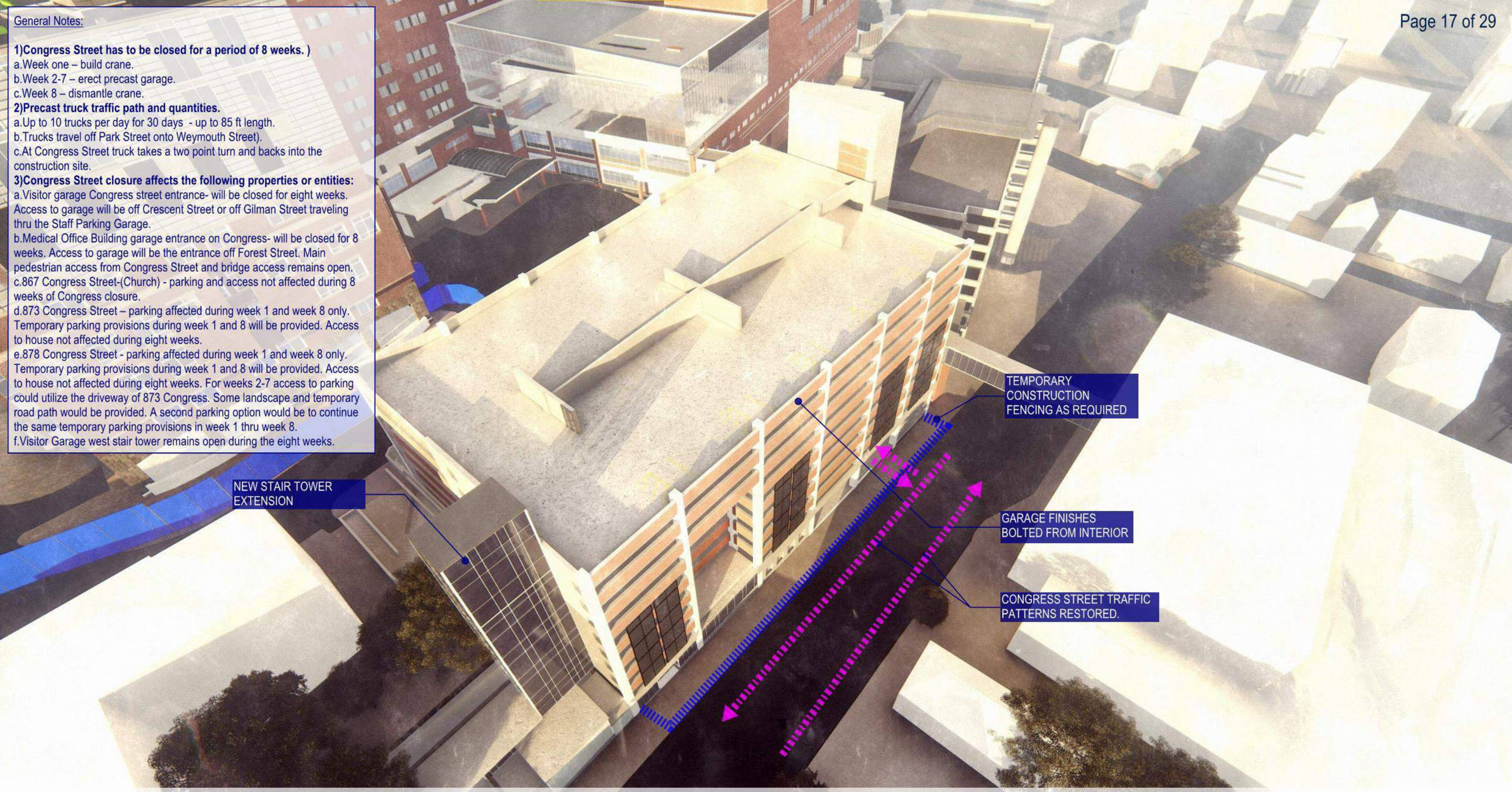
2)Precast truck traffic path and quantities.
a.Up to 10 trucks per day for 30 days - up to 85 ft length.
b.Trucks travel off Park Street onto Weymouth Street).
c.At Congress Street truck takes a two point turn and backs into the construction site.

3)Congress Street closure affects the following properties or entities:
a.Visitor garage Congress street entrance- will be closed for eight weeks. Access to garage will be off Crescent Street or off Gilman Street traveling thru the Staff Parking Garage.
b.Medical Office Building garage entrance on Congress- will be closed for 8 weeks. Access to garage will be the entrance off Forest Street. Main pedestrian access from Congress Street and bridge access remains open.
c.867 Congress Street-(Church) - parking and access not affected during 8 weeks of Congress closure.
d.873 Congress Street – parking affected during week 1 and week 8 only. Temporary parking provisions during week 1 and 8 will be provided. Access to house not affected during eight weeks.
e.878 Congress Street - parking affected during week 1 and week 8 only. Temporary parking provisions during week 1 and 8 will be provided. Access to house not affected during eight weeks. For weeks 2-7 access to parking could utilize the driveway of 873 Congress. Some landscape and temporary road path would be provided. A second parking option would be to continue the same temporary parking provisions in week 1 thru week 8.
f.Visitor Garage west stair tower remains open during the eight weeks.



General Notes:

1)Congress Street has to be closed for a period of 8 weeks.)
a.Week one – build crane.
b.Week 2-7 – erect precast garage.
c.Week 8 – dismantle crane.
2)Precast truck traffic path and quantities.
a.Up to 10 trucks per day for 30 days - up to 85 ft length.
b.Trucks travel off Park Street onto Weymouth Street).
c.At Congress Street truck takes a two point turn and backs into the construction site.
3)Congress Street closure affects the following properties or entities:
a.Visitor garage Congress street entrance- will be closed for eight weeks. Access to garage will be off Crescent Street or off Gilman Street traveling thru the Staff Parking Garage.
b.Medical Office Building garage entrance on Congress- will be closed for 8 weeks. Access to garage will be the entrance off Forest Street. Main pedestrian access from Congress Street and bridge access remains open.
c.867 Congress Street-(Church) - parking and access not affected during 8 weeks of Congress closure.
d.873 Congress Street – parking affected during week 1 and week 8 only. Temporary parking provisions during week 1 and 8 will be provided. Access to house not affected during eight weeks.
e.878 Congress Street - parking affected during week 1 and week 8 only. Temporary parking provisions during week 1 and 8 will be provided. Access to house not affected during eight weeks. For weeks 2-7 access to parking could utilize the driveway of 873 Congress. Some landscape and temporary road path would be provided. A second parking option would be to continue the same temporary parking provisions in week 1 thru week 8.
f.Visitor Garage west stair tower remains open during the eight weeks.



NO VEHICULAR TRAFFIC ON THIS PORTION OF CONGRESS STREET FOR 8 WEEKS.

RELOCATION OF PEDESTRIAN WALKING PATH

440 TON CRAWLER WITH 150' MAIN BOOM AND 160' LUFFING JIB. SWING RADIUS OF 50' OFF FACE OF EXISTING VISITORS GARAGE.

EXISTING OVERHEAD POWER LOCATION

CRAWLER CRANE LOCATION 1

CRAWLER CRANE LOCATION 2

30'-0"

30'-0"

TEMPORARY VEHICULAR GARAGE ACCESS THROUGH E.D. ENTRANCE/EXIT ONLY

160'-0"

160'-1"

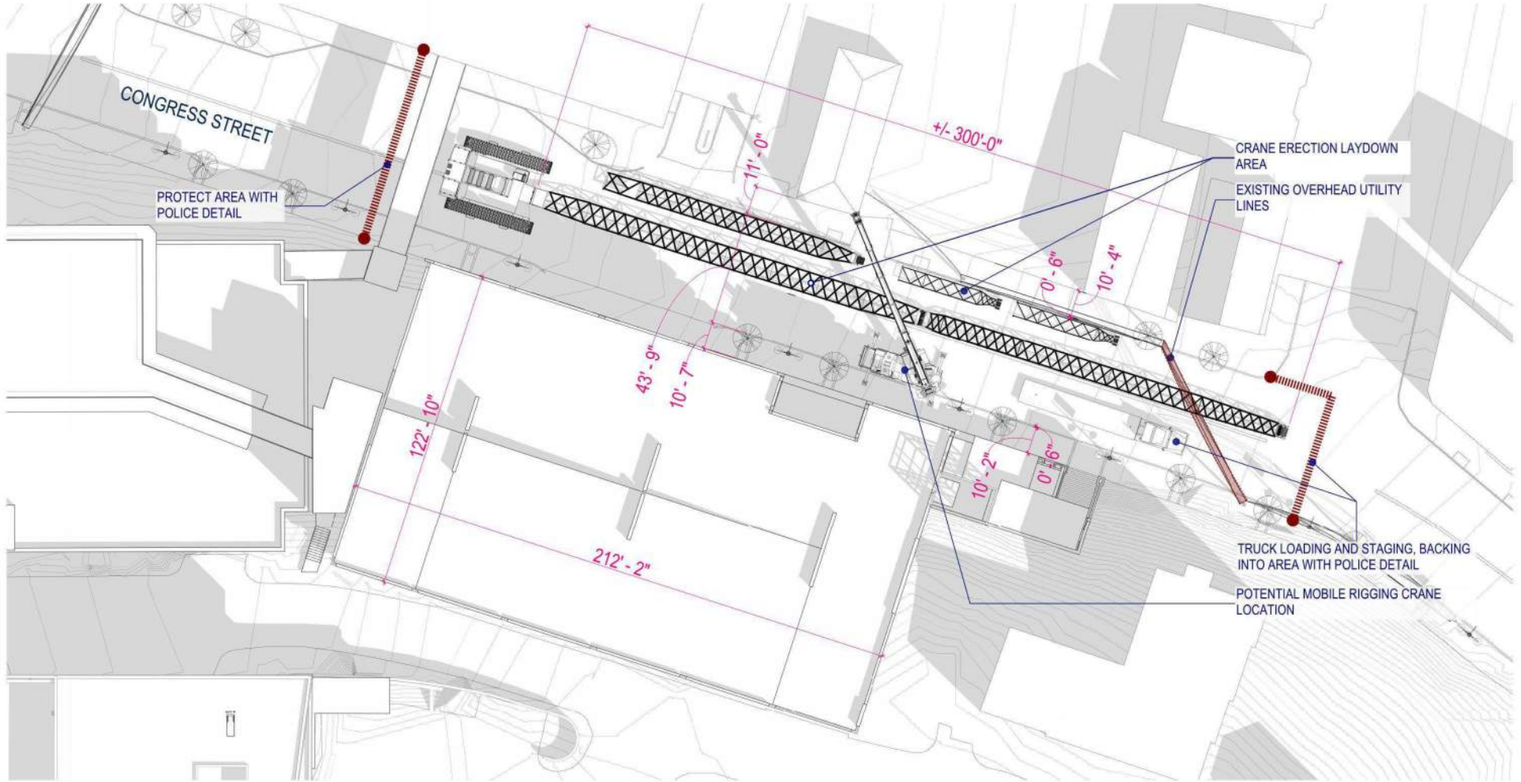
159'-10"

160'-0"

121'-0"

210'-2"

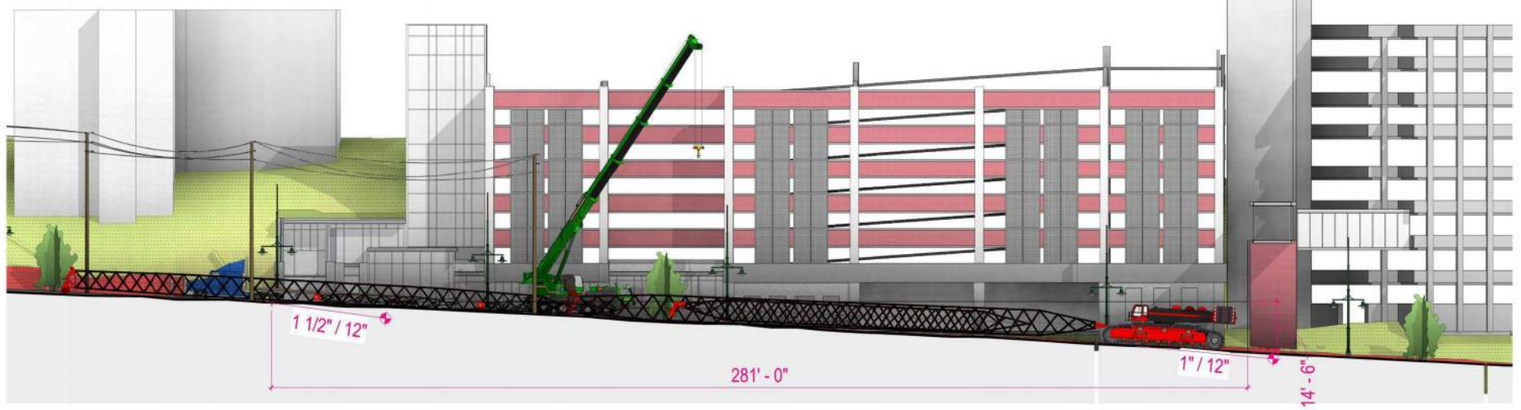
REFER TO "CONGRESS STREET CRANE LOCATION" DRAWINGS FOR MORE INFORMATION AND DETAILS.



1 CONGRESS STREET - CRANE PICK PLAN
3/64" = 1'-0"

General Notes:

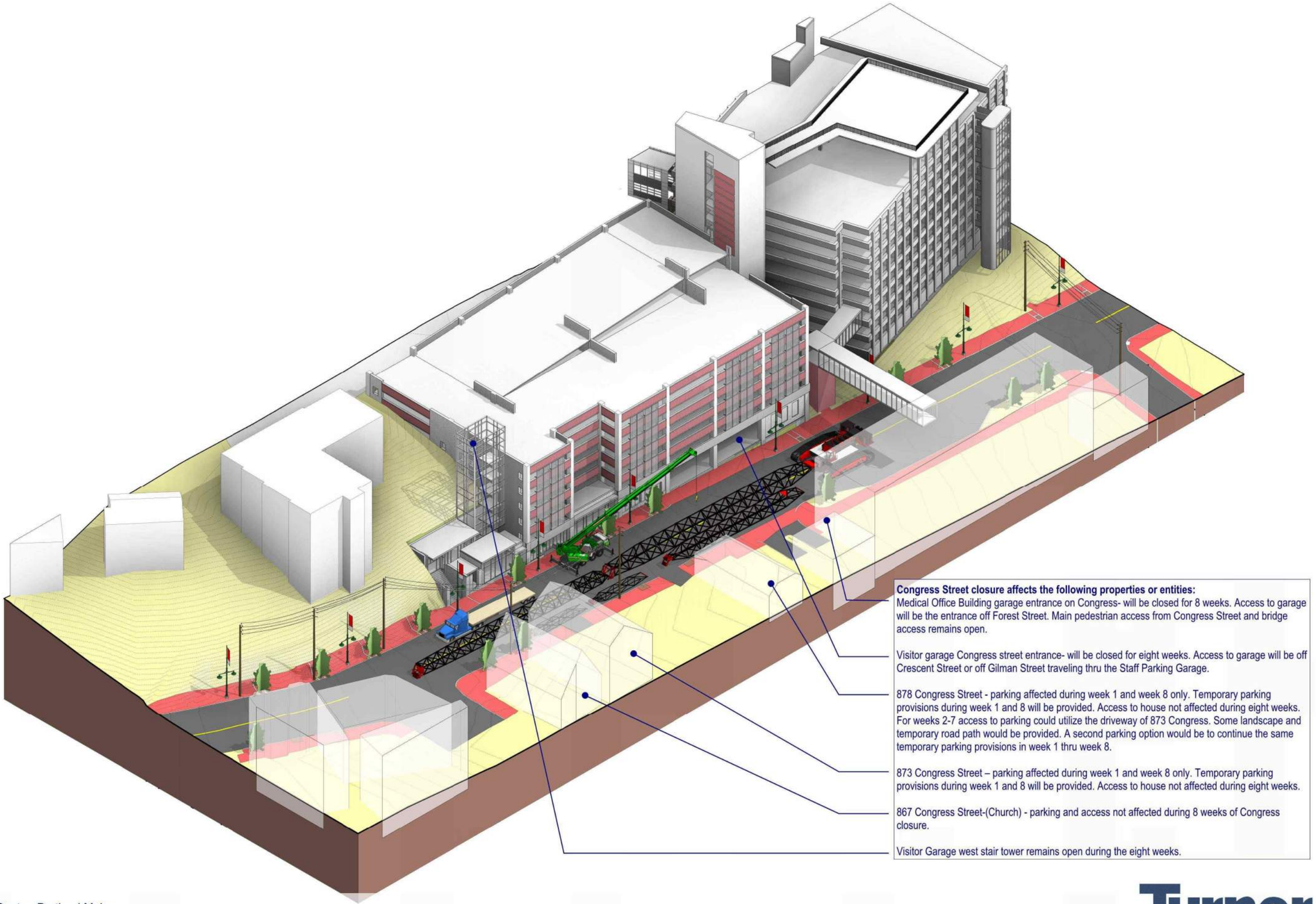
1)Congress Street has to be closed for a period of 8 weeks.)
a.Week one – build crane.
b.Week 2-7 – erect precast garage.
c.Week 8 – dismantle crane.
2)Precast truck traffic path and quantities.
a.Up to 10 trucks per day for 30 days - up to 85 ft length.
b.Trucks travel off Park Street onto Weymouth Street).
c.At Congress Street truck takes a two point turn and backs into the construction site.



2 CONGRESS STREET - SITE SECTION
1/16" = 1'-0"



3 CONGRESS STREET - AXON VIEW



Congress Street closure affects the following properties or entities:

Medical Office Building garage entrance on Congress- will be closed for 8 weeks. Access to garage will be the entrance off Forest Street. Main pedestrian access from Congress Street and bridge access remains open.

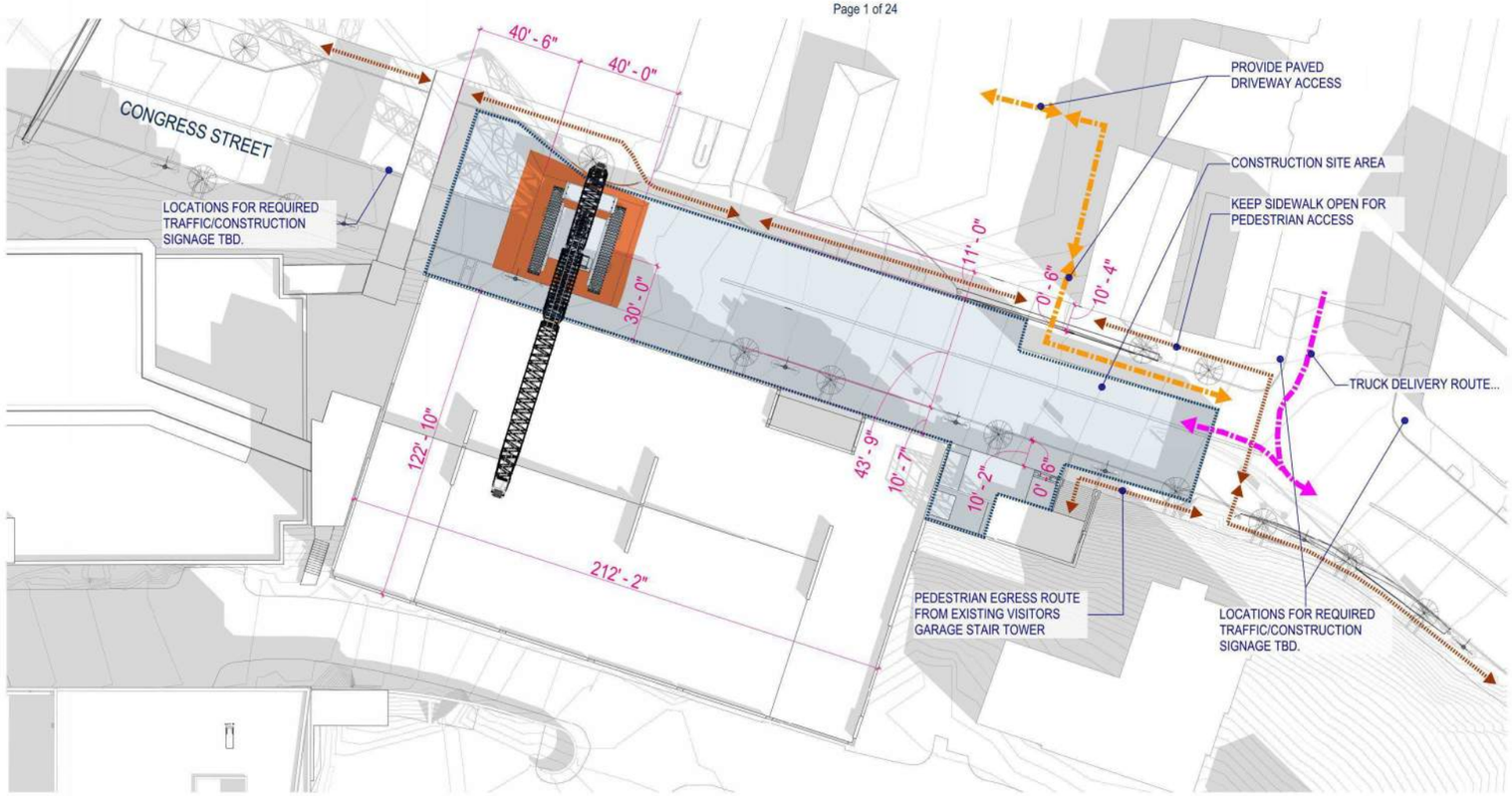
Visitor garage Congress street entrance- will be closed for eight weeks. Access to garage will be off Crescent Street or off Gilman Street traveling thru the Staff Parking Garage.

878 Congress Street - parking affected during week 1 and week 8 only. Temporary parking provisions during week 1 and 8 will be provided. Access to house not affected during eight weeks. For weeks 2-7 access to parking could utilize the driveway of 873 Congress. Some landscape and temporary road path would be provided. A second parking option would be to continue the same temporary parking provisions in week 1 thru week 8.

873 Congress Street – parking affected during week 1 and week 8 only. Temporary parking provisions during week 1 and 8 will be provided. Access to house not affected during eight weeks.

867 Congress Street-(Church) - parking and access not affected during 8 weeks of Congress closure.

Visitor Garage west stair tower remains open during the eight weeks.



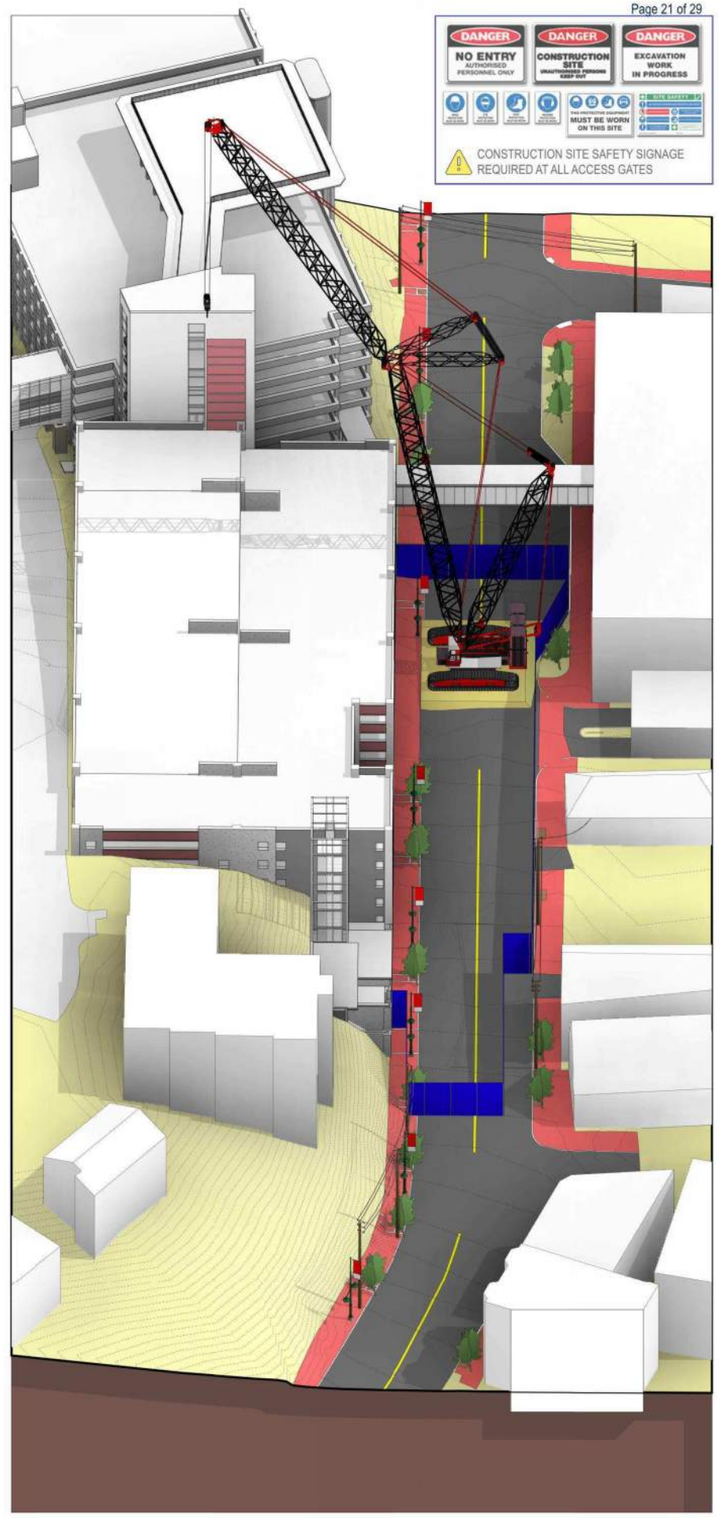
1 CONGRESS STREET - CRANE PICK PLAN
3/64" = 1'-0"

General Notes:

1)Congress Street has to be closed for a period of 8 weeks.)
a.Week one – build crane.
b.Week 2-7 – erect precast garage.
c.Week 8 – dismantle crane.
2)Precast truck traffic path and quantities.
a.Up to 10 trucks per day for 30 days - up to 85 ft length.
b.Trucks travel off Park Street onto Weymouth Street).
c.At Congress Street truck takes a two point turn and backs into the construction site.

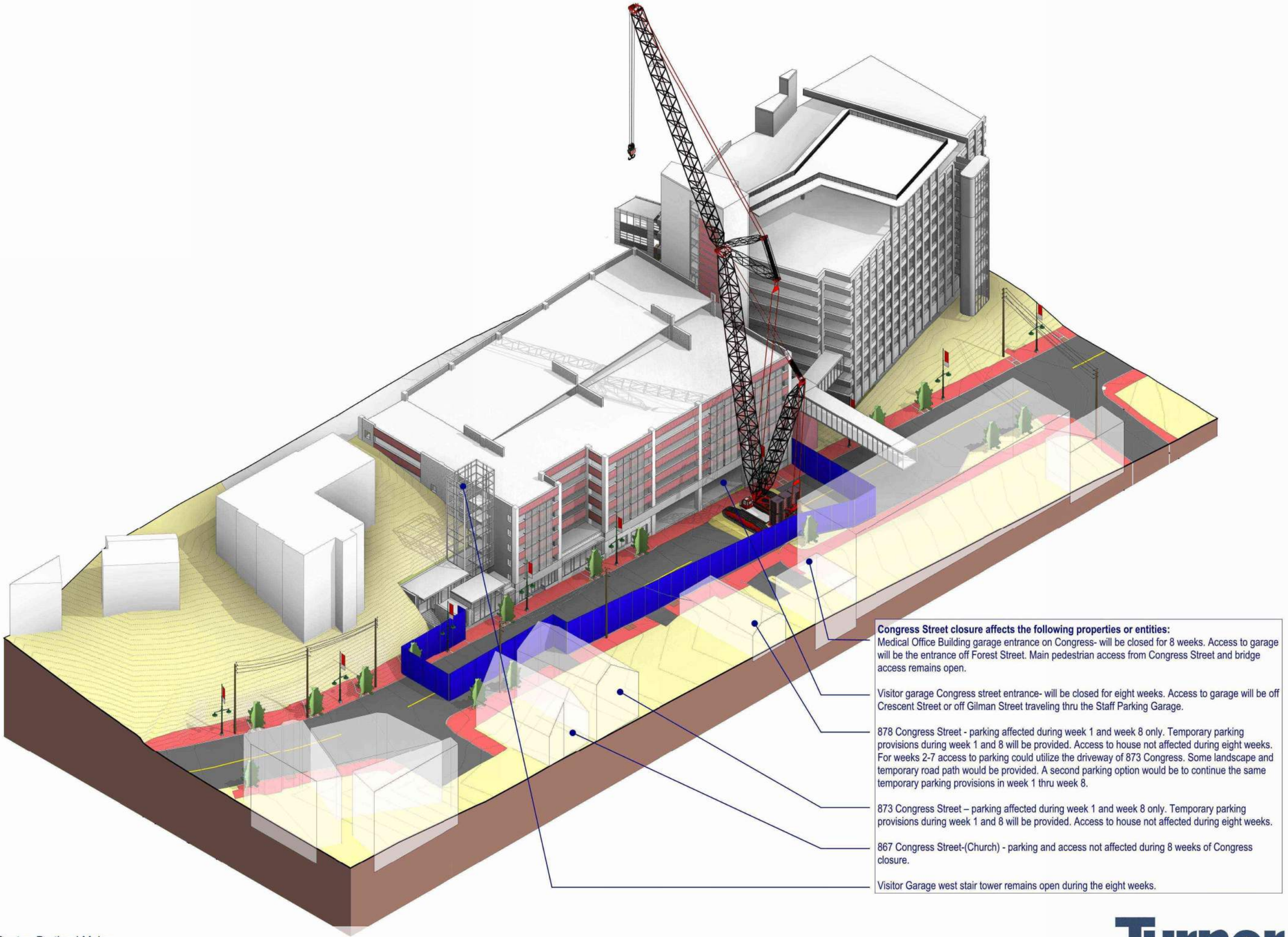


2 CONGRESS STREET - SITE SECTION
1/16" = 1'-0"



3 CONGRESS STREET - AXON VIEW

Turner



Congress Street closure affects the following properties or entities:

Medical Office Building garage entrance on Congress- will be closed for 8 weeks. Access to garage will be the entrance off Forest Street. Main pedestrian access from Congress Street and bridge access remains open.

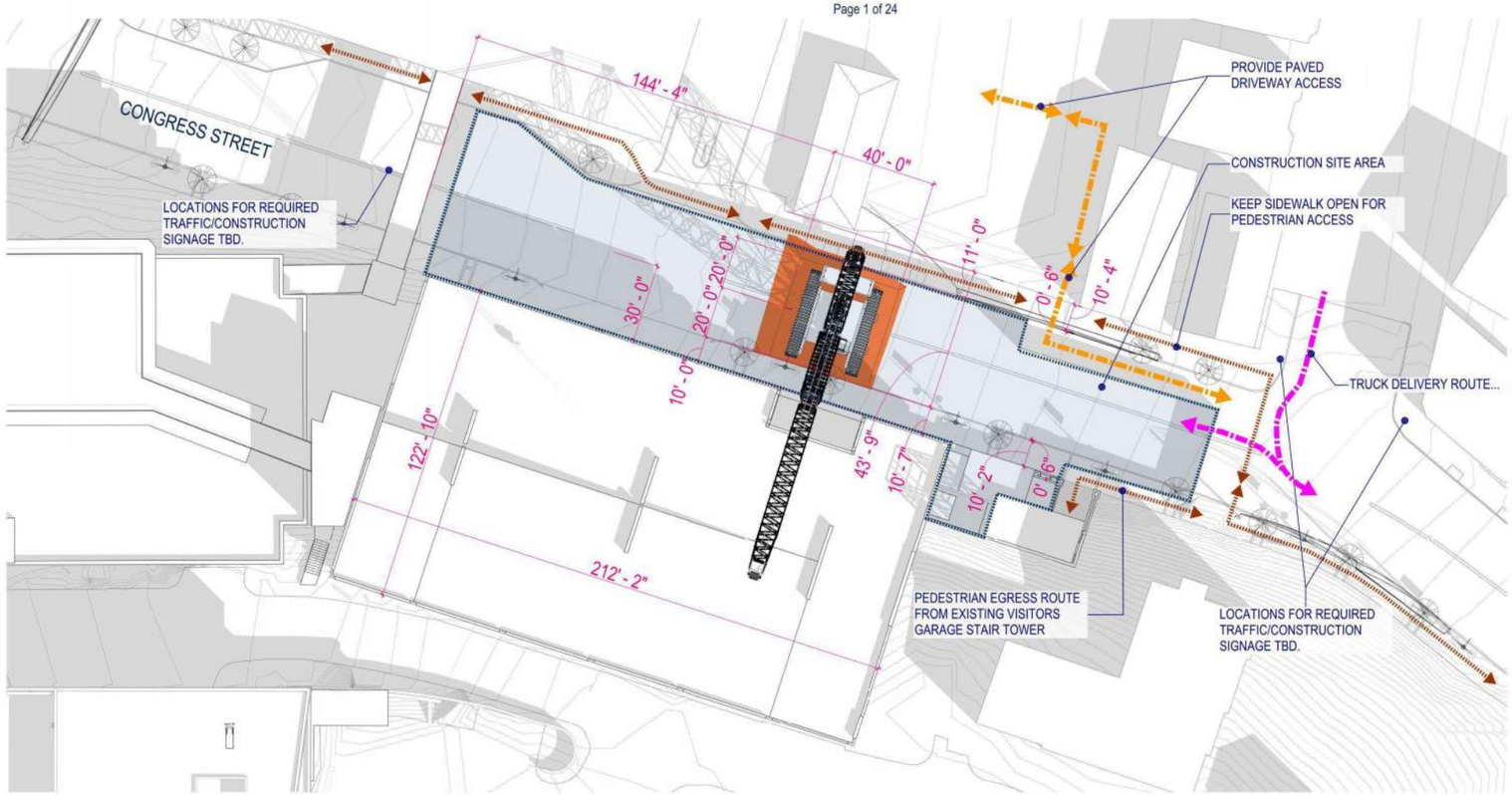
Visitor garage Congress street entrance- will be closed for eight weeks. Access to garage will be off Crescent Street or off Gilman Street traveling thru the Staff Parking Garage.

878 Congress Street - parking affected during week 1 and week 8 only. Temporary parking provisions during week 1 and 8 will be provided. Access to house not affected during eight weeks. For weeks 2-7 access to parking could utilize the driveway of 873 Congress. Some landscape and temporary road path would be provided. A second parking option would be to continue the same temporary parking provisions in week 1 thru week 8.

873 Congress Street – parking affected during week 1 and week 8 only. Temporary parking provisions during week 1 and 8 will be provided. Access to house not affected during eight weeks.

867 Congress Street-(Church) - parking and access not affected during 8 weeks of Congress closure.

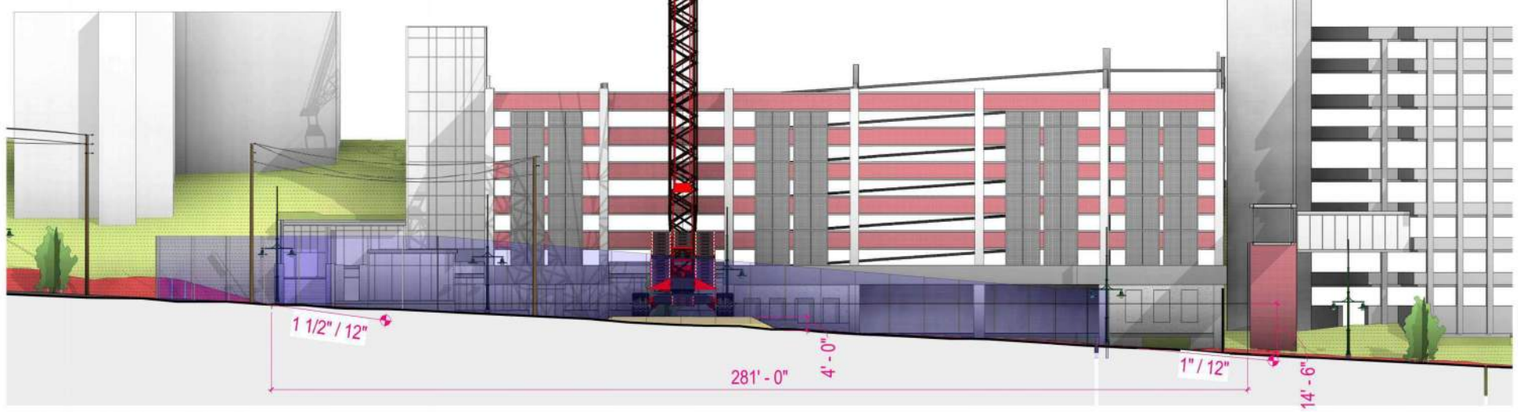
Visitor Garage west stair tower remains open during the eight weeks.



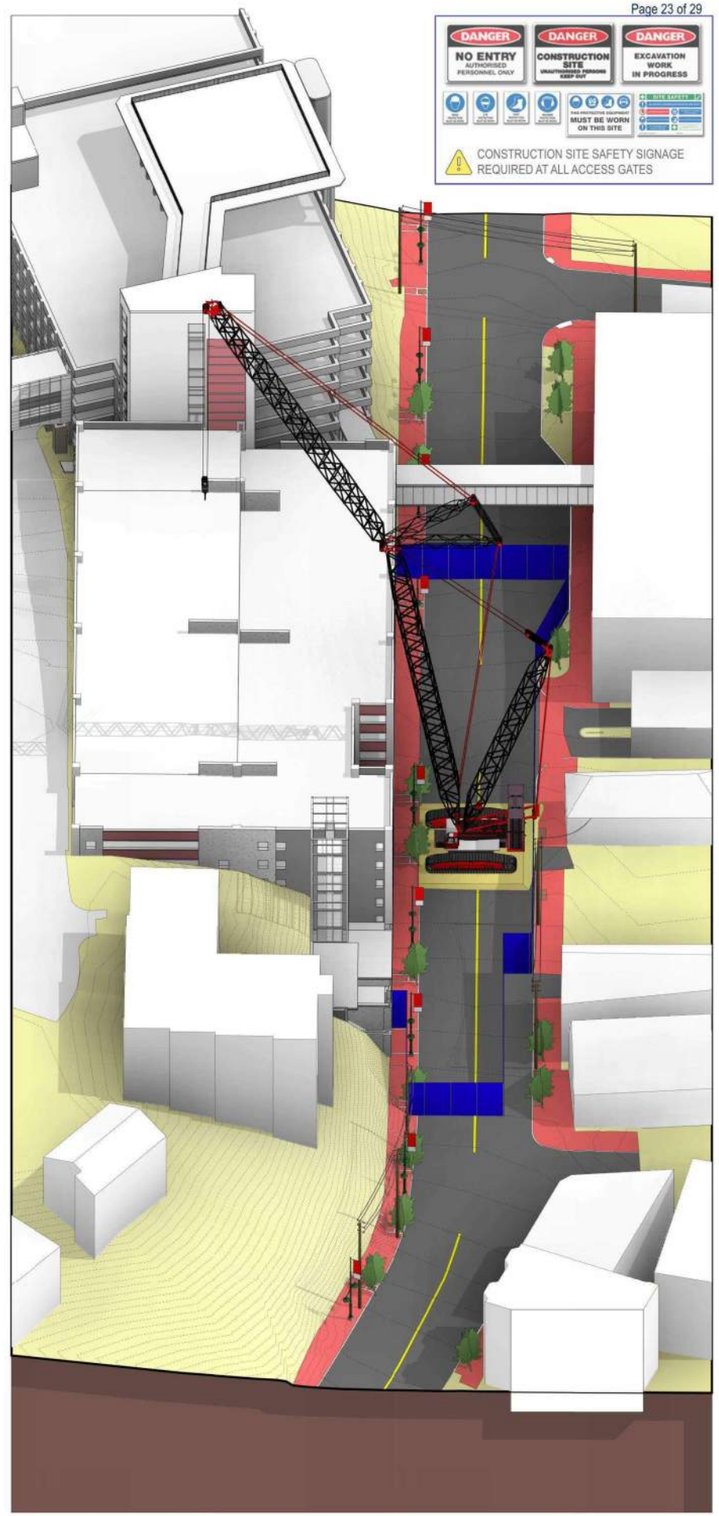
1 CONGRESS STREET - CRANE PICK PLAN
3/64" = 1'-0"

General Notes:

1)Congress Street has to be closed for a period of 8 weeks.)
a.Week one – build crane.
b.Week 2-7 – erect precast garage.
c.Week 8 – dismantle crane.
2)Precast truck traffic path and quantities.
a.Up to 10 trucks per day for 30 days - up to 85 ft length.
b.Trucks travel off Park Street onto Weymouth Street).
c.At Congress Street truck takes a two point turn and backs into the construction site.



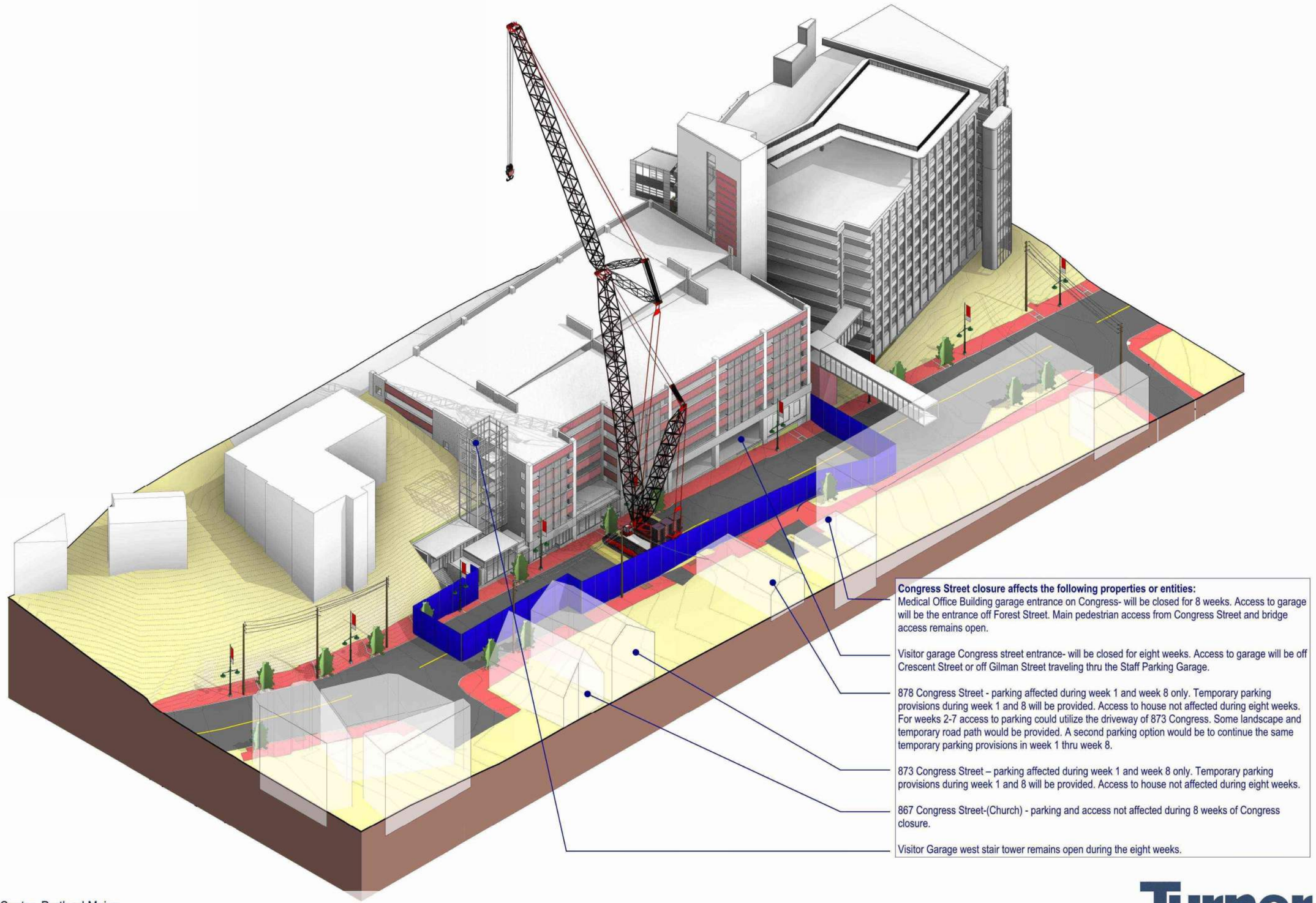
2 CONGRESS STREET - SITE SECTION
1/16" = 1'-0"



3 CONGRESS STREET - AXON VIEW

Maine Medical Center, Portland Maine
Additions and Renovations [Congress Street Crane Location 2]

Turner



Congress Street closure affects the following properties or entities:

Medical Office Building garage entrance on Congress- will be closed for 8 weeks. Access to garage will be the entrance off Forest Street. Main pedestrian access from Congress Street and bridge access remains open.

Visitor garage Congress street entrance- will be closed for eight weeks. Access to garage will be off Crescent Street or off Gilman Street traveling thru the Staff Parking Garage.

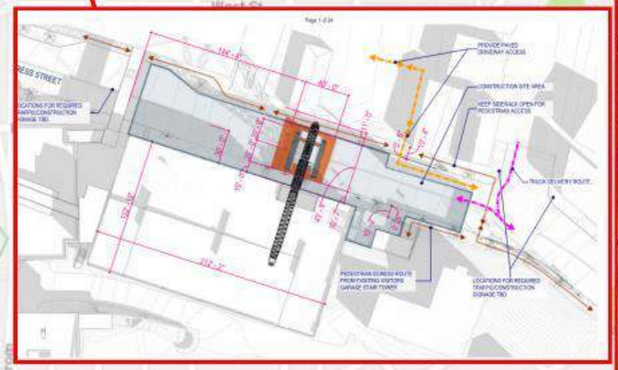
878 Congress Street - parking affected during week 1 and week 8 only. Temporary parking provisions during week 1 and 8 will be provided. Access to house not affected during eight weeks. For weeks 2-7 access to parking could utilize the driveway of 873 Congress. Some landscape and temporary road path would be provided. A second parking option would be to continue the same temporary parking provisions in week 1 thru week 8.

873 Congress Street – parking affected during week 1 and week 8 only. Temporary parking provisions during week 1 and 8 will be provided. Access to house not affected during eight weeks.

867 Congress Street-(Church) - parking and access not affected during 8 weeks of Congress closure.

Visitor Garage west stair tower remains open during the eight weeks.

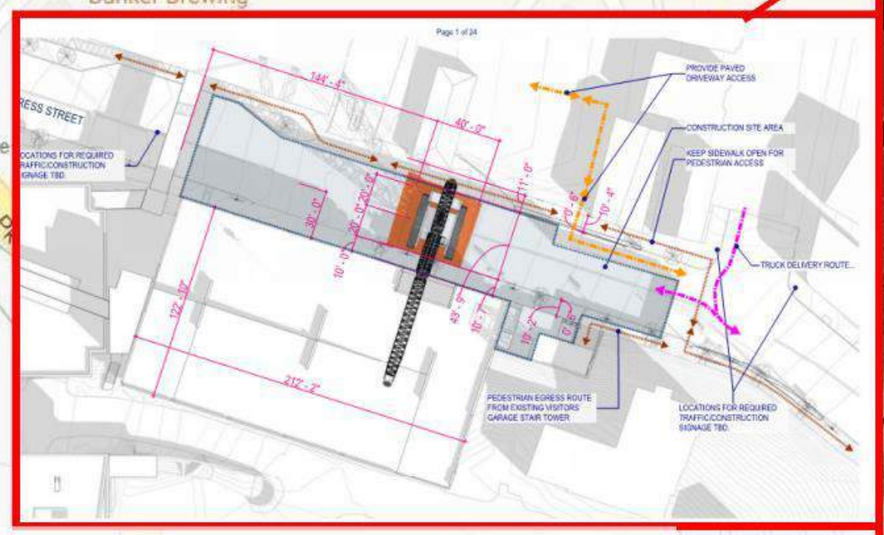
MMC VISITOR GARAGE EXPANSION
PRECAST CONCRETE TRUCKS
INBOUND ROUTE TO CONGRESS STREET SITE
PORTLAND YACHT STAGING YARD TO W. COMMERCIAL STREET TO VALLEY STREET TO PARK ST TO WEYMOUTH ST TO CONGRESS ST SITE





Maine Medical Center, Portland Maine
Additions and Renovations [Precast Delivery and Egress Paths] - Option 1

MMC VISITOR GARAGE EXPANSION
PRECAST CONCRETE TRUCK DEPARTURE ROUTE FROM CONGRESS STREET SITE
CONGRESS ST TO WEYMOUTH ST TO PARK ST TO I295



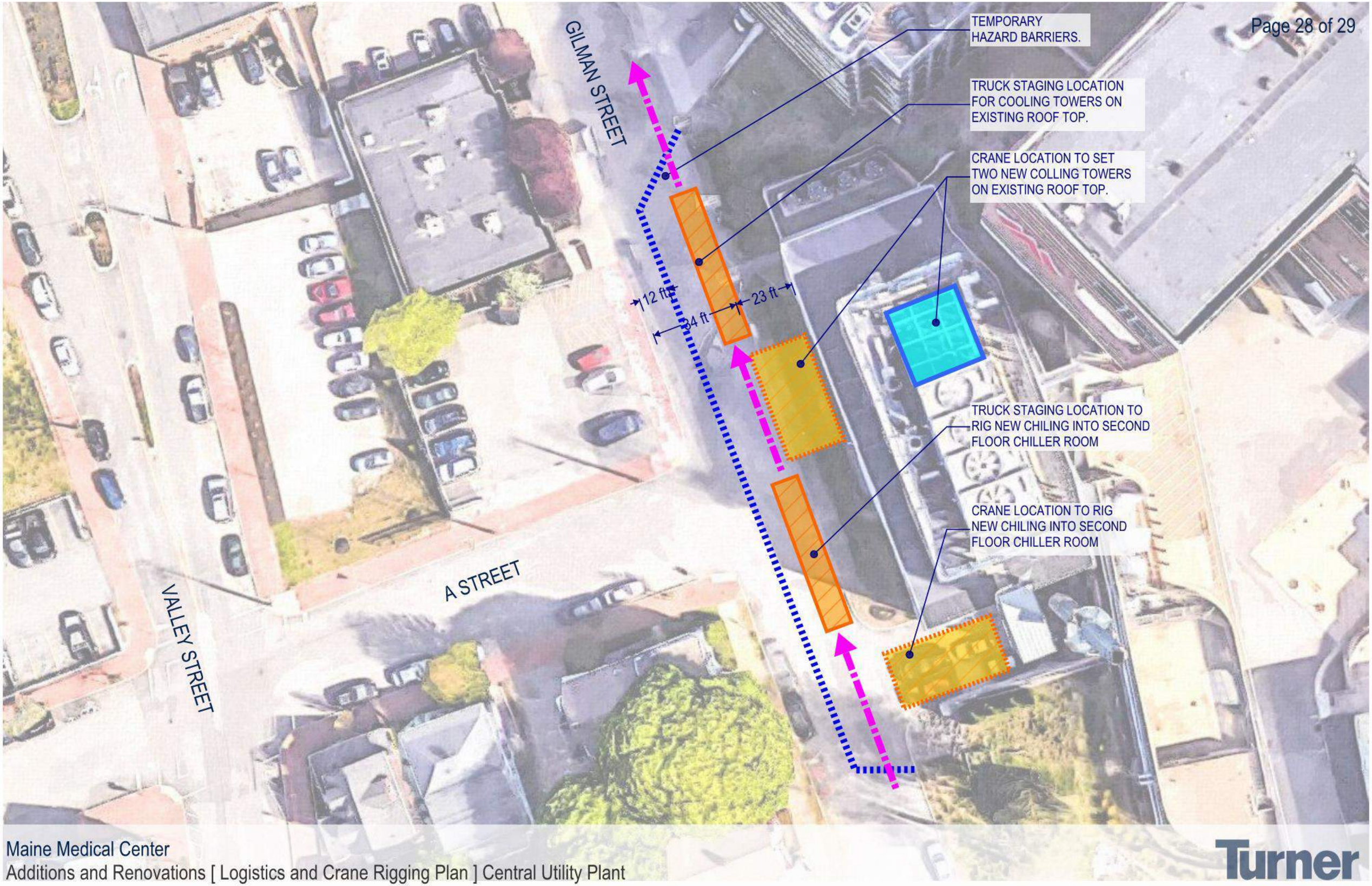


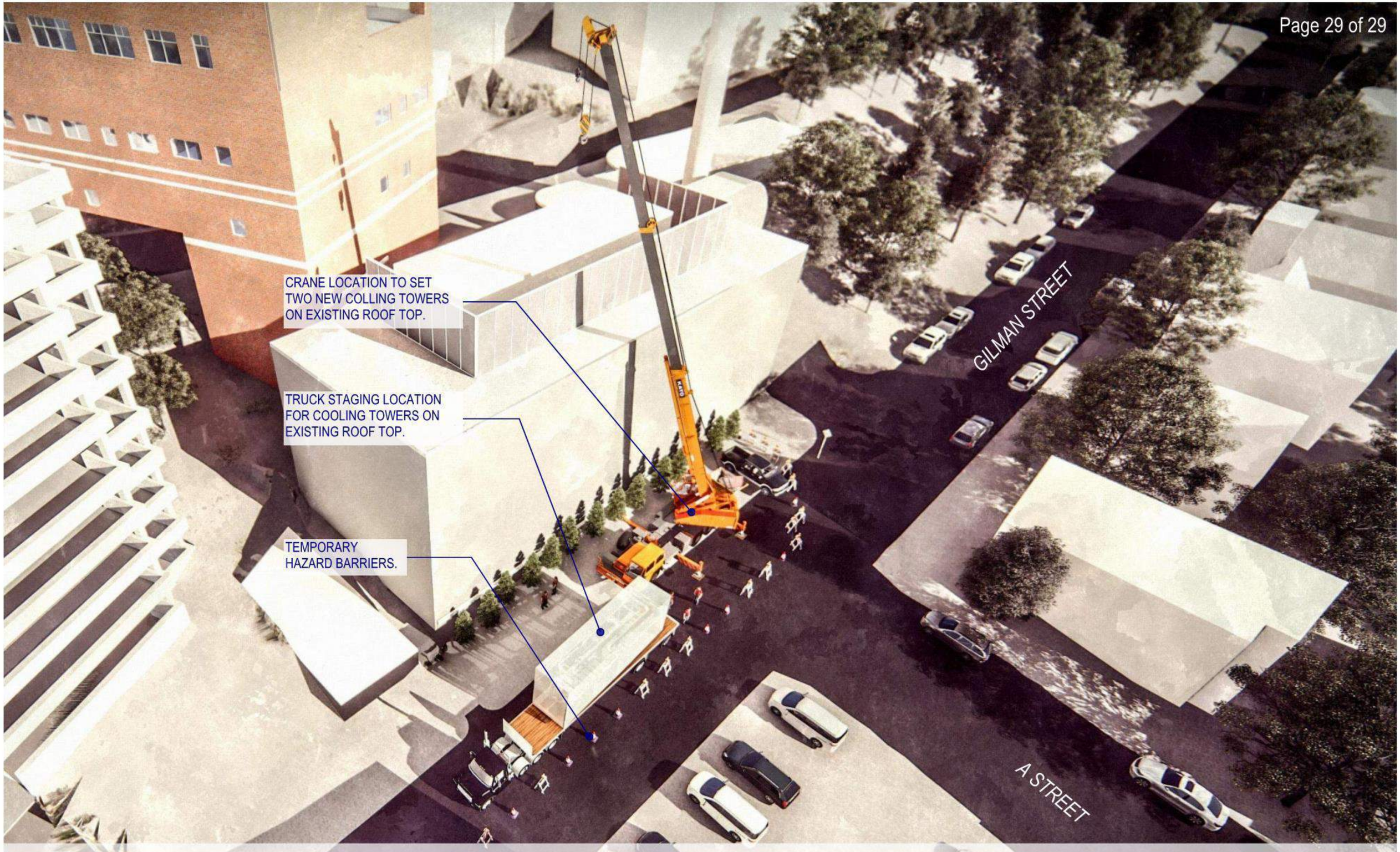
Maine Medical Center, Portland Maine
Additions and Renovations [Precast Delivery and Egress Paths] - Option 1



[Central Utility Plant] Logistics Plans and Studies

Turner

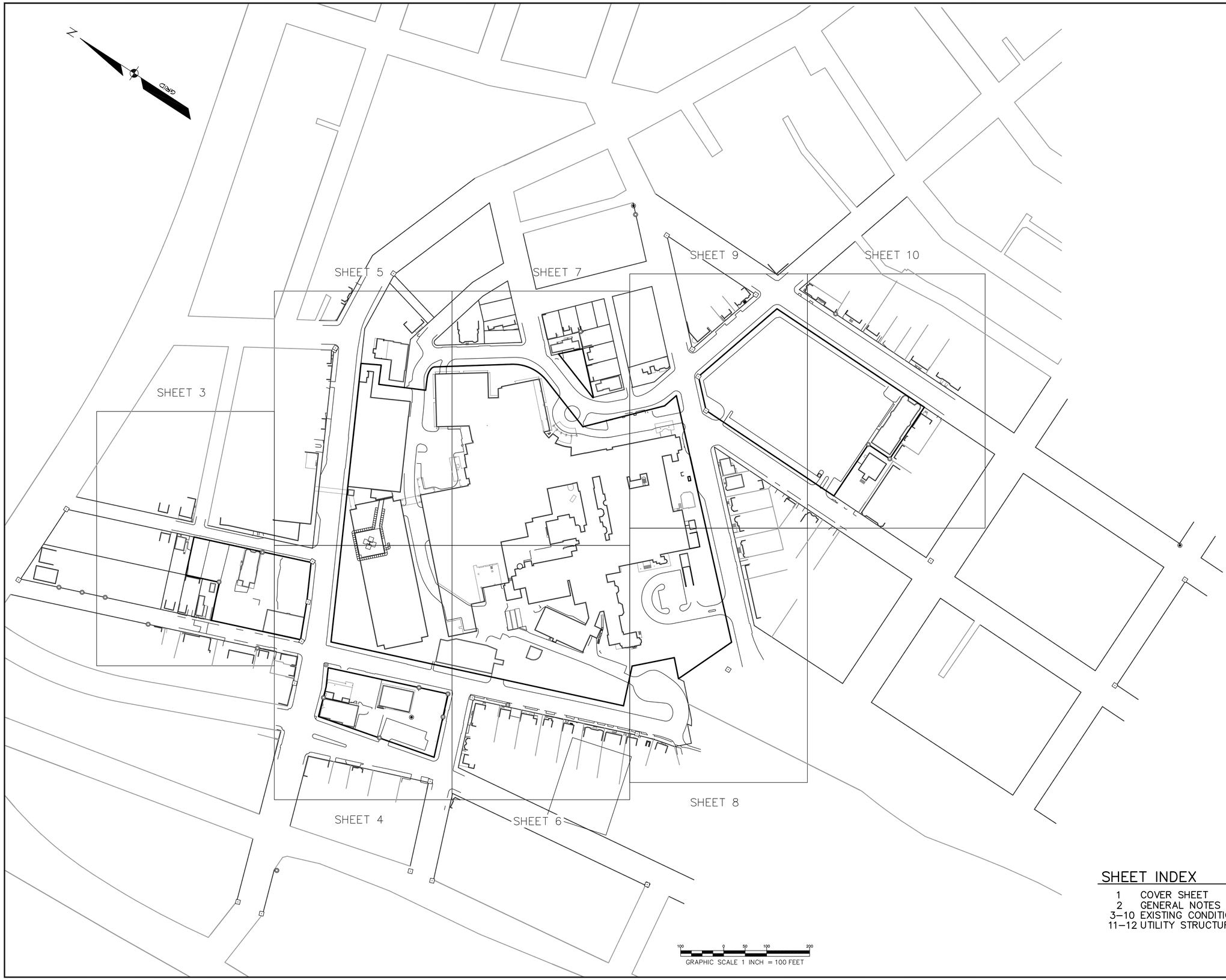

GILMAN STREET
A STREET
VALLEY STREET
TEMPORARY HAZARD BARRIERS.
TRUCK STAGING LOCATION FOR COOLING TOWERS ON EXISTING ROOF TOP.
CRANE LOCATION TO SET TWO NEW COLLING TOWERS ON EXISTING ROOF TOP.
12 ft
34 ft
23 ft
TRUCK STAGING LOCATION TO RIG NEW CHILING INTO SECOND FLOOR CHILLER ROOM
CRANE LOCATION TO RIG NEW CHILING INTO SECOND FLOOR CHILLER ROOM



Maine Medical Center

Additions and Renovations [Logistics and Crane Rigging Plan - Typical Both Locations] Central Utility Plant

Turner



LEGEND

EXISTING	DESCRIPTION
	BOUNDARY LINE/R.O.W.
	ABUTTER LINE/R.O.W.
	SETBACK
	EASEMENT
	CENTERLINE
	MONUMENT
	IRON PIPE/ROD
	DRILLHOLE
C1/L1	CURVE/LINE NO.
	BENCHMARK
MW-2	MONITORING WELL
	BUILDING
	SIGN
	EDGE PAVEMENT
	PAVEMENT PAINT
	GRAVEL ROAD
	CURBLINE
	TREELINE
122 120	CONTOURS
30.20	SPOT GRADE
	CHAIN LINK FENCE
	WIRE FENCE
	STOCKADE FENCE
	STONE WALL
	RETAINING WALL
	DECIDUOUS TREE
	CONIFEROUS TREE
	GUARDRAIL
	BOLLARD
G	GAS
W	WATER
	GATE VALVE
	HYDRANT
W	POTABLE WELL
S	SEWER
FM	FORCE MAIN
S	SEWER MH
SD	STORM DRAIN
UD	UNDERDRAIN
	CATCH BASIN
D	DRAINAGE MH
	CULVERT
OHE	OVERHEAD ELEC. & TEL.
UGE	UNDERGROUND ELEC. & TEL.
T	TRANSFORMER PAD
	ELECTRICAL MANHOLE
T	TELEPHONE MANHOLE
	LIGHT POLE/WALL
	UTILITY POLE
	GUY
	RIPRAP

SHEET INDEX

1 COVER SHEET
2 GENERAL NOTES
3–10 EXISTING CONDITIONS SURVEY
11–12 UTILITY STRUCTURE DATA CHARTS

STATE OF MAINE
MATTHEW W. EK
2117
PROFESSIONAL LAND SURVEYOR
Matthew W. Ek

REV:	BY:	DATE:	STATUS:
A	MWE	12/23/09	SUBMITTED FOR CLIENT REVIEW

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SEBAGO TECHNICS, INC. ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO SEBAGO TECHNICS, INC.

SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd. - Suite 1A
South Portland, ME 04106
Tel. 207-200-2100
250 Goddard Rd. - Suite B
Lewiston, ME 04240
Tel. 207-783-5656

PROJECT NO.	FIELD BOOK	DESIGN	CHKD	DRAWN
01046	791B	WTC	MWE	MCC

EXISTING CONDITIONS SURVEY
OF:
MAINE MEDICAL CENTER CAMPUS
GILMAN ST, CONGRESS ST, BRAMHALL ST, ET.AL
PORTLAND, MAINE
FOR:
MAINE MEDICAL CENTER
22 BRAMHALL ST
PORTLAND, MAINE 04101

RECORD OWNER:
SEE NOTE 1, SHEET 2

DATE	SCALE
10/23/09	1"=100'

SHEET 1 OF12

01046–EC–2009.dwg, TAB: EC01

GENERAL NOTES

1. THE RECORD OWNERS OF THE SURVEYED PROPERTIES ARE AS FOLLOWS:
   MAINE MEDICAL CENTER AND MMC REALTY CORPORATION AS DESCRIBED IN DEED BOOK/PAGES:

18032/68	13504/86	16145/275	9722/45	3097/244	3187/234	2951/927
3183/576	8309/5	6177/319	3108/396	3095/34	1290/192	2901/326
2349/229	1296/351	1296/352	2308/161	1285/450	1282/323	1250/470
2149/190	3995/53	2127/443	2127/320	2127/269	2147/110	2133/317
2133/311	2133/324	2133/310	2143/330	3075/669	2619/499	2685/369
3278/209	377/296	377/297	388/92	382/450	408/457	384/37
381/260	3095/34	3108/396	6177/319	3278/209	3075/669	2685/369
2619/499	2301/21	2951/927	3310/115	3310/116	2149/190	1282/323
1250/470	408/457	1296/352	1290/177	1250/470	3995/53	378/6
2901/326	1282/323	1289/192	3187/234	18032/68	19986/204	22762/45
2951/927	3097/244	2955/722	2308/161	2988/139	3188/710	384/37
1575/227	9722/45	2133/324	381/260	16145/275	8855/81	14026/287
11613/153	9392/344					

   * ALL RECORDED INFORMATION LISTED HEREON IS WITHIN THE CUMBERLAND COUNTY REGISTRY OF DEEDS (CCRD).

2. THE PROPERTIES ARE SHOWN ON THE CITY OF PORTLAND TAX MAPS AS FOLLOWS:
   MAP 53 BLOCK D, LOT 7,
   MAP 53 BLOCK X, LOT 1,
   MAP 54 BLOCK C, LOTS 5, 6, 10,
   MAP 54 BLOCK H, LOT 1,
   MAP 54 BLOCK I, LOT 1,
   MAP 63 BLOCK B, LOT 8,
   MAP 64 BLOCK B, LOTS 1–9,
   MAP 64 BLOCK C, LOT 1,
   MAP 65 BLOCK E, LOTS 19, 21, 22, 23, 24, 25, 28, 29, 30, & 32,
   MAP 65 BLOCK H, LOTS 1, 2, 5, 8, & 9..

3. BOUNDARY INFORMATION SHOWN HEREON IS BASED UPON ON GROUND SURVEY PERFORMED BY SEBAGO TECHNICS IN SUMMER AND FALL OF 2009.

4. THE BEARINGS, AND ELEVATIONS SHOWN HEREON ARE BASED UPON THE MAINE STATE PLANE COORDINATE GRID, WEST ZONE 1802 ON NAD83 AND NAVD88 IN US FEET.

5. THE PROPERTY NORTHWESTERLY OF CONGRESS STREET, BETWEEN FOREST STREET AND GILMAN STREET SHOWN ON THE CITY OF PORTLAND TAX MAP 65 BLOCK E, AS LOTS 19, 21, 22, 23, 24, 25, 28, 29, 30, AND 32 WAS SURVEYED FOR MAINE MEDICAL CENTER (MMC). THE RECORD OWNERS OF THIS AREA ARE AS FOLLOWS:
   EAST END CORP. ONE CANAL PLAZA, PORTLAND, MAINE 04112
   BOOK 19832 PAGE 97 BOOK 23397 PAGE 308
   EAST END DEVELOPMENT, LLC PO BOX 10291 PORTLAND, MAINE 04104
   BOOK 23579 PAGE 288 BOOK 23901 PAGE 188
   EAST END HOLDINGS, LLC PO BOX 10291 PORTLAND, MAINE 04104
   BOOK 20239 PAGE 341
   CONTOURS AND UTILITIES SURVEYS WERE NOT INCLUDED WITHIN THIS AREA. THIS AREA WILL BE REFERENCED HEREON AS THE SPORTSMANS LOT. TOTAL AREA OF THE SPORTSMANS LOT IS APPROXIMATELY 44, 704 SQUARE FEET OR 1.03 ACRES.

6. UTILITIES SHOWN HEREON ARE APPROXIMATE AND ARE BASED UPON FIELD LOCATION OF VISIBLE SURFACE FEATURES, INVERT INSPECTIONS, UTILITY MARKINGS BY DIGSMART OF MAINE, AND PLANS REFERENCED HEREON. THE INFORMATION SHOWN HEREON MAY NOT INCLUDE ALL UTILITIES. PRIOR TO ANY CONTRUCTION DIGSAFE AND APPROPRIATE UTILITY PROVIDERS MUST BE CONTACTED.

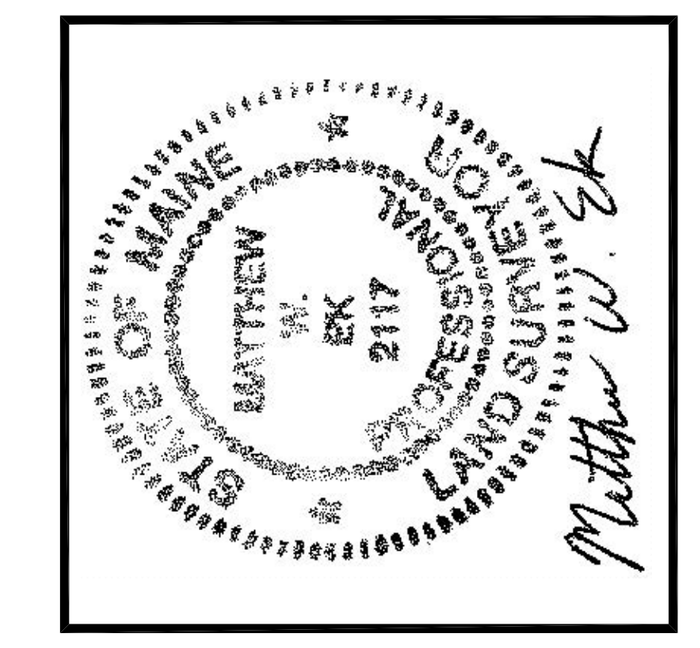
7. THE RIGHT OF WAY LINES ON THE STREETS ABUTTING THE LOCUS PROPERTIES SHOWN HEREON WERE ESTABLISHED UTILIZING CITY PUBLIC WORKS RECORDS AND FOUND MONUMENTATION AT THE CORNERS AND ANGLE POINTS OF THE STREETS.

EASEMENT, ENCUMBRANCE, AND AGREEMENT REFERENCES:

A. UTILITY EASEMENT: MAINE MEDICAL CENTER (MMC) TO CENTRAL MAINE POWER (CMP) AND NEW ENGLAND TELEPHONE AND TELEGRAPH (NET&T) POLE 29 ON VAUGHAN STREET TO PAD 29.1 PER DEED BOOK 4843 PAGE 39.
B. UTILITY EASEMENT: MMC TO PORTLAND WATER DISTRICT AT 218 VAUGHAN ST. PER DEED BOOK 4792 PAGE 125.
C. UTILITY EASEMENT: MMC TO CMP ON CHADWICK ST., POLE 13 TO POLE 13.1 PER DEED BOOK 6373 PAGE 219.
D. UNDERGROUND ANCHOR SYSTEM EASEMENT RESERVED BY MMC IN CONVEYANCE TO CRESCENT HEIGHTS LLC IN DEED BOOK 26288 PAGE 49.
E. UTILITY/DRAINAGE EASEMENT FOR A DRAIN/SEWER PIPE FROM THE PROPERTY NOW OF CRESCENT HEIGHTS, LLC. FORMERLY AS DESCRIBED IN DEED BOOK 1938 PAGE 248 AND 1946 PAGE 370.
F. UTILITY EASEMENT: TO NET&T NEAR THE NORTHERLY CORNER OF THE PARKING GARAGE ON CONGRESS ST. PER DEED BOOK 8573 PAGE 121.
G. CERTIFICATE OF VARIANCE APPROVAL GRANTING RELIEF FROM SECTION 14–137(7) MAXIMUM STRUCTURE HEIGHT OF 45 FEET, DATED JUNE 25, 1996, AND RECORDED IN DEED BOOK 12629 PAGE 295.
H. SITE LOCATION OF DEVELOPMENT DEPARTMENT ORDER BY MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION FOR MAINE MEDICAL CENTER, PER DEED BOOK 13919 PAGE 114.
I. UTILITY EASEMENT: MMC TO NET&T 6' X 8' NEAR GILMAN AND CONGRESS PER DEED BOOK 13027 PAGE 207.

PLAN REFERENCES

1. STATE OF MAINE DEPARTMENT OF TRANSPORTATION PLAN SHOWING VALLEY, CONGRESS, AND ST. JOHN STREETS, CITY OF PORTLAND DEPARTMENT OF PUBLIC WORKS FILE NO. 726 / 16.
2. STANDARD BOUNDARY SURVEY FOR MAINE MEDICAL CENTER BY STEVENS, MORTON, ROSE, & THOMPSON, INC. DATED OCTOBER 06, 1990 RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN PLAN BOOK 188, PAGE16.
3. CITY OF PORTLAND DEPARTMENT OF PUBLIC WORKS LAND SWAP WITH MAINE MEDICAL CENTER (GILMAN ST. & ARSENAL ST.) DATED JANUARY 23, 1974. DPW FILE NO. 547 / 20.
4. PLAN OF LAND OF J.M. WOOD ESQ. ELLSWORTH AND O STREETS DPW FILE NO. 361 / 3.
5. PLAN OF LAND SURVEYED FOR MOODY F. WALKER SEPTEMBER 23RD 1863 BY HOWE & OSGOOD C.E. CCRD PLAN BOOK 21, PAGE 36.
6. SITE PLAN OF NEUROSCIENCE INSTITUTE CONGRESS AND GILMAN ST. PORTLAND MAINE BY GREGORY K. JOHNSON AIA DATED JULY 31, 1987 ON FILE WITH THE DPW.
7. PLAN OF PROPOSED WIDENING CONGRESS STREET AUGUST 1885, DPW FILE NO. 360 / 2.
8. CITY OF PORTLAND DEPARTMENT OF PUBLIC WORKS, B ST. WIDENING DATED NOV.4, 1937 DPW FILE NO. 569 / 9.
9. PLAN OF CITY LANDS BETWEEN GILMAN STREET AND MAINE CENTRAL RAILROAD SOUTH OF CONGRESS STREET, DPW FILE NO. 18 / 4.
10. PLAN OF CITY LAND BETWEEN CONGRESS AND "A" STS DATED 1883 DPW FILE NO. 379 / 10.
11. CITY OF PORTLAND PLAN OF "B" VALLEY ST DATED FEB. 1926 DPW FILE. NO.179.
12. CITY OF PORTLAND, DEPARTMENT OF PUBLIC WORKS ARSENAL STREET DISCONTINUANCE DATED APRIL 15, 1953 DPW FILE NO. 410 / 96.
13. MMC PARKING FACILITY PROPOSED GRADING PLAN DATED 29 MAY 1971 BY TAC, DPW FILE NO. 680 / 4.
14. CITY OF PORTLAND DEPARTMENT OF PUBLIC WORKS WESTERN PROMENADE SLOPE, CITY BOUNDARY BETWEEN GILMAN AND "B" ST. DATED JAN. 4,1933 DPW FILE NO. 462 / 32 AND 462 / 32–A.
15. PLAN OF LAND WEST OF THE BRACKETT LINE CHADWICK AND VAUGHN STREETS, DATED 12 JUNE 1833 RECORDED IN CCRD PLAN BOOK 1, PAGE 1, DPW FILE NO. 462 / 4.
16. PLAN OF CITY LANDS BETWEEN GILMAN AND "B" STREETS DATED MAY 1883, DPW FILE NO. 69 / 4R, CCRD PLAN BOOK 4, PAGE 43.
17. WESTERN PROMENADE DATED JAN. 1926 CITY OF PORTLAND DPW SHEET NO. 7 FILE NO. 142.
18. CITY OF PORTLAND WORK SHEET CONGRESS, ARSENAL, AND BRACKETT STREETS DPW FILE NO. 363 / 11.
19. CITY OF PORTLAND, PLAN SHOWING PROPOSED GILMAN STREET, CONGRESS AND ASH STREETS, DPW FILE NO. 365 / 6.
20. CITY OF PORTLAND PLAN SHOWING GILMAN STREET, CONGRESS ST. AND WESTERN PROMENADE, DPW FILE NO. 365 / 7.
21. PLAN OF CITY LAND BETWEEN GILMAN & "B" STREETS DATED MAY 1883, CCRD PLAN BOOK 4, PAGE 43, DPW FILE NO. 379 / 25.
22. PORTLAND WATER DISTRICT, MAP NO. 7 SHOWING MAINE MEDICAL CENTER AREA.
23. CITY OF P D PLAN SHOWING CONGRESS STREET SHEET NO. 3 DPW FILE NO. 150.ORTLAN
24. CITY OF PORTLAND PLAN SHOWING GILMAN STREET DATED FEB 1926 DPW FILE NO. 178.
25. CITY OF PORTLAND PROPERTY PLAN BOOK NO. 274 SHOWING PROPOSED TAKING FROM MAINE MEDICAL CENTER ON CHARLES STREET DATED 11–29–1973.
26. CITY OF PORTLAND PLAN OF BRAMHALL ST., VAUGHAN ST., AND BRACKETT ST. DATED OCT. 1925 DPW FILE NO. 90.
27. STANDARD BOUNDARY SURVEY AT 25–27 ELLSWORTH STREET MADE FOR MAINE MEDICAL CENTER BY OWEN HASKELL, INC. DATED OCT. 14, 2002 ON FILE WITH SEBAGO TECHNICS,INC.
28. CITY OF PORTLAND MAINE DEPARTMENT OF PUBLIC WORKS, CHARLES ST. AS BUILT PLAN DATED 1973 DPW FILE NO. 495 / 7.
29. CITY OF PORTLAND MAINE DEPARTMENT OF PUBLIC WORKS, WESCOTT ST. AS BUILT PLAN DATED 1973 DPW FILE NO. 495 / 6.
30. CITY OF PORTLAND MAINE DEPARTMENT OF PUBLIC WORKS, HILL ST. AS BUILT PLAN DATED 1973 DPW FILE NO. 495 / 5.
31. CITY OF PORTLAND MAINE DEPARTMENT OF PUBLIC WORKS, HILL ST. AS BUILT PLAN DATED 1973 DPW FILE NO. 495 / 5.
32. CITY OF PORTLAND MAINE DEPARTMENT OF PUBLIC WORKS, ELLSWORTH ST. AS BUILT PLAN DATED 1973 DPW FILE NO. 495 / 2.
33. CITY OF PORTLAND MAINE DEPARTMENT OF PUBLIC WORKS, CRESCENT ST. AS BUILT PLAN DATED 1973 DPW FILE NO. 495 / 3.
34. STREET VACATION / ACCEPTANCE AND LAND TRANSFER PLAN OF MAINE MEDICAL CENTER BY SEBAGO TECHNICS, INC AS REVISED THROUGHT12–10–04 DPW FILE NO. 992 / 3.
35. STANDARD BOUNDARY SURVEY ON CONGRESS AND ELLSWORTH STREETS, PORTLAND MAINE BY DESLAURIERS & ASSOCIATES DATED 8/30/99.
36. STANDARD BOUNDARY SURVEY AT 26–28 ELLSWORTH STREET MADE FOR MAINE MEDICAL CENTER BY OWEN HASKELL, INC. DATED OCT. 14, 2002 ON FILE WITH SEBAGO TECHNICS, INC.
37. EXISTING CONDITIONS & STANDARD BOUNDARY SURVEY MAINE MEDICAL CENTER DATED 05/01/96 BY TITCOMB ASSOCIATES.
38. PLAN OF CRESCENT STREET DATED OCT.1886 BY PORTLAND CITY ENGINEER DPW FILE NO.10 / 02.
39. CITY OF PORTLAND PLAN OF BRAMHALL ST., ELLSWORTH ST., AND CHARLES ST. DATED OCT. 1926 DPW FILE NO. 158..
40. PLAN OF STREETS ON BRAMHALL'S HILL SEPTEMBER 1858 BY A.P. MARSHALL CITY ENGINEER DPW FILE NO. 359 / 22.
41. PLAN OF LAND OR LOTS WEST OF THE BRACKETT ESTATE DATED 1835, DPW FILE NO.134 / 2.
42. PLAN NO. 5 SHOWING STREETS ON BRAMHALL'S HILL SURVEYED MAY 1862BY C.R. GOODELL C.E. DPW FILE NO. / 15.
43. CITY OF PORTLAND PLAN SHOWING ARSENAL STREET DATED OCT 1925, DPW FILE NO. 95.
44. PLAN OF LAND OR LOTS WEST OF THE BRACKETT ESTATE DATED 1835, DPW FILE NO.396 / 17..
45. PLAN OF CHANGE IN LINE OF CONGRESS STREET, DPW FILE NO. 360 / 25.
46. PLAN OF CHANGE IN LINE OF CONGRESS STREET, DATED OCTOBER 1854, DPW FILE NO. 360 / 27.
47. PLAN OF J.B. BROWN'S LAND WEST OF BRAMHALL'S HILL MADE BY WM. S. EDWARDS C.E. DATED 1871ON FILE IN THE DPW OFFICE.
48. CITY OF PORTLAND MAINE DEPARTMENT OF PUBLIC WORKS, ARSENAL ST. DISCONTINUANCE PLAN DATED 12/2/41 ON FILE IN DPW OFFICE.
49. THIS PLAN OF A TOWN ON BRAMHALL'S HILL PORTLAND MAINE AT THE REQUEST OF WILLIAL VAUGHAN, THE PROPRIETOR COMPLETED IN 1813 BY PELEG WADSWORTH, SURVEYOR, DPW FILE NO. 404 / 130, CCRD PLAN BOOK 37, PAGE 12.
50. T.F. CHAPPELL C.E. PLAN OF ASH STREET, ARSENAL ST., CONGRESS ST.
51. PARKING AREA ON BRAMHALL RESERVOIR SITE CHADWICK, BRAMHALL AND VAUGHAN STS. DATED 1964 DPW FILE NO. 698 / 14.
52. MAINE MEDICAL CENTER PKG C– SITE UTILITIES EXISTING CONDITIONS PLAN DATED THROUGH 05/25/05 BY THE RICHIE ORGANIZATION.
53. MAINE MEDICAL CENTER, PORTLAND MAINE BEAN BUILDING SITE UTILITIES AT ER. BY SHEPLEY, BULFINCH, RICHARDSON, & ABBOTT, DATED THROUGH 3/28/97.
54. BOUNDARY SURVEY OF SPORTSMANS LOT FOR MAINE MEDICAL CENTER, BY SEBAGO TECHNICS, INC., DATED THROUGH 10/23/09.
55. EXISTING CONDITIONS PLAN OF EAGLES CLUB BLOCK FOR MAINE MEDICAL CENTER, BY SEBAGO TECHNICS, INC., DATED THROUGH 11/3/09.



REV:	BY:	DATE:	STATUS:
A	MWE	12/23/09	SUBMITTED FOR CLIENT REVIEW

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SEBAGO TECHNICS, INC. ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO SEBAGO TECHNICS, INC.

SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd. - Suite 1A, South Portland, ME 04106, Tel. 207-200-2100
250 Goddard Rd. - Suite B, Lewiston, ME 04240, Tel. 207-783-5656

PROJECT NO.	FIELD BOOK	DESIGN	CHKD	DRAWN
01046	791B	WTC	MWE	MCC

EXISTING CONDITIONS SURVEY
OF:
MAINE MEDICAL CENTER CAMPUS
GILMAN ST, CONGRESS ST, BRAMHALL ST, ET.AL
PORTLAND, MAINE
FOR:
MAINE MEDICAL CENTER
22 BRAMHALL ST
PORTLAND, MAINE 04101

RECORD OWNER:
SEE NOTE 1, SHEET 2

DATE	SCALE
10/23/09	NA

SHEET 2 OF12

01046–EC–2009.dwg, TAB:EC02



NOTES:

1. SEE SHEET 2 FOR GENERAL NOTES.
2. SEE SHEETS 11 AND 12 FOR STRUCTURE INFORMATION.

20 0 10 20 40

GRAPHIC SCALE 1 INCH = 20 FEET

STATE OF MAINE
MATTHEW W. EK
2117
PROFESSIONAL LAND SURVEYOR

REV:	BY:	DATE:	STATUS:
A	MWE	12/23/09	SUBMITTED FOR CLIENT REVIEW

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SEBAGO TECHNICS, INC. ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO SEBAGO TECHNICS, INC.

SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd. - Suite 1A
South Portland, ME 04106
Tel. 207-200-2100
250 Goddard Rd. - Suite B
Lewiston, ME 04240
Tel. 207-783-5656

PROJECT NO.	FIELD BOOK	DESIGN	CHKD	DRAWN
01046	791B	WTC	MWE	MCC

EXISTING CONDITIONS SURVEY

OF:
MAINE MEDICAL CENTER CAMPUS
GILMAN ST, CONGRESS ST, BRAMHALL ST, ET.AL
PORTLAND, MAINE

FOR:
MAINE MEDICAL CENTER
22 BRAMHALL ST
PORTLAND, MAINE 04101

RECORD OWNER:
SEE NOTE 1, SHEET 2

DATE	SCALE
10/23/09	1"=20'

SHEET 3 OF12

01046-EC-2009.dwg, TAB:EC03

CONGRESS STREET
(FKA MAINE STREET)
76 FEET WIDE

CONGRESS STREET
(FKA MAINE STREET)
66 FEET WIDE

VALLEY STREET
(FORMERLY B STREET)

GILMAN STREET
60 FEET WIDE

A STREET

N71°32'36"E 70.95'
S63°11'56"W 44.95'
N66°22'23"E 89.56'
N63°11'56"E 91.95'
S63°11'56"W 181.65'
S73°34'47"E 285.11'
N20°41'01"W 285.10'
S69°22'22"W 150.85'

BENCHMARK
BRASS PLUG IN 8" X 8" GRAN. MON.
ELEV=52.17'

BENCHMARK
TOP CENTER OF 6" X 6" GRAN. MON.
ELEV=41.78'

BENCHMARK
EASTERLY EDGE OF SEWER MANHOLE
RIMELEV=1063.57'

RECORD OWNER:
SEE NOTE 1, SHEET 2

NOTES:
1. SEE SHEET 2 FOR GENERAL NOTES.
2. SEE SHEETS 11 AND 12 FOR STRUCTURE INFORMATION.

GRAPHIC SCALE 1 INCH = 20 FEET

SHEET 3 | SHEET 4 | SHEET 5 | SHEET 6 | SHEET 7

REV:	BY:	DATE:	
A	MWE	12/23/09	SUBMITTED FOR CLIENT REVIEW

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SEBAGO TECHNICS, INC. ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO SEBAGO TECHNICS, INC.

SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd., Suite 1A — South Portland, ME 04106 — Tel. 207-200-2100
250 Goddard Rd., Suite B — Lewiston, ME 04240 — Tel. 207-783-9566

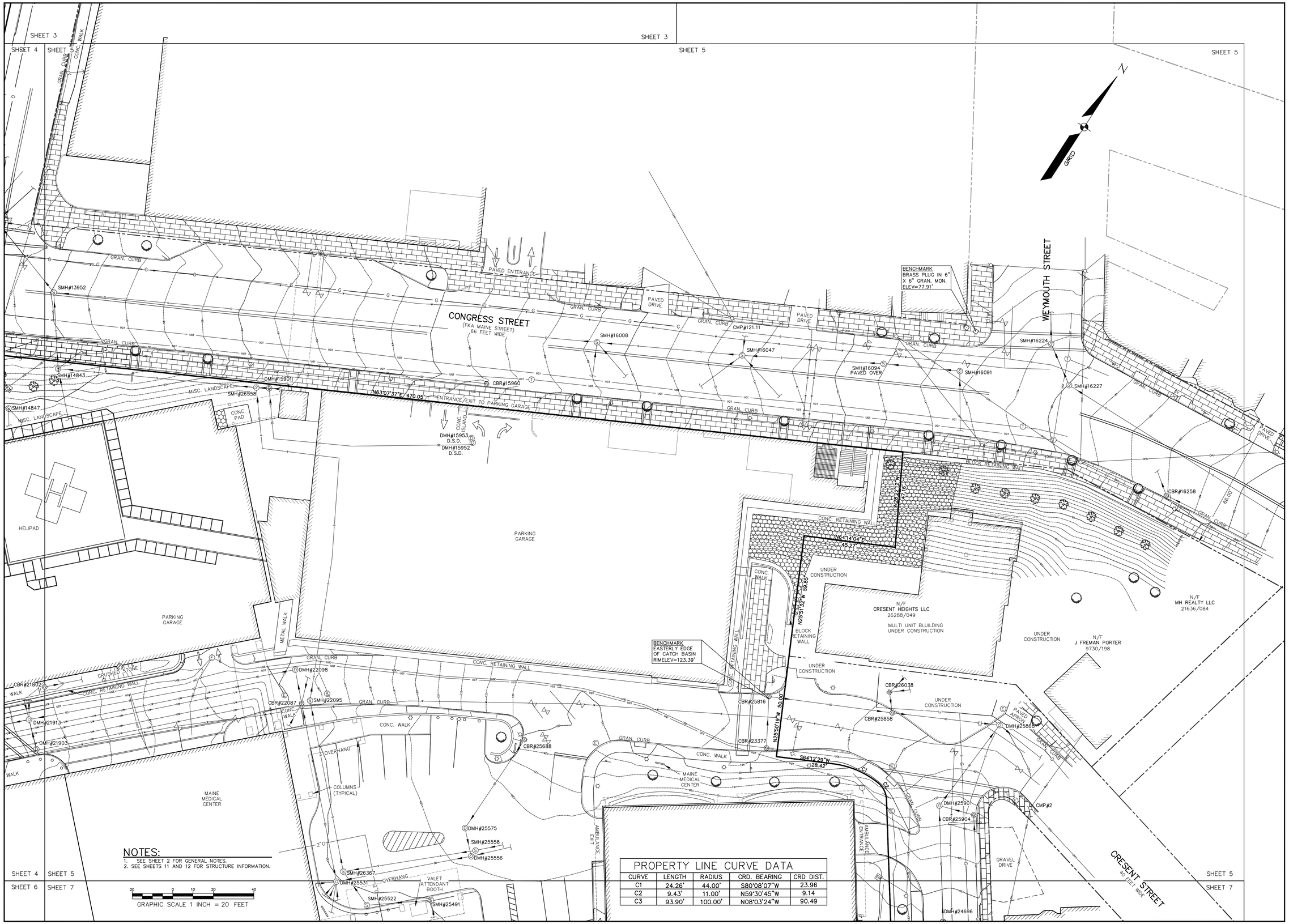
PROJECT NO.	FIELD BOOK	DESIGN	CHKD	DRAWN
01046	791B	WTC	MWE	MCC

EXISTING CONDITIONS SURVEY
OF:
MAINE MEDICAL CENTER CAMPUS
GILMAN ST, CONGRESS ST, BRAMHALL ST, ET AL
PORTLAND, MAINE
FOR:
MAINE MEDICAL CENTER
22 BRAMHALL ST
PORTLAND, MAINE 04101

DATE	SCALE
10/23/09	1"=20'

SHEET 4 OF12

01046-EC-2009.dwg, TAB:EC04



NOTES:

1. SEE SHEET 2 FOR GENERAL NOTES.
2. SEE SHEETS 11 AND 12 FOR STRUCTURE INFORMATION.

GRAPHIC SCALE 1 INCH = 20 FEET

PROPERTY LINE CURVE DATA

CURVE	LENGTH	RADIUS	CRD. BEARING	CRD DIST.
C1	24.26'	44.00'	S80°08'07"W	23.96
C2	9.43'	11.00'	N59°30'45"W	9.14
C3	93.90'	100.00'	N08°03'24"W	90.49

STATE OF MAINE
MATTHEW W. EK
2117
PROFESSIONAL LAND SURVEYOR

REV:	BY:	DATE:	STATUS:
A	MWE	12/23/09	SUBMITTED FOR CLIENT REVIEW

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SEBAGO TECHNICS, INC. ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO SEBAGO TECHNICS, INC.

SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd., Suite 1A
South Portland, ME 04106
Tel. 207-200-2100
250 Goddard Rd., Suite B
Lewiston, ME 04240
Tel. 207-783-5656

PROJECT NO.	FIELD BOOK	DESIGN	CHKD	DRAWN
01046	791B	WTC	MWE	MCC

EXISTING CONDITIONS SURVEY

OF:
MAINE MEDICAL CENTER CAMPUS
GILMAN ST, CONGRESS ST, BRAMHALL ST, ET.AL
PORTLAND, MAINE

FOR:
MAINE MEDICAL CENTER
22 BRAMHALL ST
PORTLAND, MAINE 04101

RECORD OWNER:
SEE NOTE 1, SHEET 2

DATE	SCALE
10/23/09	1"=20'

SHEET 5 OF12

01046-EC-2009.dwg, TAB:EC05

SHEET 4 | SHEET 5
SHEET 6 | SHEET 7

A STREET
GILMAN STREET
60 FEET WIDE
CENTRAL UTILITY PLANT
MAINE MEDICAL CENTER

BENCHMARK
TOP CENTER OF 6" X 6" GRAN. MON.
ELEV=66.99'

BENCHMARK
SOUTHERLY EDGE OF CATCH BASIN.
RIM ELEV=108.15'

BENCHMARK
TOP CENTER OF 6" X 6" GRAN. MON.
ELEV=105.02'

N20°41'01"W 986.18'
S69°14'08"W 94.58'

NOTES:
1. SEE SHEET 2 FOR GENERAL NOTES.
2. SEE SHEETS 11 AND 12 FOR STRUCTURE INFORMATION.

20 0 10 20 40
GRAPHIC SCALE 1 INCH = 20 FEET

SHEET 6 | SHEET 8 | SHEET 6 | SHEET 7 | SHEET 8

STATE OF MAINE
MATTHEW T. CLOUTIER
PLS
2117
LICENSED PROFESSIONAL LAND SURVEYOR

REV.	BY:	DATE:	STATUS:
A	MWE	12/23/09	SUBMITTED FOR CLIENT REVIEW

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SEBAGO TECHNICS, INC. ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO SEBAGO TECHNICS, INC.

SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd. - Suite 1A
South Portland, ME 04106
Tel. 207-200-2100
250 Goddard Rd. - Suite B
Lewiston, ME 04240
Tel. 207-783-9566

PROJECT NO.	FIELD BOOK	DESIGN	CHKD	DRAWN
01046	791B	WTC	MWE	MCC

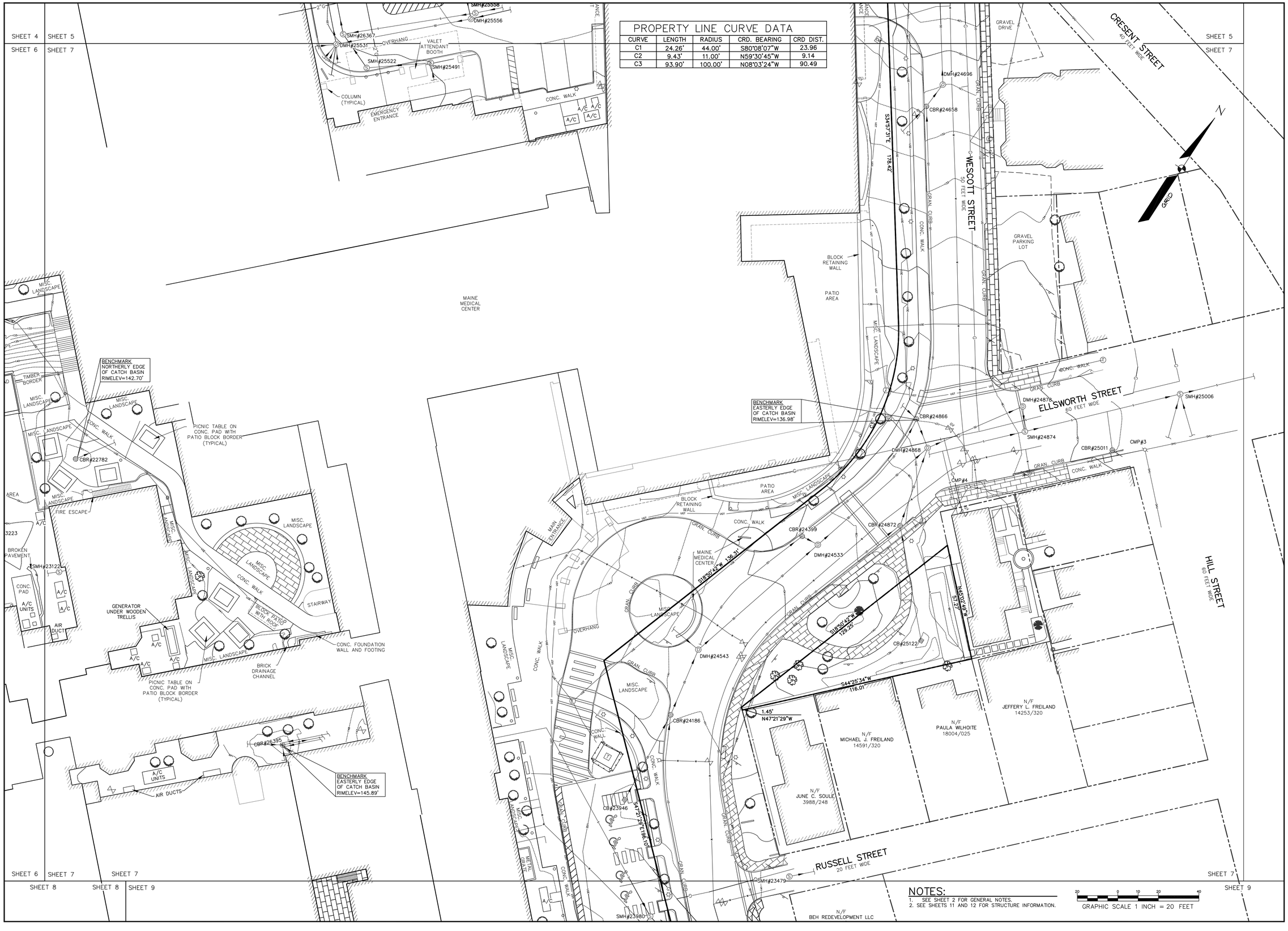
EXISTING CONDITIONS SURVEY
OF:
MAINE MEDICAL CENTER CAMPUS
GILMAN ST, CONGRESS ST, BRAMHALL ST, ET AL
PORTLAND, MAINE
FOR:
MAINE MEDICAL CENTER
22 BRAMHALL ST
PORTLAND, MAINE 04101

RECORD OWNER:
SEE NOTE 1, SHEET 2

DATE	SCALE
10/23/09	1"=20'

SHEET 6 OF12

01046-EC-20091.dwg, TAB: EC06



PROPERTY LINE CURVE DATA

CURVE	LENGTH	RADIUS	CRD. BEARING	CRD DIST.
C1	24.26'	44.00'	S80°08'07"W	23.96
C2	9.43'	11.00'	N59°30'45"W	9.14
C3	93.90'	100.00'	N08°03'24"W	90.49

NOTES:

1. SEE SHEET 2 FOR GENERAL NOTES.
2. SEE SHEETS 11 AND 12 FOR STRUCTURE INFORMATION.

GRAPHIC SCALE 1 INCH = 20 FEET

STATE OF MAINE MATTHEW W. EK 2117 PROFESSIONAL LAND SURVEYOR

REV:	BY:	DATE:	STATUS:
A	MWE	12/23/09	SUBMITTED FOR CLIENT REVIEW

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SEBAGO TECHNICS, INC. ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO SEBAGO TECHNICS, INC.

SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd., Suite 1A, South Portland, ME 04106, Tel. 207-200-2100
250 Goddard Rd., Suite B, Lewiston, ME 04240, Tel. 207-783-5656

PROJECT NO.	FIELD BOOK	DESIGN	CHKD	DRAWN
01046	791B	WTC	MWE	MCC

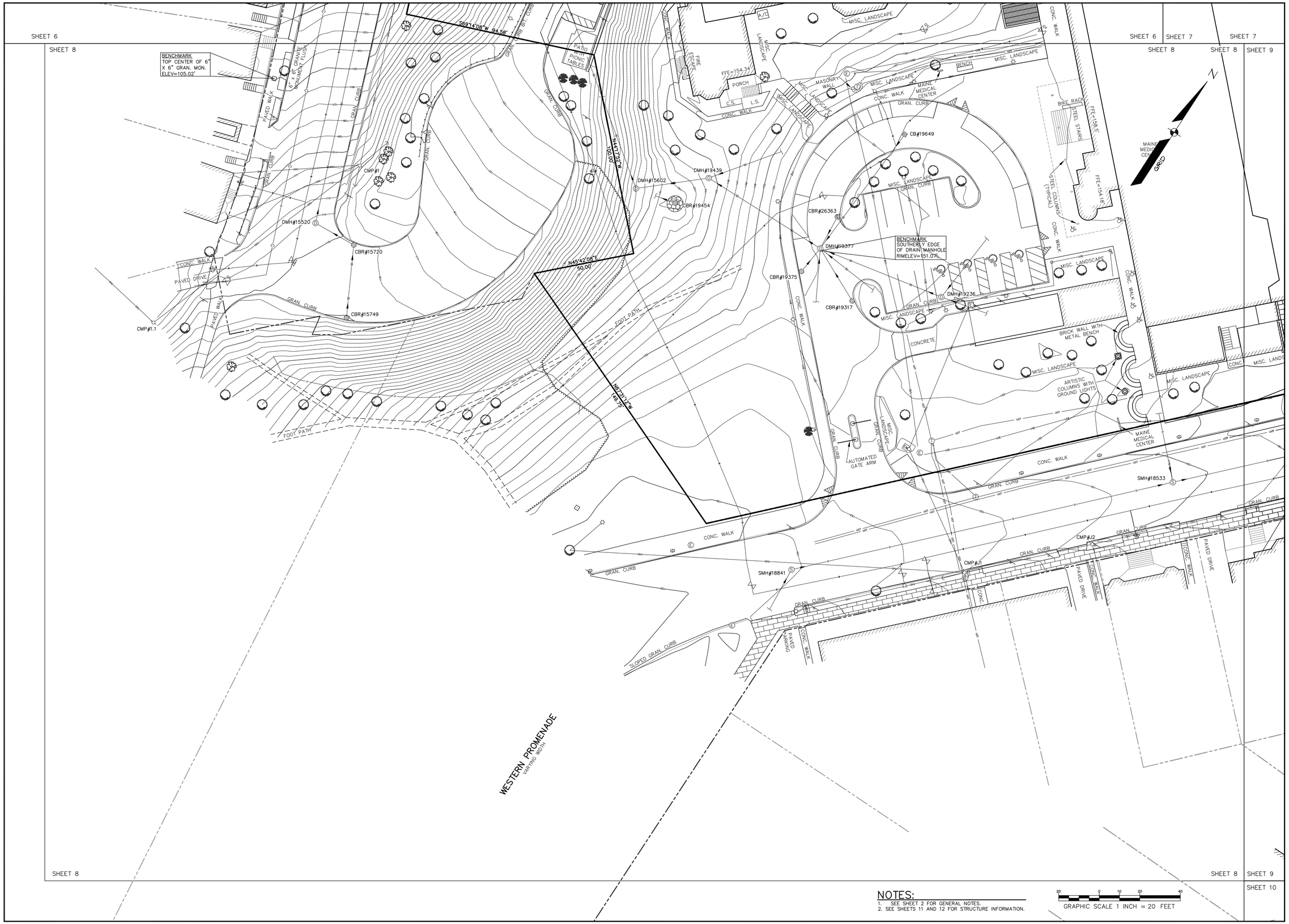
EXISTING CONDITIONS SURVEY
OF:
MAINE MEDICAL CENTER CAMPUS
GILMAN ST, CONGRESS ST, BRAMHALL ST, ET.AL
PORTLAND, MAINE
FOR:
MAINE MEDICAL CENTER
22 BRAMHALL ST
PORTLAND, MAINE 04101

RECORD OWNER:
SEE NOTE 1, SHEET 2

DATE	SCALE
10/23/09	1"=20'

SHEET 7 OF12

01046-EC-2009.dwg, TAB: EC07



NOTES:
1. SEE SHEET 2 FOR GENERAL NOTES.
2. SEE SHEETS 11 AND 12 FOR STRUCTURE INFORMATION.

GRAPHIC SCALE 1 INCH = 20 FEET

STATE OF MAINE
MATTHEW W. EK
2117
PROFESSIONAL LAND SURVEYOR

REV:	BY:	DATE:	STATUS:
A	MWE	12/23/09	SUBMITTED FOR CLIENT REVIEW

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SEBAGO TECHNICS, INC. ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO SEBAGO TECHNICS, INC.

SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd. - Suite 1A
South Portland, ME 04106
Tel. 207-200-2100
250 Goddard Rd. - Suite B
Lewiston, ME 04240
Tel. 207-783-5656

PROJECT NO.	FIELD BOOK	DESIGN	CHKD	DRAWN
01046	791B	WTC	MWE	MCC

EXISTING CONDITIONS SURVEY
OF:
MAINE MEDICAL CENTER CAMPUS
GILMAN ST, CONGRESS ST, BRAMHALL ST, ET.AL
PORTLAND, MAINE
FOR:
MAINE MEDICAL CENTER
22 BRAMHALL ST
PORTLAND, MAINE 04101

RECORD OWNER:
SEE NOTE 1, SHEET 2

DATE	SCALE
10/23/09	1"=20'

SHEET 8 OF12

01046-EC-2009.dwg, TAB:EC08

SHEET 7

SHEET 8 | SHEET 9

SHEET 7

SHEET 9

RUSSELL STREET
20 FEET WIDE

SMH#23479

SMH#23980

CBR#17954

N/F
BEH REDEVELOPMENT LLC
26288/055

N/F
BEH REDEVELOPMENT LLC
26288/052

MAINE
MEDICAL
CENTER

CONDITIONING UNITS

A/C

APPROXIMATE LOCATION OF UNDERGROUND LINEAR ACCELERATOR ROOM

PATIO AREA

SHUTTLE STOP

BROKEN PAVEMENT/ TRENCH DRAIN

ENTRANCE

OVERHANG

MISC. LANDSCAPE

CONC. WALK

BRICK WALL

CONC. WALL

GRAN. CURB

BIT. CURB

CRUSHED STONE

BIKE RACK

SMOKING AREA

CONC. ISLAND

LAUTOMATED GATE ARM

BOLLARDS TYPICAL

PAVED DRIVE

PAVED WALK

CONC. DRIVE

BRAMHALL STREET
60 FEET WIDE

CHADWICK STREET
(FKA 1 STREET)
60 FEET WIDE

BRACKETT STREET
(FKA JEFFERSON STREET)
57/75 FEET WIDE

VAUGHAN STREET
66 FEET WIDE

GRID

CBR#18426

DMH#18214

SMH#18219

CBR#18139

CBR#18124

CBR#18172

CBR#18171

CMP#3

CMP#4

CMP#14

SMH#16888

CBR#17646

CBR#17604

STA 0+00
N44°23'02"E
36.15

CMP#5S

SMH#17570

8" x 8" GRANITE MONUMENT WITH DRILL HOLE

8" x 8" GRANITE MONUMENT

SMH#17836

8" x 8" GRANITE MONUMENT 6" HIGH WITH DRILL HOLE

CBR#17684

CMP#6

CMP#5

N44°23'02"E
81.05

BENCHMARK
TOP CENTER OF "M" MON.
ELEV=140.52'

N44°23'02"E 587.81'

S60°47'58"W
357.58'

N47°36'02"W
21.03'

CBR#12313

CBR#12319

CBR#12336

CBR#16634

CBR#16685

SMH#17446

CBR#17378

CMP#34

CBR#17181

SMH#17274

CBR#17159

CMP#33

CBR#17197

CBR#17224

BENCHMARK
NORTHERLY EDGE OF SEWER MANHOLE
RIM ELEV=148.29'

NOTES:
1. SEE SHEET 2 FOR GENERAL NOTES.
2. SEE SHEETS 11 AND 12 FOR STRUCTURE INFORMATION.

20 0 10 20 40
GRAPHIC SCALE 1 INCH = 20 FEET

SHEET 8 | SHEET 9

SHEET 10

SHEET 9

REV:	BY:	DATE:	STATUS:
A	MWE	12/23/09	SUBMITTED FOR CLIENT REVIEW

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SEBAGO TECHNICS, INC. ANY ALTERATIONS AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO SEBAGO TECHNICS, INC.

STATE OF MAINE
MATTHEW W. WILSON
PLS
2117
PROFESSIONAL LAND SURVEYOR

SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd., - Suite 1A - South Portland, ME 04106 Tel. 207-200-2100
200 Goddard Rd., - Suite B - Lewiston, ME 04240 Tel. 207-783-3566

PROJECT NO.	FIELD BOOK	DESIGN	CHKD	DRAWN
01046	791B	WTC	MWE	MCC

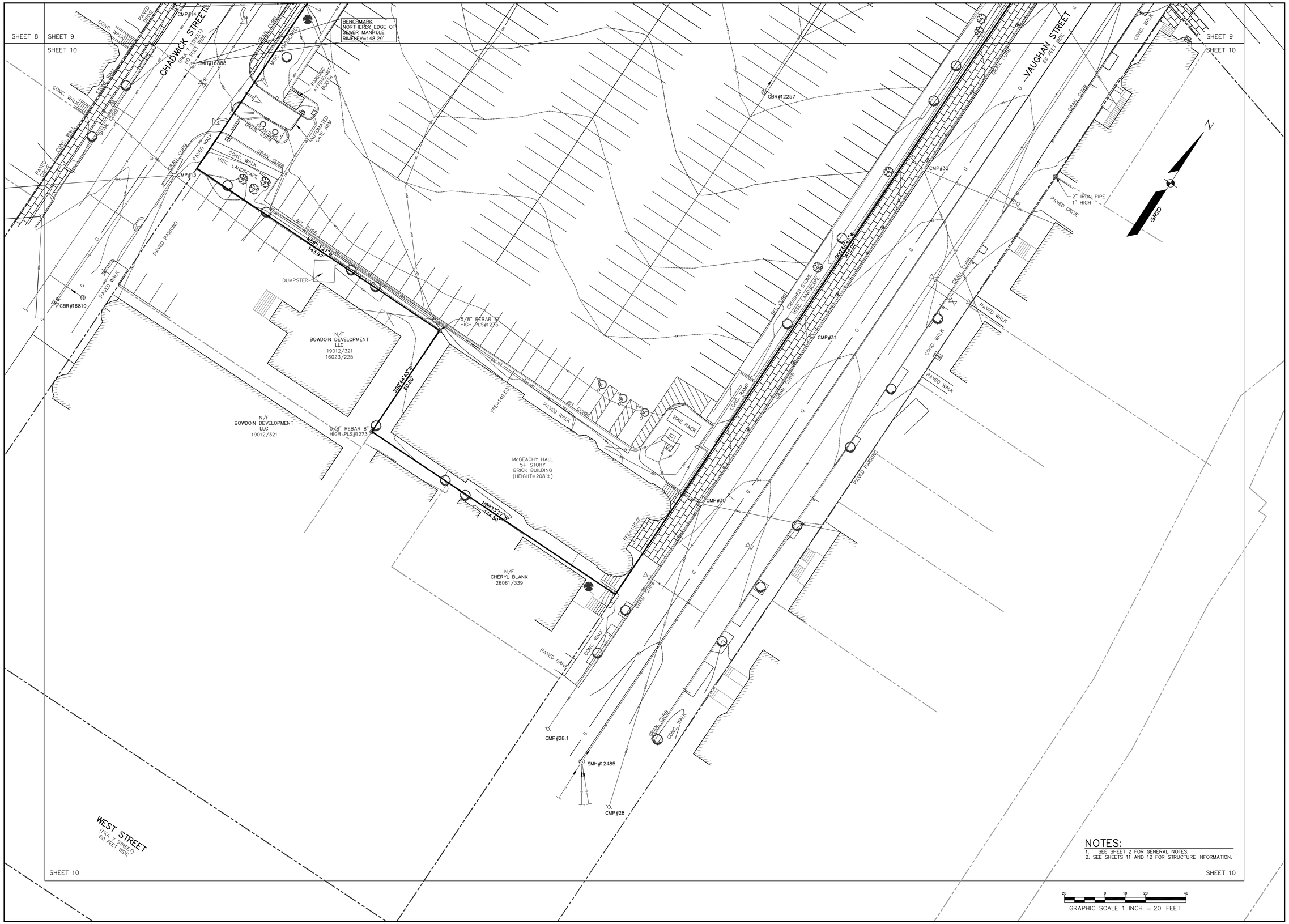
EXISTING CONDITIONS SURVEY
OF:
MAINE MEDICAL CENTER CAMPUS
GILMAN ST. CONGRESS ST. BRAMHALL ST. ET.AL
PORTLAND, MAINE
FOR:
MAINE MEDICAL CENTER
22 BRAMHALL ST
PORTLAND, MAINE 04101

RECORD OWNER:
SEE NOTE 1, SHEET 2

DATE	SCALE
10/23/09	1"=20'

SHEET 9 OF12

01046-EC-2009.dwg, TAB:EC09



NOTES:
1. SEE SHEET 2 FOR GENERAL NOTES.
2. SEE SHEETS 11 AND 12 FOR STRUCTURE INFORMATION.

GRAPHIC SCALE 1 INCH = 20 FEET

REV:	BY:	DATE:	STATUS:
A	MWE	12/23/09	SUBMITTED FOR CLIENT REVIEW

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SEBAGO TECHNICS, INC. ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO SEBAGO TECHNICS, INC.

SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd. - Suite 1A
South Portland, ME 04106
Tel. 207-200-2100
250 Goddard Rd. - Suite B
Lewiston, ME 04240
Tel. 207-783-5656

PROJECT NO.	FIELD BOOK	DESIGN	CHKD	DRAWN
01046	791B	WTC	MWE	MCC

EXISTING CONDITIONS SURVEY
OF:
MAINE MEDICAL CENTER CAMPUS
GILMAN ST, CONGRESS ST, BRAMHALL ST, ET.AL
PORTLAND, MAINE
FOR:
MAINE MEDICAL CENTER
22 BRAMHALL ST
PORTLAND, MAINE 04101

RECORD OWNER:
SEE NOTE 1, SHEET 2

DATE	SCALE
10/23/09	1"=20'

SHEET 10 OF 12

01046-EC-2009.dwg, TAB:EC10

UTILITY STRUCTURE CHART – SEWER

STRUCTURE TYPE	STRUCTURE #	RIM ELEVATION (FEET)	IN–OUT	INVERT ELEVATION (FEET)	SIZE (INCHES)	TYPE	DIRECTION	COMMENTS:
SMH	12485	145.43						
			IN	137.08	12	RCP	6	
			IN	137.23	6	PVC	6	
			IN	137.73	12	?	8	
			OUT	137.63	12	?	2	
			SHELF	138.13				
SMH	12949	61.78						
			IN	53.38	12	PVC	6	HEAVY FLOW
			IN	51.9	6	PVC	4	HEAVY FLOW
			OUT	52.38	12	PVC	11	
			SHELF	53.78				UPPER SHELF
			SHELF	52.58				LOWER SHELF
SMH	13080	54.2						
			IN	45.5	12	VIT CLAY	6	SOLIDS BUILT UP
			IN	46	12	VIT CLAY	5	
			OUT	45.3	12	VIT CLAY	3	
			SHELF	46				
SMH	13187	35.27						
			IN	24.19	12	VIT CLAY	5	
			IN	24.64	8	PVC	3	
			IN	24.87	4	PVC	3	
			OUT	24.17	12	VIT CLAY	11	
			SHELF	25.27				
SMH	13278	32.93						
			IN	21.93	12	VIT CLAY	2	
			IN	22.33	12	VIT CLAY	11	
			IN	22.13	12	VIT CLAY	5	
			OUT	21.83	12	VIT CLAY	8	
			SHELF	22.63				
SMH	13348	37.94						
			IN	27.99	12	VIT CLAY	5	
			IN	27.99	12	VIT CLAY	2	
			OUT	27.34	12	VIT CLAY	8	
			SHELF	28.19				
SMH	13457	79.42						
			IN	64.6	12	PVC	3	
			IN	72.43	12	PVC	3	
			OUT	64.73	12	PVC	10	
			SHELF	65.47				
SMH	13475	62.91						
			IN	52.35	12	PVC	6	
			IN	56.91	12	PVC	6	
			OUT	52.34	12	PVC	10	
			SHELF	53.27				
SMH	13482	55.71						
			IN	46.1	12	PVC	4	
			IN	50.14	12	PVC	4	
			OUT	46.09	12	PVC	10	
			SHELF	47.22				
SMH	13533	53.55						
			IN	44.77	12	VIT CLAY	5	
			IN	46.82	12	PVC	5	HEAVY FLOW
			IN	45.65	12	PVC	3	HEAVY FLOW
			OUT	44.38	12	VIT CLAY	11	
			SHELF	44.81				
SMH	13820	41.72						
			IN	32.44	12	VIT CLAY	5	
			IN	32.77	12	VIT CLAY	2	
			OUT	32.42	12	VIT CLAY	11	
			SHELF	33.47				
SMH	13875	47.49						
			IN	37.51	10	?	2	
			OUT	37.49	10	?	7	
SMH	13932	52.64						
			IN	43.42	15	RCP	2	
			IN	44.44	12	PVC	4	
			IN	41.64	18	RCP	5	
			IN	44.64	8	VIT CLAY	6	
			OUT	40.64	18	RCP	12	
			SHELF	41.06				
SMH	13952	52.64						
			IN	45.89	12	PVC	2	
			IN	45.98	18	RCP	4	
			OUT	44.61	18	RCP	8	
			SHELF	46.66				
SMH	14040	44.97						
			IN	39.47	18	PVC	11	HEAVY FLOW
			IN	39.42	12	PVC	12	
			IN	39.77	6	PVC	6	
			OUT	38.85	24	RCP	5	
			SHELF	40.34				
SMH	14076	44.57						
			IN	39.89	12	PVC	3	HEAVY FLOW
			OUT	39.69	12	PVC	8	
			SHELF	40.52				
SMH	14081	42.46						
			IN	31.88	12	VIT CLAY	2	
			IN	32.26	12	?	5	CAN NOT SEE MATERIAL
			OUT	31.68	12	VIT CLAY	8	
			SHELF	32.46				
SMH	14170	41.55						
			IN	30.15	12	?	5	SIZE±
			OUT	30.1	12	?	11	SOLIDS BUILD UP
			SUMP	30.4				NO DEFINED TRENCH
SMH	14843	56.66						
			IN	53.17	6	PVC	10	
			IN	52.06	12	VIT CLAY	1	
			IN	51.86	18	RCP	4	
			OUT	51.66	18	RCP	8	
			SHELF	53.27				
SMH	14847	61.65						
			IN	57.85	8	STEEL	6	
			IN	58.45	4	STEEL	6	
			OUT	52.7	8	VIT CLAY	7	
			SUMP	48.35				HEAVILY SILTED
SMH	15063	87.37						
			IN	82.52	12	PVC	2	
			IN	73.12	12	PVC	2	
			OUT	73.02	12	PVC	7	
			SHELF	73.77				
SMH	15163	81.98						
			IN	72.98	12	PVC	3	
			OUT	72.88	12	PVC	11	
			SHELF	73.68				
SMH	16008	69.24						
			IN	61.07	10	ACP	3	
			IN	61.17	10	?	4	
			IN	62.19	12	VIT CLAY	6	
			OUT	60.86	10	ACP	9	
			SHELF	62.06				
SMH	16047	72.79						
			IN	64.59	8	PVC	3	
			IN	64.57	8	PVC	4	
			IN	69.76	4	PVC	6	
			OUT	64.19	10	PVC	9.	
			IN	64.29	8	VIT CLAY	10	
			SHELF	65.13				
SMH	16091	77.67						
			IN	69.37	8	PVC	4	
			OUT	69.34	8	PVC	7	
			SHELF	70.21				
SMH	16224	79.08						
			IN	68.62	18	VIT CLAY	4	
			OUT	67.69	18	PVC	10	
			SHELF	69.13				
SMH	16227	80.05						
			IN	70.89	18	VIT CLAY	5	
			OUT	70.85	18	VIT CLAY	11	
			SHELF	71.9				
SMH	16386	88.39						
			IN	78.29	18	VIT CLAY	4	
			OUT	78.19	18	VIT CLAY	10	
			SHELF	79.39				
SMH	16888	148.29						
			IN	139.89	12	VIT CLAY	8	
			OUT	139.79	12	VIT CLAY	2	
			SHELF	140.49				

UTILITY STRUCTURE CHART – SEWER

STRUCTURE TYPE	STRUCTURE #	RIM ELEVATION (FEET)	IN–OUT	INVERT ELEVATION (FEET)	SIZE (INCHES)	TYPE	DIRECTION	COMMENTS:
SMH	17274	139.65						
			IN	131.15	15	RCP	5	
			IN	129.85	18	?	8	
			IN	132.85	12	STEEL	10	
			IN	131.4	12	?	11	
			OUT	129.75	18	?	2	
SMH	17277	140.22						
			IN	133.27	6	VIT CLAY	3	
			IN	132.27	12	?	5	
			OUT	132.17	12	?	11	
			SHELF	133.42				
SMH	17446	140.46						
			OUT	132.86	8	VIT CLAY	5	
			SHELF	133.36				SILT BUILD UP
SMH	17570	141.18						
			IN	132.73	18	?	9	
			IN	132.13	18	?	11	
			OUT	132.03	18	?	5	
			SHELF	133.28				
SMH	17836	143.54						
			IN	135.89	12	?	7	
			IN	135.44	12	?	8	
			IN	136.49	12	RCP	11	
			IN	139.11	4	STEEL	11	
			OUT	135.34	12	?	2	
			SHELF	136.39				
SMH	18219	145.32						
			IN	136.87	12	VIT CLAY	8	
			IN	137.37	12	?	10	
			OUT	136.77	12	VIT CLAY	2	
			SHELF	138.32				
SMH	18533	150.42						
			IN	141.92	12	VIT CLAY	8	
			IN	143.22	8	STEEL	11	
			OUT	141.82	12	VIT CLAY	2	
			SHELF	143.12				
SMH	18841	154.13						
			IN	146.58	12	VIT CLAY	7	
			OUT	146.48	12	VIT CLAY	2	
			SHELF	146.98				
SMH	21114	107.75						
			IN	99.86	8	PVC	2	
			IN	99.95	8	PVC	5	
			OUT	99.6	8	PVC	8	
			SHELF	100.68				
SMH	21423	106.57						
			IN	97.17	12	PVC	5	HAS DROP
			IN	86.91	12	PVC	5	AT DROP
			OUT	86.91	12	?	11	SIZE±
			SHELF	87.35				
SMH	21735	112.01						
			IN	100.12	10	PVC	1	
			OUT	99.89	12	PVC	8	
			SHELF	100.79				
SMH	22095	115.44						
			IN	108.75	18	STEEL	5	
			OUT	108.49	15	VIT CLAY	11	
			SHELF	109.52				
SMH	23122	145.59						
			IN	141.06	4	STEEL	1	ENCLOSED WITH DROP
			OUT	140.19	4	PVC	7	FRM DROP
			SUMP	140.19				
SMH	23479	140.55						
			OUT	132.88	8	?	2	BEGINING OF RUN
			SHELF	133.56				
SMH	23980	142.54						
			IN	136.54	12	?	5	
			IN	135.54	12	?	10	
			OUT	135.18	12	?	2	
			SHELF	136.25				
SMH	24874	135.9						
			IN	127.38	12	PVC	8	
			IN	127.18	12	PVC	11	
			OUT	127.17	12	PVC	2	
			SHELF	128.08				
SMH	25006	132.26						
			IN	125.55	12	VIT CLAY	5	
			IN	125.17	10	PVC	6	
			IN	125.26	12	VIT CLAY	7	
			IN	124.54	12	VIT CLAY	8	
			OUT	124.46	12	VIT CLAY	2	
			SHELF	125.61				
SMH	25491	129.94						
			IN	118.64	15	PVC	5	
			OUT	118.31	15	?	8	
			SHELF	119.65				
SMH	25522	130.11						
			IN	117.21	15	PVC	3	
			OUT	117.16	15	PVC	10	
			SHELF	118.21				
SMH	25558	128.59						
			IN	110.01	12	?	3	
			OUT	110.00	12	?	9	
			SHELF	110.60				
SMH	26197	88.26						
			IN	80.53	12	PVC	2	
			IN	80.74	15	PVC	4	
			IN	82.56	15	CPP	6	
			IN	83.62	12	PVC	6	
			OUT	80.51	12	PVC	8	
			SHELF	81.44				
SMH	26365	107.74						
			IN	97.99	12	PVC	2	
			IN	98.01	12	PVC	5	
			OUT	97.74	12	PVC	11	
			SHELF	98.44				
SMH	26367	130.04						
			IN	109.83	12	PVC	2	
			IN	109.87	15	PVC	5	
			IN	116.09	15	PVC	5	
			OUT	109.76	15	PVC	11	
			SHELF	110.77				
SMH	26558	61.63	IN	56.28	12	CPP	2	
			IN	56.23	15	PVC	5	
			OUT	56.13	15	PVC	8	

STATE OF MAINE MATTHEW W. EK 2117 PROFESSIONAL LAND SURVEYOR

A	MWE	12/23/09	SUBMITTED FOR CLIENT REVIEW
REV:	BY:	DATE:	STATUS:

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SEBAGO TECHNICS, INC. ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO SEBAGO TECHNICS, INC.

SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd. - Suite 1A, South Portland, ME 04106, Tel. 207-200-2100
250 Goddard Rd. - Suite B, Lewiston, ME 04240, Tel. 207-783-5656

PROJECT NO.	FIELD BOOK	DESIGN	CHKD	DRAWN
01046	791B	WTC	MWE	MCC

EXISTING CONDITIONS SURVEY
OF:
MAINE MEDICAL CENTER CAMPUS
GILMAN ST, CONGRESS ST, BRAMHALL ST, ET.AL
PORTLAND, MAINE
FOR:
MAINE MEDICAL CENTER
22 BRAMHALL ST
PORTLAND, MAINE 04101

RECORD OWNER:
SEE NOTE 1, SHEET 2

DATE	SCALE
10/23/09	NA

SHEET 11 OF 12

01046-EC-2009.dwg, TAB: STR-11

UTILITY STRUCTURE CHART – DRAIN MANHOLE

STRUCTURE TYPE	STRUCTURE #	RIM ELEVATION (FEET)	IN/OUT	INVERT ELEVATION (FEET)	SIZE (INCHES)	TYPE	DIRECTION	COMMENTS:
DMH	12906	72.45						
			IN	62.96	12	PVC	1	
			IN	67.07	12	RCP	5	
			OUT	63.08	12	RCP	12	
			SHELF	63.5				
DMH	12909	66.75						
			IN	60.15	12	RCP	5	
			IN	59.95	12	PVC	7	
			OUT	59.9	12	PVC	11	
			SHELF	60.45				
DMH	12914	65.09						
			IN	49.37	24	CPP	11	
			IN	59.74	10	CPP	2	
			IN	57.39	12	PVC	5	
			OUT	49.31	24	RCP	8	
			SUMP	48.94				
DMH	12964	65.52						DOWN STREAM DEFENDER
			SUMP	41.52				
DMH	12965	64.52						DOWN STREAM DEFENDER
			TOP TANK	51.84	0	?	?	
			SUMP	42.95				
DMH	12966	130.04						
			IN	121.27	4	PVC	11	
			IN	124.21	18	STEEL	3	
			IN	124.61	6	PVC	5	
			OUT	119.82	18	CPP	6	
			SUMP	119.55				
DMH	13079	53.18						
			IN	45.98	24	RCP	3	LARGER IN THAN OUT
			OUT	45.93	18	PVC	9	SMALLER OUT THAN IN
			SUMP	45.76				
DMH	13456	80.75						
			IN	72.15	18	CPP	4	
			OUT	67.96	18	?	10	
			SHELF	69.13				
DMH	13592	42.89						
			IN	37.64	10	?	2	SILTED
			IN	37.79	12	?	5	
			OUT	37.59	12	?	10	SILTED
			SUMP	37.94				SILTED
DMH	14542	37.45						
			IN	32.1	8	PVC	5	
			IN	32.25	6	PVC	2	
			OUT	31.95	8	PVC	9	
			SUMP	31.62				
DMH	15162	81.13						
			IN	75.53	12	PVC	2	APPARENT PONDING
			IN	75.48	12	RCP	5	APPARENT PONDING
			OUT	75.58	12	RCP	11	APPARENT PONDING
			SHELF	76.03				
DMH	15520	114.29						
			IN	109.54	12	PVC	3	
			OUT	109.39	12	RCP	11	
			SUMP	109.14				
DMH	15602	138.17						
			IN	134.47	10	VIT CLAY	3	
			OUT	134.47	10	VIT CLAY	11	
			SUMP	133.17				
DMH	15901	61.7						
			IN	57.4	4	PVC	2	
			IN	55.9	12	CPP	3	
			OUT	55.9	12	CPP	7	
			SHELF	56.58				
DMH	15952	67.02						DOWN STREAM DEFENDER
			IN	64.98	4	STEEL	5	
			SUMP	59.82				
DMH	15953	67						DOWN STREAM DEFENDER
			TOP TANK	64.83	0	?	?	
			SUMP	57.6				
DMH	18214	145.1						
			IN	142.35	10	STEEL	9	
			OUT	142.15	10	TRAP	2	
			SUMP	139.35				SILTED
DMH	19236	152.2						
			IN	140.22	6	PVC	1	PONDING
			IN	140.34	4	PVC	4	PONDING
			OUT	140.22	12	PVC	9	
			SHELF	140.84				
DMH	19377	151.07						
			IN	138.97	8	PVC	2	
			IN	145.93	8	PVC	2	
			IN	145.64	8	PVC	4	
			IN	138.91	12	PVC	4	
			IN	138.81	8	PVC	5	
			IN	145.67	8	PVC	7	
			IN	138.85	8	PVC	8	
			OUT	138.75	12	PVC	10	SHELF –11.55
DMH	19439	144.58						
			IN	137.38	12	PVC	2	
			IN	137.33	12	PVC	4	
			OUT	137.31	12	PVC	9	
			SHELF	138.03				
DMH	20880	121.93						
			IN	119.03	8	PVC	5	
			OUT	115.53	8	PVC	11	
			SHELF	116.63				
DMH	21220	108.04						
			IN	87.36	12	?	2	
			IN	94.86	12	RCP	2	
			IN	104.44	6	PVC	4	
			OUT	86.99	12	?	8	
			SHELF	88.29				
DMH	21240	107.93						
			IN	101.68	12	RCP	5	
			IN	101.68	10	PVC	8	POSSIBLE 12INCH
			OUT	101.58	12	CPP	11	
			SHELF	102.23				
DMH	21425	106.58						
			IN	101.88	12	CPP	2	
			IN	95.92	15	CPP	5	
			OUT	95.9	15	CPP	7	
			SHELF	96.76				
DMH	21468	106.93						
			IN	103.99	6	PVC	12	
			OUT	103.94	6	PVC	5	
			SUMP	101.77				

UTILITY STRUCTURE CHART – DRAIN MANHOLE

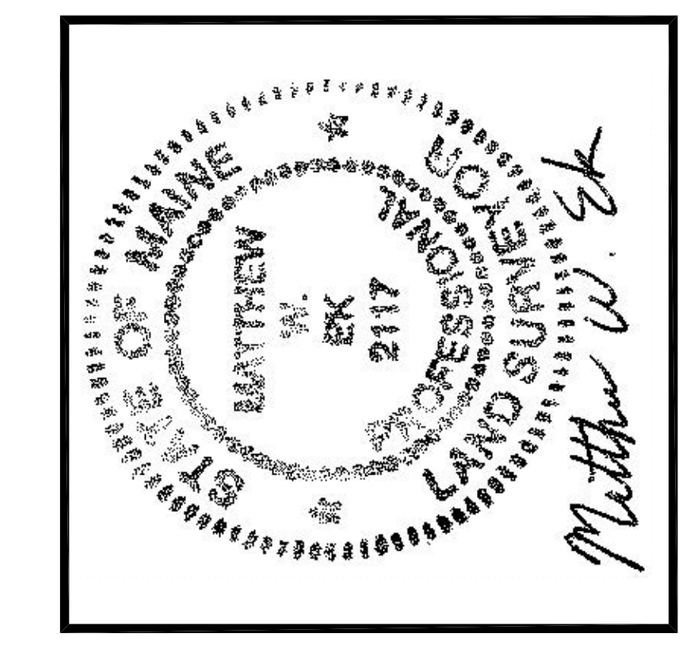
STRUCTURE TYPE	STRUCTURE #	RIM ELEVATION (FEET)	IN/OUT	INVERT ELEVATION (FEET)	SIZE (INCHES)	TYPE	DIRECTION	COMMENTS:
DMH	21903	110.18						
			OUT	107.30	8	PVC	10	
			SUMP	105.11				
DMH	21913	110.34						
			IN	102.76	18	PVC	12	
			IN	107.25	18	PVC	12	
			IN	101.85	18	PVC	2	
			IN	107.3	8	PVC	5	
			OUT	101.84	18	PVC	9	
			SUMP	100.18				
DMH	22098	115.18						
			IN	106.03	18	CPP	5	
			OUT	105.99	18	CPP	8	
			SHELF	107.08				
DMH	24533	139.38						
			IN	130.43	12	RCP	8	
			IN	132.88	12	PVC	10	
			OUT	130.4	12	RCP	2	
			SHELF	130.98				
DMH	24543	140.61						
			IN	135.38	12	RCP	7	
			IN	132.09	6	PVC	11	
			OUT	131.87	12	RCP	2	
			SHELF	132.55				
DMH	24696	130.95						
			IN	125.3	12	PVC	7	
			OUT	124.75	12	RCP	12	
			SHELF	125.73				
DMH	24868	137.55						
			IN	127.93	12	PVC	6	
			IN	130.06	12	RCP	7	
			IN	130.08	12	PVC	11	
			OUT	127.79	12	RCP	2	
			SHELF	128.43				
DMH	24878	135.6						
			IN	127.3	12	RCP	8	
			OUT	127.25	12	PVC	5	
			SHELF	127.98				
DMH	25531	130.05						
			IN	110.05	12	?	2	
			IN	109.59	12	?	5	
			IN	118.15	12	PVC	5	
			IN	124.95	4	STEEL	6	
			IN	125.85	3	STEEL	7	
			IN	121.2	4	PVC	8	
			OUT	109.44	18	?	10	
			SHELF	110.28				
DMH	25556	128.73						
			IN	121.03	12	CPP	11	
			IN	110.87	12	?	2	
			OUT	110.11	12	?	8	
			SHELF	110.4				
DMH	25575	128.66						
			IN	121.31	12	CPP	5	
			OUT	121.21	12	CPP	12	
			SHELF	122.11				
DMH	25868	125.02						
			IN	116.57	12	RCP	7	
			IN	116.37	12	RCP	9	
			OUT	116.43	12	PVC	4	
			SHELF	116.97				
DMH	25901	127.32						
			IN	117.94	12	PVC	2	
			IN	122.22	12	RCP	5	
			OUT	117.92	12	RCP	1	
			SHELF	118.62				
DMH	26205	89.94						
			IN	83.77	18	CPP	2	
			IN	84.24	6	CPP	4	
			IN	84.94	18	CPP	6	
			OUT	83.76	18	CPP	8	
			SHELF	84.77				
DMH	26212	97.74						
			IN	87.14	18	CPP	2	
			OUT	87.09	18	CPP	11	
			SUMP	86.9				

UTILITY STRUCTURE CHART – CATCH BASIN

STRUCTURE TYPE	STRUCTURE #	RIM ELEVATION (FEET)	IN/OUT	INVERT ELEVATION (FEET)	SIZE (INCHES)	TYPE	DIRECTION	COMMENTS:
CB	12257	143.24						
			OUT	137.89	12	PIPE W–HYDROBRAKE	2	
			SUMP	135.64				
CB	12313	141.64						
			OUT	136.69	12	PIPE W–HYDROBRAKE	8	LID–COVER ON 12 INSIDE 18 RCP
			SUMP	134.59				
CB	12319	141.67						
			IN	135.87	12	STEEL	2	
			IN	136.37	12	STEEL	8	
			OUT	135.72	12	STEEL	5	
			SUMP	133.57				
CB	12336	143.18						
			OUT	137.72	12	PIPE W–HYDROBRAKE	2	
			SUMP	135.98				
CB W–INLET	12640	40.47						
			OUT	38.52	0	PIPE W–CASCO TRAP	10	MEASURED TO THE TOP OF TRAP
			SUMP	34.17				SILTED TRASH DEBRIS
CB	12800	53.76						
			OUT	46.5	8	?	11	
			SUMP	46.11				SILTED
CB W–INLET	12913	66.01						
			IN	58.86	12	PVC	5	
			OUT	60.11	12	PIPE W–CASCO TRAP	10	MEASURED TO TOP OF TRAP
			SUMP	56.16				
CB W–INLET	13034	66.99						
			OUT	63.39	12	PVC	12	NO LONGER HAS TRAP
			SUMP	62.49				HEAVILY SILTED
CB	13167	33.74						
			OUT	29.54	12	RCP	8	
			SUMP	26.24				SILTED
CB W–INLET	13215	31.9						
			IN	26.8	12	RCP	2	
			OUT	26.2	12	CPP	10	
			SUMP	24.15				SILTED
CB W–INLET	13218	31.47						
			IN	25.17	12	CPP	4	
			OUT	25.12	12	CPP	8	
			SUMP	22.87				
CB W–INLET	13395	35.15						
			OUT	32.15	12	PIPE W–CASCO TRAP	7	MEASURED TO TOP OF TRAP
			SUMP	28.35				SILTED DEBRIS
CB W–INLET	13581	42.72						
			OUT	40.62	8	PVC	11	
			SUMP	40.62				
CB W–INLET	13770	42.18						
			IN	38.63	6	PVC	2	
			OUT	38.63	8	PIPE W–CASCO TRAP	5	MEASURED TO TOP OF TRAP
			SUMP	34.83				SILTED TRASH DEBRIS
CB W–INLET	13796	42.56						
			IN	38.86	8	BRICK	2	
			OUT	38.66	10	BRICK	8	
			SUMP	39.41				POOR CONDITION. SEE PHOTO
CB W–INLET	13819	34.86						
			OUT	31.21	12	PIPE W–CASCO TRAP	5	MEASURED TO TOP OF TRAP
			SUMP	27.11				SILTED TRASH DEBRIS
CB W–INLET	13999	44.76						
			OUT	41.66	12	PVC	6	
			SUMP	41.86				SILTED FULL OF DEBRIS
CB W–INLET	14031	46.2						
			OUT	43.25	12	PIPE W–CASCO TRAP	9	MEASURED TO TOP OF TRAP
			SUMP	39				SILTED TRASH DEBRIS
CB	14319	39.42						
			OUT	35.42	8	PVC	11	
			SUMP	34.52				SILTED
CB	14588	43.65						
			OUT	40.3	12	PIPE W–CASCO TRAP	10	MEASURED TO THE TOP OF TRAP
			SUMP	38.95				SILTED
CB	14635	42.48						
			OUT	34.53	12	PVC	10	
			SUMP	33.08				SILTED
CB	15076	91.16						
			IN	88.16	12	STEEL	5	
			IN	88.16	12	VIT CLAY	11	
			OUT	87.76	15	CPP	7	
			SUMP	86.61				
CB W–INLET	15161	81.02						
			IN	75.82	12	CPP	2	
			OUT	75.38	12	PIPE W–CASCO TRAP	8	
			SUMP	72.37				SILTED
CB W–INLET	15720	115.3						
			IN	110.25	12	PVC	5	
			OUT	110.25	12	PVC	9	
			SUMP	107.1				SILTED
CB W–INLET	15749	114.96						
			OUT	110.66	12	PVC	11	
			SUMP	114.96				5
CB	15960	65.99						
			OUT	62.69	8	PVC	9	
			SUMP	59.64				
CB W–INLET	16258	82.85						
			IN	79.25	10	STEEL	5	
			OUT	79.02	8	STEEL	2	
			SUMP	75.52				
CB	16634	141.94						
			OUT	136.74	12	PIPE W–HYDROBRAKE	8	
			SUMP	134.59				
CB	16685	141.93						
			IN	136.13	12	STEEL	2	
			IN	136.43	12	STEEL	8	
			IN	134.03	12	STEEL	11	
			OUT	130.13	18	?	2	POSSIBLE HYDRO BRAKE
			SUMP	129.13				2' X 3' 1.2' TALL OBJECT
CB W–INLET	16819	148.29						
			OUT	145.09	8	STEEL	11	
			SUMP	141.39				HEAVILY SILTED
CB W–INLET	17159	139.51						
			OUT	134.51	6	PVC	5	
			SUMP	131.96				
CB W–INLET	17181	138.97						
			OUT	135.9	8	OTHER–COMMENTS	2	8 PVC ELBOW INSERTED IN 10 STL
			SUMP	131.97				
CB W–INLET	17197	139.26						
			IN	135.96	10	VIT CLAY	5	
			OUT	135.81	10	VIT CLAY	11	
			SUMP	132.76				
CB W–INLET	17224	139.24						
			OUT	136.64	10	VIT CLAY	10	
			SUMP	136.74				LIGHTLY SITED
CB W–INLET	17378	138.3						
			OUT	134	12	PIPE W–HYDROBRAKE	8	
			SUMP	130.5				SILTED
CB W–INLET	17604	140.35						
			OUT	136.3	8	PVC	8	
			SUMP	134.35				
CB W–INLET	17646	140.94						
			IN	136.19	12	PVC	12	
			IN	137.24	6	PVC	12	
			OUT	136.14	8	PVC	4	
			SUMP	133.14				
CB W–INLET	17684	140.95						
			OUT	136.15	12	PIPE W–HYDROBRAKE	1	
			SUMP	135.15				HEAVILY SILTED
CB	17954	142.1						
			OUT	137.35	12	PIPE W–CASCO TRAP	4	
			SUMP	137.1				
CB W–INLET	18124	144.56						
			OUT	140.41	10	PIPE W–HYDROBRAKE	3	
			SUMP	137.76				HEAVILY SILTED
CB W–INLET	18139	144.76						
			OUT	140.71	10	STEEL	11	
			SUMP	138.21				HEAVILY SILTED
CB	18171	143.94						
			IN	142.09	8	VIT CLAY	8	
			OUT	140.24	10	PIPE W–HYDROBRAKE	11	
			SUMP	136.49				HEAVILY SILTED

UTILITY STRUCTURE CHART – CATCH BASIN

STRUCTURE TYPE	STRUCTURE #	RIM ELEVATION (FEET)	IN/OUT	INVERT ELEVATION (FEET)	SIZE (INCHES)	TYPE	DIRECTION	COMMENTS:
CB	18172	144.03						
			OUT	142.08	10	VIT CLAY	2	
			SUMP	141.53				HEAVILY SILTED
CB W–INLET	18426	146.61						
			OUT	144.31	10	STEEL	3	
			SUMP	139.31				HEAVILY SILTED
CB	19317	151.23						
			OUT	146.43	8	PVC	10	
			SUMP	144.33				
CB	19375	150.77						
			OUT	146.52	8	PVC	1	
			SUMP	144.22				
CB	19454	140.29						
			OUT	139.29	12	PVC	10	FIELD INLET BREACHES
CB	19649	152.39						
			OUT	147.34	12	VIT CLAY	8	
			SUMP	147.19				SILTED
CB W–INLET	19833	124.43						
			OUT	120.21	12	CMP	11	
			SUMP	118.58				
CB	20098	125						
			OUT	122.6	8	PVC	7	
			SUMP	120.9				
CB	20117	125.46						
			IN	122.06	8	PVC	1	
			OUT	122.04	8	PVC	11	
			SUMP	120.26				
CB	20962	114.48						
			IN	109.88	8	PVC	2	
			OUT	108.38	12	PVC	11	
			SUMP	106.18				
CB	20970	114.32						
			IN	111.42	8	PVC	5	
			OUT	111.22	8	PVC	8	
			SUMP	109.62				
CB	21100	108.15						
			SUMP	103.1				SILTED FULL OF WATER NO INV
CB	21201	108.29	IN	102.69	12	PVC	6	
			OUT	102.64	12	PVC	2	
CB	21349	106.08						
			IN	97.88	12	PVC	2	
			IN	98.41	12	CPP	5	
			OUT	97.08	15	CPP	11	
			SUMP	94.68				
CB W–INLET	21385	106.32						
			OUT	102.63	12	CPP	8	
			SUMP	99.68				
CB	21466	106.75						
			IN	102.75	6	PVC	12	
			OUT	99.4	8	PVC	8	
			SUMP	99.36				
CB	21623	123.66						
			IN	120.41	4	?	4	
			IN	119.56	4	?	6	
			OUT	119.26	12	PVC	10	
			SUMP	119.21				SILTED DEBRIS
CB	21802	107.94						
			OUT	105.05	8	CPP	2	
			SUMP	104.35				
CB W–INLET	21848	106.49						
			IN	100.35	15	CPP	2	
			OUT	100.16	18	CPP	8	
			SHELF	100.44				
CB W–INLET	22087	115.13						
			IN	108.88	15	CPP	1	
			IN	106.38	18	RCP	5	
			IN	106.53	6	PVC	7	
			OUT	106.37	18	CPP	10	
			SHELF	106.71				
CB	22782	142.7						
			OUT	139.3	8	PVC	2	
			SUMP	138.3				SILTED
CB	23223	144.37						
			IN	141.77	8	?	5	SIZE ±
			OUT	141.67	0	OTHER–COMMENTS	11	TOP OF PIPE WITH ELBOW
			SUMP	141.37				SILTED
CB W–INLET	23377	123.43						
			OUT	118.33	12	PIPE W–CASCO TRAP	11	
			SUMP	114.53				
CB	23946	141.8						
			OUT	137.67	0	PIPE W–CASCO TRAP	12	TOP OF TRAP
			SUMP	136.29				
CB W–INLET	24186	140.93						
			IN	136.11	6	PVC	6	
			IN	136.21	12	RCP	7	
			OUT	137.18	0	PIPE W–CASCO TRAP	1	TOP OF TRAP
			SUMP	133.24				
CB W–INLET	24399	139.27						
			IN	135.09	6	PVC	3	
			OUT	135.66	0	PIPE W–CASCO TRAP	5	TOP OF TRAP
			SUMP	131.47				
CB W–INLET	24658	131.2						
			IN	125.42	6	PVC	6	
			IN	127.77	6	PVC	5	
			OUT	126.88	8	PIPE W–CASCO TRAP	12	TOP OF TRAP SIZE±
			SUMP	122.72				
CB W–INLET	24866	136.98						
			IN	132.63	6	?	6	
			IN	129.98	0	PVC	10	CAPPED
			OUT	131.58	0	PIPE W–CASCO TRAP	5	TOP OF TRAP
			SUMP	127.33				
CB W–INLET	24872	138						
			IN	128.43	12	PVC	5	
			IN	132.76	6	PVC	8	
			OUT	129.43	0	PIPE W–CASCO TRAP	1	TOP OF TRAP
			SUMP	125.47				
CB W–INLET	25011	134.05						
			OUT	130.55	0	PIPE W–CASCO TRAP	11	TOP OF TRAP
			SUMP	126.25				
CB	25122	137.89						
			OUT	129.92	8	PIPE W–CASCO TRAP	1	TOP OF TRAP SIZE±
			SUMP	127.12				
CB	25688	125.2						
			OUT	121.67	12	PVC	7	
			SUMP	119.8				
CB W–INLET	25816	123.39						
			IN	117.78	12	PVC	5	
			OUT	117.67	12	PIPE W–CASCO TRAP	2	
			SUMP	113.79				
CB W–INLET	25858	124.04						
			IN	116.81	12	RCP	8	
			IN	116.73	12	PVC	11	
			OUT	117.88	12	RCP	2	
			SUMP	113.84				
CB W–INLET	25904	127.38						
			IN	123.98	6	PVC	5	
			OUT	119.49	8	PIPE W–CASCO TRAP	9	TOP OF TRAP SIZE±
			SUMP	115.63				
CB	26038	124.94						
			IN	120.94	6	PVC	10	
			IN	121.39	12	PVC	2	
			OUT	117.49	12	PIPE W–CASCO TRAP	6	
			SUMP	115.34				
CB	26363	150.95						
			OUT	146.16	8	PVC	7	
			SUMP	146.16				
CB	26395	145.89						
			IN	139.04	12	STEEL	5	ENCLOSED PIPE
			IN	141.09	6	STEEL	2	
			IN	143.29	4	?	2	NO MATERIAL
			IN	141.19	6	?	3	NO MATERIAL
			IN	141.14	4	?	8	NO MATERIAL
			OUT	139.64	12	STEEL	2	ENCLOSED
			SUMP	136.89				SILTED
CB	26561	108.54	OUT	105.09	12	PVC	12	



A	MWE	12/23/09	SUBMITTED FOR CLIENT REVIEW
REV:	BY:	DATE:	STATUS:

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SEBAGO TECHNICS, INC. ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO SEBAGO TECHNICS, INC.

SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd. - Suite 1A, South Portland, ME 04106, Tel. 207-200-2100
250 Goddard Rd. - Suite B, Lewiston, ME 04240, Tel. 207-783-5656

PROJECT NO.	FIELD BOOK	DESIGN	CHKD	DRAWN
01046	791B	WTC	MWE	MCC

EXISTING CONDITIONS SURVEY

OF:

MAINE MEDICAL CENTER CAMPUS

GILMAN ST, CONGRESS ST, BRAMHALL ST, ET.AL
PORTLAND, MAINE

FOR:

MAINE MEDICAL CENTER

22 BRAMHALL ST
PORTLAND, MAINE 04101

RECORD OWNER:
SEE NOTE 1, SHEET 2

DATE	SCALE
10/23/09	NA

SHEET 12 OF 12

01046–EC–2009.dwg, TAB: STR–12



1/8" = 1'-0"

Maine Medical Center
MaineHealth

East Tower 6 & 7 Addition

EAST ELEVATION

PERKINS+WILL

CONSTRUCTION DOCUMENTS 2/12/2018 5:45:56 PM

MAXIMUM BUILDING HEIGHT
PER IOZ REGULATORY FRAMEWORK

150'-0"

CORRUGATED METAL PANEL

PAINTED STEEL

TOP OF HELIPAD
271' - 10"

TOP OF HELIPAD
271' - 10"

EXISTING RICHARD'S BUILDING

254' - 6"
EAST TOWER
ROOF
ELEVATION

254' - 6"
EAST TOWER
ROOF
ELEVATION

CURTAIN WALL
GLAZING

METAL PANEL TO
MATCH EXISTING

NEW CONSTRUCTION

EXISTING

EXISTING
BRICK

129' - 0"
AVERAGE GRADE ELEVATION

124' - 0"
GRADE AT CORNER

126' - 0"
GRADE AT CORNER

1/8" = 1'-0"

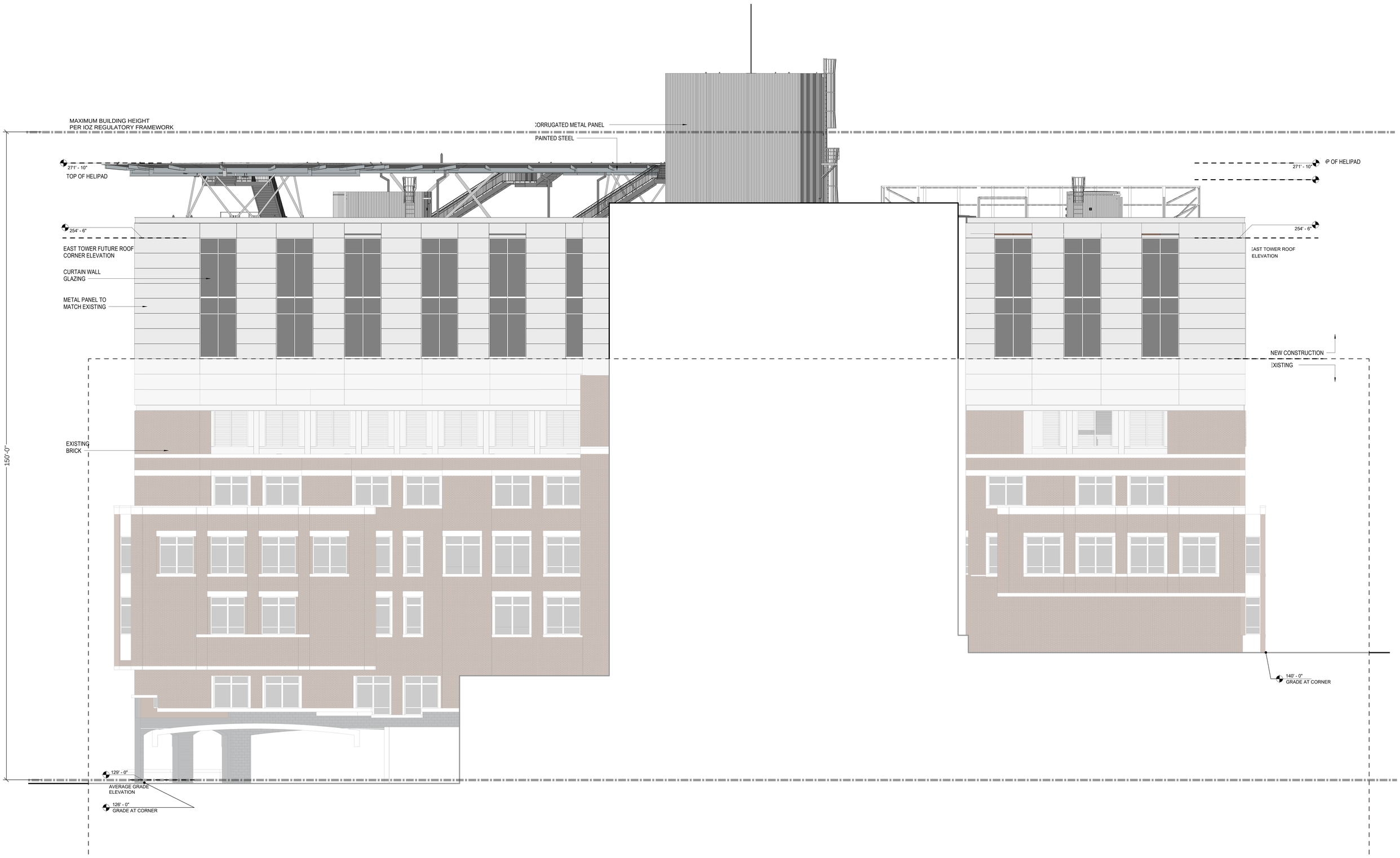
Maine Medical Center
MaineHealth

East Tower 6 & 7 Addition

NORTH ELEVATION

PERKINS+WILL

CONSTRUCTION DOCUMENTS 2/12/2018 6:13:41 PM



1/8" = 1'-0"

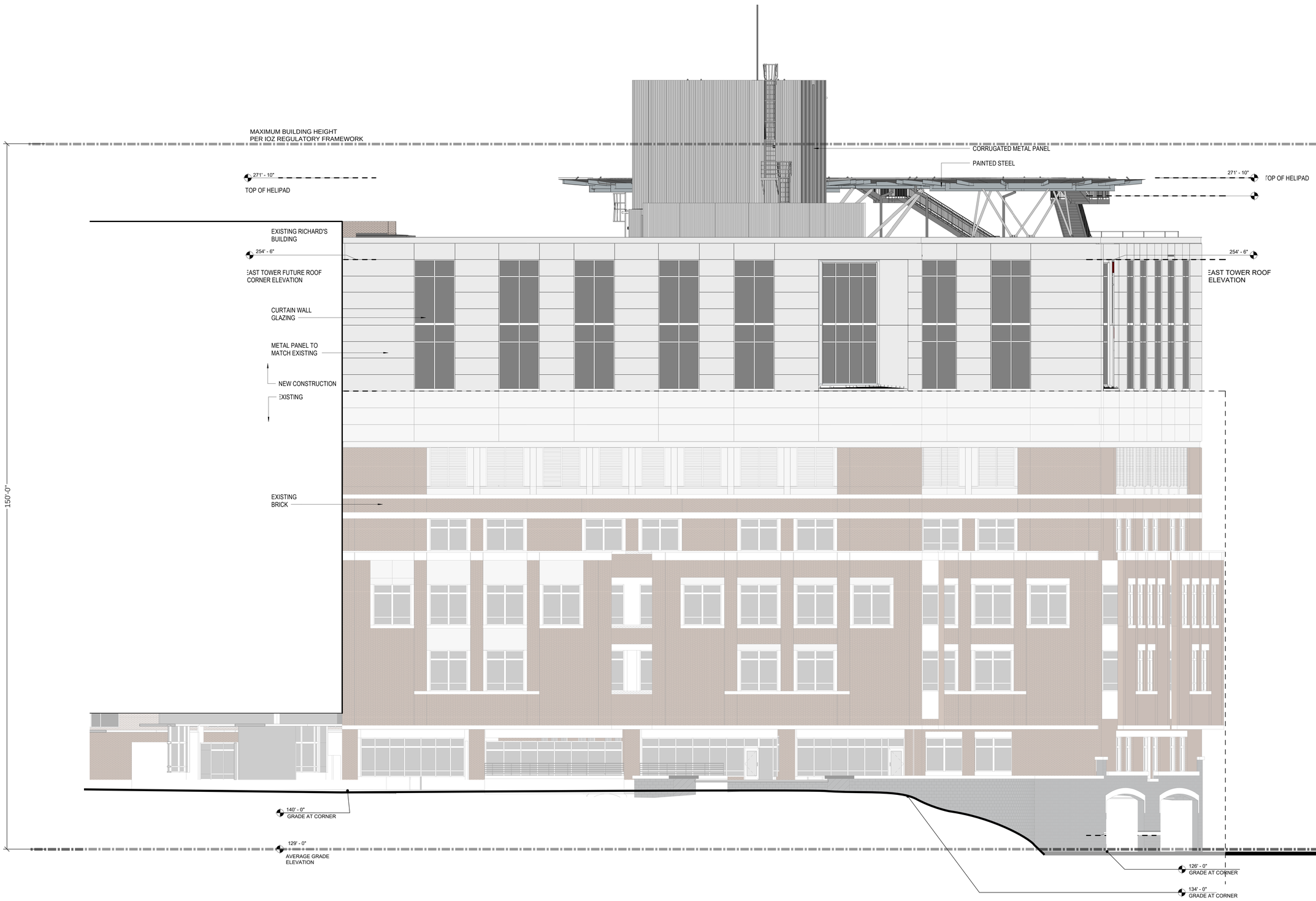
Maine Medical Center
MaineHealth

East Tower 6 & 7 Addition

WEST ELEVATION

PERKINS+WILL

CONSTRUCTION DOCUMENTS 2/12/2018 6:01:33 PM



1/8" = 1'-0"

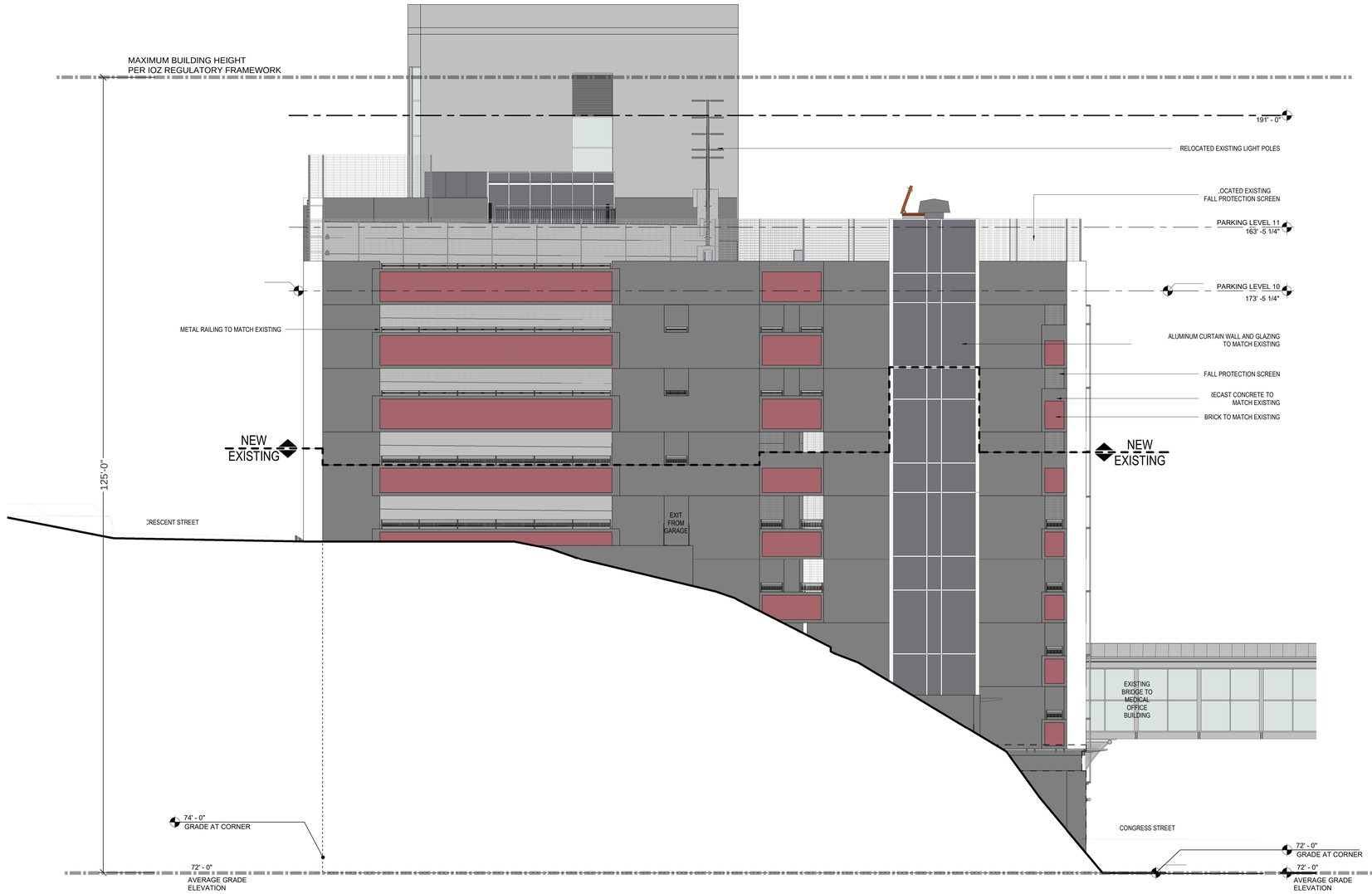
Maine Medical Center
MaineHealth

East Tower 6 & 7 Addition

SOUTH ELEVATION

PERKINS+WILL

CONSTRUCTION DOCUMENTS 2/12/2018 6:07:47 PM



Visitor Garage Expansion

EAST ELEVATION

PERKINS+WILL

2018.02.12 DOCUMENT SET

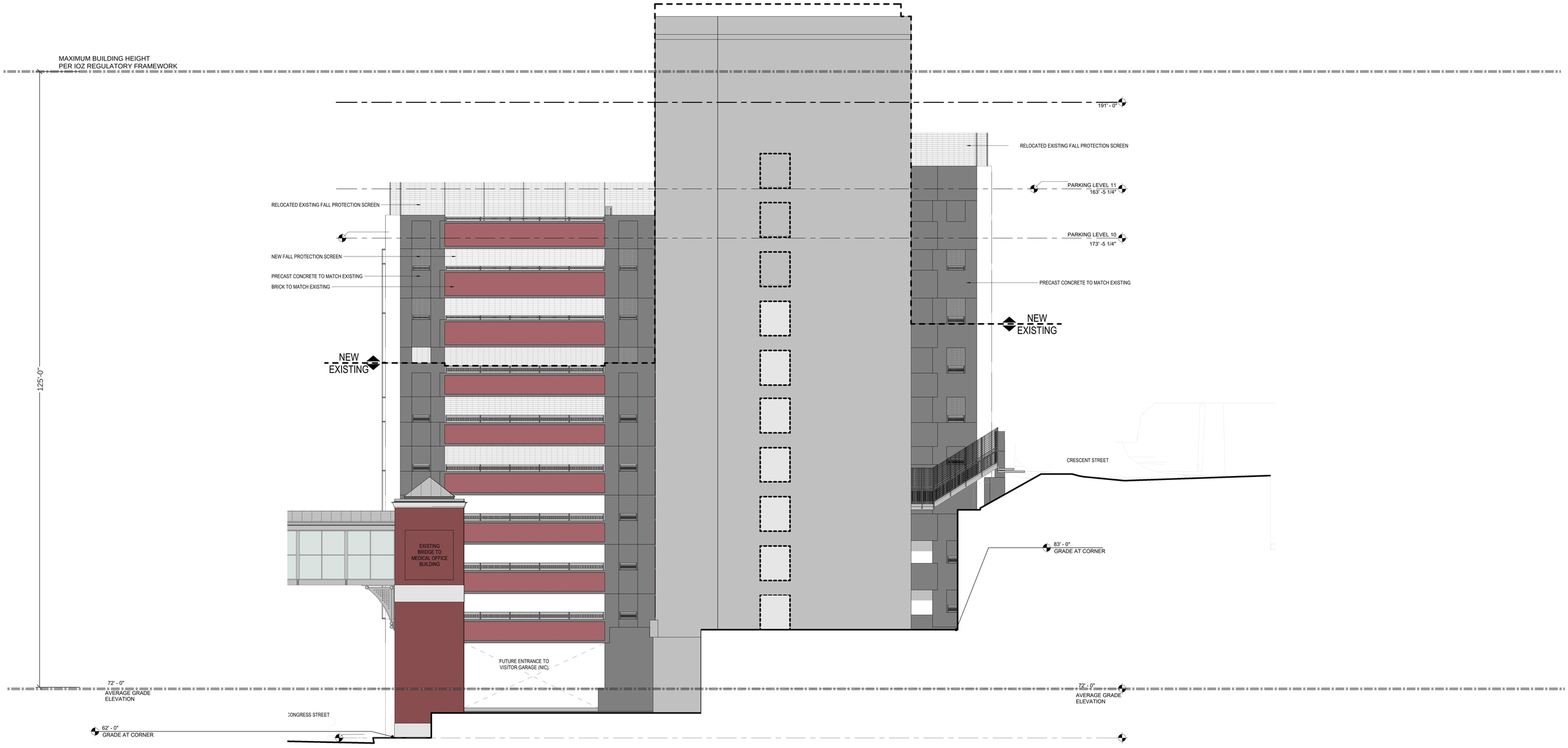


Visitor Garage Expansion

NORTH ELEVATION

PERKINS+WILL

2018.02.12 DOCUMENT SET

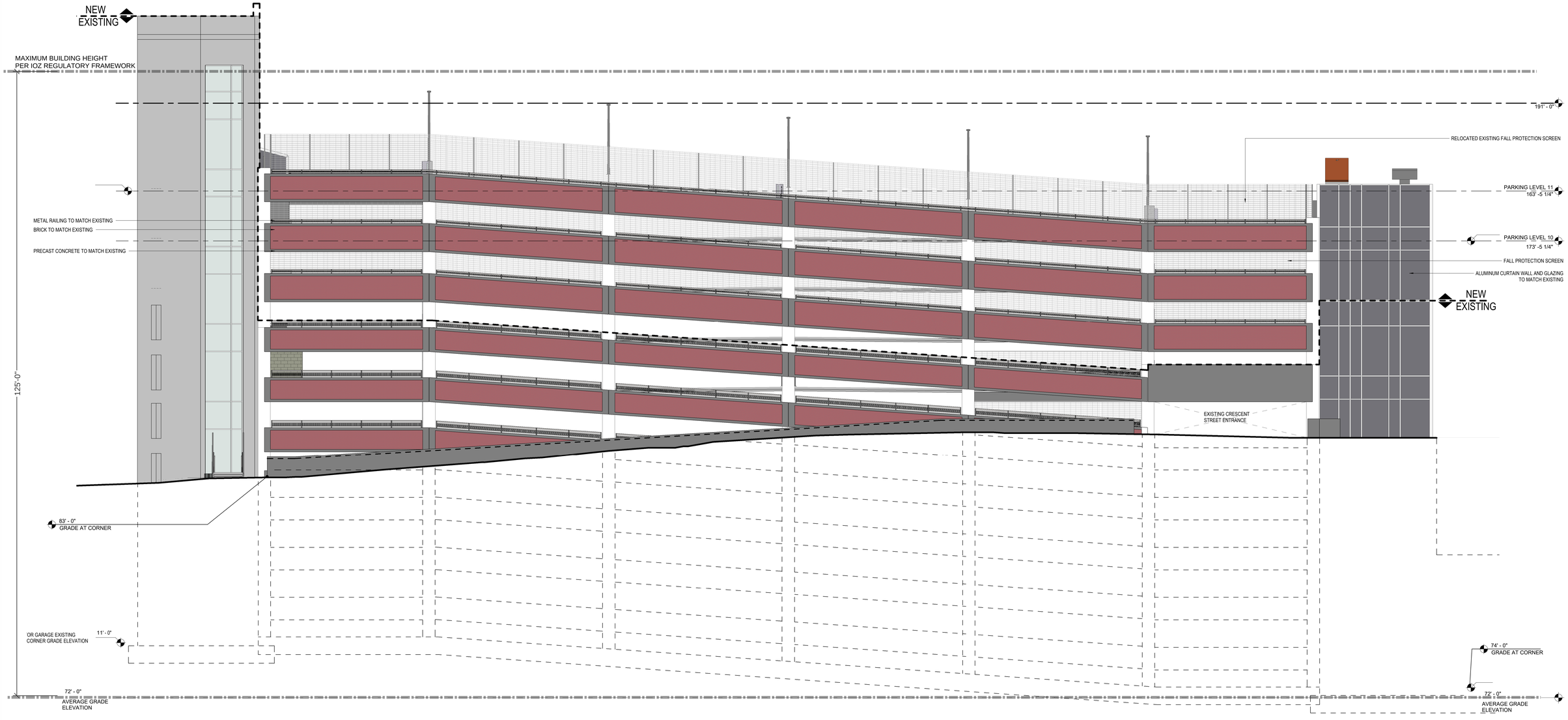


Visitor Garage Expansion

WEST ELEVATION

PERKINS+WILL

2018.02.12 DOCUMENT SET



Visitor Garage Expansion

SOUTH ELEVATION

PERKINS+WILL

2018.02.12 DOCUMENT SET

PLANNING BOARD REPORT
PORTLAND, MAINE

MMC East Tower and Visitor Garage Vertical Expansion and Relocation of Helipad
22 Bramhall Street
Level III Site Plan
Project # 2017-289
Maine Medical Center, Applicant

Submitted to Portland Planning Board: Public Hearing Date: March 27, 2018	Prepared by: Jean Fraser Date: March 23, 2018

I. INTRODUCTION

Maine Medical Center has requested a final review of its Level III Site Plan application for vertical extensions to the existing East Tower (two stories; approx. 60,000 sq ft) and to the existing Visitor's Garage on Congress Street (3 stories to provide an additional 225 parking spaces). The application includes the relocation of the helipad to the roof of the East Tower, and the applicant has confirmed that the application does not include the Central Utility Plant.

It is understood that the 64 single-occupancy bedrooms will not add patient capacity as they would allow existing double-occupancy patient rooms elsewhere to be single-occupancy.

The application is the first of three Site Plan applications associated with the short-term MMC expansion plans. The proposals follow on from the City's recent adoption of an MMC Institutional Overlay Zone and the associated Institutional Development Plan and Regulatory Framework (both attached to this Memo). The review includes aspects of the MMC IOZ Regulatory Framework that required action at the time of the first site plan (TDM and Signage Plans).

The first Workshop was held on 1.23.18 and addressed the following topics:

- Design, including Street Activation
- Helipad
- Construction Management Plan overview, plus East Tower

The second Workshop was held on 2.27.18 and focused on the following topics:

- Construction Management Plan and associated Traffic Control (Detour) Plans
- Design Update
- Utilities including stormwater and wastewater capacity

Applicant: Maine Medical Center; Alexander Green, Director of System Planning and Regulatory Compliance
Agent and Engineer: Sebago Technics Inc
Architect: Perkins + Will; Jeffrey Keilman, Senior Project Manager, Senior Associate

Required Reviews:

Applicant's Proposal	*Applicable Standards*
Addition of 60,940 sq ft to the East Tower; addition of 77,021 sq ft to the Visitor Garage	Level III Site Plan Review 14-526
Additions that would increase height; helipad	MMC IOZ Regulatory Framework

Waiver Requests: None identified at this time.

II. PUBLIC COMMENTS

This Hearing was noticed to 263 neighbors and interested parties and advertised in the March 19th and 20th 2018 editions of the *Portland Press Herald.* The Planning Division previously received two public comments raising concerns related to the design, use of the retail space under the Visitors Tower, the proposed construction detour and the impact of the construction and development on local residents parking.

III. PROJECT DATA

SUBJECT	*DATA for EAST TOWER*	*DATA for VISITORS GARAGE*
Existing Zoning	IOZ	
Existing Use	Hospital	Hospital parking garage
Proposed Use	Hospital- adding single rooms for 64 patient beds	Hospital parking garage – 3-story addition for 225 parking spaces
Parcel Size	12.52 acres	
Impervious Surface Area **--Existing** **--Proposed** **--Net Change**	 415,220 sq ft 0 sq ft 0 sq ft	 415,220 sq ft 0 sq ft 0 sq ft
Total Disturbed Area	0	0
Building Footprint **--Existing** **--Proposed** **--Net Change**	 30,470 sq ft 0 sq ft 0 sq ft	 25,674 sq ft 0 sq ft 0 sq ft
Building Floor Area **--Existing** **--Proposed** **--Net Change**	 152,350 sq ft 213,290 sq ft 60,940 sq ft	 200,000 sq ft 277,021 sq ft 77,021 sq ft
Parking Spaces **--Existing** **--Proposed** **--Net change** **--# of handicapped spaces**	 2,328 (entire campus) 2,553 225 6	
Bicycle parking Spaces **--Existing** **--Proposed** **--Net change**	 193 (entire campus) 0 0	
Estimated Cost of the Project	TBD	

IV. PLANNING BOARD WORKSHOPS - SUMMARY OF ISSUES AND COMMENTS

The following table summarizes the PB comments and the responses:

PB comment	Response
Design - comments regarding the East Tower included: • Looks like new building on top; Looks glaringly institutional; Seeking more cohesive- more integration • Would like more info on how the white wall of the ET expansion will relate to other new buildings • Would like to see renderings with other colors (?silver)/options for Board to consider • Requested rendering of ET from long view	Staff met with MMC on several occasions to better understand the options they had considered and the constraints. The applicant submitted a "*Design Review Update*" (*WS Q -2 2.23.18)* and amplified on this at the second Workshop (*Presentation WS S - 13*) and recently submitted *WS Q -3 Design Review Update 3.23.18* to clarify the design process and respond to comments.
Would like to see details of visitor garage fencing and other fall protection; also seek roofline articulation	The Hearing submittal includes a revised garage treatment that largely hides the fall protection fencing (See *Hearing Plans B a*).
How is MMC addressing the loss of parking in visitors garage while under construction	Displaced visitors parking spaces will be relocated into employee garage. Access to visitors garage will be via the employee garage during construction.
What upgrading is planned for retail space under garage?	Will be fit out for Turner - but will anticipate future retail uses.
Interested in the 2-way Park Avenue option	Discussed at a "check -in" meeting between staff and MMC; concluded that this was too complicated to do safely and correctly in the time available (would need to be designed and implemented by May 8).
Disappointed not relating the buildings better to local streets to be part of neighborhood	No further information submitted.
Parking garage needs more visual interest – more creative way that doesn't reinforce massing	The applicants have revised the design of the overbuild on the Visitors Garage so it incorporates an extension to the existing grid design cladding above the top level and overlaps the fencing.
Detour plans should take account of Seadogs Games	The applicant has met with the Seadogs management and the *Detours Presentation V5* (*Hearing Plans A a*) outlines action that will be taken to coordinate.

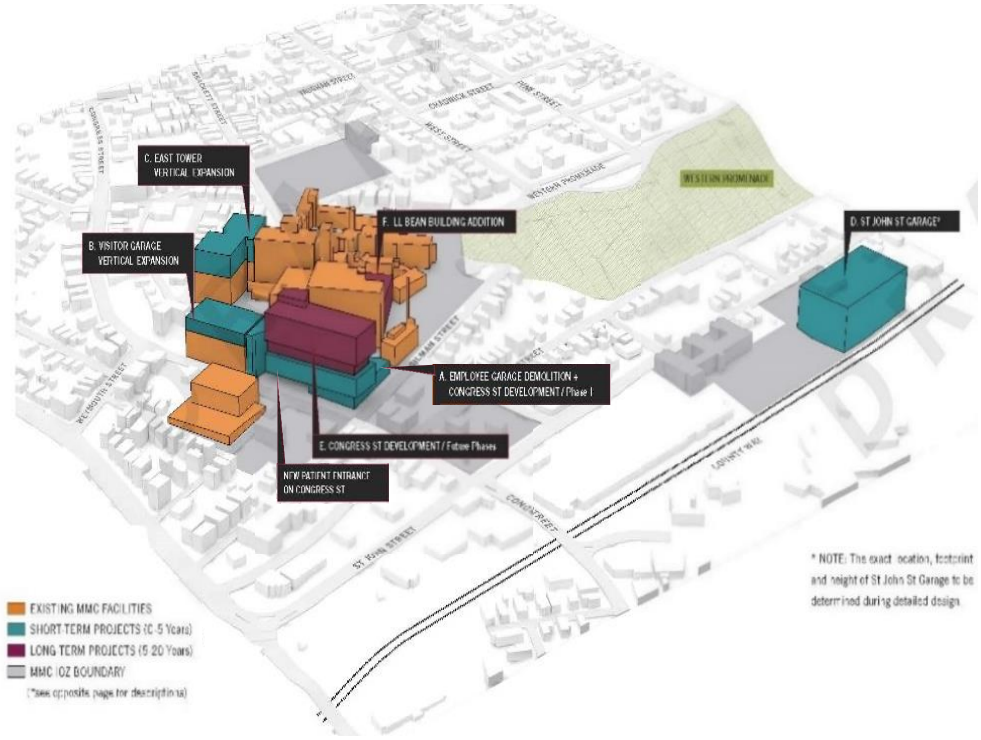
Detour routes not fully understood	The *Detours Presentation V5* (*Hearing Plans A a*) provides background information on how the detour routes were selected.
CMP should include ongoing forum for neighbors to be able to give feedback	The *CM Plan* (*Hearing Plans A c* WS I – 6 3.21) and *Communication Strategy* (*Hearing Plans A b*) addresses this

V. SITE AND CONTEXT

The approved Institutional Development Plan (IDP) (*Attachment 4*. First Workshop folder) provides information regarding the hospital site and its development over the years, along with context information. Photographs of the existing buildings (proposed to be expanded) are included below.

VI. PROPOSALS

The submissions include a description of the proposals and plans and graphics of the proposed "overbuild". The graphic to right is extracted from the IDP in Att.4 (pages 44/45)



East Tower: Addition of two floors (64 patient rooms, single-occupancy):



Existing from south

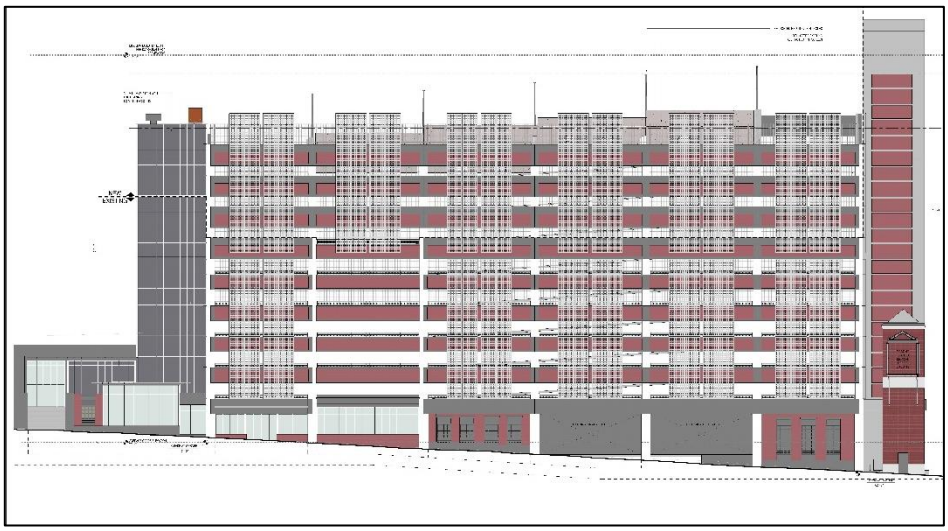


Proposed, comparable rendering (see WSQ – 1)

Visitor Garage: 3 additional floors of parking spaces: (renderings not submitted)



Existing as viewed looking west



Proposed north elevation

VII. RIGHT, TITLE, & INTEREST

The applicant has provided recorded deeds in *WS B (First Workshop folder)* as evidence of Right, Title & Interest.

Land Transfers ref submitted "recording plats": The original submission included two "recording plats" that identified street transfers and discontinuances that relate to the two buildings under review. After some research, staff agree that these do not require Planning Board action, but suggest a condition of approval that requires completion of any necessary procedural steps by the time of a CO for East Tower and Visitors Garage overbuild.

VIII. FINANCIAL & TECHNICAL CAPACITY

A letter outlining MMC's ability to fund the proposed development is included in *Attachmet WS G* in the First Workshop folder.

IX. SITE PLAN SUBMISSION REQUIREMENTS

All site plan applications are required to show evidence of applicable State and Federal approvals. The applicant has outlined the approvals that are pending with the FAA for the height of the proposed overbuild development and the associated cranes for construction (*Hearing Applicants Submittal WS S-6D FAA*) and also the FAA application for the relocated helipad *(WS-6B Helipad FAA Second Workshop folder).*

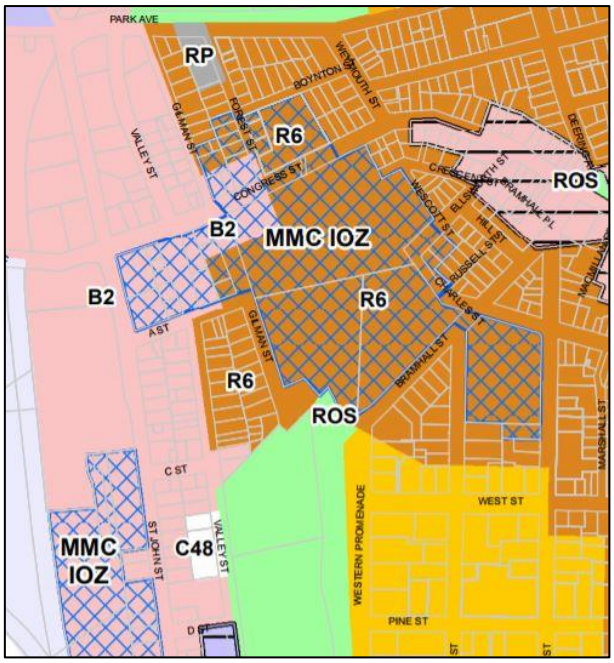
Staff recommend the following condition:

> *That the applicant shall submit evidence from the FAA that the location and height of the construction equipment, the overbuild heights, and helipad relocation is acceptable prior to the certificate of occupancy for the approved overbuild floor area, or the operation of equipment and helipad.*

X. ZONING ANALYSIS and REVIEW

Overview

The zoning map at right shows the recently adopted MMC IOZ in blue cross hatch:



The MMC IOZ *Regulatory Framework* (*Attachment 5*) is the zoning ordinance that applies to the proposed site plan projects; this was reviewed by the Planning Board in early 2017 and adopted by the City Council in December 2017.

The proposed additions to the East Tower and the Visitors Garage were included in the IDP background material for the zoning amendment, and the proposals now subject to this site plan review are consistent with what was discussed during that review.

Table 1 below summarizes the *Regulatory Framework* provisions that apply to the current review and includes staff comments:

TABLE 1 RELEVANT EXTRACTS FROM MMC IOZ REGULATORY FRAMEWORK (entire document is in Att. 5)

MMC IOZ Regulatory Framework provisions	*MMC Site Plan submissions to address the RF provisions*	*Staff Review Comments for Hearing*
(c) Uses: Note under list: 1. Mixed Uses: In recognition that Maine Medical Center is part of a mixed-use area of the City, with important existing services and businesses that serve the local and wider community, healthcare facility development fronting onto Congress Street and St. John Street shall activate the public realm, to the extent able, with uses such as service and retail/restaurant, landscaping, active building entrances, pocket parks, etc., on the ground or other publicly accessible level, consistent with the design intent contained in the approved Institutional Development Plan (IDP). In areas identified in the IDP as "Priority zone for commercially oriented/retail uses," usable ground floor retail, restaurant, or comparable community-oriented use that provides services to local residents and employees both during the day and evening hours is required. In areas labeled "Street activation through location of windows, entrances, etc.," usable ground floor retail, restaurant, or community oriented use is encouraged to the extent practicable. Such uses, where constructed or facilitated as part of a healthcare related development, are expressly permitted whether ancillary or supporting the healthcare facility or not, and shall be open and welcoming to the general public in addition to employees or visitors of Maine Medical Center.	The current submission does not include proposals for the existing empty retail space along the base of the Visitors Garage. It is understood from meetings that Turner Construction will be fitting out these units so that the film will be removed and new infra-structure (eg bathrooms) will be designed to anticipate future retail use. This has not been confirmed in the written submissions.	Staff consider that the entire building is subject to the review and therefore MMC needs to develop strategies to address any "blank walls' along Congress Street in accordance with the *Regulatory Framework* and the IDP Design Guidelines/Fig 5.15 re Street Activation (p117 of IDP in Att. 4 to this Memo) Use of these units by Turner as a construction base is welcomed; confirmation of this and the longer term intention was requested for the final submission. The final submissions do not appear to have addressed this issue and staff are preparing a potential condition of approval for the Board's consideration at the Public Hearing.
(d) Dimensional Requirements - Maximum Building Height: East Tower: 150 feet (the IDP indicated a future height of 141 ft including helipad)	Submitted proposals indicate a height of just over 146 ft but part of the helipad appears to be higher	Clarification was requested as to helipad height compared to the average grades identified in the IDP. The additional information was received; it confirms height including the helipad is 142 feet
(d) Dimensional Requirements - Maximum Building Height: Visitors Garage: 125 feet (the IDP indicated a future height of 119 ft)	Submitted proposals indicate a height of 119 ft excluding part of the stair tower	Appears to meet dimensional requirements as stair and elevator overruns are considered appurtenances. Additional information was received which confirms height is 119 feet
(d) Dimensional Requirements - Transition Zones – none at these locations	N/A	N/A N/A
(d) Dimensional Requirements - Setbacks: East Tower - 20 ft Visitors Garage - up to 40 ft	N/A	N/A N/A
(e) Design New buildings within the IOZ shall adhere to the Design Guidelines set forth in Chapter 5: Design of the IDP and the site plans standards of the City of Portland.	MMC submitted two architectural narratives (design updates) and presented additional information at the workshops.	The Design review comments for the workshops have amplified on issues raised by the Planning Board; the final Design Review memo (*Attachment 18)* acknowledges the limitations outlined by MMC and also notes that the increased height for the grid cladding on the Visitors Garage helps address earlier concerns.
(f) Signs: 1. At the time of first site plan review following IDP approval, a unified campus-wide Signage Plan shall be submitted for review and approval by the Planning Authority. Any update to such plan due to a change in name or logo shall not require amendment to the IDP. 2. Signs shall be designed in accordance with the campus-wide Signage Plan. All signs shall be designed in proportion and character with building facades and adjacent street typology. All signs shall be coordinated with the building and landscaping design and be constructed of appropriate permanent, high quality materials and finishes.	The applicant has submitted the Signage Plan (*Plan 11*, First Workshop set) that illustrates how the existing signage fits into the campus. The current proposals for the East Tower and Visitors Garage do not necessitate any additional signage, so this plan comprises the current Signage Plan.	Staff anticipate that this Strategy would be updated to take account of the signage needs of the new St Johns Garage and new hospital building (future site plans). A potential condition of approval clarifies that in respect of the East Tower and Visitor Garage any new signage would need review and approval by the Plannng Authority in the context of the MMC IOZ Regulatory Framework and IDP Design Standards.

(g) Transportation: (TDM) 1. Transportation Demand Management (TDM): a. At the time of the first site plan review following IDP approval, MMC shall submit a campus- wide TDM Plan substantially in accordance with those TDM objectives and strategies identified in the approved Institutional Development Plan. The TDM Plan may be phased into short-,mid-, and long-term actions to allow for progressive implementation over time. b. The TDM Plan shall be designed to provide transportation choice with the goal of reducing parking demand and single-occupancy vehicle trips to and from MMC by employees and visitors. c. The TDM Plan shall establish parking and trip reduction targets associated with the short-term (0-2 years), mid-term (2-5 years), and the long-term (5+ years), as well as a data collection plan.	The applicant submitted a TDM Plan (Att. WS S-7) on 12.15.17 and staff review comments were sent on 1.24.18. A revised TDM was submitted 2.13.18 and staff have not sent further comments and a detailed discussion was not part of the earlier workshops.	The discussions regarding the Congress Street closure and design have dominated the review, and staff consider more time is needed to develop the TDM plan with MMC and determine how the TDM plan should address any issues arising from the next two site plans. Additional time will also allow MMC to hire a TDM coordinator and integrate that coordinator into the development of the TDM plan. A TDM is both a site plan and *Regulatory Framework* requirement for the East Tower, and a condition is recommended to ensure that the Plan is revised, approved and implemented in time for it to be in place when the development is occupied: *That the applicant shall finalize a TDM Plan that addresses the Regulatory Framework and Site Plan requirements, for review and approval by the Planning Board prior to the issuance of a Certificate of Occupancy for the East Tower.*
(g) Transportation: (Parking) 2. Parking: a. Parking requirements in the IOZ shall be established at the time of site plan review based on a parking study that includes a campus-wide analysis of demand and supply. The parking demand study shall determine parking requirements and shall be sufficient to alleviate parking pressure on surrounding neighborhoods. b. Parking studies developed by MMC shall integrate parking and trip reduction achievements and data contained in the TDM Plan.	A Parking Demand Study *(Att WS S-8 First Workshop folder*) was submitted and identifies shortfalls in both visitor and employee parking supply and elaborates on the background information in the approved IDP. The Visitor Garage proposals will temporarily remove 2 levels of parking during construction, but will result in a net increase of 225 visitor parking spaces when complete. Staff have been advised verbally that during construction the spaces in the employee garage will be re-allocated to visitors, with some employees then reallocated to other lots.	Tom Errico, the City's consultant traffic engineering reviewer, comments: *During the construction of the Visitor parking garage, the top two floors of the existing garage will be taken out of service. The applicant should provide parking management details addressing the loss of the noted parking spaces.* Staff recommend the following conditonbe added to the CMP condition relating to requirements: *Provision of alternative parking for any parking displaced by the construction either on or off the MCC campus;* Staff note that 6 handicapped spaces are included in the 225 new spaces, and requested confirmation that this meets ADA requirements. This information does not appear to be included in the latest submissions, and staff therefore suggest the following condition of approval: *That the final parking layout of the Visitors Garage shall meet the City's Technical Manual Standards and all applicable State and Federal standards regarding handicap accessibility.*
(h) Environment. Development proposed by MMC shall be designed to integrate with the surrounding context, including open space and pedestrian networks and infrastructure.	Staff have requested that MMC address the use and safety of the pedetrian routes in the vicinity of the Visitor Garage and how the connections to Congress street will be maintained or redesigned. MMC have noted that there are current security issues with the route that goes along the eastern edge of the garage.	Staff appreciate that the grades and current uses present a challenge and that the surrounding pedestrian network may need to be revised in relation to the new hospital. Therefore the following condition of approval is recommended to ensure that the Visitor Garage and East Tower are part of the pedestrian networks (both within and outside the ROW) developed as part of the new hospital development. *That the applicant shall develop a long term public Pedestrian Network Plan showing the integration of the upper level MMC campus with the Congress Street corridor, including measures to address CPTED principles, for implementation when the retail space beneath the Visitors Garage is available for lease or sale; such plan to be submitted for review and approval by the Planning Authority prior to the issuance of a building permit for the Congress Street Hospital Entrance.* It should be noted that the Design Review has raised a question over the need for interim action in respect of the Congress Street access to the existing pedestrian route along the east side of the garage.

(i) Mitigation measures. MMC shall mitigate site plan impacts to off-premise infrastructure in a manner proportionate to those impacts. Mitigation may include financial or in-kind contributions to existing or planned City projects focused on mitigating the impacts of MMC development. Mitigation contribution shall be determined based on the City's standard procedure in effect at the time of site plan review.	The submissions for the Workshops largely focusses on why the applicant considers that they are not required to make any changes to the stormwater system. The presentation to the second Workshop and associated Response (Hearing Submittal WS L-4 *Stormwater comment Response*) also outlined why there is little scope to achieve greater separation in respect of the Visitor Garage stormwater.	The DPW and Peer Engineer comments (*Attachments 14 and 17*) have encouraged the applicant to remove stormwater discharges from the City's combined system in Congress Street to meet Site Plan ordinance requirements (see below) and mitigate the hospitals impacts on the system. Discussions with MCC and their consultants explored the scope for separation and detention and DPW representative concluded that the best option was to achieve greater detention so that the Congress Street system is not overburdened by the existing and proposed developments; the following condition is recommended: *That the stormwater system for the Congress Street Hospital Entrance shall add detention capacity in lieu of stormwater separation in order to reduce the burden of the existing & proposed development on the City's infrastructure. As part of the site plan application for the Congress Street Hospital Entrance the applicant shall set out the strategy and associated proposals for achieving additional detention or for contributions to other measures that achieve the same objective.*
(k) Construction management 1. At the time of site plan review, MMC shall submit a Construction Management Plan substantially in accordance with those construction management principles identified in the approved Institutional Development Plan for review and approval by the Planning Authority. 2. The Construction Management Plan shall include a construction schedule, as well as strategies for managing neighborhood communication and noise, air quality, traffic, and parking impacts associated with the construction as set forth on the Construction Management Template developed by the City and attached and incorporated to the IDP as Appendix A	As discussed at both of the PB Workshops, the *Turner CMP* and the associated *Detours* (*see Hearing Plan Set A CMP*) have been discussed with City representatives since January and broadly take account of City concerns. The *Detour Presentation v 5* outlines how the detour routes were developed. The *Outline Lead In Schedule* for the closure of Congress Street has been submitted (*Hearing Plans A CMP*) along with an associated *Communications Plan* and proposals for *Weymouth Street repairs* for the detour traffic.	The discussions have been constructive and the proposed conditions of approval generally address the following detailed concerns or document key items as summarized below: • Some of the detailed proposals have not been fully set out in the submissions or only recently submitted, so the first suggested condition identifies the key aspects of the CMP/Detour proposals that still need to be finalized. • The second potential condition confirms that the responsibilities lie with MMC and their contractors; • The third condition stresses the importance of establishing a clear communications plan so that neighbors and others impacted by the project are fully informed with impacts minimized as far as possible; • The last condition identifies the anticipated schedule and penalties for delay as based on the Kleinfelder Peer Review and the Police Department concerns that the Congress Street closure extends to just before the July 4th holiday and that the impacts of any delay would be substantial (both under Report Attachments).
(l) Other requirements **1. Helipad.** MMC shall be governed by the provisions of the Helistop Overlay Zone with the following exceptions: a. Setback requirements of Section 14-327(3); and b. Fencing requirements of Section 14-327(4).	The applicant submitted a Sound Study (XX), further comments on 1-31-18 and a Response with data analysis (*WS S-6c Heiliport Comment Response* under Second Wroskhop set). (The FAA applications were also submitted - see Site Plan discussion)	Staff recommend that a framework be developed to confirm the predicted sound impacts and provide a back up mechanism if they are not accurate. The following condition is recommended: *That within 9 months of the date of this site plan approval the applicant shall submit a "Sound Measurement Plan" for review and approval by the Planning Authority, for assessing the actual changes in sound impacts on nearby properties between the helipad operating at the existing site and at the new location, including criteria for mitigation where such impacts are severe based on appropriate national standards. The "Sound Measurement Plan" is required in the event that the predicted sound levels are incorrect, and it shall be approved and implemented at least 2 months before the helipad is relocated*

XI. SITE PLAN REVIEW

The proposed development has been reviewed by staff for conformance with the relevant review standards of the City of Portland's site plan ordinance. Staff comments are below.

Transportation Standards

a. *Impact on Surrounding Street Systems, Site Access and Circulation and Loading and Servicing*
The impacts are just during construction and have been addressed in the Construction Management Plan and Detour Plans as outlined under Zoning above.

b. *Sidewalks* There are four ramps associated with crosswalks at the East tower that do not meet current standards, and the applicant is requested to replace those in a suggested condition of approval.

c. *Public Transit Access*- the proposals do not trigger this standard.

d. *Location and number of parking spaces*- see comments above under Zoning

e. *Location and number of bicycle parking*
The Transportation Program Manager has commented that the number, detailed location and design of the bike parking near the East Tower has not been documented (*Attachment 12*) and that the design of the racks currently does not meet the City'sTechnical Standards. The applicant has submitted reponses to this issue (most recently in *Hearing submittal WS S14*), but has not addressed the detailed location of the racks in relation to the East Tower nor the design of the racks. Staff recommend the following condition:

> *That the applicant shall submit an assessment of the existing bicycle parking near the East Tower to confirm whether it meets the City's Technical Standards for the location, number and design of bicycle parking to serve the East Tower as expanded, and add to/relocate or replace bicycle parking as necessary to meet the standards prior to the issuance of a certificate of occupancy for the East Tower.*

f. *Transportation Demand Management* - this is a Site Plan requirement for the East Tower- see the discussion above under Zoning.

g. *Construction Management Plan* - see discussion under Zoning above.

Environmental Quality Standards

a. *Preservation of Significant Natural Features and Landscaping and Landscape Preservation* – not applicable to the proposal.

b. *Water Quality/Storm Water Management/Erosion Control*
The Site Plan standards apply to this development and in general it is expected that when a site plan is under review the site should meet current standards. The ordinance includes the following:

> *14-546 (b) (3) Env. Quality Standards "All development must demonstrate that the proposed site improvements are designed to minimize the amount of stormwater leaving the site"; 14-526 (c) (1) Consistency with City Master Plans "All developments shall be designed so as to be consistent with City Council approved master plans and facilities plans and with off-premises infrastructure, including…sewer and stormwater.*

As mentioned above under Zoning, the Citys combined system along Congress street is already overburdened and the applicant is requested to pursue further stormwater separation or detention. A suggested condition is outlined under Zoning.

Public Infrastructure and Community Safety Standards

a. *Consistency with Related Master Plans - see above re Stormwater*

b. *Public Safety and Fire Prevention* – see the Design Review Memo (*Attachment 18*) which highlights a possible area where further action could be taken in the interim to reduce potential crime. The suggested condition of approval integrates the issue of CPTED with a longer term plan for pedestrian networks on the expanded campus.

c. *Availability and Capacity of Public Utilities* – Letters in respect of CMP and Water capacity have been submitted, and the Wastewater capacity letter is outstanding.

Site Design Standards - these are covered by the Zoning with the exception of the streetlights. The current street lights do not have high level lamp fixtures (see Transportaion Program Manager comments in *Attachment 12*) and a suggested condition of approval requires that the four in front of the visitors garage be upgraded in view of the increased level of activity in this corridor.

XII. STAFF RECOMMENDATION

Subject to the proposed motion and conditions of approval listed below, Planning Division staff recommends that the planning board approve the proposed MMC East Tower and Visitor Garage Vertical Expansion and Relocation of Helipad.

XIII. PROPOSED MOTIONS FOR THE BOARD TO CONSIDER

A. DEVELOPMENT REVIEW

On the basis of the application, plans, reports and other information submitted by the applicant; findings and recommendations contained in the Planning Board Report for the public hearing on March 27, 2018 for application 2017-289 (Mmc East Tower And Visitors Garagage Overbuild And Relocated Helipad at 22 Bramhall Street) relevant to the site plan regulations; and the testimony presented at the planning board hearing, the planning board finds that the plan **is/is not** in conformance with the site plan standards of the land use code and the MMC IOZ Regulatory Framework, subject to the following conditions of approval:

i. That the documentation of the land transfers and street acceptances associated with the sites shall be completed prior to the Certificate of Occupancy;

ii. That the applicant shall submit evidence from the FAA that the location and height of the construction equipment, the overbuild heights, and helipad relocation is acceptable prior to the Certificate of Occupancy for the approved overbuild floor area, or the operation of equipment and helipad;

iii. That within 9 months of the date of this site plan approval the applicant shall submit a "*Sound Measurement Plan*" for review and approval by the Planning Authority, for assessing the actual changes in sound impacts on nearby properties between the helipad operating at the existing site and at the new location, including criteria for mitigation where such impacts are severe based on appropriate national standards. The "*Sound Measurement Plan*" is required in the event that the predicted sound levels are incorrect, and it shall be approved and implemented at least 2 months before the helipad is relocated;

iv. That the applicant shall undertake all construction associated with this site plan in accordance with the Turner CMP dated March 21, 2018 and Detour Plan (MOT) dated March 21, 2018 unless agreed in writing with Planning Authority, including:

   a. Provision of alternative parking for any parking displaced by the construction either on or off the MCC campus; and
   b. Coordination with the Seadogs and other event organizers, and with METRO, to ensure safety of all users; and
   c. Incorporate ongoing monitoring and adjustments in consultation with city representatives; and
   d. That the Park and Weymouth signal shall meet MUTCD requirements and include pedestrian accommodations, ADA compliance and have full vehicle detection; and
   e. Minor ROW adjustments such as curb radii at Boynton/Forest Streets, ADA ramps and bus stop pads; and
   f. Repairs to Weymouth Street prior to/after the detour as agreed with the Department of Public Works.

v. That the applicant is solely responsible for all activities (physical modification to the ROW, monitoring, revisions to the CMP etc) associated with CMP/detour plans referred to in condition iv. above;

vi. That the applicant shall take steps as necessary to minimize construction impacts on neighbors, including businesses, in the vicinity of the project, and implement the Communications Plan generally as outlined;

vii. That the applicant shall comply with the submitted Construction Schedule which notes a Congress Street closure between Monday May 7th to Thursday, June 28th 2018 inclusive. This closure period is dependent upon 1) the City of Portland issuing building permits in a timely manner and 2) the absence of other events beyond the control of the applicant ("force majeure"), including, without limitation, acts of God, war, fire, flood, acts of a sovereign nation or any state or political subdivision or any department or regulatory agency. Unless otherwise justified by 1) or 2) above, if Congress Street is not open to through traffic and pedestrian access on June 29th, the Planning Board recommends that penalties of $10,000/day should apply for each day of delay;

viii. That the stormwater system for the Congress Street Hospital Entrance shall add detention capacity in lieu of stormwater separation in order to reduce the burden of the existing and proposed development on the City's infrastructure. As part of the site plan application for the Congress Street Hospital Entrance the applicant shall set out the strategy and associated proposals for achieving additional detention or for contributions to other measures that achieve the same objective;

ix. That the applicant shall finalize a TDM Plan that addresses the Regulatory Framework and Site Plan requirements, for review and approval by the Planning Board prior to the issuance of a Certificate of Occupancy for the East Tower;

x. That the applicant shall develop a long term public Pedestrian Network Plan (both on and off the ROW) showing the integration of the upper level MMC campus with the Congress Street corridor, including measures to address CPTED principles, for implementation when the retail space beneath the Visitors Garage is available for lease or sale; such plan to be submitted for review and approval by the Planning Authority prior to the issuance of a building permit for the Congress Street Hospital Entrance;

xi. That the applicant shall implement the following upgrades in the ROW prioe to the issuance of a Certifcate of Occupancy:
    a. Update the four (4) pedestrian light fixtures along the Congress Street frontage of the Visitors Garage to LED, and for each add the bracket and LED light fixture at the top of the existing poles.
    b. Install ADA pedestrian ramps at 4 locations where there are crosswalks near the East Tower.

xii. That the applicant shall submit an assessment of the existing bicycle parking near the East Tower to confirm whether it meets the City's Technical Standards for the location, number and design of bicycle parking to serve the East Tower as expanded, and add to/relocate or replace bicycle parking as necessary to meet the standards prior to the issuance of a Certificate of Occupancy for the East Tower;

xiii. That the final parking layout of the Visitors Garage shall meet the City's Technical Manual Standards and all applicable State and Federal standards regarding handicap accessibility;

xiv. That the applicant shall submit the ability to serve letter regarding wastewater prior to the issuance of a building permit for the East Tower overbuild;

xv. That any new signage relating to the East Tower or Visitors Garage shall be subject to separate site plan review in the context of the Regulatory Framework and IDP Design Standards by the Planning Authority prior to installation.

[Attachments next page]

ATTACHMENTS

Folder – First Workshop- January 23, 2018

MMC (Memo)

MMC (Applicants Submittal)

WS - 1 Cover Letter
WS A Application Form
WS A -1 East Tower Data Sheet
WS A -2 Visitor Garage Data Sheet
WS B Right Title Interest
WS C State and Federal Approvals
WS D Zoning Assessment
WS E Easements
WS G Financial and Technical Ability
WS H - Boundary Survey
WS I - 3 CM Plan January 18
WS J Traffic Study
WS M City Master Plans
WS N Utilities
WS O Solid Waste
WS Q - 1 Design Review Update January 18
WS S - 2 Bicycle Parking
WS S - 3 East Tower Code Report
WS S - 4 Visitor Garage Code Report
WS S - 5 Heliport FAA Submittal
WS S - 6 Heliport Noise Study
WS S - 7 TDM Plan
WS S - 8 Parking Demand Study
WS S - 9B CM East Tower MOT January 18
WS S-10 Project Description

MMC (Site Plans)

Plan 1 Boundary Survey (8 sheets)
Plan 2I Recording Plan
Plan 2J Recording Plan
Plan 5 Site Plan
Plan 10A Visitor Garage Lighting Plan
Plan 10B Heliport Lighting Plan
Plan 11 Signage Plan
Plan 13 Shadow Analysis
Plan 14A East Tower Level 6 Floor Plan
Plan 14B East Tower Level 7 Floor Plan
Plan 14C East Tower East Elevation Janua...
Plan 14D East Tower North Elevation Jan...
Plan 14E East Tower West Elevation Janu...
Plan 14F East Tower South Elevation Janu...
Plan 14G Visitor Garage Level P8 Floor Pl...
Plan 14H Visitor Garage Level p8 Floor Pl...
Plan 14I Visitor Garage Level P10 Floor Pl...
Plan 14J Visitor Garage Level P11 Floor Pl...
Plan 14K Vistitor Garage East Elevation Ja...
Plan 14L Visitor Garage North Elevation J...
Plan 14M Visitor Garage West Elevation J...
Plan 14N Visitor Garage South Elevation J...
WS Q - 1 Design Review incl renderings1....

Folder – Second Workshop- February 27, 2018

MMC (Memo)

MMC (Applicants Submittal)

WS - 7A TDM Plan Update February 13
WS - S- 6A Heliport Memo January 31
WS A-3 Neighborhood Meeting Info February 21
WS L Stormwater Management Plan
WS L-1 2004 Stormwater Management Plan
WS L-2 2004 Watershed Plans
WS N-1 Wastewater Capacity Request
WS N-2 CMP Ability to Serve
WS Q - 1 Design Review Update January 18
WS Q - 2 Design Review Update February 23
WS S - 12 Site Lighting Narrative
WS S-6B Heliport FAA Application February 8
WS S-6C Heliport Comment Responses 2.23.18
WSL - 3 Stormwater Comment Responses 2.21 (1)

MMC (Plans)

CMP/Detours

GP Traffic Analysis 2.14.18
WS I - 5 CM Plan February 13

Plans

Plan 2K Boundary Survey February 21
PLAN 14O ET Elevations February 22
Plan 14P VG Elevations February 22

Public Hearing Attachments – March 27, 2018

1. Initial Traffic Comments
2. Fire Department Comments on CMP
3. Preliminary Design Review Comments

4. MMC Institutional Development Plan (IDP) as approved by PB
5. MMC IOZ Regulatory Framework (Ordinance 14-282) as adopted by CC
6. "Check In" meeting notes through Feb 15, 2018
7. Extract from Site Plan Ordinance regarding stormwater and sewer infrastructure
8. City comments on submitted TDM
9. Peer Engineer Review comments 1.25.18 and 2.7.18
10. Design E-mail re further info requested
11. Fire Department comments
12. Transportation Program Manager re bike parking, lighting and ADA access in ROW
13. Police Department re CMP and Detours
14. DPW re CMP/Detours and Drainage Infrastructure
15. Staff clarification re relocated helipad sound analysis
16. Kleinfelder third party review of "constructability" and closure of Congress Street
17. Peer Engineer Review comments 3.21.18
18. Urban Design final Review comments 2.16.18
19. Updated Check In Meeting notes

Public Comments
PC-1 Pringle 1.23.18
PC-2 Beever 2.27.18

HEARING APPLICANTS SUBMITTAL (numbering as per applicant)
WS L – 4 Stormwater Comment Response Letter
WS N – 3 PWD Ability to Serve
WS Q – 3 Design Review Update 3.22.18
WS S – 6D FAA Submissions 3.22.18
WS S – 13 PB Workshop Presentation 2.27.18
WS S – 14 Bike Parking
WS S – 14 Maine Biz Article 3.5.18

HEARING PLANS
A- CMP/Detours
   a. Detours Presentation v5
   b. MFP Communications Strategy
   c. WS 1 – 6 CM Plan 3.21.18
   d. WS S – 9E MOT Update 3.21.18
   e. Congress Street Closure Implementation Schedule 3.12.18
   f. WS S – 15A Weymouth St. Repairs
   g. Example of letter to Neighbors
   h. Combined submittal (repeats most of above)

B- Other
   a. Revised Eleavations Visitor Parking Garage
   b. View of East Tower from I295

Portland Maine | Yes. Google's good here.

Jean Fraser <jf@portlandmaine.gov>

MMC Visitor Garage and East Tower Project - Initial Traffic Comments

1 message

Tom Errico <thomas.errico@tylin.com> Thu, Jan 18, 2018 at 11:33 AM
To: Jean Fraser <jf@portlandmaine.gov>
Cc: Keith Gray <kgray@portlandmaine.gov>, Jeremiah Bartlett <JBartlett@portlandmaine.gov>, Bruce Hyman <bhyman@portlandmaine.gov>, "Jeff Tarling (JST@portlandmaine.gov)" <JST@portlandmaine.gov>

Hi Jean – the following outlines my initial comments as it relates to the above noted project. Please note that the comments do not include a review of the Congress Street Traffic Control Plan.

- This proposed project is not expected to increase traffic volumes and thus at completion will not have a significant impact on traffic conditions. I would note that a Traffic Movement Permit will be required in conjunction with the Congress Street Medical Office Building where additional employees are programmed. The TMP will require a comprehensive Traffic Impact Study.

- During the construction of the Visitor parking garage, the top two floors of the existing garage will be taken out of service. The applicant should provide parking management details addressing the loss of the noted parking spaces.

- The following are initial East Tower Traffic Control Plan comments:

    - The City does not support the conversion of Ellsworth Street to two-way flow between Congress Street and Crescent Street. The applicant has noted this to be acceptable. The plans should be revised to reflect this change.

    - It is unclear if the bump out at the Crescent Street/Wescott Street intersection is to be removed. If it is to remain, vehicle turning templates should be provided for review and approval.

    - Detailed routing and vehicle turning information for truck deliveries shall be provided for review and approval.

    - It is my understanding that the Fire Department will be providing comments regarding concerns for Emergency Department vehicle access.

- Specific parking information shall be provided as it relates to fully understanding current on-street parking usage, location of on-street parking prohibitions, and how existing properties parking needs will be addressed given loss of on-street spaces.

If you have any questions, please contact me.

Best regards,

Thomas A. Errico, PE
Senior Associate
Traffic Engineering Director
TY LIN INTERNATIONAL
12 Northbrook Drive
Falmouth, ME 04105
+1.207.781.4721 main
+1.207.347.4354 direct
+1.207.400.0719 mobile
+1.207.781.4753 fax
thomas.errico@tylin.com
Visit us online at www.tylin.com
Twitter | Facebook | LinkedIn | Google+

"One Vision, One Company"

MEMORANDUM

To: FILE

From: Jean Fraser

Subject: Application ID: 2017-289

Date: 1/18/2018

1/17/2018

Circulation--The ambulance emergency room entrance should remain open to one way traffic. The area can be difficult to maneuver in its current design. Making the patient delivery area a two way drop off doesn't seem achievable.

1/17/2018

The Fire Dept is opposed to the closing of Congress Street, doing so will create difficulty for all ambulances in getting their patients to the hospital emergency room. The proposed detours will create high congestion on all streets leading to the hospital emergency department.

Planning and Urban Development Department
Planning Division

Subject: IOZ Design Review – 22 Bramhall (Maine Medical)

Written by: Caitlin Cameron, Urban Designer

Date of Review: Wednesday, January 17 2018

The projects at 22 Bramhall Street – East Tower and Visitor Garage expansion - were reviewed according to the adopted IOZ IDP and Regulatory Framework standards by Caitlin Cameron, Urban Designer, Jean Fraser, Planner, and Nell Donaldson, Senior Planner.

In the case of both proposals, the new construction is limited to vertical expansion of existing buildings. The proposals do not alter the footprints, plans, existing materials, or access points to each building. Therefore, the design evaluation is generally limited to the impact on the overall campus design, long views to the campus, and Congress Streetscape.

Design Review Comments*: (questions and unmet standards in red)*

- Please provide a rendering showing the visitor garage project in context on Congress Street.
- More information is requested regarding materials – label materials on elevations.
- More information is requested regarding site lighting.

IDP Design Guidelines

1. New buildings will be designed to contribute to the campus vision and organizational goals identified in the Master Facility Plan and the Transportation Plan, and best practice design standards for healthcare.

East Tower: The East Tower expansion seeks to introduce a contemporary tower that prioritizes the patient experience while also taking advantage of its visual prominence by creating a simple but strong contemporary statement that knits together some of the varying design components of the existing surrounding buildings. The stated MMC vision includes integrating inside and outside – achieved here through the internal circulation and window size and placement, as well as a "50 year palette" that selects materials based on cues from nature to create timeless environment. This vision includes Sky, Sea, and Land as concepts for material/color selection. The white metal panel and large curtain wall system intend to evoke the "sky" – light, recessive, neutral. Planning Board may want to consider if this East Tower design meets this vision for timelessness, integration of inside/outside, and a reflection of modern delivery of healthcare – these design decisions will likely inform future choices for other parts of the campus.

Visitor Garage: The architectural character remains consistent by continuing the existing material palette and expression. In the case of Congress Street, the City's priority is the building interface with the street – keeping the urban street wall edge, activating the ground floor, providing a sense of scale and enclosure for the pedestrian. The MMC vision includes creating a sense of place while allowing new design reflect its location in Portland and Maine, as well as

the historic context of the hospital and surrounding neighborhoods. In this case – those goals are met or at least existing conditions are improved upon.

2. The overall composition and experience of the campus will be considered for cohesive identity from approaches along Congress Street and I-295.

East Tower: The addition introduces a new design aesthetic to the MMC campus. The applicant proposes this as the first of several phases that incorporate the vision for the campus as described above and in the applicant's submittal. Staff think this design creates a more visible and contemporary identity to the campus – if approved, future designs should be evaluated for cohesiveness with this new direction.

Visitor Garage: The architectural character remains largely the same as the existing condition and is found to be consistent with the established character. The building addition increases the visibility of the campus from those long views.

3. Building entrances will be oriented toward, located adjacent to, accessible from, a sidewalk in a public right-of-way to create a pedestrian-oriented environment.

East Tower: Not applicable – entrances remain the same with existing ground floor.

Visitor Garage: The existing building has two retail entrances facing Congress Street and steps with a door to access the circulation tower for the garage. The garage currently only has vehicle entrances facing Congress Street which pedestrians can use but there is not a designated pedestrian path/door. From Crescent Street, there is a pedestrian path and doorway.

4. Building designs will relate to and be compatible with the existing, or – in areas of change – planned character of residential and commercial neighbors. Design elements and characteristics to consider include:

- Building placement and relationship to the street

- Overall massing and scale

- Roof forms

- Proportion, directional expression, and composition of facades

- Rhythm of solids to voids

- Rhythm and proportion of openings

- Rhythm of entries and projections

- Relationship of materials, texture, and color

East Tower: The addition is simple in its massing, roof form, and material palette. These two additional floors also change the overall proportion of the building's massing and façade composition. Staff support the direction given the constructability constraints and the limitations of the existing façade character. The window openings are places and scaled to reflect the long views and tower scale of the building. They establish a rhythm consistent with existing building and campus design. The white metal in contrast with the red brick make the proportions top-heavy, but the applicant makes the case that brick is not a viable option for the

building addition and that white color palette was selected to integrate with the existing materials and details without introducing yet another element.

Visitor Garage: The massing, roof forms, rhythms, and material relationships remain mostly unchanged from the existing conditions. Scale is the most significant change to this building – staff have requested street view renderings to understand how that scale change will be experienced on the street.

5. Façade materials of buildings will be of high quality, and contribute to an attractive public realm.

East Tower: The applicant indicated the material choices are limited by construction constraints as well as the existing material palette. The proposal is simple white metal panel intended to visually blend with the existing white materials as well as provide a light, recessive quality to the increase in mass and height. Vi sual interest will be provided by material pattern, fenestration, and shadow lines created by angled windows on each façade.

Visitor Garage: The proposal maintains the existing material palette of brick, concrete, and metal screen. Staff agree this is a logical selection to provide consistency to the building. However, staff are concerned about the loss of the canopy on the stair tower as an architectural feature.

6. The design process will consider long views of new buildings including roofs and associated structures to minimize visual impacts and provide visual interest. Rooftop appurtenances will be either screened from view or integrated into the building design, and will not be visible from adjacent streets, Western Promenade, or the Congress Street approach (helipad excluded).

East Tower: The rooftop mechanicals are screened in a way that minimizes their impact and appearance and are visible only from a few directions.

Visitor Garage: Rooftop appurtenances have not been adequately screened or integrated into the building design - this is especially of concern for the long views.

7. Vibrant, contributing and sustainable active ground floors will be provided to add activity and a sense of place to the priority node identified in the City's Comprehensive Plan.

East Tower: Not applicable

Visitor Garage: Staff request the applicant provide more information regarding the ground floor activation facing Congress Street. The building includes storefront, doors oriented to Congress Street, canopies, and adequate site lighting, however, the space is currently vacant and has a translucent film covering the windows and impeding the visual connection and activity from the sidewalk.

8. In areas where the occurrence of limited blank facades along public right-of-ways are unavoidable due to changes in topography or building use requirements, the following strategies will be used to mitigate visual impact:

- providing elements of visual interest along any black walls facing public streets, and,

- working with the City of Portland to ensure adequate lighting of public sidewalks to create a safe pedestrian experience.

East Tower: Not applicable

Visitor Garage: See comment 7. above.

9. Any parking structure within the IOZ will:

- screen views of cars from the public rights-of-way

- provide elements of architectural interest on upper floors to contribute positively to long views and gateway approaches

- for garage structures within 20' of the public right-of-way, meet street activation intent according to street type

East Tower: Not applicable

Visitor Garage: Screening methods will follow the established existing design – solid wall with metal mesh railing with a trellis accent – this current condition successfully screens cars/headlights from Congress and Crescent streets. The current design includes a curtain wall stair tower with an accentuated canopy feature – this roof element appears to be removed from the new addition and rooftop mechanicals are shown without screening or design integration. Staff suggest keeping an element like the canopy will help screen the rooftop mechanicals and meet the guideline of providing architectural interest on upper floors – especially considering with the increased height, these elements will become even more visible from long views. For street activation, see comments 7. above.

Building Relationship to Public Street

1. ***Urban Main Street (Congress Street)***

   MMC buildings abutting Congress St will be designed to:

   - *Provide urban-levels of density*
   - *Create an urban street wall that provides a sense of enclosure to the public realm*
   - *Have their primary orientation towards Congress Street*
   - *Activate the public sidewalk with building entrances, lobbies, etc.*
   - *To the extent possible, given programmatic needs, provide visual interest and ensure pedestrian safety with views into and out of the building along the public sidewalk*
   - *To the extent possible, given programmatic needs, provide space for community-oriented uses such as services or retail that can be shared between MMC users, neighbors, and the broader Portland community*
   - *Support the existence of neighborhood amenities such as restaurants and other retail uses providing services to local residents and employees both during the day and evening hours.*

   In addition to the guidelines listed above, buildings that have frontage on Congress Street and that include parking components will activate portions of or place liner buildings along the ground floor facing Congress Street.

East Tower: Not applicable

Visitor Garage: The building addition maintains the urban street wall already established. The existing building's primary orientation is towards Congress Street. Entrances are not proposed to be changed – there are several existing entrances oriented to Congress Street. For activation, see comment 7. above.

Crime Prevention Through Environmental Design (CPTED)

MMC will incorporate the following design strategies that have been demonstrated to deter crime:

- *Providing a clean and aesthetically pleasing campus environment that is designed with vandal-resistant materials*
- *Providing clear and properly-sized signs in safe locations to ensure safe wayfinding*
- *Ensuring that paths from transit stops, bike storage areas, and parking areas to main pedestrian entrances are well-lit, with clear sight lines*
- *Designing street-level elevations to minimize potential hideouts*
- *To the extent possible, given clinical program demands, providing views in and out of building ground floors populated by users to serve as "eyes on the street"*
- *Generating foot traffic on public sidewalks with pedestrian entrances*

East Tower: Please indicate any changes to the site lighting or ground level building interface.

Visitor Garage: Please indicate any changes to the site lighting or ground level building interface.

Mitigating Impacts Through Design

Minimizing Shadow Impacts - Shadow impacts were evaluated as part of the IDP process. Both projects increase building height and will inevitably have some shadow impact – the garage height will increase the shadow cast across Congress Street but, as the applicant has argued, shadows on Congress Street are unavoidable due to the terrain, orientation, and street position. Refer to Plan 13 for shadow analysis of the approved IDP building heights – a couple of residential buildings are impacted in the winter by the increased height.

Context-Sensitive Lighting Design – More information is requested regarding site lighting for both projects.

Mitigating Wind Impact – No information was provided to evaluate this item.

Preserving and Enhancing Viewsheds – The building expansions do not impact Western Promenade viewsheds. Each of these expansions will increase the visibility of the campus from multiple long views.

Regulatory Framework

1. ***Mixed Uses: . . .*** *healthcare facility development fronting onto Congress Street and St. John Street shall activate the public realm, to the extent able, with uses such as service and retail/restaurant, landscaping, active building entrances, pocket parks, etc., on the ground or other publicly accessible level, consistent with the design intent contained in the approved IDP. . . .*

   East Tower: Not applicable

   Visitor Garage: See comment 7. above.

Maine Medical Center
MaineHealth

Institutional Development Plan



Maine Medical Center
MaineHealth

Institutional Development Plan

FINAL / October 9, 2017
Submitted to Portland City Council for Review

This document is valid until superseded by an approved update.

About This Plan

DATE: October 9, 2017
STATUS: Final / Submitted to Portland City Council for Review

Maine Medical Center (MMC) applied in January, 2017 for a zoning amendment to create an **MMC Institutional Overlay Zone (IOZ)** to allow MMC to modernize and expand their Bramhall St campus. The IOZ ordinance that provides the framework for this zoning was enacted by the City of Portland Code of Ordinances effective May 31, 2017.

The IOZ requires eligible institutions to submit an **Institutional Development Plan (IDP)**, a stand-alone document that describes the institution's tentative plans for the future, in addition to a **Regulatory Framework**, a land use code component that establishes the parameters to allow each institution to grow as envisioned in the IDP. The IDP and Regulatory Framework are institution-specific supplements to the more general provisions provided in the IOZ ordinance, and designed to provide a full list of variances from underlying zoning that are adopted by the Portland City Council.

Since January, MMC has met weekly with members of the neighborhood associations and City staff from Planning and other departments, to develop its IDP. This IDP was approved and the accompanying Regulatory Framework was recommended for approval to the City Council by the City of Portland Planning Board on September 26, 2017.

Once approved by the City Council, the MMC Regulatory Framework will establish the boundary for the MMC IOZ and provide zoning requirements that govern MMC's long-term development within the IOZ. Individual projects proposed by MMC in the IOZ in the future for such properties will be reviewed for zoning compliance with the MMC Regulatory Framework and any underlying zoning requirements that are not superseded by the IOZ.

This document was prepared for MMC by Perkins+Will with input from MMC, VHB, Gorrill Palmer, Sebago Technics, Colliers, Turner, and HeliExperts International. MMC would like to thank its neighbors in the Western Promenade, St John Valley, Parkside, West End, and Libbytown and the City of Portland for their contributions to the IDP process.

Table Of Contents

1. INTRODUCTION 7

About Maine Medical Center 8
Campus Context 14
Compliance with the Comprehensive Plan 24
Public Input on IDP 28

2. MASTER FACILITY PLAN 31

Master Facility Planning Process 32
Key Institutional Needs 34
Short-Term Projects (0-5 Years) 44
Long-Term Projects (5-20 years) 46
Long-Term Development Envelopes 50

3. TRANSPORTATION PLAN 53

Transportation Plan: Overview 54
Vehicular Access and Circulation 55
Parking 62
Alternative Transportation 67
Transportation Demand Management (TDM) 74

4. ENVIRONMENTAL AND INFRASTRUCTURE PLAN 83

Natural Resource Protection 84
Stormwater Management 86
Energy Conservation 91
Operational Sustainability 93

5. DESIGN 99

Design Drivers 100
Neighborhood Integration 102
Design Guidelines 116

6. NEIGHBORHOOD ENGAGEMENT 129

Ongoing Community Engagement 130
Construction Management Principles 131
MMC Community Benefits 135

APPENDICES

Appendix A: Construction Management Plan Template 142

CHAPTER ONE

INTRODUCTION

Maine Medical Center has been a member of the Portland community, a Portland landmark and a destination for excellent health care since it was built as Maine General Hospital in 1874. The campus has grown in size and complexity within its footprint to meet growing demand and changes in healthcare technology and care delivery.



ABOUT MAINE MEDICAL CENTER

Maine Medical Center (MMC) is a complete health care resource for the people of greater Portland, the entire state of Maine, and northern New England.

MMC is the state's largest medical center, licensed for 637 beds and employing more than 6,000 people. MMC's unique role as both a community hospital and a tertiary referral center requires an unparalleled depth and breadth of services, including the state's only medical school, through a partnership with Tufts University School of Medicine, and a world-class biomedical research center, the Maine Medical Center Research Institute.

The MMC care model includes the state's largest multispecialty medical group, Maine Medical Partners. Maine Medical Partners provides a wide range of primary, specialty, and subspecialty care delivered through a network of more than 40 locations throughout Maine.

Maine Medical Center is named one of "America's Best Hospitals" by US News & World Report. MMC's Trauma Center is the busiest in Maine, providing the most advanced tertiary care in the state.

MISSION, VISION AND VALUES

Maine Medical Center is dedicated to maintaining and improving the health of the communities it serves by:

- Caring for its community
- Educating tomorrow's caregivers
- Researching new ways to provide care

It proudly carries its unique responsibility as Maine's leader in patient care, education and research. MMC is dedicated to the traditions and ideals of not-for-profit healthcare. It provides care to all who seek it.

MMC's efforts to execute its Mission are aimed at achieving a simple, yet powerful Vision: "Working together so (Maine's) communities are the healthiest in America."

MMC is guided by a set of Values, helping to meet and exceed the expectations of those it is privileged to serve. MMC's Values:

- Patient-Centered
- Integrity
- Ownership
- Excellence
- Respect
- Innovation

PROGRAMS AND SERVICES

MMC provides a scope and depth of specialty and subspecialty inpatient and surgical care that is unparalleled in Maine.

MMC is the only Level I American College of Surgeons (ACS) trauma center in Maine and has the only Level III Neonatal Intensive Care Unit (NICU) and the only kidney transplant program in the state. MMC is an American Nurses Credentialing Center (ANCC) Magnet Hospital and has received numerous awards including: Best Regional Hospitals (2016-2017) from US News and World Report, Gold Seal of Approval and Top Performer in Key Quality Measures from the Joint Commission.

MMC is also the leading provider of tertiary services in the State of Maine. Tertiary services are defined as a set of Medicare severity diagnosis-related groups (MS-DRGs) that are rare and complex, require collaboration across treatment modalities, complex treatment decisions dependent upon unique diagnostic tests, regionalized care, and associated with complex co-morbidities and complications.

MMC's clinical services are organized into six service lines listed in **Table 1.1** at right. More information is available on the MMC website at http://www.mmc.org/care-and-services

Table 1.1 List of MMC Service Lines

ADULT MEDICINE	**MMC's Adult Medicine Service Line extends across the continuum of care, spanning from primary care, to emergency and critical care, medical services for hospitalized adults, subacute rehabilitation and long-term care. It includes a wide array of specialty programs and services including Digestive Health, Endocrinology, Geriatrics, Infectious Disease, Nephrology, and Palliative Care. This service line also includes the procedural areas of Endoscopy and Transplantation.**
CARDIOVASCULAR	**MMC's Cardiovascular Service Line addresses the treatment needs of patients with cardiovascular diseases such as coronary artery disease, valvular heart disease, congestive heart failure, arrhythmias, congenital heart disease, and peripheral vascular disease.**
ONCOLOGY	**MMC's Oncology Service Line provides health services to patients diagnosed with cancer such as medical oncology, radiation oncology, gynecological oncology, and surgical oncology.**
SURGICAL	**MMC's Surgical Service Line addresses specific health problems requiring surgical intervention including cancer, cardiovascular disease, eye diseases and injuries, gastric and intestinal diseases and injury, gynecological diseases and injury, joint and bone diseases and injury, neurological and spinal diseases and injury, bariatric, trauma, and genito-urologic diseases and injury.**
NEUROSCIENCES	**MMC's Neurosciences Service Line addresses the treatment needs of patients with neurological diseases such as stroke, epilepsy, neuro-oncology, multiple sclerosis, neuroendovascular diseases, Parkinson's disease, Alzheimer's disease and dementia, neuromuscular diseases, peripheral nerve and muscle conditions, and spine disorders as well as an array of neurodiagnostic services including electroencephalography (EEG) and sleep lab.**
WOMEN'S AND CHILDREN'S	**MMC's Women's and Children's Service Line addresses the health problems and needs of women and of children under 18 years of age with such clinical services as child birth and pediatric subspecialties including, neonatology, pediatric medicine, oncology, cystic fibrosis, gastroenterology and nutrition, cardiology and cardiac surgery, nephrology, neurology, pulmonology, ophthalmology, orthopedics, and urology.**

HISTORY

MMC opened its doors in 1874 as Maine General Hospital on Bramhall Hill, at the northern end of the tree-lined Western Promenade and adjacent to the Bramhall Reservoir.

The campus, designed by architect Francis Fassett, included four pavilions around a central administration building. The east pavilion and two outbuildings were erected first, providing patients with sweeping views of Casco Bay and the Fore River. The hospital was designated as the training facility for the Portland School for Medical Instruction and the Medical School of Maine at Bowdoin College, and had its own School of Nursing. Built of red-brick in Italian Gothic style, Maine General soon became a local landmark and a destination for the most up-to-date medical care in the state.

The opening of Union Station (1888) down the hill at Congress and St John Sts brought commercial uses to the area and improved access to the hospital. The hospital also catalyzed development of the area with medical uses such as the 1891 Maine Eye and Ear Infirmary as well as residential uses. The Western Promenade neighborhood gained prominence at the turn of the century as high-end homes and apartment buildings were built near the hospital and improvements were made to the

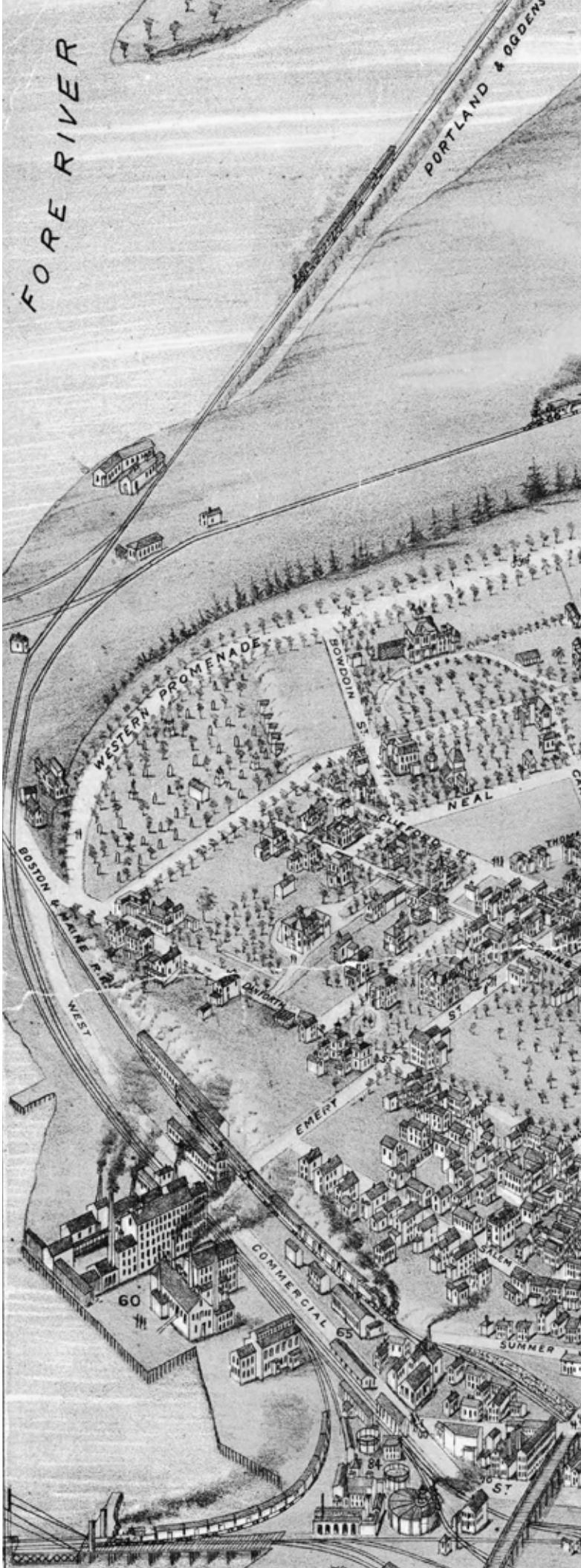


Fig.1.1 1876 Bird's eye view of Portland.


MAINE CENTRAL R.R.
ST. JOHN ST.
CARTER
FOREST
WEYMOUTH
ELLSWORTH
WESTERN PROMENADE
BRAMHALL ST.
CHADWICK ST.
WEST ST.
PINE ST.
VAUGHAN ST.
CARLETON ST.
BRACKETT ST.
CONGRESS ST.
GROVE ST.
PORTLAND ST.
GRANT ST.
SHERMAN ST.
CUMBERLAND AVE.
MELLEN ST.
AVE.
STATE ST.
DEERING
SPRING
CLARK
DANFORTH
PARK
HIGH
YORK ST.
CENTER
10
11
25
26
59

Western Promenade parklands. Maine General Hospital modernized its facilities through the 1920s and added a third pavilion in 1929.

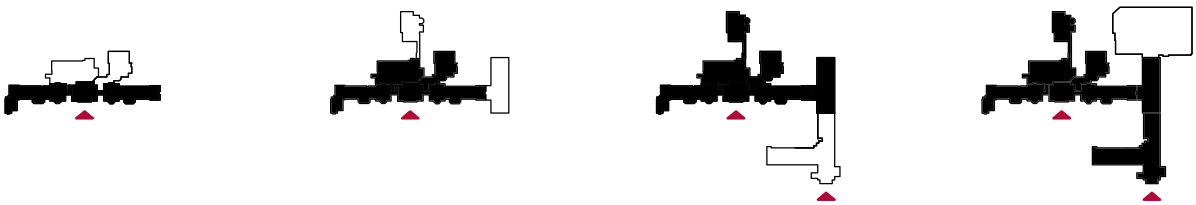
In 1951, Maine General Hospital, the Maine Eye and Ear Infirmary, and Children's Hospital merged to become MMC. Two new pavilions were added in 1956 to provide modern patient rooms. Suburban growth and the construction of interstate highways in the 1960s increased demand for parking at the Medical Center, which was met by converting the Bramhall Reservoir into a surface parking lot (current South Lot).

In 1968, MMC doubled the size of its facilities with the addition of the eleven-story Richards Wing. The campus expanded its footprint down towards Congress St with the addition of its first parking garage (now known as Employee Garage) in the 1970s. In the late 1970s, MMC became a teaching hospital for the University of Vermont College of Medicine.

In 1985, MMC opened the six-story LL Bean Building, another major addition to the campus. The Bean Building housed the new Neonatal Intensive Care Unit (NICU), operating suites, and specialty departments; it also now houses the Barbara Bush Children's Hospital (BBCH). The Dana Building was built in 1987, adding much-needed classroom and conference space to the campus.

Through the 2000s, MMC has renovated and expanded its facilities to meet its role requirements as the highest acuity provider of healthcare in the state. In 2008, MMC opened the 190,000 SF East Tower including new units for prenatal care, labor, delivery and recovery, neonatal intensive care, and mother-baby units. The Emergency Department expanded into the basement of the East Tower the

Fig.1.2 Historical evolution of MMC



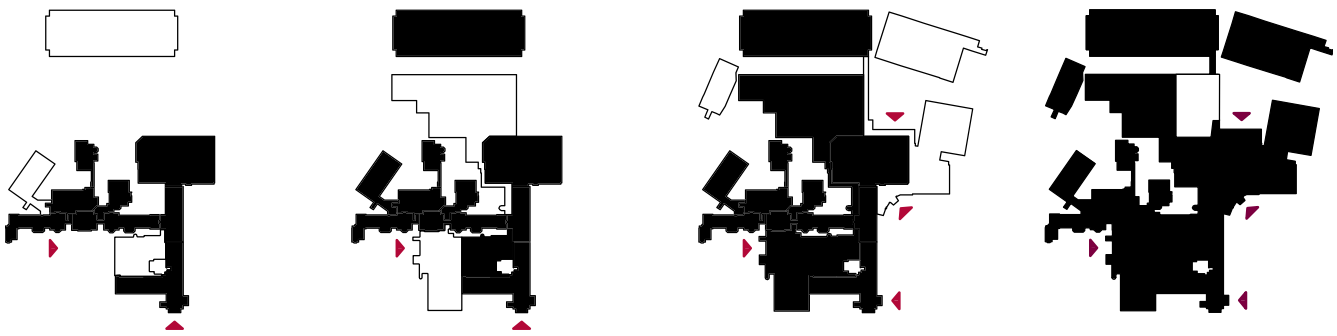
1890s 1920s 1950s 1960s

following year. The campus transformation project also included a new central utility plant and the 512-car Patient and Visitor Garage.

As its partnership with the University of Vermont came to a close, MMC initiated a new training program for medical students at the Tufts University School of Medicine in 2011. Today, MMC also hosts students from the Geisel School of Medicine at Dartmouth and University of New England College of Osteopathic Medicine.

In 2015, MMC completed construction on a portion of the LL Bean building roof to add new operating rooms and perioperative care beds.

Today, MMC is undertaking a new planning effort driven by the need to replace semi-private patient rooms with private rooms and to provide additional surgical capacity. The plan also provides an opportunity to address infrastructure needs, parking, wayfinding, and overall building organization to improve the delivery of care (see **Chapter 2** for details).



1970s **1980s** **2000s** **PRESENT DAY**

CAMPUS CONTEXT

MMC Bramhall campus is located at a high point in the west end of the Portland peninsula that is renowned for the Western Promenade—an 18-acre park and national historic landmark designed by the Olmsted Brothers, among others. The campus abuts the Western Promenade in a dense urban setting that serves, in many ways, as a transitional zone between areas with diverse character, land uses, and demographics.

The campus, which serves the entire state of Maine as well as eastern New Hampshire, is located within less than a mile's distance of I-295, which links Portland to destinations across New England. To the north, the campus fronts on Congress St —Portland's main street that extends along the spine of the peninsula to Portland's downtown and beyond. The MMC campus is located at the western gateway into the City.



Fig.1.3 Bird's eye view of the campus in its urban context





Fig.1.4 Bird's Eye View of the Campus in Context, Looking North



ADJOINING NEIGHBORHOODS

The 21.8-acre MMC Bramhall campus abuts four distinct neighborhoods. To the west and north is the St John Valley Neighborhood, a diverse area featuring a wide mix of uses including industrial warehouses, a large food processing plant, bus garages and facilities, single-family residential, local and chain restaurants, multi-family rentals, and alternative grocery stores. St John Valley, and the largely residential Parkside neighborhood to its east, are among the most ethnically and racially diverse in Portland. (City of Portland GIS Maps, 2010 Diversity Index). The two neighborhoods share easy access to Hadlock Field, Fitzpatrick Stadium, and Deering Oaks Park north of Park Avenue.

The Western Promenade neighborhood is located to the south of the medical campus. The focal point and namesake of the neighborhood is the 18-acre linear park that wraps the 120-feet tall escarpment, providing sweeping views of the Fore River. Designated as a park as early as 1836, and designed in 1905 by the Olmsted Brothers. The Western Promenade neighborhood and large sections of the adjoining West End neighborhood are included in the West End local historic district in recognition of their cohesive residential character featuring major architectural styles from 1850 to the 1920's (see Historic Resources at right).

ZONING CONTEXT

Development on the MMC campus has been historically governed by Contract Zone agreements C41 (main campus) and C18 (Congress St Medical Building).

At the request of the City, and with input from its neighbors, MMC has developed an Institutional Development Plan (IDP) in the new Institutional Overlay Zone (IOZ). See **Fig.1.5 on page 19** for a map of MMC's IOZ in its zoning context.

HISTORIC RESOURCES

The MMC Bramhall campus abuts the West End Historic District, one of the eleven locally-designated historic districts in the City of Portland (see **Fig.1.5 on page 19** for district boundary). The locally-designed West End Historic District includes the Western Promenade, an 18-acre public park that dates back to the 1830s.

The West End Historic District was added to the National Registry of Historic Places (NRHP) under the name "Western Promenade Historic District" in 1984. The Western Promenade was also added to the NRHP database as a Historic Landscape in 1989.

MMC's IOZ boundary includes the Maine Central Railroad General Office Building located at 222 St John St, which was added to the NRHP in 1988. The IOZ boundary also includes McGeachey Hall at 216 Vaughan St, which is listed as a contributing structure to the Western Promenade Historic District (see **Fig.1.5 on page 19** for locations).

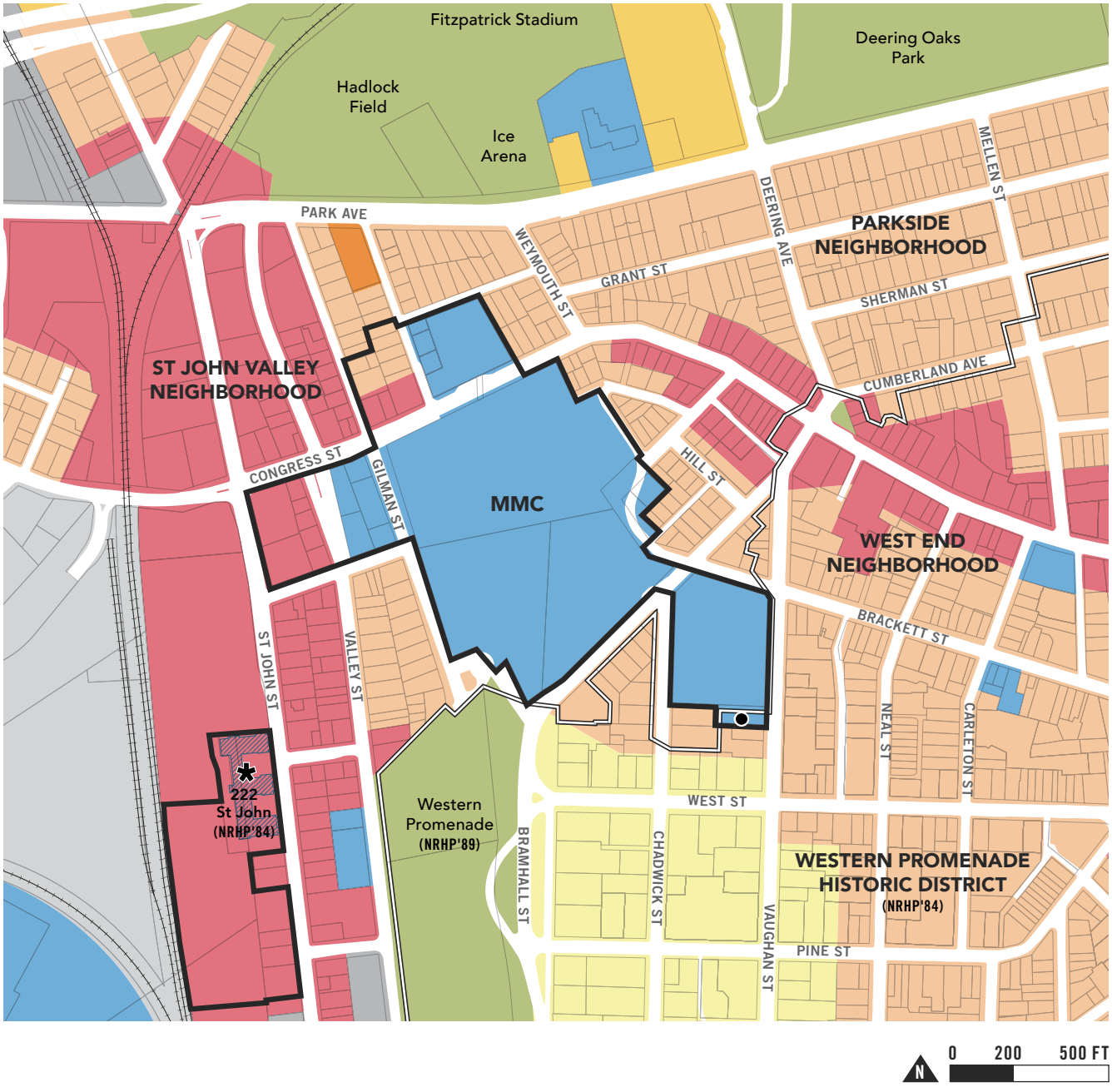
Any development within the IOZ boundary that is adjacent to or within 100 feet of any designated landmark, historic district, or historic landscape district will be subject to applicable requirements listed in Article 5 (Site Plan) of the City of Portland Land Use Ordinance.

Fig.1.5 MMC Campus: Neighborhood and Zoning Context (Data Source: City of Portland GIS)

MMC Institutional Overlay Zoning (IOZ) District Boundary
West End Local Historic District Boundary
NRHP-Listed Structure within IOZ Boundary
Contributing Structure to National Historic District within IOZ Boundary
Parcel Boundaries

CITY OF PORTLAND EXISTING ZONING DISTRICTS

R4 Residential
R5 Residential
R6 Residential
RP Residential Professional
B2 or B2b Business Community
IL Industrial - Low Impact
IM or IMb Industrial - Moderate Impact
ROS Recreation Open Space
Contract Zones (including existing MMC Contract Zones 18 and 41)



PROPERTY OWNERSHIP

MMC owns and leases a number of properties across the City of Portland. These properties are listed and identified on a map on the following pages (see **Fig.1.7** and **Tables 1.2 and 1.3** on the following pages).

Properties that have a functional relationship to the MMC Bramhall campus, which is the subject of this IDP are highlighted with an * on **Tables 1.2 and 1.3**. Per the requirements of the IOZ, a functional relationship is defined as uses or activities that are integrally linked to the day-to-day operations of the MMC Bramhall Campus, without which activity at MMC would be severely limited in one or more services.

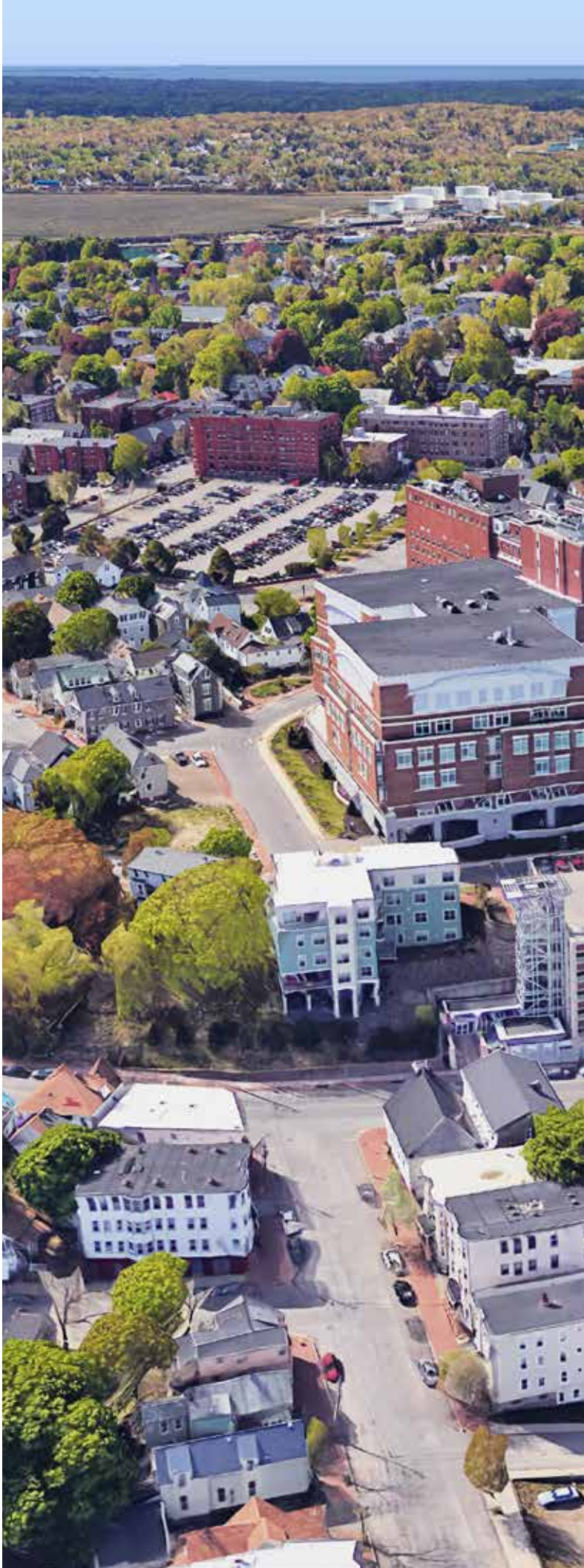


Fig.1.6 Bird's Eye View of the Campus in Context, Looking South


Maine Medical Center

Fig.1.7 Map of MMC-Owned Parcels and Leased Properties

All Parcels within the City of Portland owned by Maine Medical Center or MMC Realty Corp.

Locations where MMC leases space (map extent only)

Table 1.2 List of Properties Owned by MMC within the City of Portland

Parcel Address	*Current Use*
A MMC BRIGHTON CAMPUS	
335 Brighton Ave	MMC Brighton
367 Brighton Ave	Residential
27 Hollis Rd	Residential
136 Prospect St	Residential
142 Prospect St	Residential
170 Prospect St	Residential
B MMC BEHAVIORAL HEALTHCARE	
556 St John St	Medical Office
D GATEWAY GARAGE BUILDING	
177 High St	Business Office
429 Cumberland Ave	Business Office
Note: MMC does not own but leases parking spaces in the Gateway Garage.	
E PORTLAND FAMILY MEDICINE	
272 Congress St	Medical Office
263 Congress St	Parking Lot
148 Cumberland Ave	Parking Lot

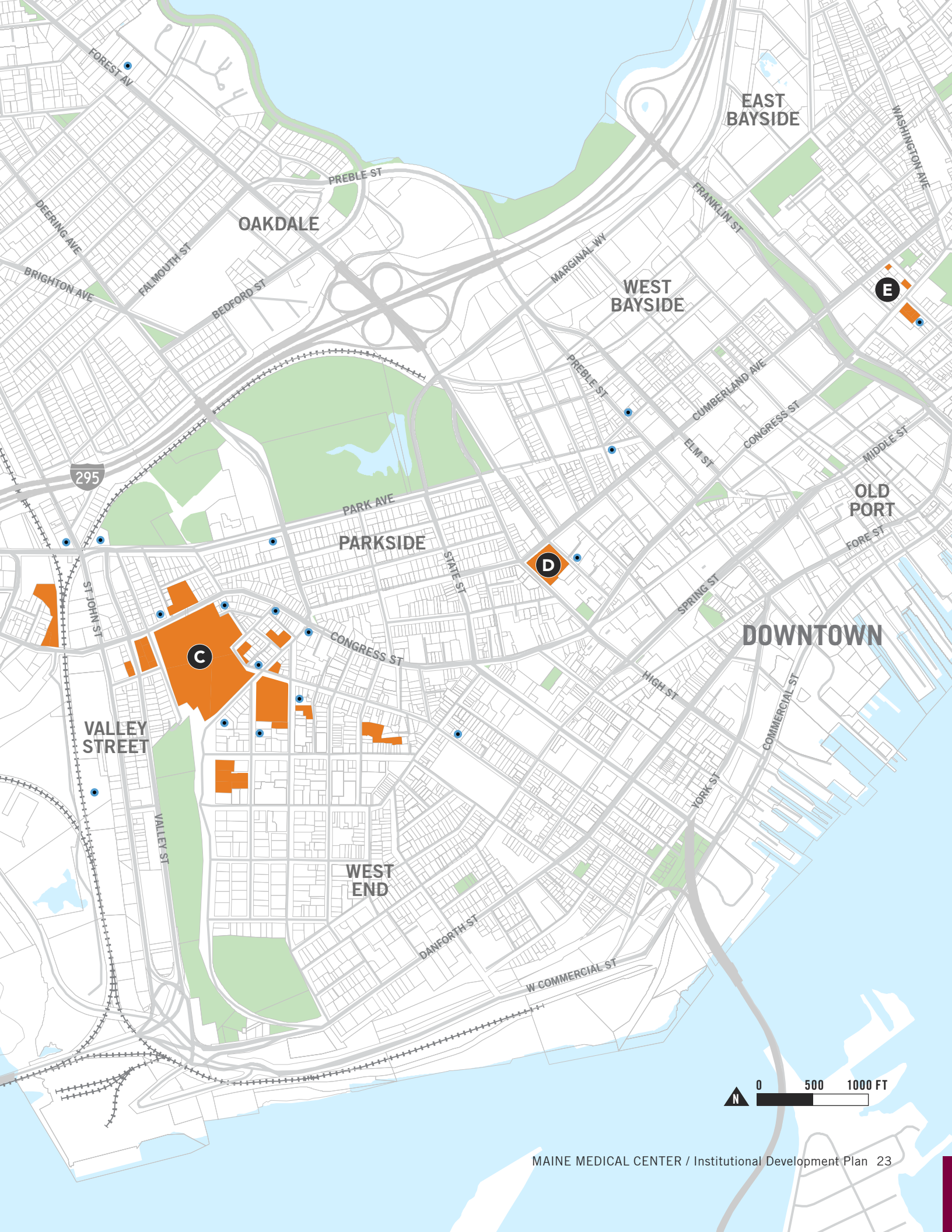
Parcel Address	*Current Use*
C MMC BRAMHALL CAMPUS AREA	
22 Bramhall St	MMC Bramhall
930 Congress St	Medical Office
932 Congress St	Business Office
887 Congress St	Medical Off. / Pkng
308 Brackett St	Parking (South Lot)
993 Congress St	Parking
995 Congress St	Business Office
98 Chadwick St	Maint. Garage
94 Chadwick St	Parking / Storage
47 Bramhall St	Business Office
229 Vaughan St	Business Office
216 Vaughan St	Medical Office
66 Bramhall St	Medical Office
19 West St	Medical Office
120 West St	Residential
34 Ellsworth St	Vacant Land
40 Ellsworth St	Vacant Land
231 Western Prom	Residential
227 Western Prom	Vacant Land
44 Gilman St	Parking
52 Gilman St	Medical Office
261 Valley St	Parking
262 Valley St	Parking
264 Valley St	Vacant Land

Table 1.3 List of Properties Leased by MMC in the City of Portland

Parcel Address	*Current Use*
131 Chadwick St	Business Office
180 Park Ave	Business Office
233 Vaughan St	Business Office
241 Oxford St	Business Office
315 Park Ave	Business Office
39 Forest Ave	Business Office
509 Forest Ave	Business Office
7 Bramhall St	Bus. Off. / Pkng
794 Congress St	Business Office
295 Park Ave	Medical Office
20 Portland St	Medical Office
818 Congress St	Medical Office
181 High St	Parking
222 St John St	Parking

Parcel Address	*Current Use*
905 Congress St	Parking
98-100 India St	Parking
183 Brackett St	Residential
25-29 Crescent St	Residential
321-325 Brackett St	Res. / Pkng
75 St. James St	Storage
85 St. James St	Storage
Located off the map extent:	
12 Andover Road	Medical Office
1250 Forest Ave	Medical Office
1577 Congress St	Medical Office
901 Washington Ave	Business Office
190 Riverside St	Business Office
87 Central Ave	Medical Office




EAST BAYSIDE
WASHINGTON AVE
FRANKLIN ST
FOREST AV
PREBLE ST
OAKDALE
DEERING AVE
FALMOUTH ST
BRIGHTON AVE
BEDFORD ST
MARGINAL WY
WEST BAYSIDE
E
PREBLE ST
CUMBERLAND AVE
CONGRESS ST
ELM ST
MIDDLE ST
295
PARK AVE
PARKSIDE
OLD PORT
FORE ST
STATE ST
D
SPRING ST
ST JOHN ST
CONGRESS ST
C
DOWNTOWN
HIGH ST
COMMERCIAL ST
VALLEY STREET
YORK ST
VALLEY ST
WEST END
DANFORTH ST
W COMMERCIAL ST
N
0
500
1000 FT

COMPLIANCE WITH THE COMPREHENSIVE PLAN

MMC, being a long term member of the Portland community, recognizes the Comprehensive Plan contains the City's overall goals for growth and change through the articulation of a variety of policy directives and goals for the development. Among other things, the Plan addresses the City's infrastructure, commercial/business development, transportation resources, industry, and commerce and residential housing plans.

The MMC IDP and Regulatory Framework are in basic harmony with the City's overarching goals and policies. With its IDP and Regulatory Framework, MMC has balanced and accommodated the many City goals and policies in a way that advances the City's overall best interests while at the same time addresses the high priority healthcare needs of Portland's residents and the people of the State of Maine. This balancing is exactly the type of flexibility that the City's recently drafted IOZ ordinance is meant to facilitate.

The Comprehensive Plan challenges the City to "support the vision of large, transformative projects [such as the MMC modernization project] through strategic, cost effective, and incremental actions" (*Comprehensive Plan*, p.74).

MMC IDP: COMPLIANCE WITH THE COMPREHENSIVE PLAN

In this IDP, MMC conveys the need to modernize its facility in order to meet the healthcare needs of the people of northern New England. This includes not only upgrading clinical space and providing for the needs of patients and families, but also continuing its investment in its personnel and their ability to travel to and from the workplace and secure needed parking. The adopted 2035 Comprehensive Plan "promotes the orderly expansion of institutional uses, such as educational and hospital campuses, which are central to workforce development, employment, and the health of the local and regional economies" (*Comprehensive Plan*, p.45).

Economic Growth

Employee engagement indicators reveal that one of the issues of greatest importance to current and future employees, in addition to compensation, is parking availability. In order to attract a high quality, highly educated workforce, MMC factors into its operations these two important considerations. Following the completion of its short-term modernization project, MMC projects a growth in its employment base into the future in part because of its status as an excellent academic medical center. Portland's Comprehensive Plan promotes the growth in employment base and supports sustainable growth in education and medical institutions (*Comprehensive Plan*, pp. 44 and 88)

Transportation

MMC has considered its transportation needs holistically, factoring into its future development alternative means of transportation. Since 2009, MMC has implemented a Transportation Demand Management (TDM) plan called "Get on Board!". MMC is updating that plan and considering enhancements to encourage more walking, cycling, and public transportation by its employees.

MMC's ability to promote alternative modes of transportation and success in TDM relies on the availability of a regional system of safe and reliable alternative modes of transportation. Therefore, MMC supports the City's effort to 'explore the technical and financial feasibility of a Transportation Management Association (TMA) as a means of improving access to, and mobility around, downtown, and the waterfront.' (Comprehensive plan, p.76)".

MMC has been, and continues to be, committed to the process and has often been cited by the City of Portland Planning Department as a TDM role model in the City.

Environment

A clean environment is important for healing and health. MMC is environmentally conscious and engages in recycling to minimize the generation and environmental impacts of solid waste. The Hospital conserves water when possible, and has switched away from pesticides to more organic landscape solutions reflecting Portland's goal of "model[ling] environmentally sound landscape management practices, such as planting native species, and limiting the use of pesticides and fertilizers" (*Comprehensive Plan*, p. 20). Buildings are built with energy efficiency standards in mind. Local farmers visit the campus weekly during harvest months and employees are encouraged to support the local food movement. The Comprehensive Plan also notes the need to "support a healthy, resilient, and sustainable food system by collaborating with local and regional stakeholders" (*Comprehensive Plan*, p.20).

MMC REGULATORY FRAMEWORK: COMPLIANCE WITH THE COMPREHENSIVE PLAN

In keeping with the goals of the Comprehensive Plan, MMC has projected its future expansion needs, taking into account the neighborhood context in which it is situated. MMC has minimized future expansion into residential areas adjacent to its campus, thereby preserving housing stock in the City (*Comprehensive Plan*, pp. 48-50). It has appreciated the neighborhood involvement in

its zoning process and has been responsive to the concerns raised.

MMC is taking the bold step of reorienting its front entrance to Congress St, which serves as a gateway corridor to the City of Portland. The area presently is commercial in nature and in need of investment and activation as is recognized by the City's *Comprehensive Plan* (pp. 84, 86). Welcoming the public at the new entrance accomplishes a number of land use goals: it adds tremendous activity to the streetscape, with people coming and going. It also eliminates traffic in the residential neighborhoods of the West End and Western Promenade by providing clear wayfinding directly off of Interstate 295 and the major arterials entering the City. Further, investment in this area will transform the area with the expectation that other properties in the vicinity will likewise invest. In fact, the owners of Union Plaza, located at the junction of Congress St and St John St, testified before the Portland Planning Board that they have been waiting for such investment before they took the step of redesigning and investing further in that property. MMC expects, and is excited about, a transformation of the area into a more vibrant, active and clean area, good for local merchants, hospitality businesses, restaurants and residents.

The *Comprehensive Plan* identifies the St John St / Congress St area as a "priority node, an area that has seen disinvestment, grown in sprawling patterns, simply have the potential to serve as focal points for change in the forms of increased density or, height, streetscape improvements, or diversification of uses to better serve neighborhood needs" (*Comprehensive Plan* p. 84, see **Fig.1.8 on page 27**). MMC's IDP will serve as the catalyst to stimulate new development, investment and reinvestment in this area of the City.

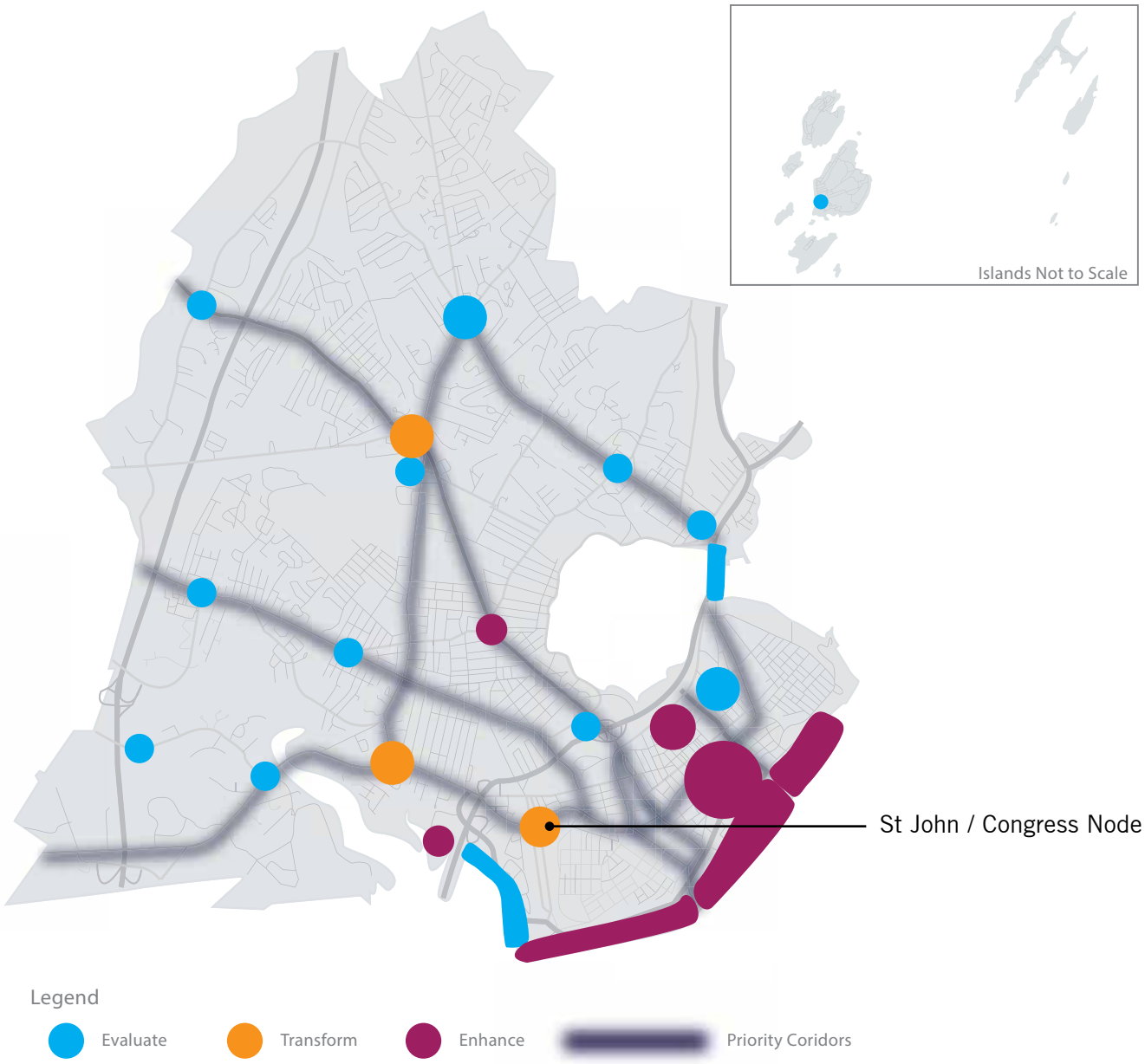
MMC's IOZ Regulatory Framework provides the mechanism for thoughtful, future development to transform the priority corridor identified by the City into an area of "additional mixed uses, higher density growth to take advantage of the transit benefits and services that well-designed, diverse corridors can offer" (*Comprehensive Plan*, p.84).

CONCLUSION

From an analysis of MMC's IDP, it becomes clear that the IDP is consistent with the City's Comprehensive Plan and the purposes contained within the City's IOZ ordinance.

From an analysis of the Regulatory Framework that accompanies MMC's IDP, it becomes clear that the Regulatory Framework is consistent with the City's Comprehensive Plan and with MMC's IDP.

Fig.1.8 Diagram Showing Priority Nodes and Corridors, City of Portland Comprehensive Plan (2017)



PUBLIC INPUT ON IDP

MMC appreciates the importance of maintaining an open dialogue with its neighbors and keeping its neighbors up to date on its evolving plans for replacement and modernization at its Bramhall Campus. In August 2016, MMC leadership met with the neighborhood representatives of its four adjacent neighborhood groups: St John Valley, West End, Western Promenade, and Parkside to explain its need to modernize its campus. Shortly thereafter the Libbytown Neighborhood Association was added to the group.

Since November 2016, MMC has met on a monthly basis with two representatives of each neighborhood ("Expansion Group") to engage in a productive dialogue regarding the City's new IOZ process and MMC's IDP. The City's Planning Director and the City's District 2 Councilor has been invited to each of these monthly meetings. The minutes of the monthly meetings are distributed to the Group members who are asked to disseminate them to respective neighborhood constituents.

MMC also has created a website (http://www.mmc.org/modernization) to ensure open communication with the community at large and specifically its adjacent neighbors. The minutes of each Expansion Group meeting are posted on the website, as are any updates or current events occurring which involve MMC's plan. These include dates for the Planning Board workshops and hearings and a link to the City's Planning website. A designated contact

Fig.1.9 Public Meeting #1 (January 12, 2017): Open House Portion for Collecting Public Comments



email has been established where residents can ask questions, provide suggestions, etc., and a text about sign-up is provided for those who want to receive them.

Finally, to date, MMC has held two larger neighborhood meetings where information has been shared about MMC's needs and its plans to address its issues of bed capacity, operating needs and transportation and parking. These meetings have been well attended and have allowed time for participants to ask questions, voice opinions and to get answers. The minutes of these meetings are posted on the MMC website as well as submitted to the City of Portland.

MAJOR AREAS OF PUBLIC CONCERN

At the initiation of MMC's Master Facility Planning engagement with its neighbors, it was recognized there would be concerns identified by neighborhood residents that would require ongoing dialogue and an openness to new ideas or suggestions. It was understood that there may be many areas where consensus of approach will be reached, and other areas where reasonable minds could differ. MMC and the participants in this process have identified the following "areas of major public concern":

- By far the biggest concern with the MMC proposed IDP revolves around transportation and parking, and specifically with the location of future parking structures;
- The extent of IOZ boundaries and a fear of property acquisition by MMC in residential zones;
- Fear of loss of local amenities, and the desire for mixed-use development that includes street-level retail and restaurants;
- Patients, visitors, or employees smoking in the neighborhood; and,
- Hope for continued public engagement between MMC and its neighbors.

MMC's IDP has addressed each of these concerns in the following chapters. In addition, the public indicated concern with the height of the proposed Gilman St parking structure as well as the need for a well-thought-out Construction Management Plan to apply during the course of construction. MMC has listened to each of these concerns and has addressed them as follows:

- MMC has relocated the parking structure from Gilman St to a nearby location that is tucked behind existing buildings on St John St. By doing so it was able to lower the height of the structure while also removing it from the priority node designated by the City for gateway treatment.
- MMC has hired Turner Construction Company to manage the daily operations of construction. Turner is well-versed in managing construction projects adjacent to residential uses and has agreed to comply with all requirements of the City Construction Management Template, which is attached as an appendix to this IDP.

CHAPTER TWO

MASTER FACILITY PLAN

As it nears its 150th anniversary, Maine Medical Center continues to improve its facilities and services to fill its role as Maine's leader in patient care, education, and research. MMC is engaged in master facility planning to address clinical, building, and parking needs.



MASTER FACILITY PLANNING PROCESS

The goal of any healthcare facility planning process is to evaluate the suitability of the campus or facility to meet anticipated needs for the delivery of healthcare with enough flexibility to allow for adjustments within an ever-changing healthcare market. Future development opportunities are identified in this process.

Maine Medical Center's campus has grown in size and complexity throughout the years. This growth brought changes in programmatic and infrastructure needs and to allow it to serve patients in the State.

PLANNING FACTORS SPECIFIC TO HEALTHCARE

There are a multitude of factors to consider in healthcare planning that are unique to the industry and some that limit the ability to plan too far into the future. Due to the unpredictability of many of these factors, healthcare planning beyond three years with relative accuracy is challenging. Therefore, healthcare planning is typically completed in three-year increments. For example, the rate of change in healthcare payment and policy often follows federal and state election cycles but can change as often as annually. A summary of factors that affect healthcare planning is included in the **Table 2.1** at right.

MMC'S MASTER FACILITY PLAN: PROCESS

Each of the following are aspects of a master facility plan and have been evaluated to determine the needs and projected growth for MMC.

Facility Assessment

The baseline for any master plan is to evaluate the current state of the campus including age of buildings, capacity of infrastructure, and appropriateness of building layout to accommodate the modern delivery of healthcare. This helps the organization identify areas which must be addressed by any future facility work.

Programmatic Requirements

Anticipating the healthcare needs of a community is challenging beyond a three-year period. Healthcare facilities are designed to last several years and attempt to anticipate change by allowing for flexibility and multi-use spaces. Best-practices and industry standards in healthcare delivery are used as benchmarks to anticipate programmatic needs.

Adjacencies

Maximizing key programmatic adjacencies is next in developing a functional master plan once a campus baseline and programmatic requirements are understood. Currently dispersed programs and long travel distances existing on the campus are to be evaluated and studied as an opportunity for improvement. Assessing the flow patterns and travel distances enables proper reorganization of program adjacencies for current and future design interventions.

Table 2.1 Planning Factors Specific to Healthcare

Factor	Definition
POPULATION	Changes in utilization due to population growth: — Population increase or decrease — Population aging — Population distribution — Consumer preference
EPIDEMIOLOGY	The underlying causes of disease (divided into two categories): — Disease-based: Estimates the incidence and prevalence that are impacted in the long-run by preventative measure (i.e. vaccinations effectiveness) — Behavioral-based: Changes in disease incidence and prevalence due to behavioral and sociocultural factors (i.e. obesity, smoking, diet)
ECONOMICS	Macro-economic factors that affect healthcare utilization: — Employment — Healthcare Consumer Price Index — Gross domestic product growth or decline — Employer-based coverage levels — Benefit level and out-of-pocket expense — Regional/Local healthcare environment
PAYMENT & POLICY	Legislative and market-driven reform, including specific payment and policy innovations that will impact utilization: — Health insurance coverage expansion — Bundled payment initiatives/pilots — Accountable Care Organizations (ACOs) — Publicly-funded prevention and wellness initiatives
INNOVATION & TECHNOLOGY	Structural technology that shifts the site at which care is delivered or innovations that affect utilization across different care settings: — Imaging and diagnostics — New therapeutics — Pharmaceutical advancements — Quality innovations
SYSTEMS OF CARE	Increased efficiency resulting from better care coordination and serve integration across various care sites: — Clinical Integration: Use of evidence-based practices and elimination of redundant care — Alignment: Coordination between providers, including inpatient and outpatient providers — Information Technology: Includes computerized physician order entry (CPOE) and e-care
WORKFORCE AVAILABILITY	The healthcare workforce is highly specialized which requires years of training. The availability of qualified individuals can severely limit a healthcare organization's ability to provide care.

KEY INSTITUTIONAL NEEDS

MMC's facility needs are multi-factorial but can be summarized into four categories:

1. Clinical Need
2. Building Need
3. Campus Reorganization
4. Parking Need

1. CLINICAL NEED

Increasing Severity of Case Mix

MMC treats Maine's sickest patients and estimates that the average patient seeking care at MMC will continue to get sicker. MMC's case mix index (CMI) was 1.86 in fiscal year 2015 (October – September); the highest in the state of Maine. A hospital's case mix index is calculated by finding the average severity of diagnosis-related groups at that hospital. The average case mix index for a hospital in the United States is 1.31 (CMS.gov). MMC's CMI grew to over 2.00 in fiscal year 2016 and is expected to continue to increase in the future.

Bed Shortage

Over half of MMC's inpatient beds are located in semi-private rooms (see **Fig.2.2)**. MMC closes an average of 60 inpatient beds in semi-private rooms every day to prevent infection due to disease-resistant organisms (DROs), or to address behavior related issues or other room sharing restrictions. This, along with construction closures for renovations and repairs, reduces MMC's licensed bed capacity of 637 beds to an effective bed capacity closer to 560 on an average day (see **Fig.2.3).**

On a routine day, MMC can expect approximately 100 admissions from Surgery and the Emergency Department and 35 to 50 transfer requests per day from other healthcare and provider organizations. When 500 patients are in the hospital and over 60 beds are closed, a limited number of inpatient beds are available for new patients. Inpatient beds are specialized for medical/surgical, intermediate care,

Fig.2.1 MMC's Case Mix Index: Historic Data and Projections

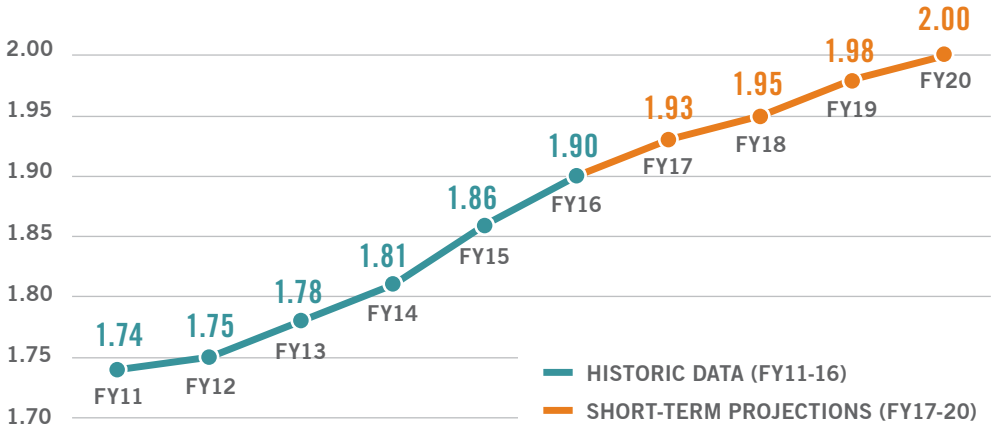


Fig.2.2 Existing Inventory of Private vs Semi-Private Beds

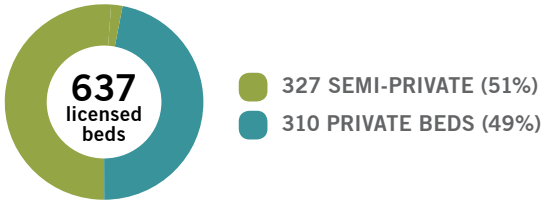
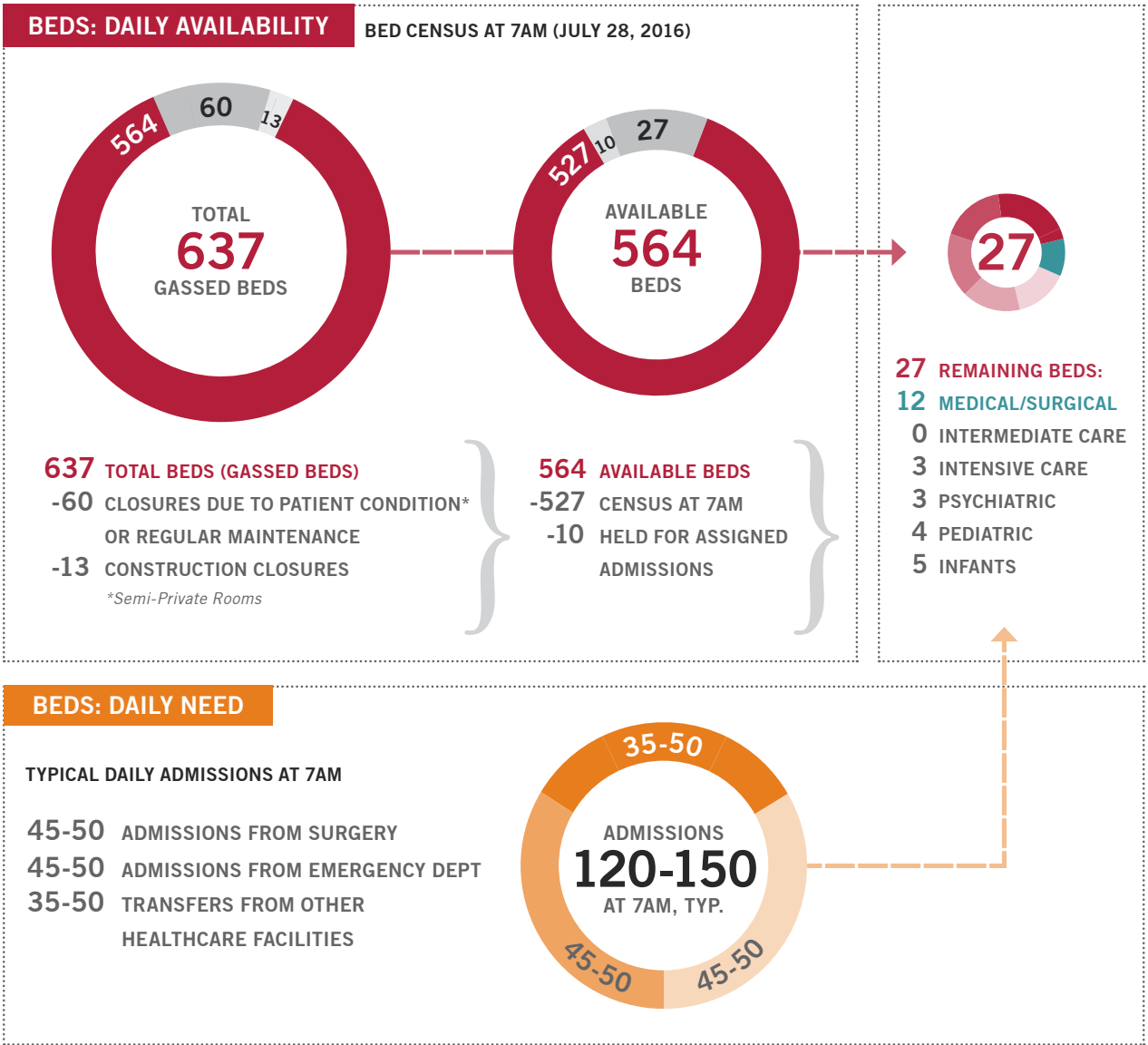


Fig.2.3 A Day in the Life of MMC: Bed Shortage



intensive care, psychiatric, pediatric, or infant care services. The actual number of beds available for specific populations of patients is much smaller. For example, if a patient needs a critical care bed but, the only beds that are available are general medical/surgical, then MMC struggles to meet that patient's needs.

Fig.2.3 demonstrates a snapshot of the challenge MMC is faced with daily to meet the needs of the community due to bed shortages. The challenge is expected to grow in complexity as patients get sicker and require highly specialized care. Many of the rooms are also too small and not flexible enough to meet the demands of the growing universality of medical equipment. The Master Facility Plan recommends adding private patient rooms and procedural capacity to meet current needs and to plan for the future. Adding new private rooms was also identified as a key strategy to decompress existing buildings, maximizing infrastructure capacity.

2. BUILDING NEED: AGING FACILITIES

The age of campus buildings is the first key element of assessing the overall suitability as structures for continued use in healthcare delivery. Facilities at MMC date back to the 1870's with the construction of the Maine General Building. Since the early 1900s, MMC has grown to meet the needs of patients. Close to 77% of MMC's clinical activities occur in buildings more than 30 years old.

MMC regularly conducts building assessments to inform future investment and development decisions on campus. The assessments evaluate the condition of building structure and systems, and compliance with current building codes and regulations including fire safety. The 2015 assessment illustrates the age and condition of the buildings on campus (see **Fig.2.4 and Fig.2.5**). Among those that are listed, continued investment is cautioned in the Pavilions, the Richards Building and the LL Bean Building, which together host a large percentage of the hospital's bed inventory. These include a large number of semi-private beds that must be replaced by beds in private rooms to conform to current patient care standards. The Employee Garage is identified for replacement in the short-term due to its structural challenges.

MMC's Care teams work collaboratively with MMC's Facilities and Engineering teams to ensure patients are cared for in the best possible environment. This requires continuous maintenance and improvements to the facilities. The remaining opportunities for

improvement and retrofits in the existing buildings are marginal. It is impossible to enlarge operating rooms or make semi-private rooms private without major disruptions to the delivery of patient care, reduction in capacity, major facility expansion, or some combination.

The proposed short-term projects (see page 40) will partially replace and modernize MMC's campus to meet anticipated future need. Proposed patient rooms will be private and adaptable to the level of care needed by patients. They will be "universal rooms" capable of being occupied by a wide spectrum of patient populations from intensive care to general medical or surgical care. Procedure rooms will be large enough to fit the equipment and technology needed for the complex procedures that patients increasingly require at MMC.

3. CAMPUS REORGANIZATION

Healthcare facility plans seek to optimize adjacencies between critical departments to reduce travel distances across campus for staff and patients.

Currently dispersed programs and long travel distances present an opportunity for future improvement on the MMC campus. The planning team assessed multiple flow patterns and travel distances to enable proper reorganization of program adjacencies to improve safety and efficiency of healthcare delivery, and ease of wayfinding for patients and families.

4. PARKING NEED

MMC hosts a wide variety of people on the Bramhall campus every day. Patients, families, staff, and students all require access to the facility. Patients and families from all over northern New England come to MMC for care. These people do not live close enough to take advantage of alternative methods of transportation like buses, cycling, or walking that are provided locally. Clinical and support staff require safe, reliable, and often emergent, access to the facility in order to provide services to patients. Providing parking is a priority at MMC, and a key driver of the Master Facility Plan (see **Chapter 3. Transportation Plan** for details).

Fig.2.4 Existing Facilities by Age

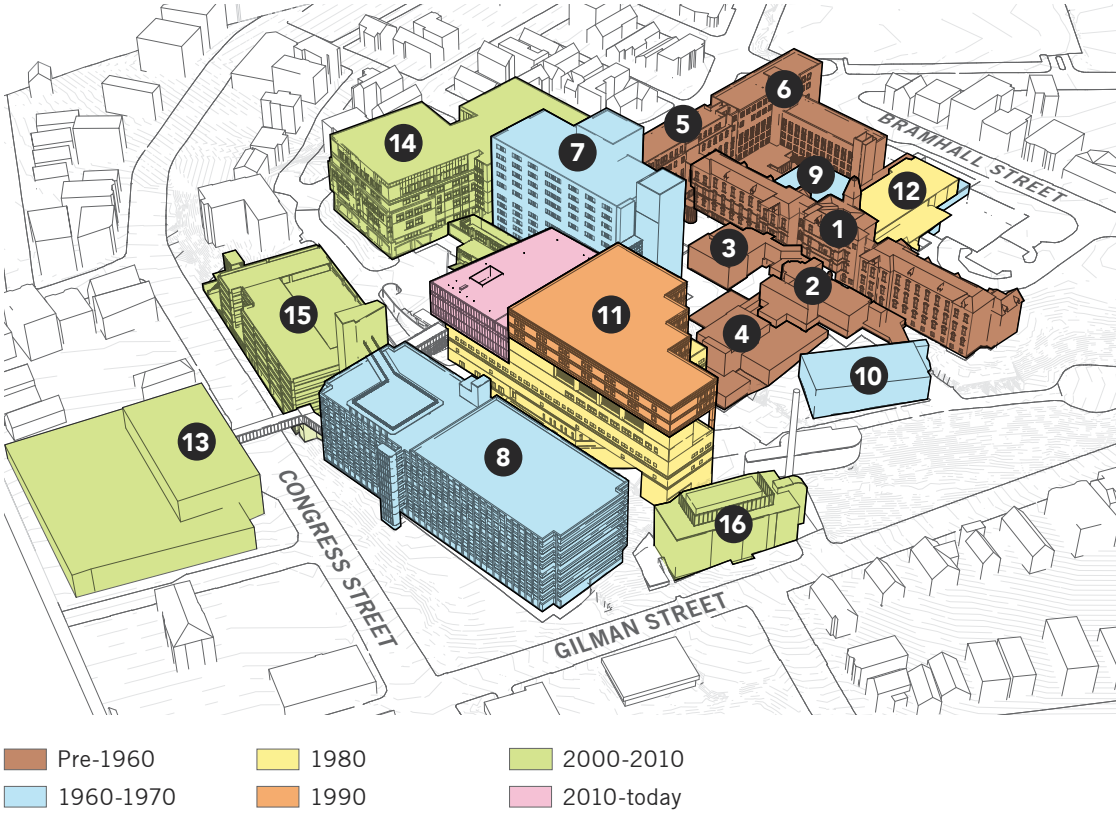


Table 2.2 Inventory of Existing Facilities

#	Building Name	Date	Gross SF
1	Maine General	1870s	72,920
2	Annex B	1870s	36,250
3	Annex C	1870s	13,190
4	Annex A	1929	10,110
5	Pavilion A	1929	66,380
6	Pavilions C & D	1956	83,460
7	Richards Building	1968	228,920
8	Employee Garage	1970s	--
9	Diagnostics Building	1976	89,150
10	Engineering Services Bldg	1978	23,840
11	LL Bean Building	1985	231,830
12	Dana Building	1987	19,310
13	Congress St Medical Office Building	1999	47,000
14	East Tower	2008	200,000
15	Patient and Visitor Garage	2008	--
16	Central Utility Plant	2008	--
		TOTAL	**1,122,360 GSF**

Fig.2.5 2015 Facility Assessment Results



Continued investment in this building is:

Recommended Cautioned Not recommended for future use.

See Table 2.2 on opposite page for building numbers.

PROJECTED DAILY CENSUS

While the number of patients, visitors, and employees on MMC's Bramhall campus varies day-to-day, a daily census estimate can be produced for a typical week day using a variety of data sources, including the annual patient counts (see **Table 2.3 at right**). The estimated daily census of individuals on campus is included in **Table 2.4** and exceeds six-thousand individuals.

The anticipated change in campus users over time is summarized in **Table 2.4**. MMC developed this estimate considering the following summarized factors:

- MMC is Maine's largest medical center, the only American College of Surgeons Level 1 trauma center, only American Academy of Pediatricians Level III nurseries and the largest academic medical center, in partnership with Tufts University School of Medicine and is therefore best equipped to meet the rising patient need.
- The number of Maine residents seeking care outside of Maine has been decreasing over the past several years.
- MMC's share of inpatient discharges has increased over the past several years.
- MMC's Case Mix Index is increasing.
- Complex healthcare services are consolidating across the country.

MMC uses national healthcare consulting firm Sg2 and The Advisory Board to consider additional factors impacting the evolving healthcare industry and local demand for services. Additional factors considered in the volume estimate include the following and those listed in **Table 2.1 on page 33**:

- Changes in healthcare utilization as a result of changes in the population within the hospital's service area;
- Changes in the underlying causes of disease (i.e. incidence and prevalence of disease and the impacts of a focus on prevention) and behavioral-based impacts to health (i.e. smoking and obesity);
- Macro-economic factors affecting healthcare utilization (i.e. employment, employer-based insurance coverage, health care consumer price index);
- Legislative and market-driven healthcare reform;
- Innovations in technologies and models of care;
- Improvements in the systems of care that improve coordination among providers; and,
- Continuous process improvements within care models that reduce potentially avoidable admissions and 30-day readmissions.

The Projected Daily Census is the basis of calculations for future campus transportation needs discussed in the following chapter.

Table 2.3 Historic Data: Annual Census of Patients on Bramhall Campus (FY 2013-2016)

	2013	2014	2015	2016
Inpatient Discharges	29,253	29,401	30,196	30,889
Outpatient Activity	138,626	132,257	140,862	154,434
Bramhall Outpatient Clinics	39,829	40,694	38,209	39,709
TOTAL	**207,708**	**202,352**	**209,267**	**225,032**

Table 2.4 Individuals on Campus on an Average Week Day: 2016 Estimates and 2026 Projection

	2016 (FYE Sept-Oct)	Forecast, 2026	Projected 10-Year Growth	CAGR (2016-2026)
Inpatient Discharges	100	110	7.84 %	0.76 %
Inpatient Visitors	250	270	7.84 %	0.76 %
Outpatient Activity	600	620	4.45 %	0.44 %
Outpatient Visitors	600	620	4.45 %	0.44 %
Bramhall Outpatient Clinics	150	150	-1.79 %	-0.18 %
Employees: Shift 1 (inc. volunteers)	3,640	3,900	6.96 %	0.67 %
Employees: Shift 2	210	220	6.96 %	0.67 %
Employees: Shift 3	520	550	6.96 %	0.67 %
Students on Campus: Medical	100	110	10 %	0.96 %
Students on Campus: Nursing	100	100	10 %	0.96 %
Other Students (PA, Pharma, etc.)	20	25	10 %	0.96 %
Non-MFP Related Contractors	25	25	--	--
TOTAL / AVERAGE	**6,315**	**6,700**	6.43 %	0.63 %

CAGR = Combined Annual Growth Rate

Assumptions:

- Daily inpatient discharges for 2016 estimated from annual count, using six-day weeks to accommodate for reduced activities Sun-Tue.
- Daily outpatient activity for 2016 estimated from annual count, using five-day weeks.
- Inpatient visitors estimated at 2.5 per patient for the base year of 2016.
- Outpatient visitors estimated at one per patient for the base year of 2016.
- 60% of employees are estimated to be on campus at one time for the base year of 2016.

IDENTIFICATION OF PROJECTS

In considering all possible scenarios for development to meet the goals outlined above, the Master Facility Plan has identified the following necessary projects needed to modernize of the MMC Bramhall campus:

- Vertical expansion of East Tower to add private, universal patient rooms;
- Removal of the Employee Garage, which is nearing the end of its structural lifespan;
- Construction of a new building in place of the Employee Garage that can provide new private, universal patient rooms and surgery suites in close proximity to the Emergency Department and the hospital's core diagnostic and treatment services located in the LL Bean Building;
- Providing a new patient entrance on Congress St that clarifies the arrival sequence for the majority of patients and visitors arriving on campus via Congress St, and parking in the Visitor Garage; and,
- Construction of a new Employee Garage within walking distance to campus will provide reliable access to parking spaces for all campus employees who choose to drive to work.

See **Fig.2.6** on the opposite page for an illustration of projects included in the Master Facility Plan.

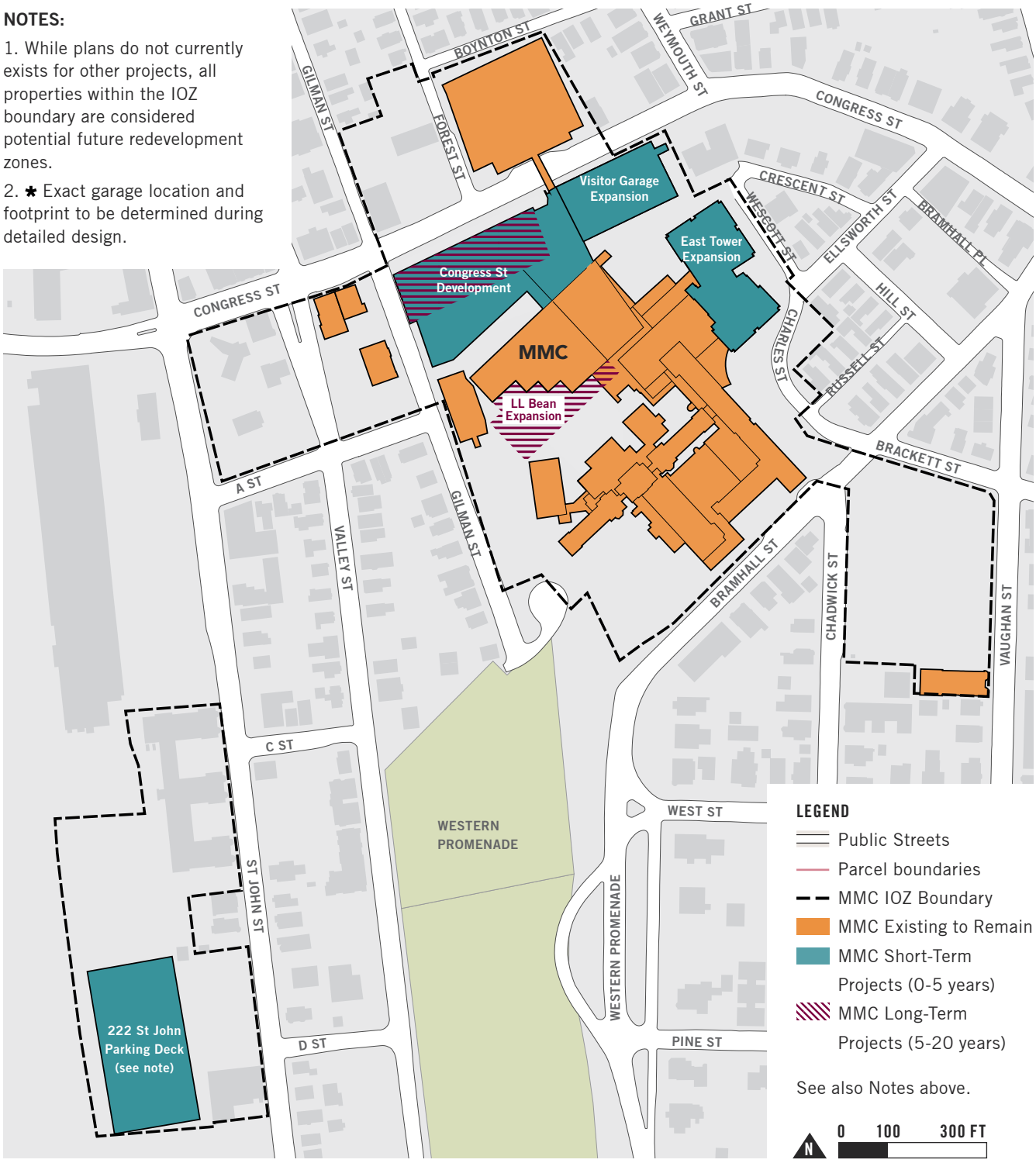
The short- and long-term project plans do not represent the only projects within this timeframe. Due to the various factors impacting healthcare planning and their short horizons, there may be other projects proposed within this timeframe.

Fig.2.6 MMC Facilities Master Plan: Projects

NOTES:

1. While plans do not currently exists for other projects, all properties within the IOZ boundary are considered potential future redevelopment zones.

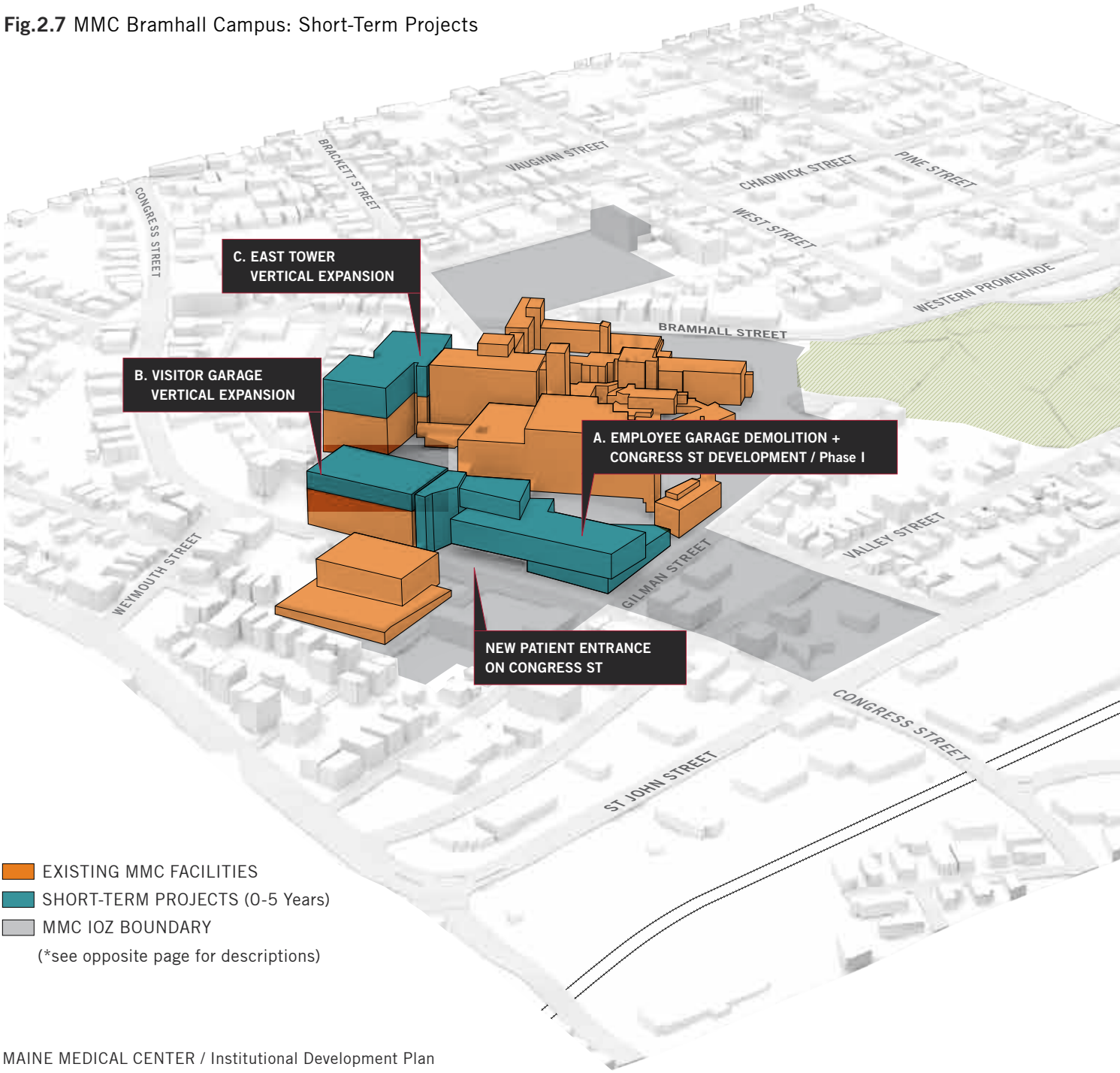
2. ✱ Exact garage location and footprint to be determined during detailed design.



SHORT-TERM PROJECTS (0-5 YEARS)

A series of short-term projects are in the planning stages to meet MMC's current needs and to improve the efficiency of care delivery. These do not represent the only projects that could be proposed within this timeframe: due to the various factors impacting healthcare planning and their short time horizons (0-3 years), there may be other projects proposed within this timeframe.

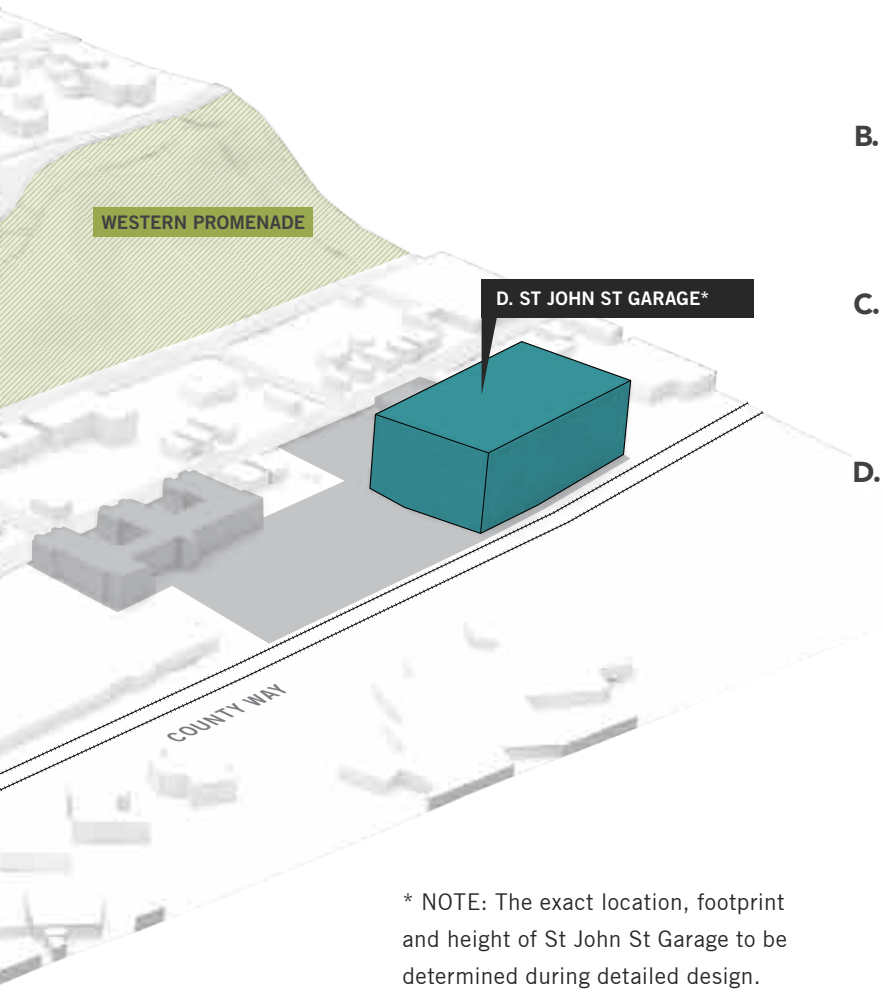
Fig.2.7 MMC Bramhall Campus: Short-Term Projects



Demolitions

A. Employee Garage Demolition

The 2015 building assessment does not recommend continued investment in this structure (see **Fig.2.5 on page 39**).



* NOTE: The exact location, footprint and height of St John St Garage to be determined during detailed design.

Additions / New Construction

A. Congress St Development, Phase I (285,000 GSF)

New six-story building along Congress St on former site of the Employee Garage, plus two-story connector to the LL Bean Building. Building program includes: a new patient entrance, universal, private inpatient beds and new procedure rooms. The new entrance changes the campus's orientation to Congress St.

B. Visitor Garage Vertical Expansion

Addition of three floors at top to accommodate 225 new parking spaces.

C. East Tower Vertical Expansion (60,000 GSF)

Addition of two floors at top to accommodate 64 inpatient beds and relocated heliport.

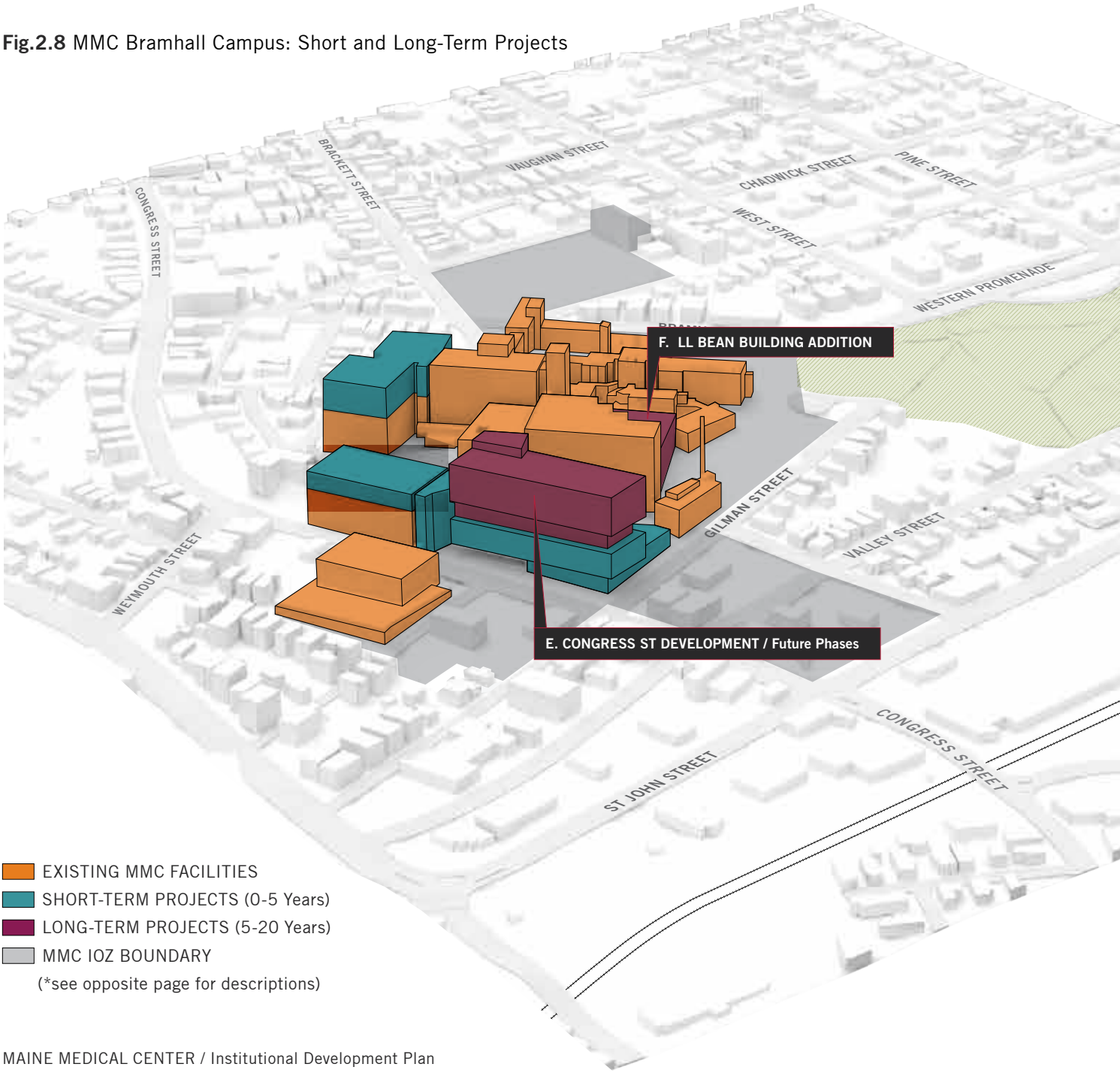
D. St John St Garage

New 10-story, free-standing garage at 222 St John St to accommodate roughly 2,200 new parking spaces. The garage replaces spaces lost in the Employee Garage, in addition to consolidating parking from multiple surface lots owned or leased by MMC. (See **Chapter 3. Transportation Plan** for details).

LONG-TERM PROJECTS (5-20 YEARS)

The facility planning process has also identified potential long-term projects that are identified below. Given the changing nature of the healthcare industry, it is currently uncertain if these projects will be implemented. MMC will continue to evaluate its facility needs following the implementation of short-term projects by 2022. These do not represent the only projects that could be proposed within this timeframe: due to the various factors impacting healthcare planning and their short time horizons (0-3 years), there may be other projects proposed within this timeframe.

Fig.2.8 MMC Bramhall Campus: Short and Long-Term Projects



Additions / New Construction

E. Congress St Development, Future Phases (Approx. 300,000 GSF)

Future vertical expansion to include additional private inpatient beds.

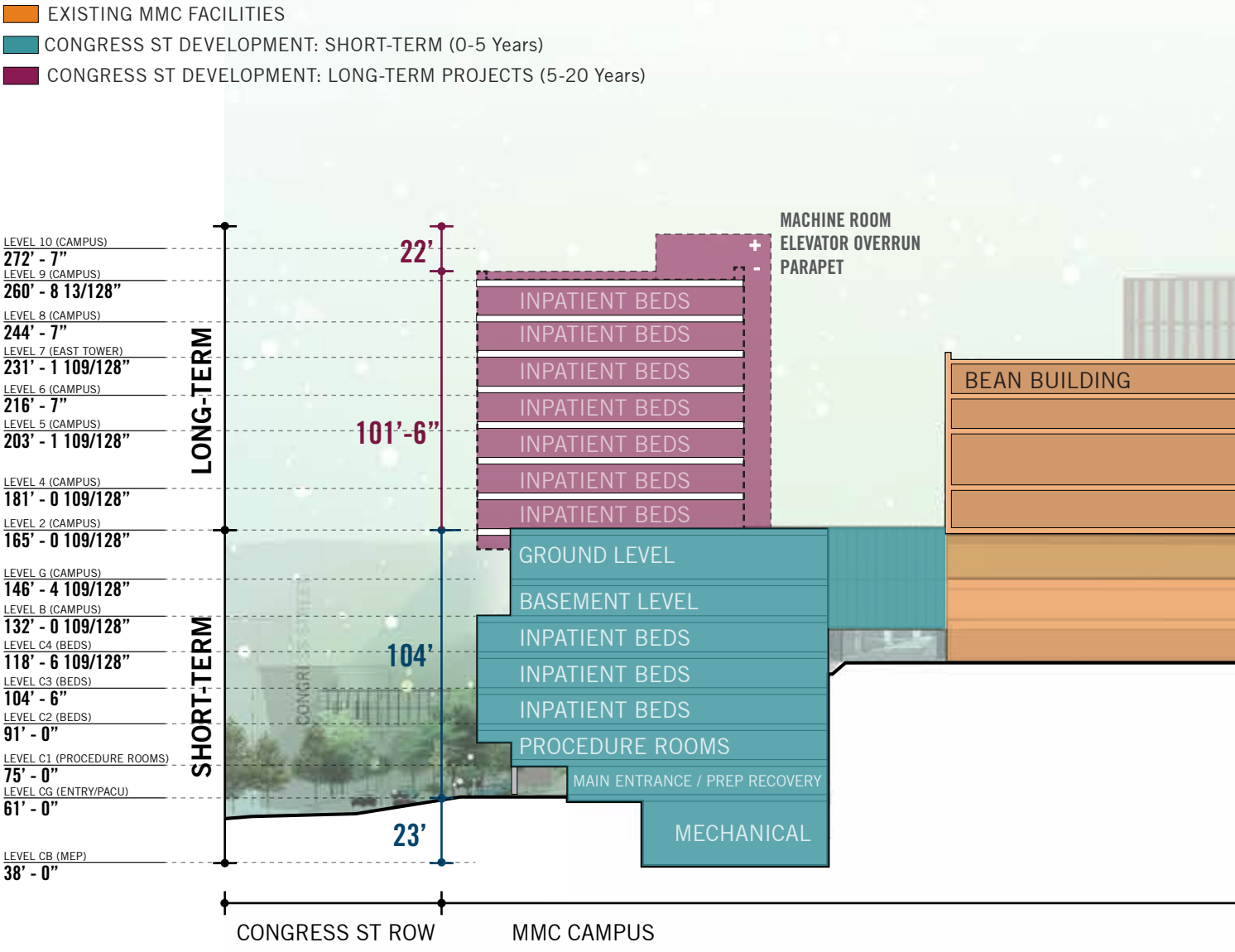
F. LL Bean Building Expansion (Approx. 120,000 GSF)

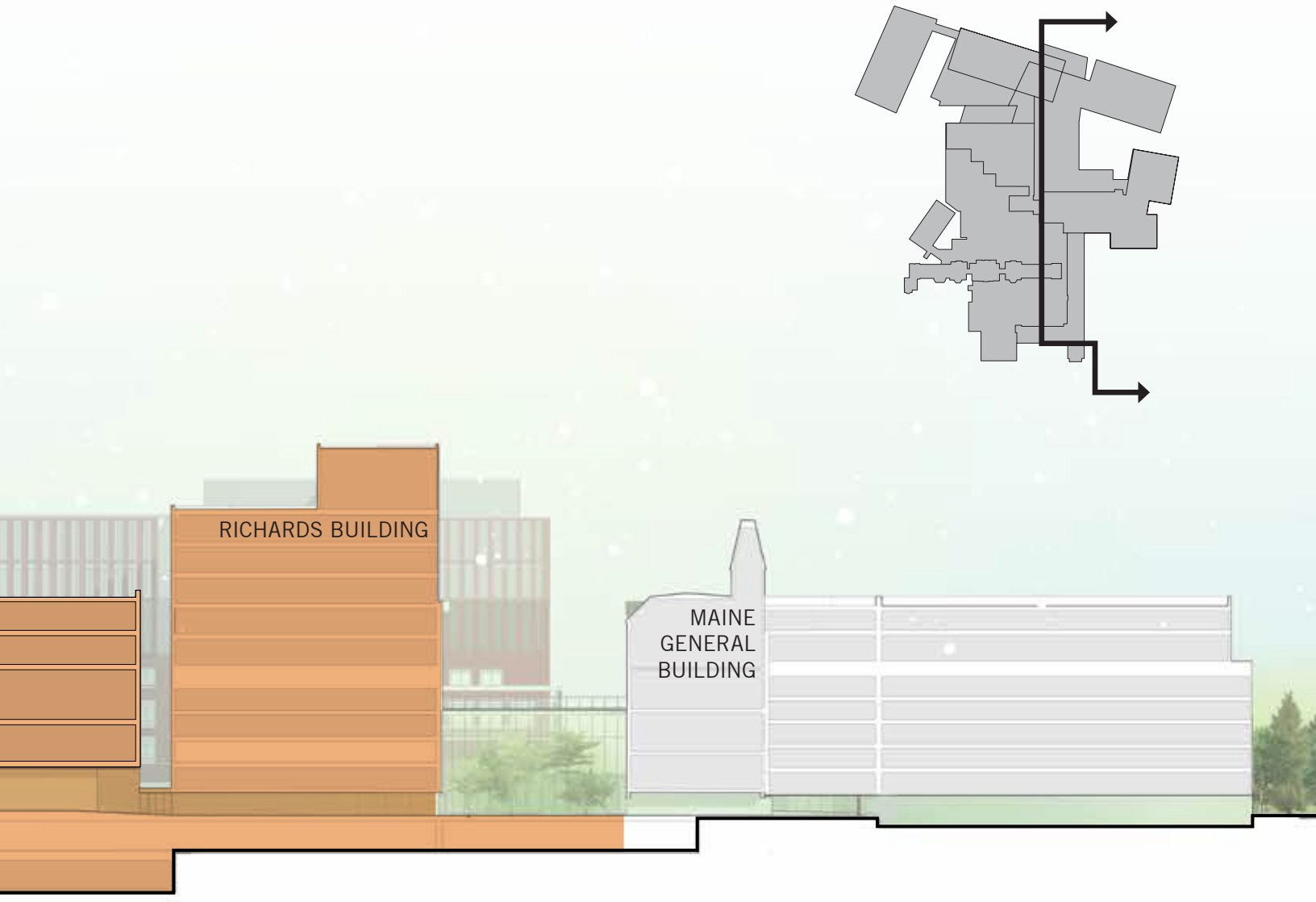
Expansion of diagnostics and treatment, and interventional platforms. If necessary, existing Laundry Building and Engineering Services Building may be modified or removed to facilitate expansion.



* NOTE: The exact location, footprint and height of St John St Garage to be determined during detailed design.

Fig.2.9 MMC Bramhall Campus: Longitudinal Cross-Section through the Proposed Congress St Development

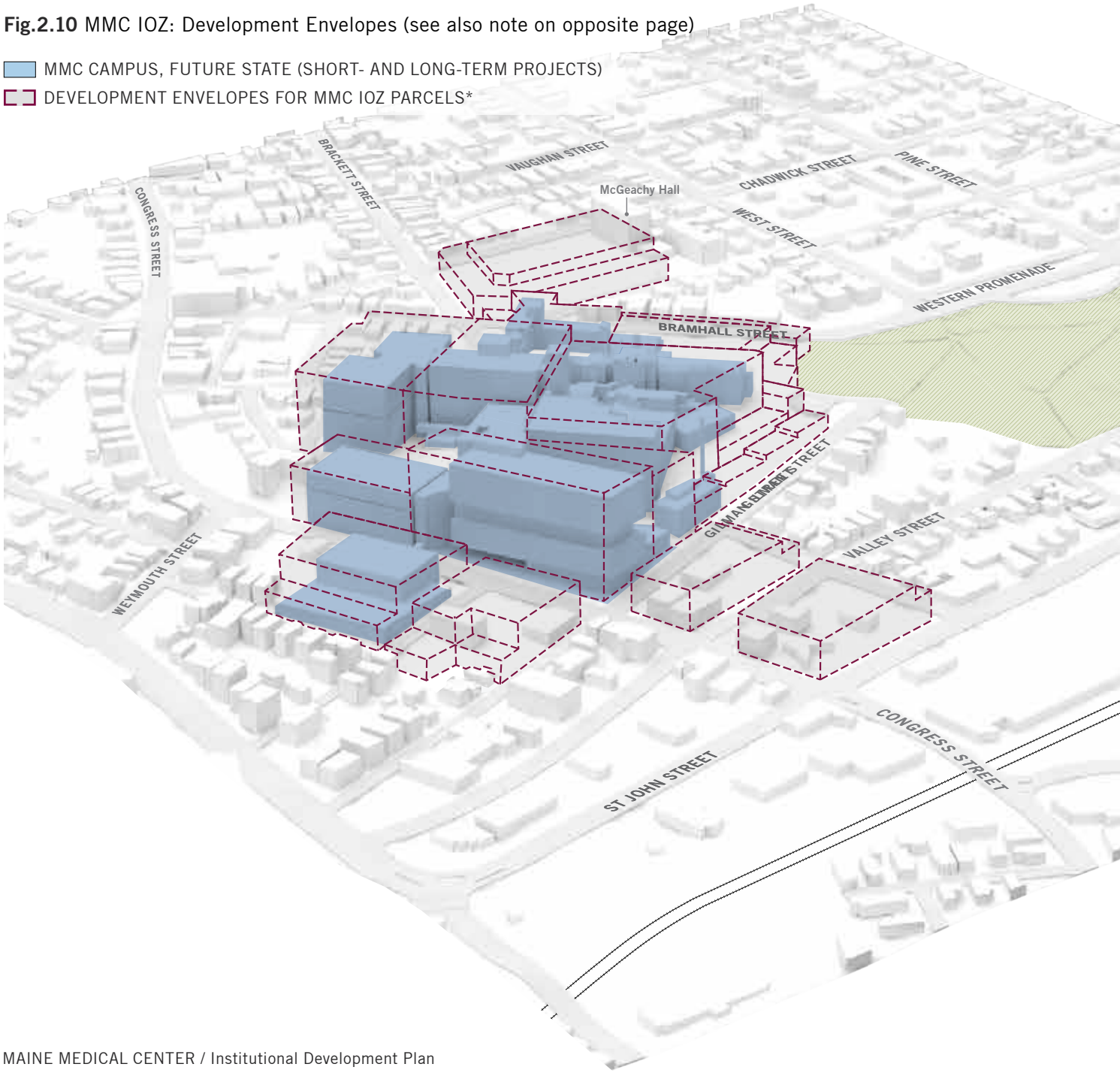



RICHARDS BUILDING
MAINE
GENERAL
BUILDING

LONG-TERM DEVELOPMENT ENVELOPES

While MMC's Master Facility Plan does not identify specific projects other than those listed on the previous pages (see Fig.2.7 on page 42), all parcels included within MMC's IOZ boundary are considered to be potential zones for redevelopment that supports the effective delivery of healthcare services by MMC to our community in the long-term. Towards this end, MMC has identified context-appropriate uses (see **Table 2.5** at right), development envelopes and design criteria for all IOZ parcels.

Fig.2.10 MMC IOZ: Development Envelopes (see also note on opposite page)



NOTE: **Fig.2.10** illustrates the maximum height envelopes listed in the MMC IOZ Regulatory Framework. Per the IOZ, the development envelopes only apply to properties that MMC holds right, title, or interest at the time of development. All future development within the IOZ boundary is subject to review for compliance with guidelines and requirements included in MMC's IDP, Regulatory Framework and City of Portland site plan review requirements.

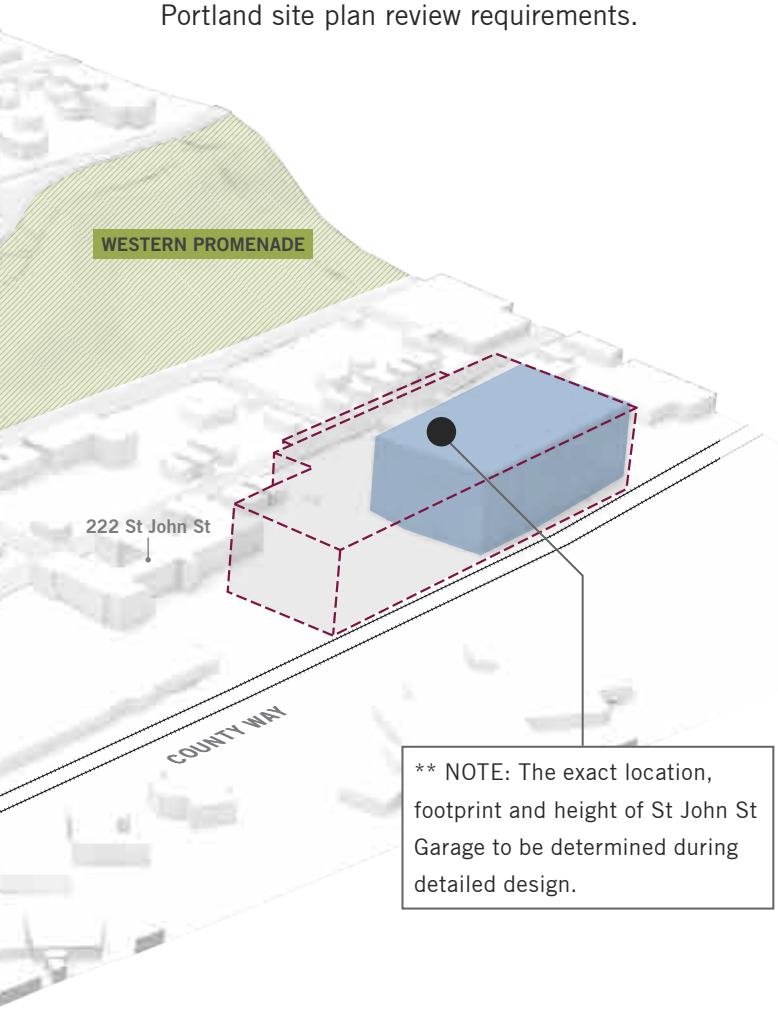


Table 2.5 MMC Potential Future Uses

MMC may locate the following uses within its IOZ boundary:

In addition to the uses permitted in the underlying zone, the following uses are permitted as a matter of right:

Healthcare facilities including but not limited to the following ancillary and/or supporting uses:

- **Hospital**
- **Medical Office / Clinic**
- **Laboratory Center / Services**
- **Research and Development (R&D) Laboratory or Facility**
- **Educational Facility / Conference Center**
- **Administrative / Business Office**
- **Accessory Service or Trade Uses**
- **Guest House**
- **Multi-family housing for healthcare staff and students**
- **Rehab / Skilled Nursing Facility**
- **Retail Facility**
- **Restaurant / Café**
- **Employee Service Amenities**
- **Day Care Center**
- **Fitness Center or Gymnasium**
- **Parking Lot**
- **Parking Garage**
- **Bicycle Storage**
- **Heliport**
- **Antenna Station**
- **Outdoor use areas, such as green areas, parks, gardens, art installations, and other active and passive non-commercial recreation spaces**

CHAPTER THREE

TRANSPORTATION PLAN

Maine Medical Center is developing a long-term transportation plan that will improve campus access, circulation, and wayfinding for patients and visitors. Ongoing initiatives are aimed at providing alternative transportation options to reduce traffic and parking impacts as well as to be responsive to neighborhood concerns about a large parking structure near residential properties.



TRANSPORTATION PLAN: OVERVIEW

Maine Medical Center is developing a long-term Transportation Plan that will improve campus access, circulation, and wayfinding for patients and visitors. It is also developing a Transportation Demand Management (TDM) plan focused on reducing the number of single occupancy vehicles on campus. Ongoing initiatives are aimed at providing alternative transportation options to reduce traffic and parking impacts.

MMC's Transportation and TDM plans are designed to address neighborhood concerns, and to improve campus access, circulation, and wayfinding for patients, visitors, physicians, and staff. The Transportation Plan will be developed and refined during the Maine Department of Transportation (MDOT) required Traffic Movement Permit (TMP) process, with input from the Medical Center's neighbors and City of Portland's traffic engineer. The TDM includes an explanation of the assessment of the Hospital's parking needs to adequately support the Bramhall Campus, and includes strategic initiatives aimed at providing alternative transportation options to reduce long-term traffic and parking impacts. The goal is to provide effective and intuitive transportation solutions that emulate best management practices in transportation infrastructure and operations that support tertiary academic medical centers, enhance and optimize the patient experience, and improve overall traffic flow in the surrounding area.

The purpose of this chapter is to provide an overview of the key transportation elements of the Transportation Plan and the TDM.

The Traffic Management Permit process may require modifications that MMC does not anticipate. The following provides MMC's best analysis of traffic generation and traffic patterns in the short term.

VEHICULAR ACCESS AND CIRCULATION

MMC's service area includes all of Maine and parts of New Hampshire. The majority of MMC patients and visitors do not live within walking distance or near public transportation and arrive by car (see **Fig.3.1 on page 57** for a map of patient origin). The nature and acuity of patient needs create a challenge to the use of alternative modes of transportation. This situation is not atypical for a hospital, but rather is the norm, even in locations with a robust public transit system.

MMC is open to patients every hour, every day of the year. Most MMC staff and physicians, who also fill shifts 24 hours a day, do not live within walking distance or near public transportation (see Fig.3.6 for a map of MMC employee residences). Work responsibilities that require the use of an automobile, a lack of transit options to accommodate staff schedules, seasonal weather extremes, and an insufficient bicycle infrastructure in the surrounding municipalities are all factors that contribute to a high drive share by staff.

EXISTING VEHICULAR FLOWS

Vehicle access and circulation on the MMC Bramhall Campus was planned and designed to maintain a safe and efficient transportation system. Most notably, the concept of separating patients, employees, emergency department operations and loading/service are all considerations that exist at MMC currently and have been approved by the City of Portland. Existing vehicular circulation patterns in and around the Bramhall campus are illustrated on **Fig.3.2 on page 58** and summarized below.

One advantage of its proximity to I-295 is the ease of vehicular access to campus by patients/visitors, employees, and emergency and service vehicles, and the avoidance of high traffic volumes in neighborhood streets.

Patients and Visitors

Patients and visitors have several choices when accessing the hospital. Through a strong wayfinding and signage plan, they are directed to park directly in the Patient / Visitor Garage or the South Lot. They also have access to a convenient patient drop-off area that is located off of Bramhall St, with direct access to parking in the South Lot.

Well-designed curbside drop-off / pick-up areas for patients and visitors are critical to the functionality of any medical center campus. These amenities provide the opportunity for patients and visitors to quickly reach their destination, without the need to park their vehicle, and in some cases, having to

walk long distances, often times unprotected from weather conditions.

MMC provides both inpatient and outpatient care at the Bramhall campus. Outpatient care services experience higher curbside demands for patient drop-off / pick-up activities because of the shorter visits whereas inpatient care generates less turnover, but requires greater accessibility. In addition to general patient access and egress by private vehicles, MMC drop-off / pick-up zones also experience other demands created by taxis (including ride-share such as Uber, Lyft, etc.), shuttle buses, short-term deliveries (like flowers, etc), and staff—vehicles that do not necessarily park, but intend to only drop-off passengers and then exit the hospital campus.

Emergency Department Access

MMC's Emergency Department (ED) is located near the main entrance but is clearly delineated and separated from it. Within the ED area, ambulances have their own dedicated area and are separated from patient ED access and short-term ED parking.

Staff Access

Staff primarily park in the Employee Garage, which is located on Congress St with access off of Gilman St. Other employee parking locations include the various satellite lots listed in **Fig.1.7 on page 22**. This design limits the mixing of patient and staff traffic, resulting in fewer staff vehicles near patient access zones.

Service Access

Trucks destined for MMC are directed to a dedicated loading and service facility located off of Gilman St, separate from all active patient access and circulation functions. MMC does not accept large deliveries from any location other than through the loading dock area.

EXISTING TRAFFIC CONDITIONS

An analysis of existing traffic conditions on and around the Bramhall Campus was completed by Gorrill Palmer, a South Portland based land development, transportation and municipal engineering firm. Gorrill Palmer observed several street intersections during the morning and afternoon in December 2016. In order to estimate the peak summer traffic volume on the two busiest intersections observed (Congress St / St John St and Congress St / Valley St), trip counts were increased by 1.1% on St John St and 11.4% on Congress St. The trips observed are summarized on **Table 3.1** below.

Table 3.1 Seasonally Adjusted 2016 Volumes

	2016 ESTIMATED VOLUMES		MMC TRAFFIC AS A PERCENT OF TOTAL TRAFFIC	
INTERSECTION	AM	PM	AM	PM
Valley St. / Congress St.	1,170	1,200	17%	7%
Congress St. / Saint John St.	1,860	2,100	14%	7%

Fig.3.1 Dot Density Map Showing Patient Origin by Zipcode (2016)

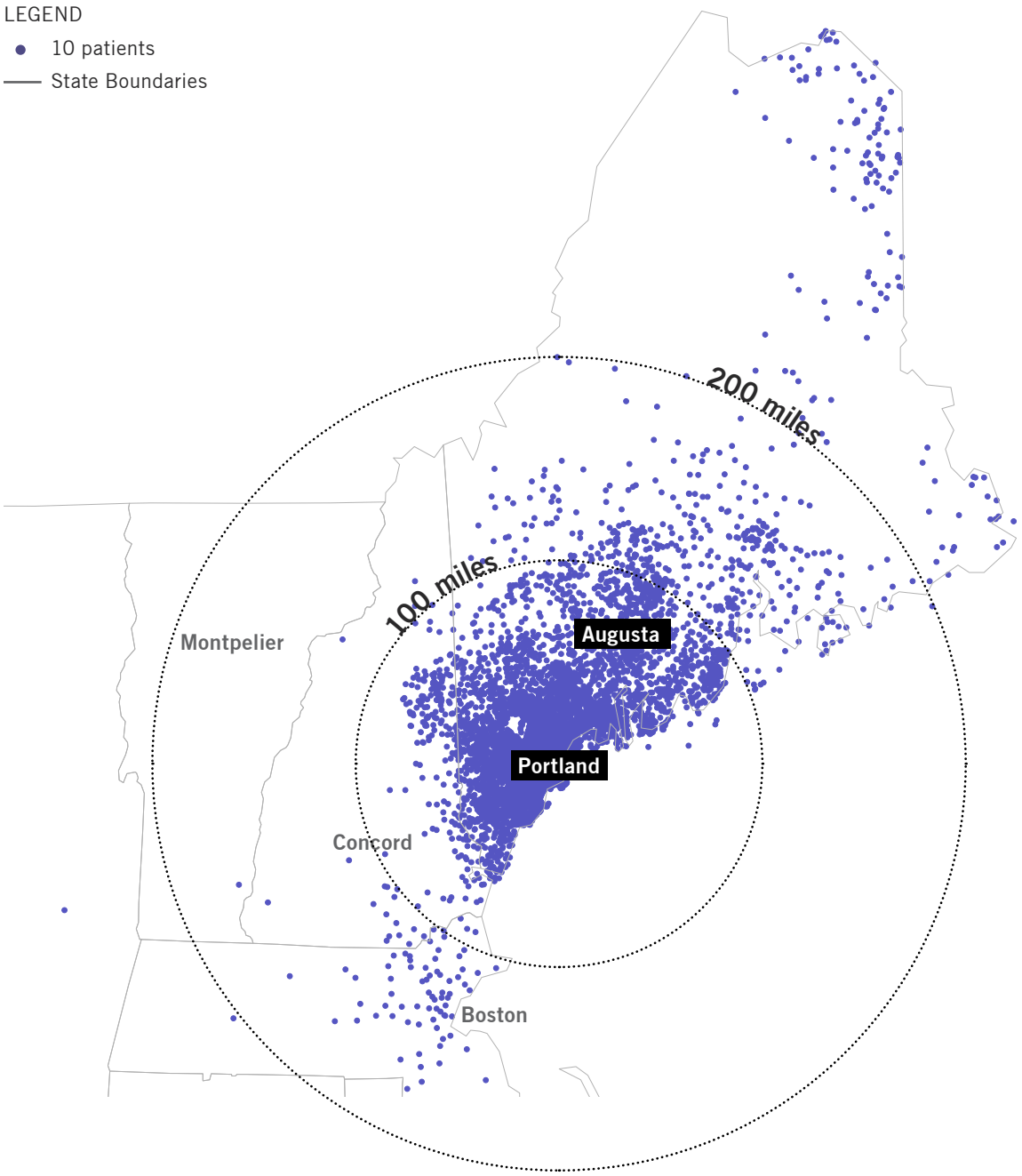


Fig.3.2 MMC Existing Circulation Routes and Access Points

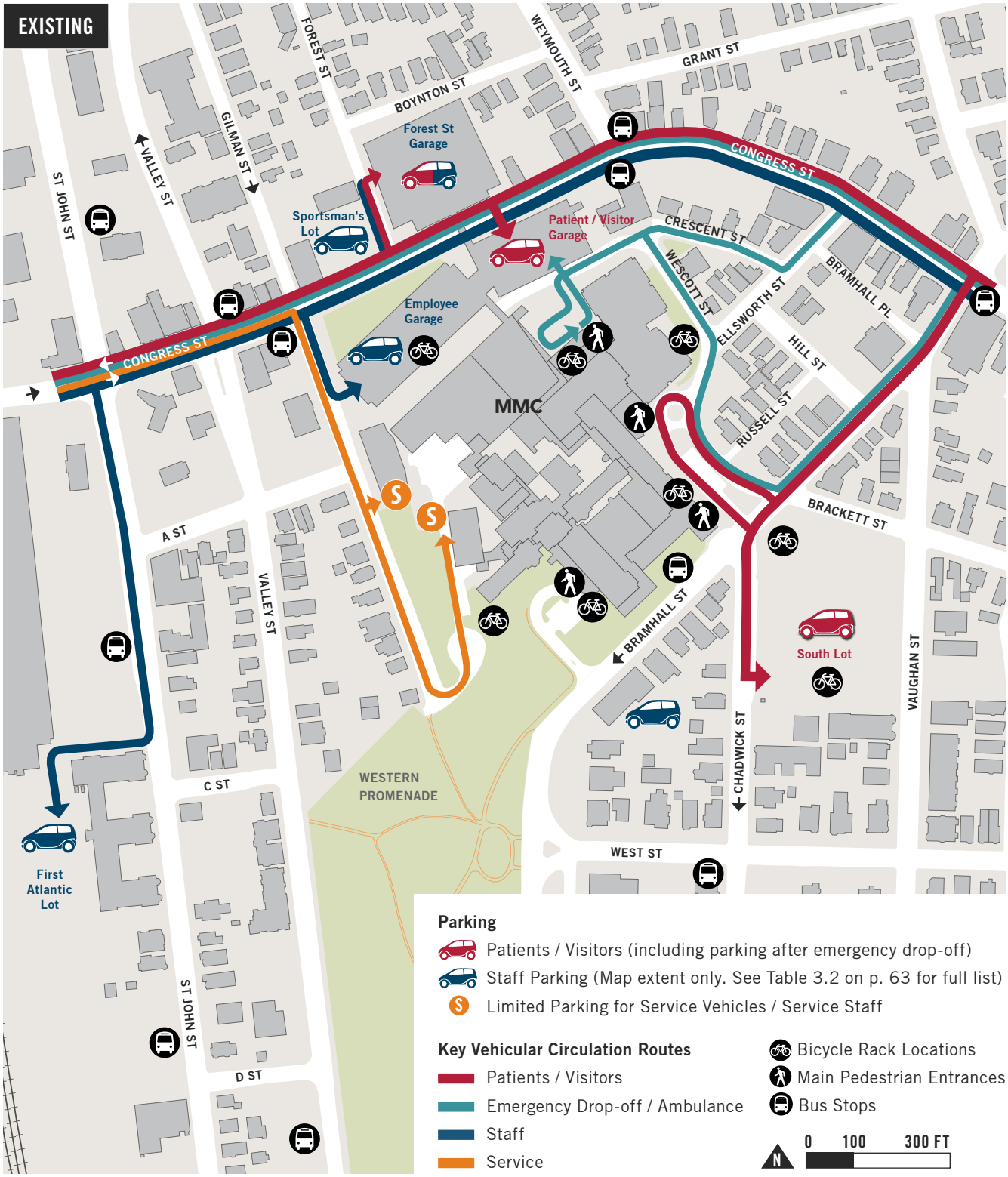
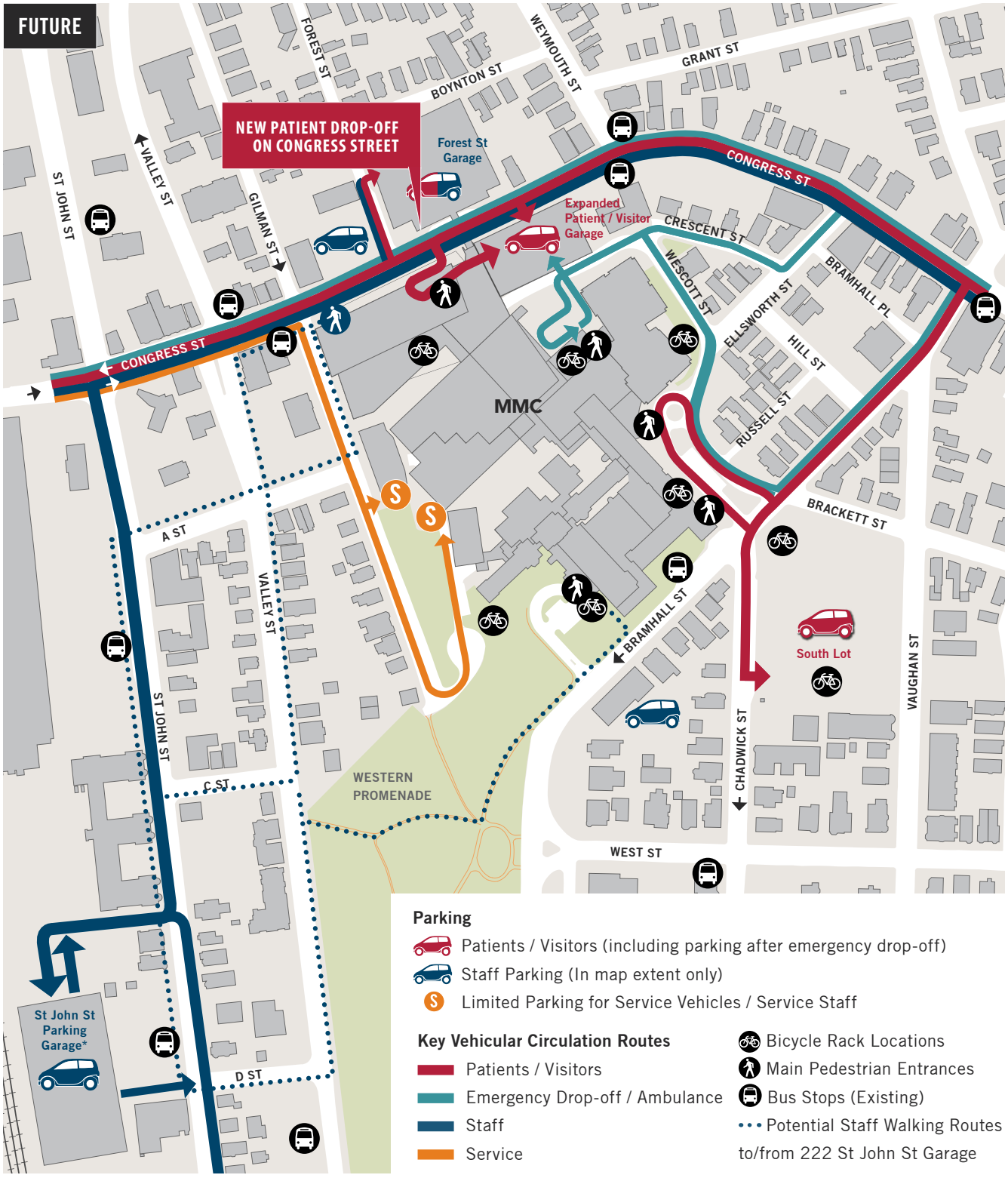


Fig.3.3 Transportation Plan (Future): Circulation Routes and Access Points



* NOTE: The exact location, footprint and access for St John St Garage to be determined during detailed design.

The safety evaluation considered crash data provided by MaineDOT for the period of 2014-2016, the most recent available at the time the analysis occurred. In order to evaluate whether a location has a crash problem, MaineDOT uses two criteria to define a High Crash Location (HCL). Both criteria must be met in order for a location to be classified as an HCL:

1. A critical rate factor (CRF) of 1.00 or more for a three-year period. A CRF compares the actual crash rate to the rate for similar intersections in the state. A CRF of less than 1.00 indicates a rate of less than average, and:
2. A minimum of eight crashes over the same three-year period.

Based on the crash data provided by MaineDOT, the HCLs in the vicinity of the site are: the intersection of Congress St with Bramhall St and Deering Ave, the intersection of Congress St with Gilman St, the intersection of Park Ave with Valley St, Congress St from Forest St to Weymouth St, and St. John St from Congress St to just south of Park Ave.

PROPOSED MODIFICATIONS TO ACCESS AND CIRCULATION

Proposed New Entrance

MMC's short-term projects include a new entrance on Congress St to improve access and egress for patients and visitors. Today, most motorists arrive on campus via Congress St: they either park off Congress St in the Patient / Visitor Garage, or use Bramhall St to reach the emergency room or entrance on Charles St, which also allows access to the Patient / Visitor Garage on an upper floor.

It is anticipated that the new Congress St entrance will be used primarily by vehicles dropping off or picking up patients, shuttle buses, or short-term deliveries (like flowers, etc). The entrance will be designed to allow vehicles to either exit back onto Congress St or directly enter the adjacent Patient / Visitor Garage after passing through the drop-off zone without having to go back onto the public street. The Charles St entrance (at the East Tower) will remain open and continue to accommodate some defined patient demand. Changes to patient / visitor circulation and the impacts on Congress St traffic operations will be studied as part of the Traffic Movement Permit Application (TMP) process.

The new entrance on Congress St is expected to improve access to the campus while reducing vehicular traffic on neighborhood streets. Work is currently underway to identify design options for the new entrance and drop-off that minimizes impact on existing pedestrian, bicycle, transit and vehicular traffic along Congress St. The proposed site plan will be reviewed as part of the State's Traffic Movement Permit (TMP) Application during the City's Site Plan review process.

Proposed Employee Parking

As part of MMC's short-term projects, the existing Employee Garage will be demolished. MMC is collaborating with a third-party developer to build a 2,200 space parking garage at 222 St John St. All staff parking will be consolidated to this new location.

PROJECTED TRAFFIC IMPACT

As mentioned previously, the traffic impacts of the MMC Short-Term Projects will be studied comprehensively as part of the Maine Department of Transportation (MaineDOT) Transportation Movement Permit (TMP) application process delegated to the City of Portland.

Some of the traffic items reviewed as part of the TMP will include:

- Trip generation methodology.
- Trip distribution assumptions.
- Weekday morning and evening traffic operations/capacity analyses.
- Average and 95% queue analyses for key intersection approaches.
- Pedestrian and bicycle safety evaluations.
- Identification of potential mitigation to address identified deficiencies created or exacerbated by the proposed development.

A high-level analysis of the projected changes in traffic as a result of estimated growth in the City of Portland and MMC's short-term projects was completed. Traffic volumes in the vicinity of MMC's Bramhall campus are anticipated to increase by approximately 3.5% between 2016 and 2023, without any MMC development, due to background traffic growth throughout the City. This increase is based on an estimated growth of 0.5% per year and compares the 2016 traffic volumes to the 2023 Pre-development traffic volumes (with no MMC development).

If the MMC employees utilize the 222 St John St garage, then traffic volumes at the intersection of St John Street / Congress Street may increase by approximately 17% and traffic volumes at the intersection of Valley St / Congress St may decrease by approximately 5% during peak commuter hours between 2016 and 2023. This increase compares the 2016 (seasonally adjusted) predevelopment traffic volumes to the 2023 Postdevelopment traffic volumes (with MMC development). This change in traffic volumes is due to the additional garage traffic (i.e. MMC expansion), the relocation of the existing employee garage traffic from Gilman Street to St John Street, and the background City traffic growth.

In 2023, the development of the employee parking garage at 222 St John St may increase total traffic volumes at the intersection of St John St / Congress St by approximately 12% during the peak commuter hours and approximately 56% during the peak hours of MMC shift changes that primarily occur during non-peak commuter hours. This is the increase

between 2023 Predevelopment volumes (with no MMC development) and 2023 Postdevelopment volumes (with MMC development). This increase is due to the additional garage traffic and the relocation of existing employee garage traffic from Gilman to St. John. Although the percentage increase during the peak hour of MMC shift changes appears high, the traffic volumes during the non-commuter peak hours with additional MMC development are still lower than the volumes during the peak hours of commuter traffic without significant additional MMC development.

MMC's traffic volume is expected to decrease at other intersections near satellite parking locations as a result of consolidating parking at 222 St John St. Although traffic due to MMC is anticipated to decrease at intersections near the satellite parking lots, total traffic volumes at those intersections may not change significantly, since different users may still utilize the lots. However, regardless of traffic volumes, there will be less vehicle miles travelled on the roadway network, since MMC employees will no longer be driving around the streets seeking out the last remaining parking spaces.

PARKING

MMC offers its patients, visitors, physicians, and employees several options for parking. MMC currently controls approximately 2,877 total off-street parking spaces either via ownership or through leases with others that specifically serve the Bramhall Campus. Of the 2,877 spaces, 2,027 parking spaces are subscribed to staff and physicians. About 1,538 of these employee parking spaces are located on the Bramhall Campus..

In addition to their on-campus parking spaces, MMC controls an additional 489 spaces for employees in remote parking facilities that serve the Bramhall Campus. Off-site spaces that are used by employees require shuttle services to the Bramhall Campus by dedicated shuttle services. **Table 3.2** on the following page provides a summary of existing MMC parking facilities. MMC has continued to see demands on the existing supply intensify due to increased patient volumes and higher acuity patients (longer lengths of stay).

In order to assess MMC's existing and future parking demand, a nationally recognized consulting firm was hired that specializes in this work. Vanasse Hangen Brustlin, Inc. (VHB) began working with MMC in January 2017. VHB also has done work for the City of Portland.

EXISTING PARKING ANALYSIS

The existing parking garages and surface lots are not equipped to readily collect and compile entrance, exit, and occupancy data electronically. As a result, in order to collect baseline data,

Table 3.2 Existing Parking Spaces

		Patient / Visitor	Employee	Total at Facility	Ownership
ON-CAMPUS 850 patient / visitor 1,538 employee spaces	Employee Garage	0	1,274	1,274	Owned
	Patient / Visitor Garage	480	0	480	Owned
	South Lot	370	0	370	Owned
	887 Congress (Forest St Garage)*	0	178	178	Owned
	7 Bramhall St	0	26	26	*Leased*
	905 Congress St (Sportsman Lot)	0	60	60	*Leased*
OFF-CAMPUS 489 employee spaces	222 St John St (First Atlantic Lot)	0	283	283	*Leased*
	181 High St (Gateway Garage)	0	100	100	*Leased*
	993 Congress St (Classic Lot)	0	97	97	Owned
	321 Brackett St	0	9	9	*Leased*
	TOTAL PARKING SPACES	850 Patient / Visitor	2,027 Employee	2,877 Total	

* The Forest St Garage has an additional 222 spaces that are dedicated to medical office staff and patients.

detailed hourly parking occupancy counts were conducted on March 8, 2017 and March 9, 2017 by VHB. The goal of these parking counts was to collect temporal parking data at the Employee garage, the Patient / Visitor garage, and the South Lot to confirm parking surge (between daytime and evening staff shift changes) and overnight demand. Hourly counts were conducted from 5am to 12pm, 3pm to 8pm, and 10pm to 12am. This data have been compiled to quantify the existing conditions parking demand estimates.

Additional parking occupancy counts were conducted daily between April 24, 2017 and April 28, 2017 at 10am and 2pm by MMC. MMC parking was 93% occupied throughout the week.

Overall, existing parking demand conditions at MMC were quantified via a combination of distinct actions:

- Weekday occupancy parking counts were conducted to understand utilization at key points in time to assess peak occupancy, overnight occupancy, and intervals of weekday garage entries and exits. These counts were conducted in March and April 2017.
- Intermittent spot checks of parking utilization and access/egress were conducted from January through March 2017 by MMC and its consulting team.

- MMC Parking and Security staff and the City of Portland Parking Director provided input regarding their observations and experiences relating to the utilization of parking.

These counts, observations and input indicate that the parking system typically operates at or above capacity during weekday daytime.

CURRENT PARKING SHORTAGE

MMC's 850 patient/visitor parking spaces equates to +/- 1.33 parking spaces per bed. This is low when compared to other New England and national peers. Patient drive rate is consistently high among large academic medical centers regardless of location. Therefore it is appropriate and reasonable to compare MMC patient parking needs on a space per bed basis to highly urban, suburban, and rural settings. MMC would need about 340 additional patient/visitor parking spaces to achieve the midpoint parking space/bed ratio (approximately 1.87) of its peers.

MMC's 2,027 staff parking spaces equates to about 3.18 parking spaces per bed. This ratio is also low when compared to other peer institutions. When studying employee parking needs, it is important to compare institutions that would reside in similar contexts where driving behavior and auto mode shares would be similar.

During the analysis, MMC's consultant team attempted to identify comparable medical centers. A significantly similar comparison medical center does not exist due to the number of factors impacting parking. The medical centers that were determined to be somewhat similar and adequate comparisons had median parking ratios of 1.87 for patients/visitors and 4.38 for employees.

Under current conditions, MMC will require 150-200 additional on-campus parking spaces to alleviate current staff parking shortfalls that have been estimated via observations and data collection activities and eliminate on-street parking by MMC staff. To help existing demand pressures, MMC continues to pursue a number of strategies to address its constrained parking situation, including:

- The study of enhanced Transportation Demand Management (TDM) actions to reduce single-occupancy vehicle trips and parking demand,
- Moving employees to off-campus locations (both program and parking), and,
- Securing additional remote parking and serving that remote parking with convenient shuttle services for staff.

MMC's existing decentralized parking solution creates management challenges and is an employee dissatisfier. Management challenges include multiple shuttle routes that add to traffic congestion on Portland's streets and the high cost of servicing and operating multiple shuttles. MMC employees frequently share that the employee parking at the Bramhall Campus is unreliable. There are eight

parking locations available for MMC employees. When one location is full, employees have to search other locations for available parking which adds to traffic congestion on Portland's streets. On days when MMC is near or at capacity, finding a parking spot in a reasonable amount of time is a challenge.

PLANNING GOALS FOR PARKING

With regard to Parking, MMC's goal is to accomplish the following key objectives:

1. Support a predictable arrival experience for patients and visitors,
2. Where feasible, allow for segregation of MMC patients/visitors and staff parking,
3. Address neighborhood concerns of MMC staff occupying on-street parking spaces,
4. Provide a parking supply that is sufficient to support the Medical Center,
5. Rely upon an enhanced TDM program to help reduce vehicle trips and parking demands when reasonably feasible.

FUTURE DEMAND PROJECTIONS

Future patient, visitor, staff and physician parking needs were quantified based on an assessment of MMC's patient volume (inpatient and outpatient activity) and staff growth projections. The demand for patient care at MMC is growing as described under **"Projected Daily Census" on page 40**. MMC anticipates that the overall patient demand will grow by approximately 8 percent over the next ten years (or 0.75 percent per year). Similarly, employment at MMC is expected to grow by approximately 7 percent over the next ten years (or 0.7 percent per year). We expect patient and patient-related and employee parking demand will increase at similar rates. This demand will be offset by Transportation Demand Management methods described later in this chapter. These expected trends have been used to estimate the increased parking needs of the Hospital.

The following key points summarize MMC parking activity under current conditions, and provide the context for assessing and understanding the parking objectives that are proposed for the transportation plan:

- Under current conditions, the MMC parking system typically operates at or above capacity during weekday daytime hours.
- The hospital requires about 150-200 additional on-campus parking spaces to alleviate current 2017 staff parking shortfalls. These estimates are based on several iterations of counts, observations, and input from MMC, as described previously.
- When compared to other peer academic medical centers, MMC generally has a lower parking-to-licensed bed ratio both for its patients as well as its physicians and staff. There is not an industry standard method for comparing hospital parking supply. The number of patient beds was used as the common factor in this analysis because of its relative uniformity among academic medical centers.

PROPOSED MODIFICATIONS TO PARKING

MMC's short-term projects include:

1. Patient / Visitor Garage Addition: MMC will expand its existing 480-space Patient / Visitor Garage by three levels to accommodate an additional 225 spaces by 2019.

2. New St John St Garage: MMC will deconstruct the existing 1,274-space Employee Garage and will construct a replacement garage that will supply approximately 2,200 spaces for MMC. MMC intends to provide a reliable and complete parking solution for employees.

FUTURE PATIENT / VISITOR PARKING

Once the Patient / Visitor Garage Addition is completed, the patient parking supply will be adequate to meet the growing needs of the patients and visitors.

MMC's short-term projects will increase patient/visitor parking supply from 850 spaces to 1,075 spaces. As a ratio of parking spaces per bed, MMC's on-campus patient parking system will improve from an existing ratio of 1.33 (a rate that is low when compared to peers) to 1.68 (average to its peers).

FUTURE EMPLOYEE PARKING

In total, MMC estimates a need for 500-600 additional staff/physician parking spaces to accommodate future demands and resolve the existing parking shortage. The 2,200 employee parking spaces in the new St John St Garage are intended to accomplish the following:

- Accommodate expected staff growth,
- Provide for replacement parking to support demolition of the existing Employee Garage,
- Consolidate existing remote surface parking, and
- Reduce parking by staff on surrounding neighborhood streets.

This increase in employee parking supply will improve MMC's ratio of employee parking to patient beds from their existing ratio of 3.18, which is very low when compared to peer academic medical centers.

The proposed St John St Garage will consolidate the majority of MMC's employee parking which will improve employee satisfaction and minimize management challenges. A smaller and more reliable shuttle service will be available to MMC employees getting to and from the parking garage. In addition, the St John St location is 3 tenths of a mile from the Bramhall Campus and MMC will encourage walking.

ALTERNATIVE TRANSPORTATION

MMC supports and aims to increase the use of alternative transportation by its employees, patients and visitors through the implementation of its Transportation Demand Management (TDM) Plan outlined on page 74. Ongoing collaboration with the City of Portland, local and regional transit agencies, and neighborhood and advocacy organizations is planned to ensure the improvement of pedestrian, bicycle and transit infrastructure and networks serving the campus.

MMC solicited input from neighbors on the topics of vehicular, bicyclist and pedestrian safety around the campus at its January 12, 2017 Open House. Key findings from this meeting are summarized at the end of this section under the heading "Future Transportation Planning Considerations." MMC has shared the Open House results with the City of Portland and neighborhood representatives. MMC will continue working with neighbors, City staff, and elected officials to address vehicular, pedestrian and bicyclist safety concerns around its campus as part of its ongoing community engagement process (see page 130).

PUBLIC TRANSIT ACCESS

METRO provides bus service throughout the Greater Portland region and makes stops within walking distance to the MMC Bramhall campus. The campus is also served by the ZOOM Turnpike Express route operated by ShuttleBus–ZOOM.

Multiple METRO routes accessible from the campus provide connections to the nearby Portland Transportation Center (PTC) and the Downtown Hub, which are served by additional METRO and regional bus lines. The PTC also serves as the local connection to Amtrak's Downeaster service that runs along the coast between Boston and Brunswick. See **Fig.3.4** and **Table 3.3** on the following pages for an illustration of bus routes and bus stops within walking distance of the MMC campus. All buses serving the campus are equipped with bike racks to enable multi-modal commutes.

MMC supports mass transit commutes and provides financial incentives to employees choosing public transit as part of its Transportation Demand Management (TDM) program. MMC will provide enhanced incentives and work with METRO to improve transit access for all campus users as part of its future TDM Plan. See "Supporting Mass Transit Commutes" on page 78 for details.

Detailed design of each new development on campus will consider the location of nearby transit stops, and identify any necessary changes to locations to better serve transit users.

Fig.3.4 Map of Existing Transit Routes and Stops

MMC Main Pedestrian Entrance
Bicycle Rack Locations
Existing Bus Stops around Campus (see opposite page for transit route legend)

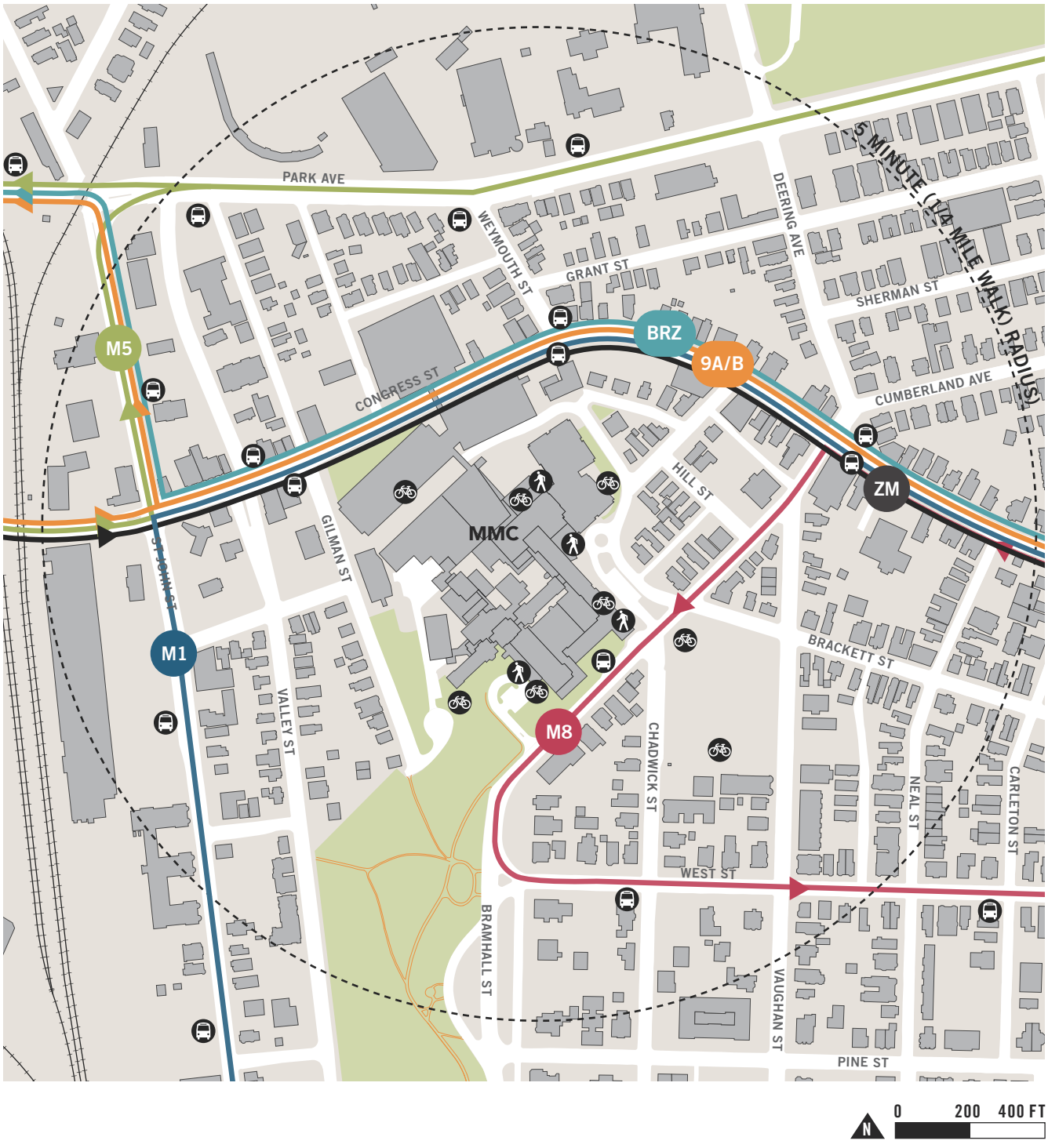


Table 3.3 Bus Routes Serving MMC Bramhall Campus

The following bus routes are accessible within a five minute walk of the MMC campus. See **Fig.3.4 on** opposite page for location of routes and bus stops.

M1 **M1 – CONGRESS STREET**
Connection to Portland Transportation Center (PTC), Downtown, Munjoy Hill and Eastern Promenade

M5 **M5 – JETPORT / MAINE MALL**
Connection to Downtown, Hannaford Plaza, Maine Mall and Portland Jetport

M8 **M8 – PENINSULA LOOP**
Connection to Downtown, Franklin Towers, Whole Foods Plaza and Hannaford Plaza

9A/B **M9A / 9B – NORTH DEERING VIA STEVENS AVENUE**
Connection to MMC Brighton campus, Highlands, Rosemont, and North Deering

BRZ **METRO BREEZ EXPRESS (BRZ)**
Connection to PTC, Downtown, Falmouth, Yarmouth, Freeport

ZM **ZOOM Turnpike Express (ZM)**
Connection to Biddeford and Saco

Rte #	Closest Stop	Times of Operation	Headways
M1	Congress St	5:35am to 11:10pm (M-F) 7:45am to 6:05pm (Sat) 8:10am-6:35pm (Sun)	Varies between every 30 minutes during daytime to every 45 minutes late evenings
M5	St John St	5:30am to 10:45pm (M-F) 6:05am to 10:45am (Sat) 7:55am to 6:40pm (Sun)	Varies between 25-35 minutes during weekdays (daytime) to every 40-45 minutes on weekend evenings
M8	Bramhall	6:40am to 6:00pm (M-F) 7:50am to 6:17 pm (Sat) 9:35am-4:17pm (Sun)	Varies between every 30-40 minutes during weekdays to every hour during weekends
M9A/9B	Congress	5:35am to 10:35pm (M-F) 7:35am to 10:30pm (Sat) 8:35am-4:35pm (Sun)	Varies between 10 minutes on weekday mornings to every 1 hours on weekends and evenings
BRZ	Congress	6:00am to 7:45pm (M-F) 8:20am to 6:10pm (Sat) No Sunday Service	Varies between 45 minutes on weekday mornings to every 2 hours on Saturdays
ZOOM	Bramhall and Congress	6:00am to 6:40pm (M-F) No Weekend Service	5 buses in the morning b/w 6am-8:17am 6 buses in the afternoon b/w 2:46pm-5:35pm

Fig.3.5 Heatmap Showing Popular Bicycle Routes in the Area, as Recorded by Strava App Users

less more

Source: Based on self-tracking app data mapped by Strava Labs (labs.strava.com/heatmap)

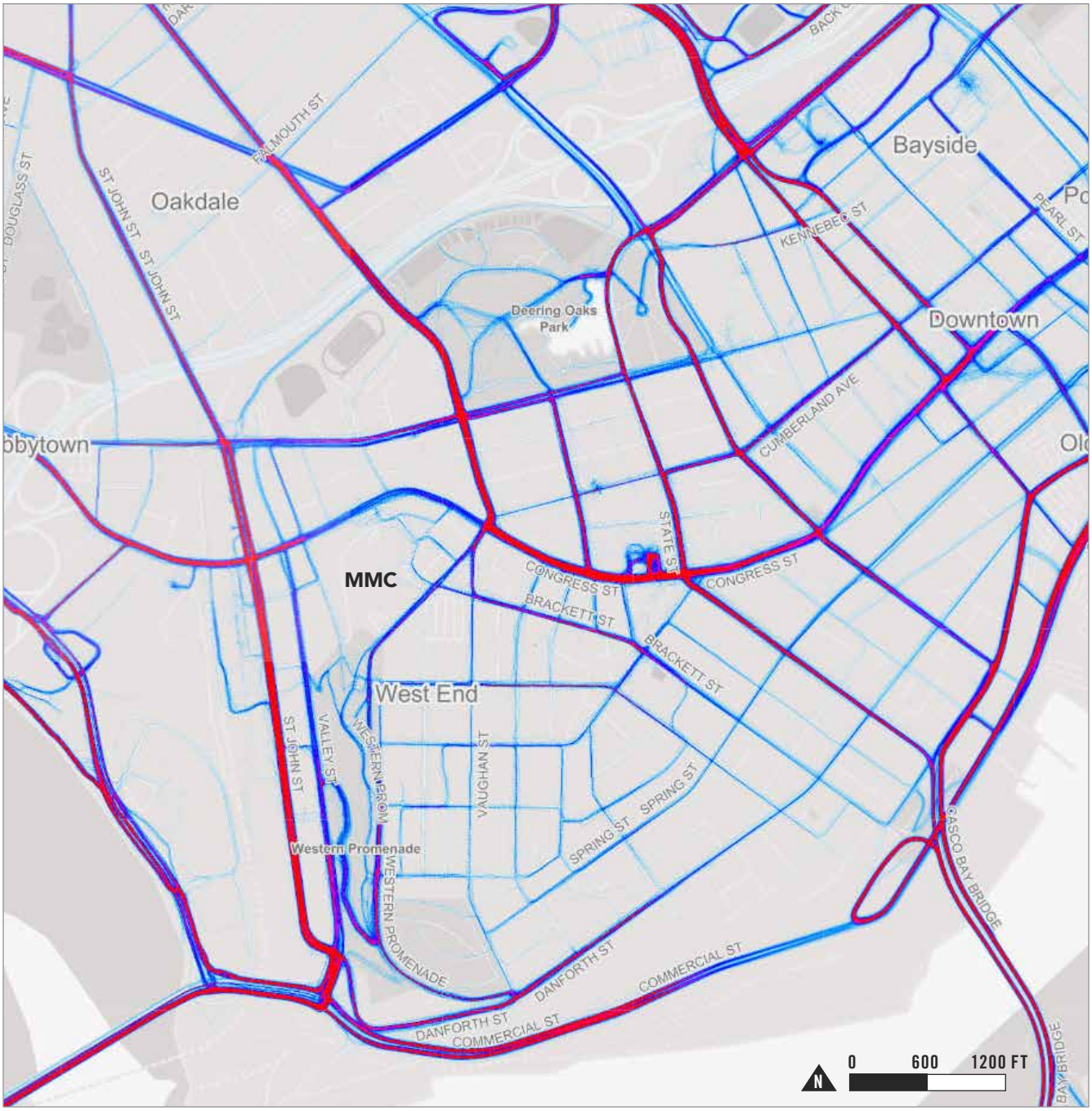


Fig.3.6 Portland Bikeway and Pedestrian Network *(Source: City of Portland, 2014)*

EXISTING FACILITIES

- Bicycle Lane
- Paved Shoulder
- Neighborhood Byway
- Shared Use Pathway
- Shared Lane, with Marking
- Shared Lane

PLANNED FACILITIES

- On Road Bikeway
- Neighborhood Byway
- Shared Use Pathway or Rail with Trail



BICYCLE ACCESS AND STORAGE

As shown in **Fig.3.5 on page 70**, bicycling is prevalent within the City of Portland, however, bike use at and around the MMC campus is generally lower than in other Portland locations. This could be a result of the severe grades in the Bramhall neighborhood, but also the lack of strong municipal bicycling infrastructure, including dedicated bike lanes, paths and sharrows.

MMC is committed to supporting bicycle access to the Bramhall campus by all users, including employees. In recent years, the hospital has invested in bicycle racks, showers, and lockers, and currently has the capacity to accommodate parking for up to 193 bicycles on campus (see **Fig.3.2 on page 58** for locations). MMC aims to continue support employees who bike to work as a part of its TDM plan (see "Supporting Bicycle Commutes" on page 79).

MMC is an advocate of the City of Portland's Bikeway Network Plan, which will provide bicycle infrastructure on campus adjacent streets with linkages to existing and planned shared use pathways (see **Fig.3.6 on page 71**).

Detailed design of each new development on campus will identify any necessary changes to bike infrastructure to better serve the needs of those arriving by bike.

PEDESTRIAN ACCESS AND CIRCULATION

Whether they arrive on campus by car, by bus or by bicycle, all campus users are pedestrians at some point in their journey to their MMC destination. Like other medical centers of its size, MMC provides elevated, covered, and temperature-controlled pedestrian walkways between its parking garages and key campus circulation corridors. This limits exposure to adverse weather conditions, facilitates wayfinding for patients / visitors, and minimizes on-street vehicle / pedestrian conflicts.

MMC also maintains its network of campus pathways and campus-adjacent public sidewalks to ensure safe pedestrian access to campus facilities (see **Fig.3.2 on page 58** for location of key pedestrian entrances).

MMC will complete a campus-wide ROW Plan at the time of its first site plan review that includes sidewalk materials to clarify the need for any variations from current city policies and how they would be integrated into the public realm. In order to improve slip resistance and ADA accessibility, MMC may request waivers from the city's sidewalk material policy under site plan review.

MMC aims to improve pedestrian access to campus with future building projects by orienting building entrances to public streets and providing active ground floor uses where possible. (See "Design Guidelines" on page 116 for details.). MMC will also work with the City and other stakeholders

including the St. John Valley Neiighborhood Association to identify potential improvement that could be implemented to pedestrian routes between the proposed St John Garage (see **Fig.2.7 on page 44**) and the core campus.

FUTURE TRANSPORTATION PLANNING CONSIDERATIONS

MMC continues to solicit input from its neighbors to identify transportation-related issues and possible improvements that should receive additional consideration during the planning and design of future projects by MMC and the City. Key issues identified in this process to date include the following:

- Chadwick Street: A portion of Chadwick Street is one-way. The conversion to two-way could reduce the amount of traffic going further into the West-end neighborhood and help slow vehicular speeds to levels that are safer for pedestrians and bicyclists.
- Chadwick Street at West Street: Neighbors have observed low compliance with stop-signs and two-way travel on one-way streets.
- Vaughan Street at Bramhall Street: This is a difficult intersection geometry for pedestrians, cyclists and vehicles.

TRANSPORTATION DEMAND MANAGEMENT (TDM)

MMC has an active Transportation Demand Management (TDM) program that was one of the first in the state of Maine when launched in 2008. The program aims to reduce MMC's impact on peninsular traffic by subsidizing and marketing of alternative commute options including walking, bicycling, public transit, and rideshare. Known as "Get on Board!," this voluntary program has grown each year through increased enrollment.

In 2017, MMC engaged VHB, a consulting firm with expertise in this area, to update and enhance its TDM program and to inform its long-term plans for parking, in particular.

This section provides a summary of VHB's analysis of existing employee commuter behavior, and outlines proposed updates to the "Get on Board!" program that will be implemented in the near- and long-term to further reduce single-occupant vehicle (SOV) commutes by employees.

EMPLOYEE COMMUTES: 2017 BASELINE

As part of its efforts to monitor and enhance the "Get on Board!" program, MMC recently administered a voluntary transportation survey with its employees. The survey showed that 9% of employees use alternatives to SOV commutes (see **Fig.3.7 on page 75**). Based on the expert knowledge and experience of VHB, the high percentage of employees driving to work alone and parking near campus is not unexpected given the nature of the services provided, the dispersed geographic footprint of where MMC employees live, and the availability of viable transportation alternatives to driving. Detailed analysis of employee driving distance to work is illustrated in **Fig.3.8** and **Fig.3.9** on the following pages.

FUTURE TDM TARGETS

Based on a review of census data, employee travel origin and destination information, existing employee travel mode split, and transportation survey results, MMC believes it can further reduce the portion of employees driving alone to work, thus reducing trip making and resultant parking demands. An initial estimate is that an additional 1.5% of the daytime population could be shifted into alternative modes of accessing the campus. This represents approximately 65 fewer individuals driving alone to campus.

The reduction would be achieved through MMC's existing TDM initiatives, as well as new strategies that will be implemented over time. MMC will endeavor to increase its employees' overall use of alternative modes of travel beyond the target identified above through further enhancements or program expansions in the coming years and depending upon initiatives by the City, GPCOG, and others.

MMC's enhanced TDM Plan draws on national best practices and suggested examples from the City of Portland Planning Staff. City suggestions included evaluating the Downtown Parking Management

Fig.3.7 MMC Bramhall Campus Employees Commuting Mode Split (2017)

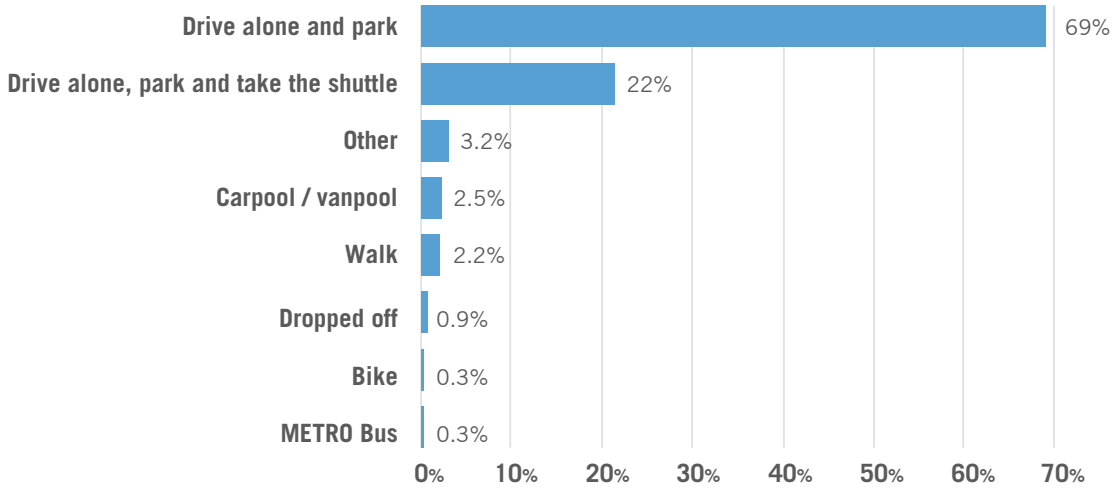


Fig.3.8 MMC Bramhall Campus Employees, Distance to Work by Type of Employee

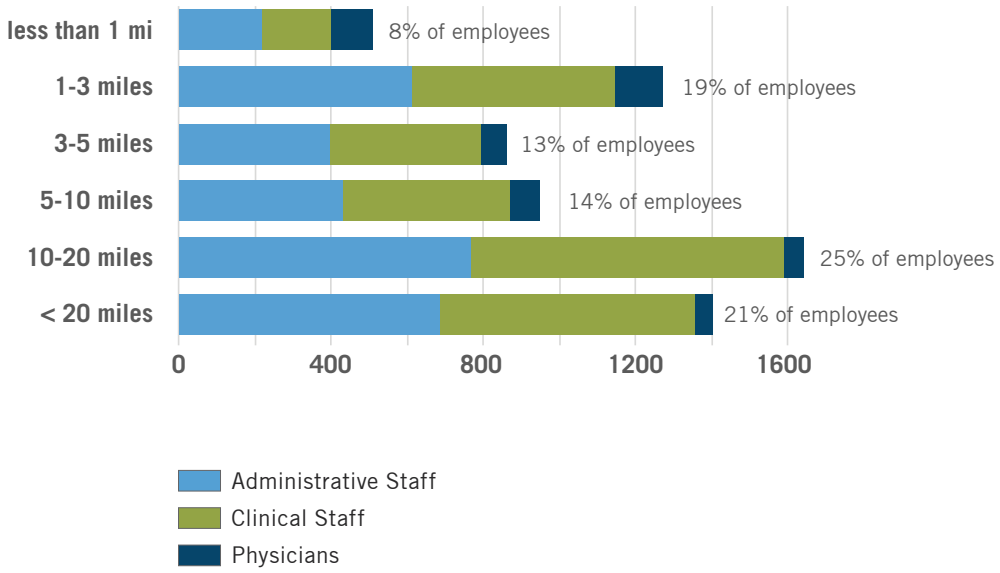
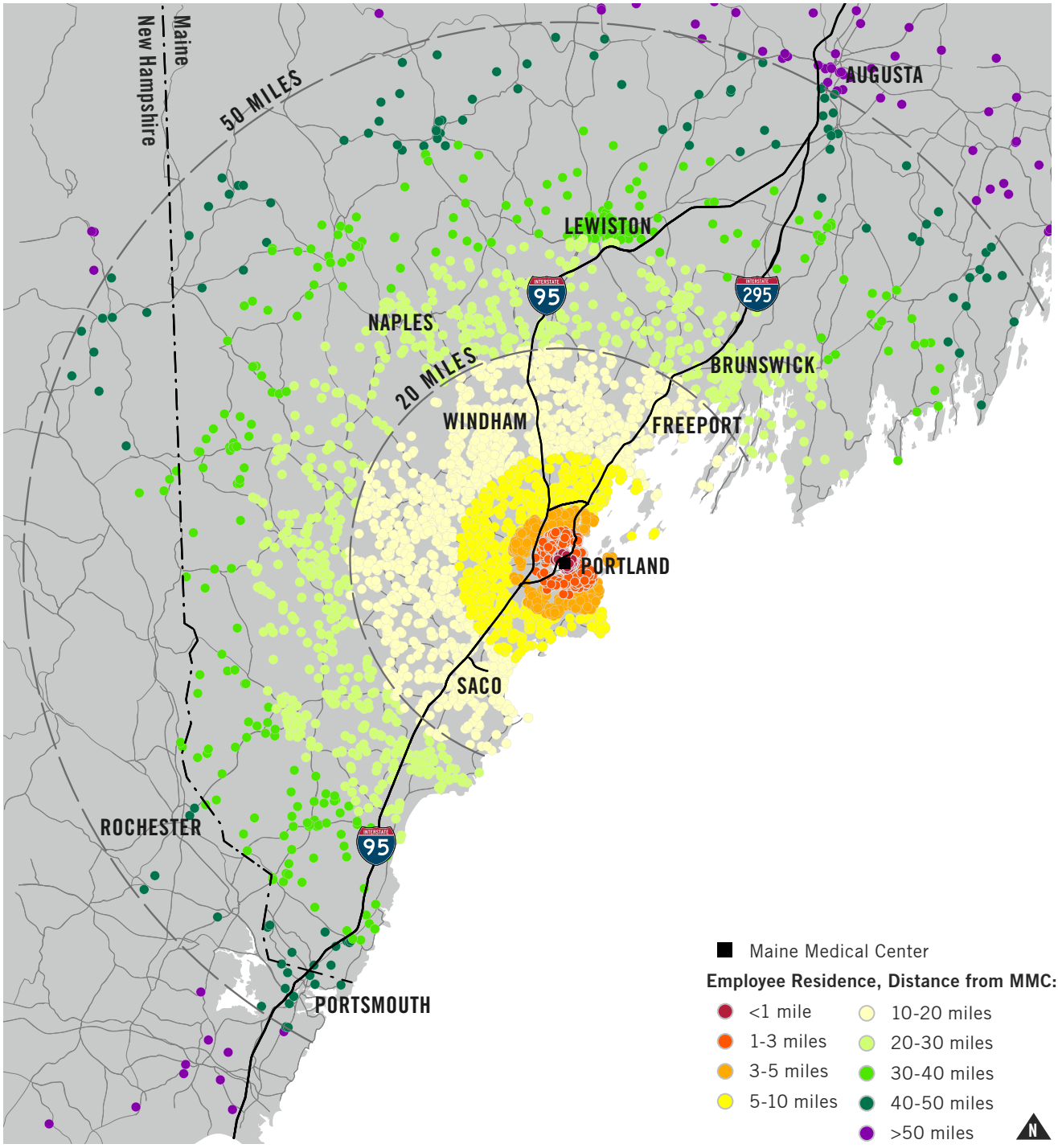


Fig.3.9 Map of MMC Bramhall Campus Employee Residences Illustrating Distance to Work and Travelsheds



Plan for Burlington, VT, an Institutional Parking Management Plan also for Burlington, VT, and a Transportation Demand Management Study for Downtown Syracuse, NY. Additionally, MMC also examined the commuting program instituted by Boston's Longwood Medical and Academic Area (LMA), known as CommuteWorks, and operated by MASCO, a consortium of hospitals, colleges and universities, and other related institutional uses. These programs were evaluated because of their efforts to manage SOV driving in a highly concentrated employment district.

Applicable Best Practices

- Collaboration among organizations in the area impacted
- Regular communication and education of alternative transportation benefits
- Pay for parking
- Complimentary support programs (i.e. guaranteed ride home, carpool)
- Regular monitoring of commute mode (i.e. surveys, automated data collection)

TDM PROGRAM COMPONENTS

Individual program elements and related incentives of MMC's TDM program are outlined below. These include continuation of existing initiatives, as well as the following new initiatives / enhancements that will be implemented starting in 2018:

- Data Collection
- "Get on Board!" Coordinator
- Increased Education of Employees about the "Get on Board!" Program
- Bi-Annual Transportation Survey
- Regional Connections Partnership
- Enhanced Transit Fare Discount / Partnership with METRO
- Enhanced Carpool/Vanpool Matching
- Active Transportation Incentives

MMC aims to achieve a 1.5 percent reduction in SOV commutes 5 years after the approval of the IDP. This target will be revised when a new baseline is established.

Data Collection

MMC will explore methods to improve data collection and implement a reasonable system to collect data on the transportation habits of employees and parking garage utilization.

"Get on Board!" Coordinator (New)

MMC will enlist the services of a "Get on Board!" Coordinator responsible for the implementation, operation and continuing sustainability of MMC's TDM. This individual will continually monitor the

program, its operations and future opportunities to reduce vehicle dependency by staff at MMC. The Coordinator will also be responsible for data collection and TDM updates as required.

Increased Education of Employees about the "Get on Board!" Program (New)

MMC will be enhancing the "Get on Board!" promotion and education process by periodically educating existing employees of the options and benefits available through the "Get on Board!" program. Additionally, newsletters will be distributed highlighting the environmental, health and other benefits of TDM.

Bi-Annual Transportation Survey (New)

MMC will conduct a Transportation Survey of its employees every 2 years to collect data about commuting mode split, barriers to TDM use and marketing effectiveness. Information from this survey will be included in the TDM plan updates.

Regional Connections Partnership (New)

MMC will seek to form partnerships with other major employers in the region, including the City of Portland, to foster a holistic approach to transportation demand management. The partnerships would enable the exchange of TDM-related information and experiences between institutions, and it would foster a community that is focused on promoting alternative transportation in the City of Portland.

Supporting Mass Transit Commutes (Enhanced)

MMC employees can purchase discounted bus tickets and Shuttle-Bus Zoom tickets conveniently in the cafeteria. MMC buys the tickets at the regular price and offers them to employees at the reduced prices listed in **Table 3.4** below. This is a clear demonstration of MMC's commitment to making "Get on Board!" work.

Table 3.4 MMC Current Transit Incentives

	MMC COST	EMPLOYEE COST
METRO (10 RIDES)	$13.50	$8
S. PORTLAND (10 RIDES)	$13.50	$8
ZOOM (10 RIDES)	$39	$29.60
ZOOM MONTHLY	$100	$84.50
ZOOM QUARTERLY	$260	$197.50

MMC will fully subsidize the cost of METRO bus tickets for employees who wish to use the bus for the foreseeable future so long as the cost of METRO bus tickets remains as illustrated in **Table 3.4**. If METRO bus ticket costs change, then MMC will evaluate utilization and work with METRO to find the best solution to support employees who wish to use the METRO. Subsidizing METRO tickets would provide employees with an additional financial incentive to use the transit system serving the MMC district.

METRO's existing routes and schedules cannot meet all of MMC's employees' transportation needs, however. Although the MMC campus is well served by bus transit (See **Fig.3.4 on page 68**), the limited hours of operation and the long headways

between runs do not provide a viable alternative to the car even for those employees who can walk to a bus stop from their residence. (See **Table 3.3 on page 69).**

MMC intends to explore a partnership with the Greater Portland Transit District (METRO) to identify strategies for increasing MMC ridership, such as service updates and/or pricing agreements. The formation of a partnership could be mutually beneficial, by providing METRO with feedback for increasing ridership while maximizing the usefulness of the transit system for MMC employees. As MMC formalizes its ties to other local institutions through a regional partnership, its collaboration with METRO could also extend to other employers.

Supporting Employee Carpools (Enhanced)

"Get on Board!'s" most successful initiative to date has been its carpooling program. Most of these connections are ad-hoc. MMC will promote increase participation by actively matching potential riders. Additionally, while Go Maine is the primary administrator of vanpools in the state, MMC will work to proactively identify and assist with the formation of vanpools.

The employee "Get on Board!" portal is linked to the GoMAINE Commuter Connections website, which is an alternative commuting program operated by MDOT. GoMAINE provides commuters with additional commuting resources and benefits that supplement those provided by MMC. These benefits include a carpool ride-matching program and a rewards program for participants.

Supporting Bicycle Commutes (Enhanced)

The MMC campus is located in close proximity to popular bicycle corridors, including St John and Congress Sts which connect riders to destinations across the City of Portland (see **Fig.3.5 on page 70**). MMC has worked diligently to support bicycle commuters. In 2008, MMC installed five strategically-located bike racks and ten bike lockers on their Bramhall Campus. Three new bicycle racks were added in the vicinity of the Main entrance and in the South Lot in 2016, bringing total storage capacity to 193 bicycles across campus (see **Fig.3.2 on page 58** for location of bicycle racks on campus). Bicycle commuters also have access to a shared toolshed with basic tools.

MMC will undertake an internal marketing program which offers fun and useful prizes for those participating in alternative modes of transportation. Making alternative transportation fun and a community-wide effort is likely to increase participation by some who might not otherwise engage in the process.

Pay for Parking

MMC will charge its employees no less than $3 per paycheck to utilize MMC parking. MMC employees are paid bi-weekly. MMC will evaluate employee parking fees in the mid-term.

Guaranteed Ride Home (GRH) Program

For those employees who regularly use alternative modes of transportation to and from its Bramhall Campus, MMC will guarantee a ride home in emergency situations.

UCar

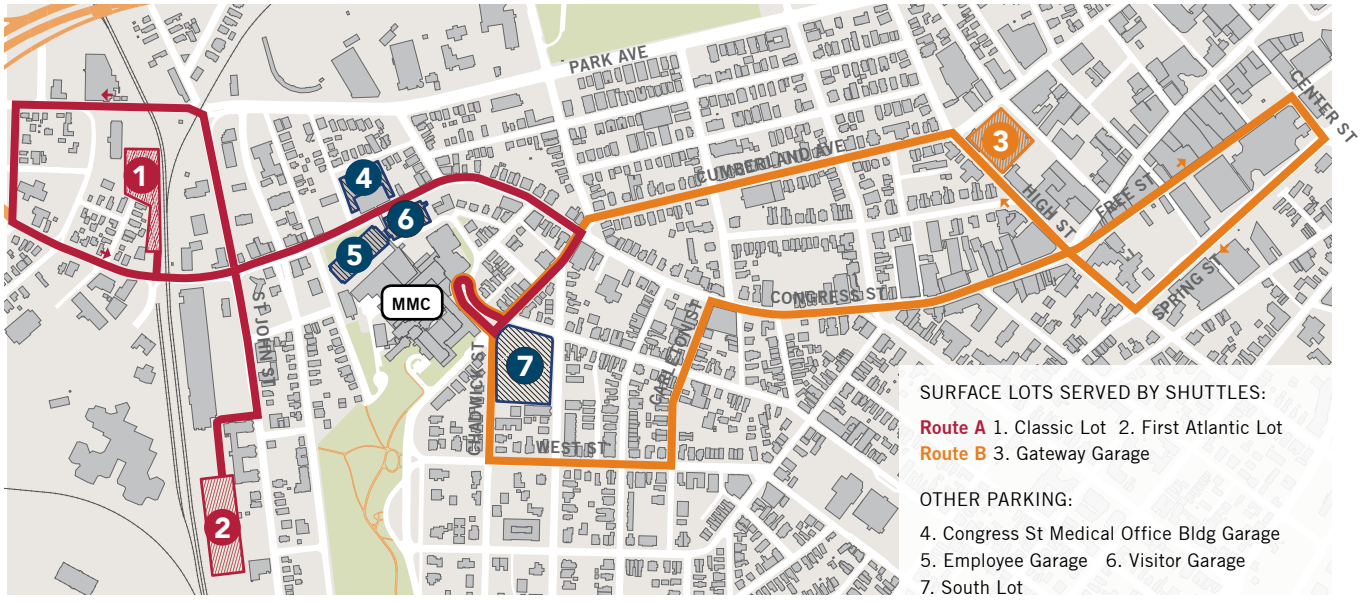
Working with UHaul and the City's Parking Department, MMC will continue to monitor the use of the UCar presently located in its Congress St parking garage. In the event an additional car is warranted, MMC will work with its partners in finding a suitable location on the main campus for the storage and use of the UCar.

MMC Employee Shuttles: Current Service

The MMC employee shuttle operates Monday-Friday from 6am to 11pm. The number of shuttles running to off-site parking locations at any given time varies from 1-5 shuttles depending on traffic volume. These off-site lots fill to capacity on a daily basis. The employee shuttle service has three distinct routes and schedules:

A. Service to and from the off-site 1st Atlantic and Classic parking lots runs from Monday through Friday from 6am to 11pm, in a continuous loop. The 1st Atlantic parking lot (222 St John St) is utilized first in the mornings. Once it nears capacity, service shifts to the Classic parking lot (993 Congress St). Return trips in the evenings service both lots.

Fig.3.10 Map of MMC Shuttle Routes A & B.



B. The Gateway shuttle moves employees between the MMC Bramhall campus, the Gateway office building / garage and the MaineHealth home office at 110 Free St. The shuttle leaves every 20 minutes from the south entrance Monday through Friday from 6am to 4pm. Transportation is provided on an "On Call" basis between 4pm and 11pm. This shuttle also provides a limited courtesy transportation service to patient families staying at the Ronald McDonald House (250 Brackett St.).

C. A courtesy shuttle runs between Brighton Medical Center (335 Brighton Ave) and MMC every 20 minutes from 6am to 4pm.

The shuttles provide a predictable alternative to employees commuting between the three sites while reducing vehicular traffic in and around campus.

MMC has instituted a shuttle service for contractors from the Classic Parking Lot (993 Congress St) to the hospital to reduce traffic and parking impact on the campus and surrounding neighborhoods. In 2015, MMC added a 20-space contractor lot on Forest St. Only essential contractor vehicles are permitted to park on campus: contractor parking passes are distributed by the Engineering Department on a case-by-case basis.

MMC Employee Shuttles: Future Routes

Once the St John St garage is complete and the majority of MMC employee parking is consolidated to that location, a new shuttle route will be established that reduces the amount of traffic around City streets and provides a reliable method of transportation for MMC employees. Future shuttle routes will be determined during the site plan review process.

CHAPTER FOUR

ENVIRONMENTAL AND INFRASTRUCTURE PLAN

Sustainable and resilient infrastructure is key to ensure safe and efficient operations of healthcare facilities in the 21st century. Maine Medical Center is seeking to advance its good stewardship of environmental and infrastructure resources through its Institutional Development Plan.



NATURAL RESOURCE PROTECTION

The Maine Medical Center Bramhall campus is located at a high point in the west end of the Portland peninsula. There are several locations where natural resources are significant:

- The Western Promenade, a culturally significant public park that is listed in the National Registry of Historic Places (NRHP'89, see **Fig.4.1)**;
- MMC-owned landscape along Bramhall St abutting the Western Promenade and serving as a foreground to the Maine General Building and original hospital structure;
- MMC, located in an urban setting, maintains small landscaped areas that provide visual respite from surrounding hard scape. These areas are well maintained, flowers watered and mulched and trees fertilized in order to preserve the pleasing aesthetics important to its neighbors, employees and patients; and,
- MMC-owned natural area along Gilman St. This steeply sloping zone contains natural vegetation consisting primarily of mature evergreen tree growth which serves as a natural buffer between the hospital and residences on Gilman St.

The Western Promenade, in particular, is a treasured resource for the public, including employees, patients and visitors to the MMC Bramhall Campus. It is a site from which to take in views of the countryside and the White Mountains. The Master Facility Plan utilizes vertical expansion and/or previously developed sites to minimize impact on natural resources and maintain existing campus open spaces. The plan does not encroach upon or negatively impact any of the natural resources listed above.

Fig.4.2 on page 85 illustrates the location of these natural resources in relation to the proposed short- and long-term projects.

Fig.4.1 MMC IOZ: Relationship to the Western Promenade



Fig.4.2 MMC Environmental Protection and Operations Plan



* NOTE: The exact location, footprint and height of St John St Garage to be determined during detailed design.

STORMWATER MANAGEMENT

The MMC Bramhall campus is located at a high point in the west end of the Portland peninsula. From the high point of the property along Bramhall St, runoff from the site drains west, north and east entering the to the City of Portland's separated storm drain system and combined sewer system. The campus terrain and location of high slopes that contribute to stormwater flows is illustrated on **Fig.4.3 on page 86**.

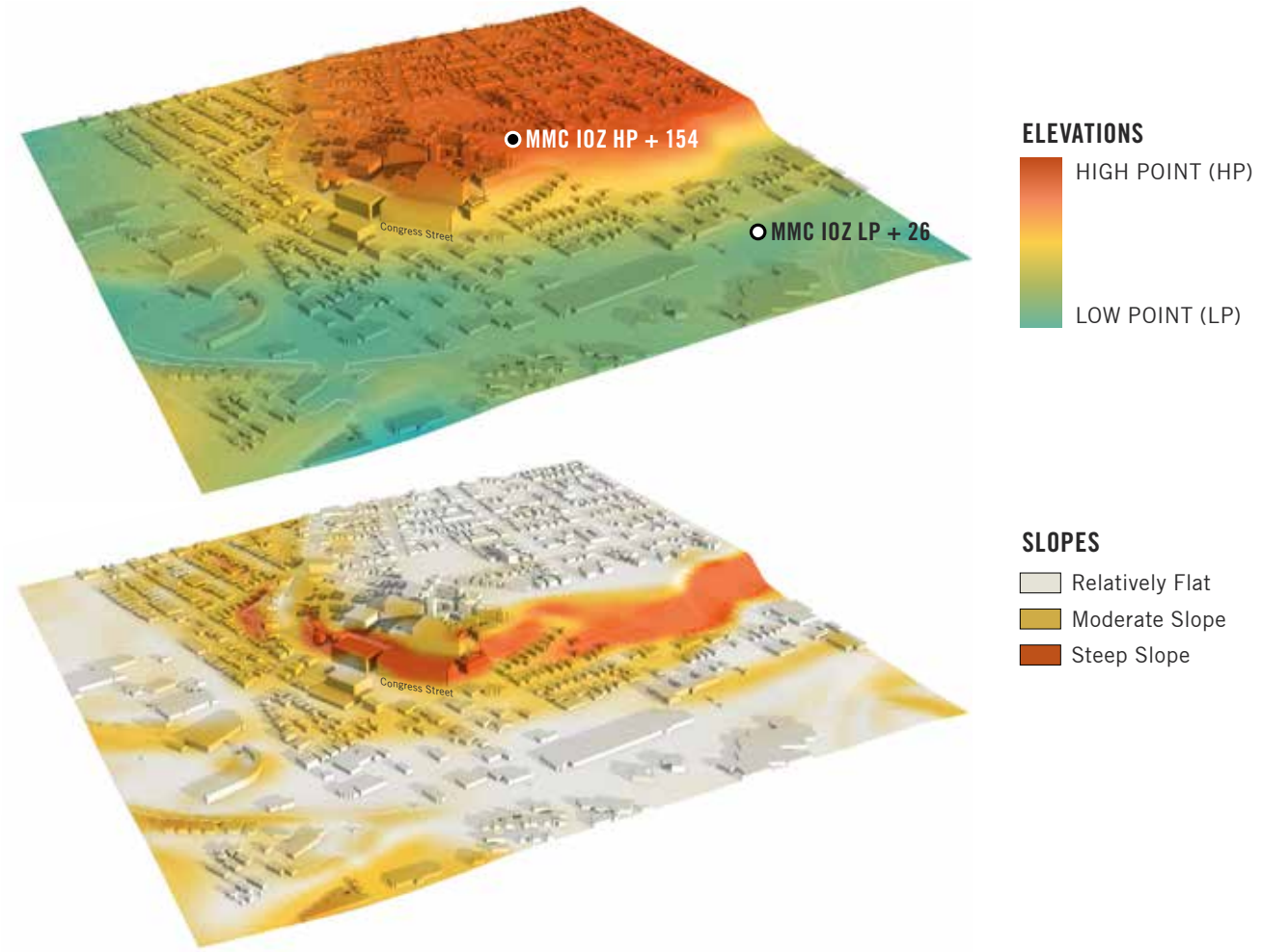
FEMA Floodplains

The campus is not located in a FEMA-designated flood zone. The 100-year flood zone boundary is located at the western edge of the Pan Am rail line and consists of flood-prone flats along the Fore River.

EXISTING STORMWATER INFRASTRUCTURE

In general, the campus redevelopment over the last 15 years has collected runoff from parking lots and new rooftops into a separated storm drainage

Fig.4.3 Diagrams Illustrating Elevation and Location of Steep Slopes around MMC Campus
(See **Fig.5.5 on page 106** for a map of existing elevations within the MMC IOZ boundary).



system, including storm drains in the public right of way. Where feasible, the on-site separated drainage system has been connected to a municipal separated storm drain. This includes the storm drains in A St constructed by the City in 2001 and Gilman St constructed by MMC in 2005.

2004 Improvements

The campus' stormwater conditions were most recently evaluated in a stormwater management report prepared by Sebago Technics, Inc. in 2004 as part of the Planning Board's review of the Bramhall campus expansion project, which included the construction of the Women and Infants Center, Emergency Department Expansion, Congress St Parking Garage and the Central Utility Plant. To meet stormwater treatment requirements for the expansion, MMC installed two Downstream Defender Stormwater treatment units to treat runoff from impervious areas on the site. The redevelopment separated and redirected stormwater runoff from approximately 6.3 acres of existing development from the combined sewers in Crescent St, Ellsworth St, and Congress St to the separated storm drain in A St. A 6' diameter unit was installed in the Congress St Parking Garage and a 10' diameter unit was installed in Gilman St.

Discharges into the City Combined Sewers

Other locations abutting the campus including Congress, Wescott, Charles, Bramhall, and Bracket Sts are only served by the City's combined sewers. At these locations, MMC's recent drainage construction terminates in a separated storm drain manholes connected to adjacent City combined sewer manholes to provide points of connections for future municipal separated storm drains.

Detailed information on MMC's stormwater discharges into the City's combined sewer and separated storm water infrastructure is outlined on **Fig.4.4 on page 88**.

FUTURE STORMWATER FLOWS

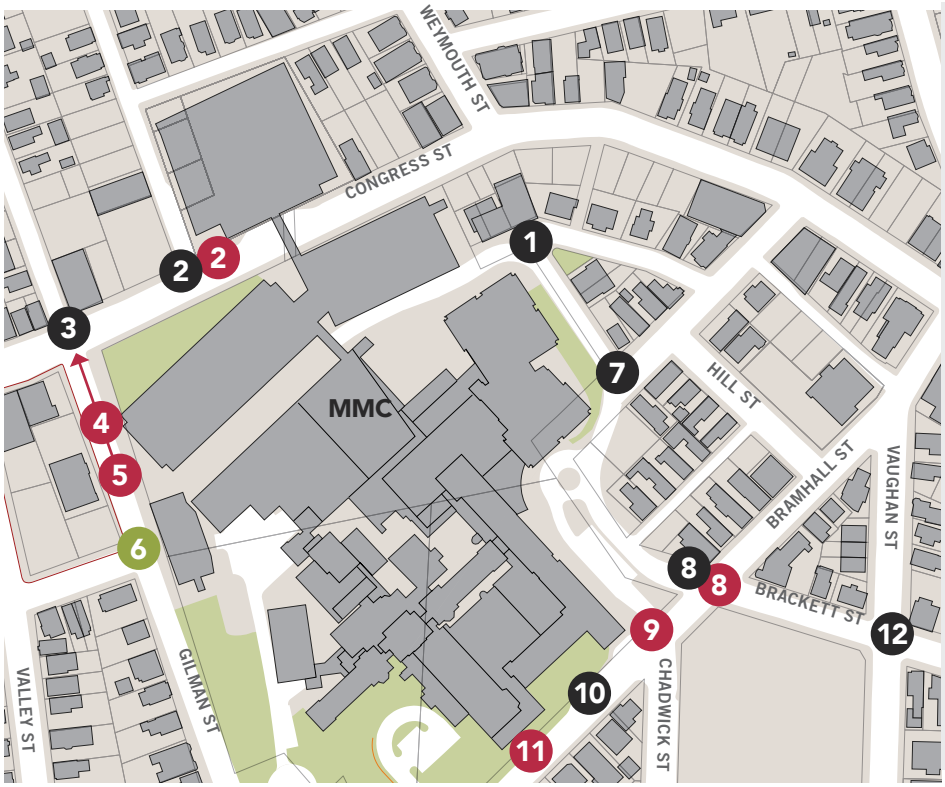
Any development or redevelopment of sites by MMC will be required to meet the City's stormwater management ordinance requirements and mitigate any increases in discharges to the extent practicable.

Projected Impacts of Proposed Development

A high level assessment of short- and long-term projects identified as part of MMC's Master Facility Plan shows no significant change to the amount of impervious surface or peak rate of run-off at the proposed project sites, as outlined below. A detailed discussion about the impacts of any future development will be part of site plan review.

- Proposed vertical additions to existing East Tower and Visitor Garage will not change the amount of impervious surface.
- Replacement of the Employee Garage with the proposed Congress St Development is not anticipated to increase impervious surfaces. The current design of the project site redevelopment includes an extensive green roof component and proposes

Fig.4.4 Existing Sewer Connection Points



Locations where MMC separated stormwater enters the City combined sewer system

Locations where MMC separated stormwater enters the City storm water system

Locations where MMC separated sanitary sewer enters the City combined sewer system

LOC.	MMC STORM WATER FLOWS	MMC SANITARY FLOWS
1	Runoff from the campus and storm drains constructed by MMC in Wescott St enters a combined sewer manhole at the intersection of Wescott St and Crescent St. The outfall of this system a 12" combined sewer that drains in a westerly direction along Crescent St, eventually draining to Park Ave via sewers in Ellsworth St, Congress St and Weymouth St.	N/A.
2 2	Separated runoff from the MMC parking garage enters the municipal combined sewer at the intersection of Congress St and Forest St. The sewer outlet from this manhole is an 18" reinforced concrete pipe that drains north in Forest St to Park Ave.	Sanitary sewer outfalls from the MMC parking garages enter the municipal combined sewer at the intersection of Congress and Forest St. The sewer outlet from this manhole is an 18" reinforced concrete pipe that drains north in Forest St to Park Ave. Areas tributary to this system include the Emergency Department, Women and Infants Center and Richards Wing.
3	Runoff from areas of the campus along Congress and Gilman St enter catch basins connected to the City's combined sewer system at the intersection of Gilman and Congress St. From this point the combined sewer drains north in Gilman St to Park Ave. Runoff in the roadway that bypasses the catch basins at the intersection runs west along Congress to St John St.	Sanitary sewer flows from #4 and #5 enter the City combined sewer at this location.

LOC.	MMC STORM WATER FLOWS	MMC SANITARY FLOWS
4	N/A.	The sanitary sewer serving the LL Bean Building, Annex B / Maine General Bldg, and the Engineering Services Building enters the City's 12" concrete sewer in Gilman St. From this point the sewer drains north in Gilman St to Congress St (#3) and continues to Park Ave.
5	N/A.	The sewer service from the Central Utility Building enters the 12" concrete City sewer in Gilman St, a short distance above Location 4.
6	Runoff at the intersection of Gilman St and A St at the upstream end of a separated storm drainage system constructed by the City of Portland in 2001 as part of the St John St sewer separation project. The storm drain was extended along A St, from its intersection with St John St to a drain manhole in Gilman St opposite the MMC Central Utility Plant. This storm drain was extended to the hospital property specifically for the purpose of providing a point of connection for separated stormwater runoff from the hospital. In 2005 MMC constructed drainage on campus to collect runoff from areas of the site including the existing emergency room parking area, LL. Bean Wing, and service areas abutting the Central Utility Plant to the A St storm drain. This project also extended the separated storm drain in Gilman St to the south, separating runoff in Gilman St and the Dana Center from the City's combined sewers.	N/A.
7	Runoff at the intersection of Ellsworth St and Wescott St. Separated storm drains constructed by MMC in 2005 connect to a combined sewer system manholes in Ellsworth St. The combined sewer drains in an east in Ellsworth St towards to Congress St.	N/A.
8 8	Separated storm drainage from the MMC parking lot enters the combined sewer in Charles St at its intersection with Bramhall St.	Sanitary sewer manhole in the intersection of Bramhall and Brackett Sts where sewer services from Pavilions A and C connect to the City sewer. The outfall of the manhole at this location is a 15" sewer that drains to the east in Bramhall St.
9	Runoff from small areas of the site along Bramhall St enters the combined sewer system at Location 8.	Sewer service from the south end of Pavilion A enters a City sewer manhole at the intersection of Bramhall and Chadwick St. From this location, the sewer continues east to Location 8.
10	Small areas along Bramhall St enter catch basins in the city right-of-way	N/A.
11	N/A.	Sewer manhole in Bramhall St where a sewer service from the Dana Center enters the City sewer in Bramhall St. From this location, the sewer continues east to Location 9.
12	Runoff at the intersection of Brackett St and Vaughan St where separated MMC storm drains in the Brackett St parking lot connects to the combined sewer draining southeast in Bracket St.	N/A.

removals of existing impervious area. The net impact of this design is expected to result in no increase in the peak rates of runoff from the site. It is expected that the primary post-development stormwater connection will be to the Forest St combined sewer at the intersection of Congress St and Forest Sts..

- 222 St John St is served by a separated stormwater drainage system that travels west under the railroad tracks and past the Cumberland County jail site and Fore River Parkway to discharge to the Fore River. The proposed new parking structure on this property is not anticipated to significantly change the amount of impervious surface or peak rate of run-off.

SANITARY FLOWS INTO CITY COMBINED SEWERS

Issues in areas of the City's stormwater, sewer drainage, and fire hydrant systems in the vicinity of MMC's campus have been identified by City officials but have not been quantified. MMC understands that the site plan review process for individual projects may include measures that minimize new impacts to the combined sewer system. The MMC campus discharges sanitary flows into the City of Portland's combined sewer system at approximately seven locations, as illustrated in **Fig.4.4 on page 88**. This information is provided to the best of MMC's knowledge after researching its own records and those of the City of Portland. Due to the age of the public sewer system and MMC's buildings, record plans of the existing sewer systems may be incomplete and additional currently unidentified connections may exist. We are unaware of capacity issues in the City's existing system at the connection points from the campus to the City sewer system located in the public right of way. Drainage studies completed for the 2004 Bramhall campus expansion and approved through the site plan process did not identify deficiencies at the connection points to the City system.

MMC anticipates increased use of city combined sewers for sanitary flows associated with its short- and long-term projects. The increased sewer flow loads and exact connection locations will be determined during the Site Plan review process as required by the City of Portland:

- The East Tower expansion is anticipated to increase sanitary flows in the combined sewer located at the intersection of Congress and Forest Sts, which connects to the Forest St combined sewer.
- The Congress St Development is anticipated to increase sanitary flows in the combined sewer located at the intersection of Congress and Forest Sts, which connects to the Forest St combined sewer. The Congress St Development may also include a sewer connection that increases sanitary flows into the combined sewer located at the intersection of Congress and Gilman Sts that ultimately discharges to the Gilman St combined sewer.

ENERGY CONSERVATION

CURRENT CONSUMPTION

Because MMC, of necessity, is such a large consumer of energy, it utilizes the services of an energy procurement broker, Competitive Energy Services, to provide it with strategic energy consulting services and management of energy procurement activities for electricity, natural gas, and oil in order to maximize efficiency and to ensure MMC achieves the most competitive pricing. MMC purchases its energy through a competitive bid-based energy procurement process.

In calendar year 2016, MMC consumed:

- 411 gallons of oil,
- 1,633,686 CCF of natural gas, and,
- 35,375,765 Kw-Hr of electricity.

CONSERVATION EFFORTS

Central Utility Plant (2008)

In 2008, MMC's 22 Bramhall St campus went live with its upgraded and centralized utility plant. The Central Utility Plant (CUP) was designed to provide better management of and more efficient results for energy consumption by the hospital. The plant produces steam, chilled water, and back-up power for the Bramhall campus. The peak tonnage of the plant is currently close to 2,400 tons per hour of chilled water.

Since 2008, MMC has experienced dramatic energy consumption decreases directly resulting from the state of the art utility plant. The CUP controls both electrical and gas utilization, and heating and chilling functionality, and will service the short-term modernization project under development at the Bramhall campus, with a minor upgrade to the existing systems. The CUP contains state-of-the-art dual natural gas /oil system allowing for switching between oil and gas depending upon price and availability.

Infrastructure Improvements

In addition to its conservation methods in the electric, oil and gas arena, MMC has also undertaken investment in infrastructure upgrades at its 22 Bramhall Campus to reduce building air changes and temperature set-points allowing for the monitoring and control of humidity and temperature during high demand use times. Upgrades in sequencing and timing of set points have achieved efficiencies of HVAC run times and energy demand.

Further, MMC has been investing in lighting and plumbing features that allow for reduced energy consumption. LED lights have been installed in its garages and in the public corridor within the Bean Building. Low flow plumbing fixtures with aerators are installed when replacements or renovations are required. These fixtures lower overall water consumption at the hospital.

Future MMC projects are expected to integrate with ongoing major utility initiatives impacting the area including Unitil's Natural Gas SURE project and the City's LED street light conversion program.

Table 5.1 Projected Electricity Demand

		Projected Net Energy Demand	Potential On-Site Energy Production (Rooftop PV)
East Tower Vertical Expansion	Utilizing new systems for efficiency	300 KW	--
Visitor Garage Vertical Expansion	Utilizing existing systems	350 KW	150 KW
Congress Street Development	Net demand with the deletion of the existing garage currently on site	1,700 KW	
St John St Garage	Stand-alone project not connected to core campus primary metered system	230 KW	500 KW
Central Utility Plant Expansion	Additional summer cooling demand	1,800 KW	
TOTAL ENERGY DEMAND		4,380 KW	650 KW

Green Buildings

The historic Maine General Hospital incorporated natural light and ventilation as an important part of the healing process. To continue this legacy, new campus buildings will take advantage of natural light, heat, and ventilation to improve building performance while also contributing positively to the healing qualities of patient and family spaces. Specific designs will aim to lower Energy Use Intensity (EUI) beyond the traditional code minimum baseline. Use of industry standards such as LEED will serve as a model for evaluating the sustainability of future MMC buildings.

PROJECTED ENERGY DEMANDS

Each project in the Master Facility Plan has specific needs and vary in their impacts. The proposed projects combined are anticipated to generate 5,400 KW of additional electricity demand (see **Table 5.1** above for details). MMC is currently working with Central Maine Power to identify capacity for the projected electricity loads.

The steam loads are met by MMC's CUP and will not impact city infrastructure. The CUP has the capacity needed to service MMC's short-term growth needs. The gas infrastructure has capacity to handle any increases to the current steam load.

OPERATIONAL SUSTAINABILITY

HAZARDOUS WASTE MANAGEMENT

MMC has a Hazardous Materials and Waste Plan supported by policies for the handling and disposal of hazardous waste, universal hazardous waste and biomedical waste.

Biomedical and Hazardous Waste

Biomedical waste sharps, biomedical waste, pathological waste (tissues, etc), and hazardous pharmaceutical and other chemical waste are collected by MMC Environmental Services or contractors, and stored at secure locations across campus prior to pick up, transfer, and ultimate disposal by contractors. DEA controlled substances are wasted at the point of generation (e.g. medication rooms), solidified, and collected by MMC Environmental Services at a secure holding room for pick-up, transfer and ultimate disposal by contracted vendor. All hazardous materials leave the campus through the loading docks (see **Fig.4.2**).

MMC's short-term projects are not expected to create significant increases waste volumes. No changes are currently planned to hazardous materials storage and transfer locations on campus.

Grease Discharge

MMC will be installing a grease trap system capable of separating grease from waste water as part of its short-term projects.

Soiled Linen

MMC has its own Linen Services department that is responsible for overseeing the processing of laundry for all of MMC and Maine Medical Partners (MPP) locations. The plant is located in Westbrook, and the linen is transported between these locations by MMC's Materials Management team.

SUSTAINABLE OPERATIONS

MMC expects to continue, and where possible, expand on the following sustainable operation strategies as part of its long-term plan.

Campus Recycling

MMC separates paper and cardboard out of the waste stream through on-campus recycling. MMC Kitchen and Café provide recycling for can and bottle returnables, and separate compos items from the waste stream. MMC has also switched to reusable needle boxes to reduce plastic waste. Expired medical equipment and devices are reprocessed by contractors.

Landscaping

MMC contracts with an outside landscaping company. In renewing its contract, MMC is requiring the use of organic pesticides and fertilizers for all planting and green space on campus.

Snow Removal

MMC contracts with an outside snow removal company. The environment requires the use of melting agents, but MMC has taken steps to minimize its use by installing heated sidewalks at the front entrance and South lot entrance as well as the Emergency Department entrance. MMC will continue to use replace calcium chloride instead of salt, when possible, to reduce environmental impact of snow removal.

NOISE IMPACT

MMC's Master Facility Plan aims to minimize noise and disturbance both for the benefit of its neighbors and its patients. Key to this is relocating the main campus entrance to Congress St. This will limit traffic and associated noise from moving up onto the hill. The relocation of the helipad will maintain current flight paths, which were designed to minimize neighborhood noise impacts by following the recommended approach to the hospital over the Congress St corridor as opposed to over dense residential areas. MMC will document the noise complaints it receives electronically and at its dedicated noise complaint phoneline at 207-662-6699, and review all such complaints with the neighborhood council as they arise.

MITIGATING IMPACT OF HELIPAD OPERATIONS

MMC's helipad is currently located on top of the Employee Garage, which is slated for deconstruction in the short-term per MMC's Master Facility Plan (MFP). The MFP calls for a new helipad to be built on top of the East Tower following its planned vertical expansion (see "Short-Term Projects" on page 44).

MMC is in the process of identifying preferred flight routes for the new helipad, to be approved by the City of Portland, that will minimize noise impact of helicopter flights on surrounding residential areas. Initially, such preferred flight routes shall be proposed to the Federal Aviation Administration (FAA) as shown on the flight map (see **Fig.4.5 on page 95**). At the initiative of either the City or MMC, the map of preferred flight routes may be amended from time to time by agreement between MMC and the City. MMC will notify all flight providers likely to use the Helicopter Landing Pad of such preferred routes, and shall take the following measures to ensure that such preferred routes are utilized whenever weather conditions, safety considerations and the best interests of the patient being transported permit, with the expectation that this will be the usual case.

MMC will instruct all providers which regularly use the Helicopter Landing Pad that pilots must file an exception report with the Air Medical Provider Administration of Lifeflight of Maine or its

Fig.4.5 Proposed Flight Routes for the new MMC Helipad



NOTE: Path #3 is new and will only be used under high wind conditions if required by the Federal Aviation Administration.

successor entity for operations modified for safety considerations or at the direct request of Approach Control at the Portland International Jetport. Logs of these exception reports will be made available to MMC and to the City upon request but no more frequently than annually.

When and if the Portland Jetport has the capacity to maintain and preserve data which specifically identifies flight routes actually taken by aircraft utilizing the Helicopter Landing Pad, the City shall consult such data to review compliance with this paragraph, and MMC, upon request of the City, shall be responsible for the cost of translating this data into usable form but not for the costs of the flight monitoring.

MMC will continue to engage providers of helicopter emergency medical transport who are accredited by the Commission on Accreditation of Medical Transport Systems (CAMTS) or its successor agency (unless special circumstances warrant a non-accredited provider, such as the Air National Guard, US Coast Guard and others), and who operate in compliance with the "Fly Neighborly Guide," third edition (and any subsequent revisions) prepared by the Helicopter Association International.

Helicopter landings on the Helipad shall be used for emergency patient care only, and on the rare occasion for emergency management training by federal or state management agencies or US military or government aircraft.

Compliance with Helistop Overlay Zone Regulations

Because the proposed helipad location is on the roof of an existing structure, the landing pad shall not be required to meet the setback requirements of Section 14-327(3), or the fencing requirements of Section 14-327(4) of the Helistop Overlay Zone.

MMC will continue to honor the following exception to the Helistop Overlay Zone included in the 2005 Conditional Rezoning Agreement (Order 172-04/05):

1. Equipment. In generating any specifications in connection with the negotiation of any contract or agreement with any provider of emergency medical transport by helicopter, MMC will specify that helicopters utilizing the Helicopter Landing Pad (with the exception of U.S. military or government aircraft) are relatively new turbine powered aircraft meeting requirements under ICAO Annex 16 Chapter 8 for in-flight noise levels and complying with FAA airworthiness standards, 14 CFR part 36.11 and 14 CPR 21 Sub-part D, or any amended or successor requirements or standards.

MMC shall conduct a noise study as part of the site plan process if any changes to the helipad are being proposed, and work to mitigate any potential noise impacts.

[This page is intentionally left blank.]

CHAPTER FIVE

DESIGN

Maine Medical Center aims to continue its tradition of design excellence with its new campus projects. Future buildings will be designed to improve care delivery while also providing a new gateway to Portland on Congress St.



DESIGN DRIVERS

The campus transformation of Maine Medical Center (MMC) draws its inspiration from its site, history, programmatic needs and most importantly the desire to create a sense of place. Specifically, the Hospital will reflect its location within Portland and of Maine. Within this framework, the Hospital aims to preserve the historic character of the existing campus yet provide the opportunity for new identities to develop that represent the modern delivery of healthcare and the future of MMC.

Fig.5.1 MMC Campus: Key Design Drivers

COMMUNITY

Positive Patient, Family & Community Experience



ADAPTABILITY

Spatial and Programmatic Flexibility



HEALING

Spaces that Promote Healing



A NEW GATEWAY ON CONGRESS STREET

MMC key design drivers and interventions envisioned for the MMC balance the clinical needs of the hospital with the campus' place within the City of Portland. Included is a primary effort to improve the built environment of MMC's campus relationship with its urban context. This is achieved by focusing the new entrance towards Congress St to create an improved presence on the urban edge of the campus. This key intervention improves the visitor and patient experience from arrival to the City all the way to entering MMC buildings themselves. Providing a new entry on Congress St connects a campus entry directly to the existing and expanded visitor parking garage, simplifying the drop-off and parking sequence. This move creates a clear arrival sequence from drop-off, to parking, to movement through the MMC campus.

AN EFFICIENT, WELL-ORGANIZED CAMPUS

The inclusion of a new entry coupled with clear primary circulation along the ground level connects major interior programmatic functions with the site, further reinforcing the wayfinding and activating the building interior and exterior. Engaging with Congress St with a sensitivity to human scale and experience will be the focus of the transition between exterior to interior including transitions from urban to natural environments. This approach extends to vertical connections, both physical and visual, to mitigate the large grade changes that exist on campus and with the surrounding sites. These interventions will provide a positive patient

Fig.5.2 Artists' rendering of new Congress Street entrance, part of the proposed Congress Street Development (Note: Façade design is subject to change during detailed design.)



and visitor experience as well as improve the surrounding neighborhood.

DESIGN THAT SUPPORTS HEALING

The creation of healing environments is an essential element to the design within the IOZ boundary. This will be achieved through the incorporation of access to and views of nature and natural daylight, which are proven to improve positive patient outcomes within a healthcare environment. Proper location and use of glass and transparency provides connections to the exterior to improve patient, visitor and staff experience but also to further reinforce wayfinding, and activate and energize the streetscape.

A SUSTAINABLE AND RESILIENT CAMPUS

Hospitals are vital partners within the communities they serve. Due to this relationship, design modifications will further improve MMC's status as a resilient campus that provides both a responsive exterior environment and healing indoor environment. Buildings take advantage of natural light and air, coupled with the use highly efficient mechanical systems. These drivers will reduce the energy necessary to operate the buildings, further increasing resilience in the face of unanticipated events.

CONTEXTUAL LANDSCAPE FRAMEWORK

The long-term landscape framework for the MMC campus draws its inspiration from the landscape typologies of coastal Maine reconciled to the site's rich historical and urban context. The campus commands a high promontory adjacent to the historic Western Promenade, and extends down the hill to Portland's bustling main street, Congress. The landscape design will respond to this context with elements that provide transitions between the historic and pastoral to contemporary and urban.

The landscape design at the southern end of the campus is conceived as a visual extension of the Western Promenade's historic landscape design, while the new entrance on Congress St is thought to be a contemporary expression aligned with modern healthcare design. The new entrance on Congress St is contemplated to accommodate ADA-compliant access from the street along with stairs and a vehicular drop-off. The streetscape improvements along Congress St itself will rely on the existing City standards, providing continuity along the length of the street and completing the transition to the urban realm.

The intermediate landscape spaces may be located on the campus to provide the transition between these two primary expressions, with landscapes and outdoor spaces that include courtyards, viewing gardens and green roofs.

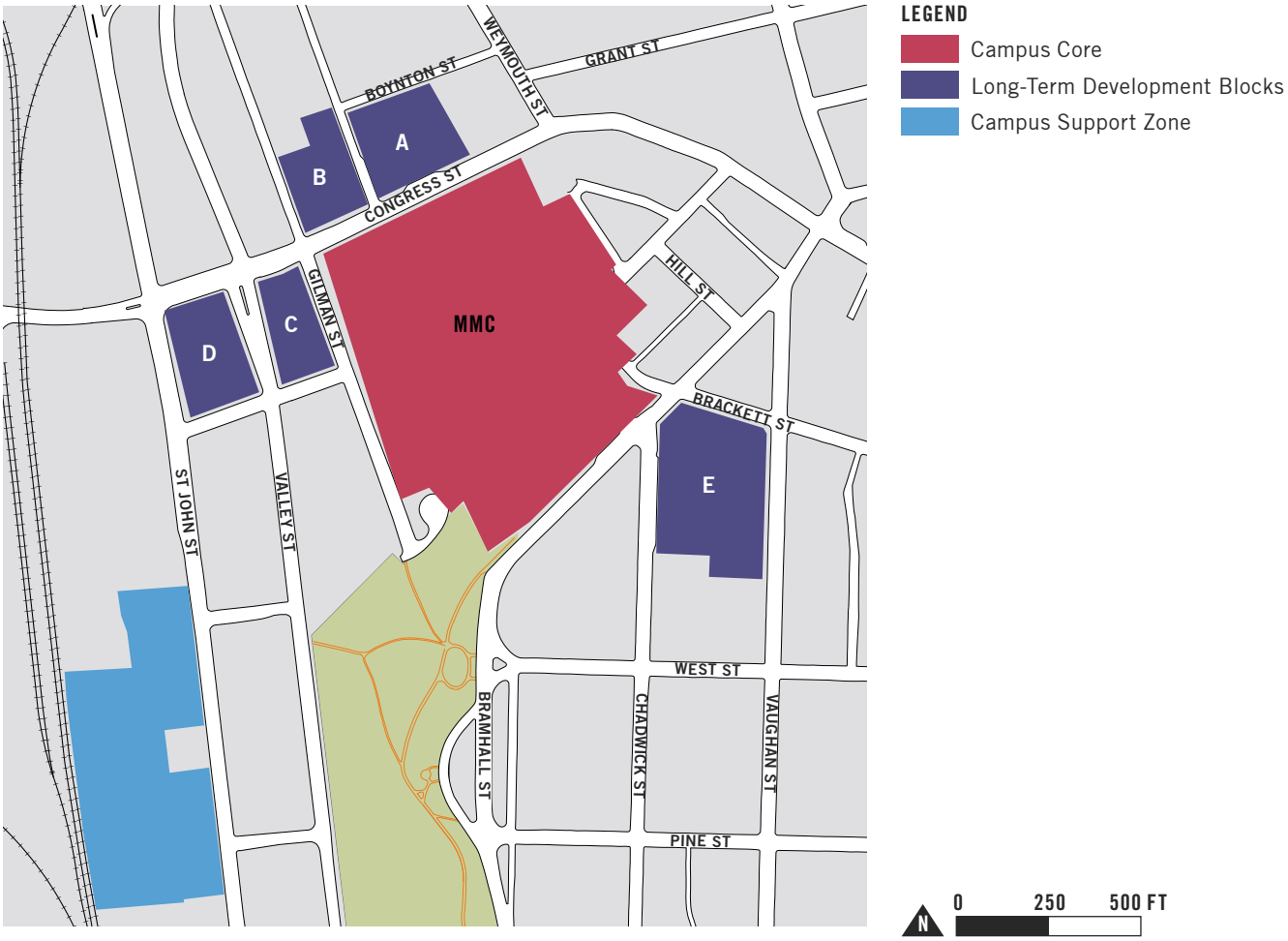
NEIGHBORHOOD INTEGRATION

Like many urban medical centers established in the 19th century, neighborhoods have grown up around MMC while the Medical Center has continued to grow. The historically synergistic relationship between MMC and surrounding neighborhoods, commercial corridors and parks is described in detail under "History" on page 10). The growth of MMC in the automobile era brought forward challenges related to traffic and parking that are common to medical centers located in urban settings. These issues continue to be at the forefront of MMC's ongoing dialogue with its neighbors and the City, and are addressed in the "Transportation Plan" section of this document (see page 53). Equally important to the relationship between MMC and its neighbors, however, is the integration of campus buildings, open spaces, and parking lots into the physical fabric of the neighborhoods through careful consideration of location, height / massing, use, and overall design.

As outlined in the introduction to this chapter, improving the interface between campus and community was an objective of the MMC Master Facility Plan. The new hospital building proposed in the short-term will transform MMC's frontage on Congress St, which was previously defined by parking structures only.

During the IDP process, the City of Portland encouraged MMC to look beyond its limited zoning boundary to identify areas for potential long-term growth. MMC has worked with abutting land owners

Fig.5.3 MMC IOZ Development Zones



and the City to identify key parcels contiguous with its core campus that can accommodate potential expansion of healthcare-related or supporting uses in the long-term (see **Fig.5.3**).

A majority of these are under-developed parcels on either side of Congress St—an area envisioned for transformation into a new gateway node in the City's Comprehensive Plan (see **Fig.1.8 on page 27).** Nearby but non-contiguous parcels along St John St were identified to accommodate additional supporting uses, and in particular, the potential for a future employee parking deck.

The following sections summarize MMC's methodology for identifying an appropriate height envelope for these future development zones that will ensure appropriate integration with and transition into adjoining neighborhoods.

DETERMINING MAXIMUM HEIGHTS: OVERVIEW OF METHODOLOGY

MMC has used a multi-part methodology to determine the appropriate height profile for potential future development within the IOZ boundary:

1. Project Definition. The Master Facility Plan has identified heights for short- and long-term projects that reflect MMC's campus modernization needs. These approximate heights, which are expected to be refined through detailed design, were taken as a starting point to determine maximum heights for the proposed building sites.

2. Urban Design Analysis. Heights for zones that are not identified for specific projects were determined using context-sensitive urban design best practices from urban hospital campuses and health districts around the US. These included:

    » Enabling larger and taller buildings within the campus core while providing height transitions to the scale of residential and historic neighborhoods along campus edges (see "Transitional Zones" **page 110**);

    » Testing future development blocks for a variety of uses appropriate for mixed-use health districts to identify heights that accommodate desired uses; and,

    » Using computer-generated shadow analysis of existing versus proposed height profiles to minimize potential shadow impacts of future development on adjoining public spaces and properties (see "Minimizing shadow impacts" **page 122** for details).

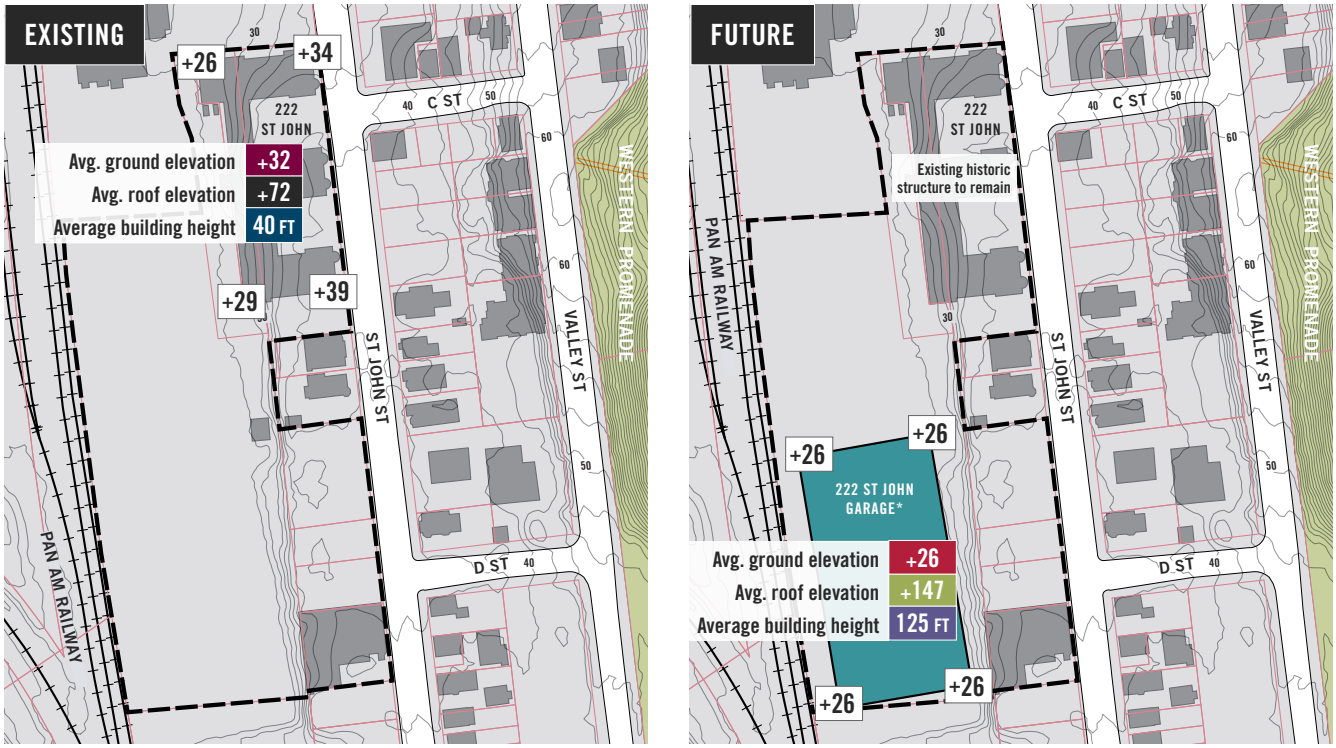
3. Slope Analysis. A 3D terrain model was used to optimize maximum heights based on the average grade of each building site and/or development zone within the IOZ.

4. Visioning. MMC has worked with the City of Portland planning staff to identify maximum and minimum heights and number of stories for new development along Congress St that can provide "gateway" experience that is called for in the City's Comprehensive Plan. The target heights have been identified as 75 feet (6 stories) maximum, and 3 stories minimum along Congress Street. (Note: Actual heights listed vary depending on the average slope within each block).

The resulting future height profiles, which are the basis of the maximum heights requested in the Regulatory Framework, are illustrated in **Fig.5.4** through **Fig.5.8,** along with the existing height profiles for ease of comparison.

The regulatory framework also identifies the maximum number of stories allowed within each

Fig.5.4 Existing and proposed future heights for long-term development parcels along St John Street

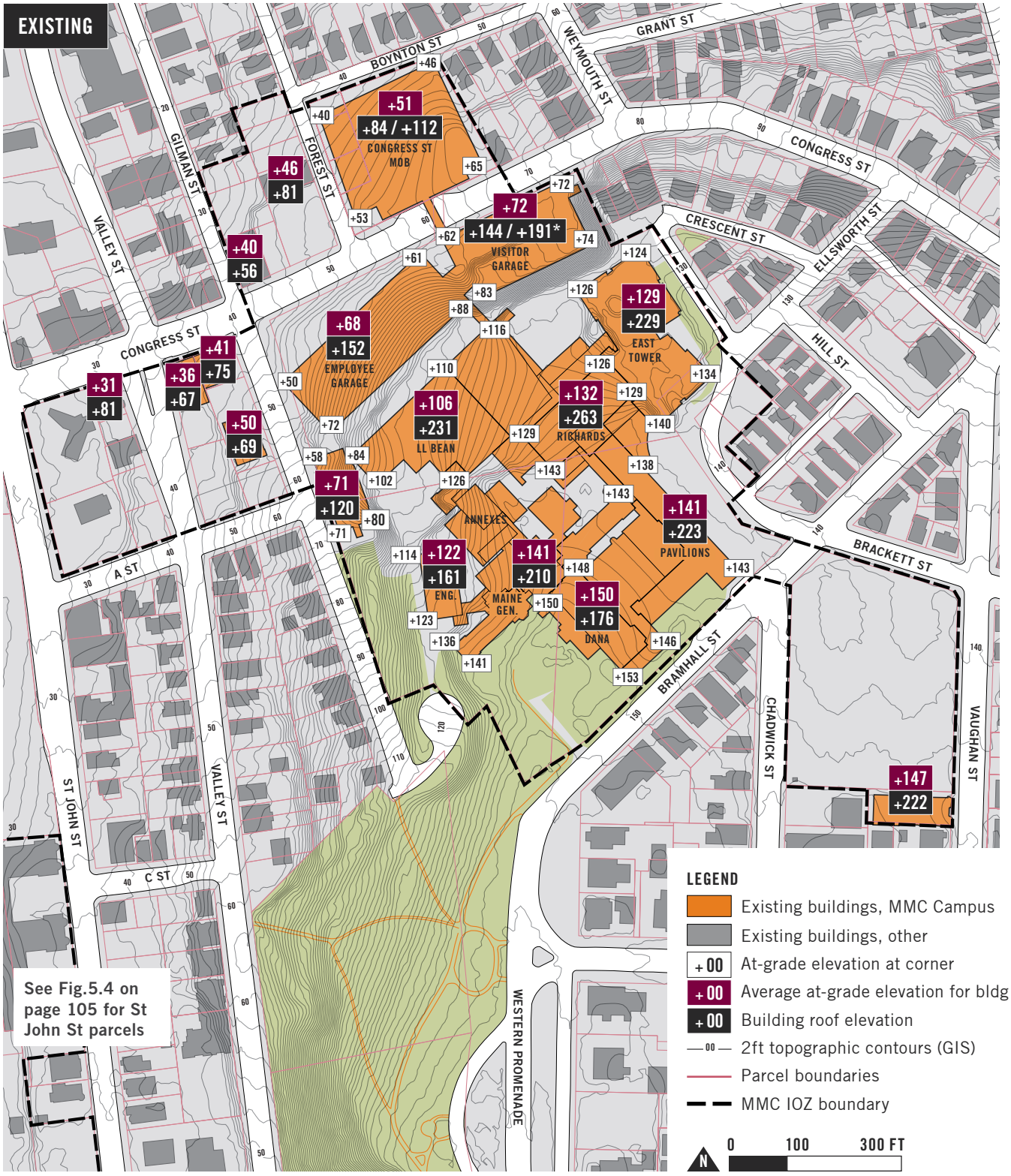


*** NOTE: The exact location, footprint and access to St John Garage to be determined during detailed design.**

height zone, which are based on a minimum floor-to-floor height of 10ft for allowed uses. Floor heights of actual buildings will vary widely based on program use, and can exceed 20ft for intensive healthcare uses.

A 3D rendering of the maximum height envelopes requested in the Regulatory Framework can be seen in **Fig.5.13 on page 114.**

Fig.5.5 Existing Structures within IOZ: At-Grade and Rooftop Elevations



* Height of existing elevator tower on the Visitor Garage, excluding mechanical room on top of tower.

Fig.5.6 MMC Long-Term Development Vision: At-Grade and Rooftop Elevations

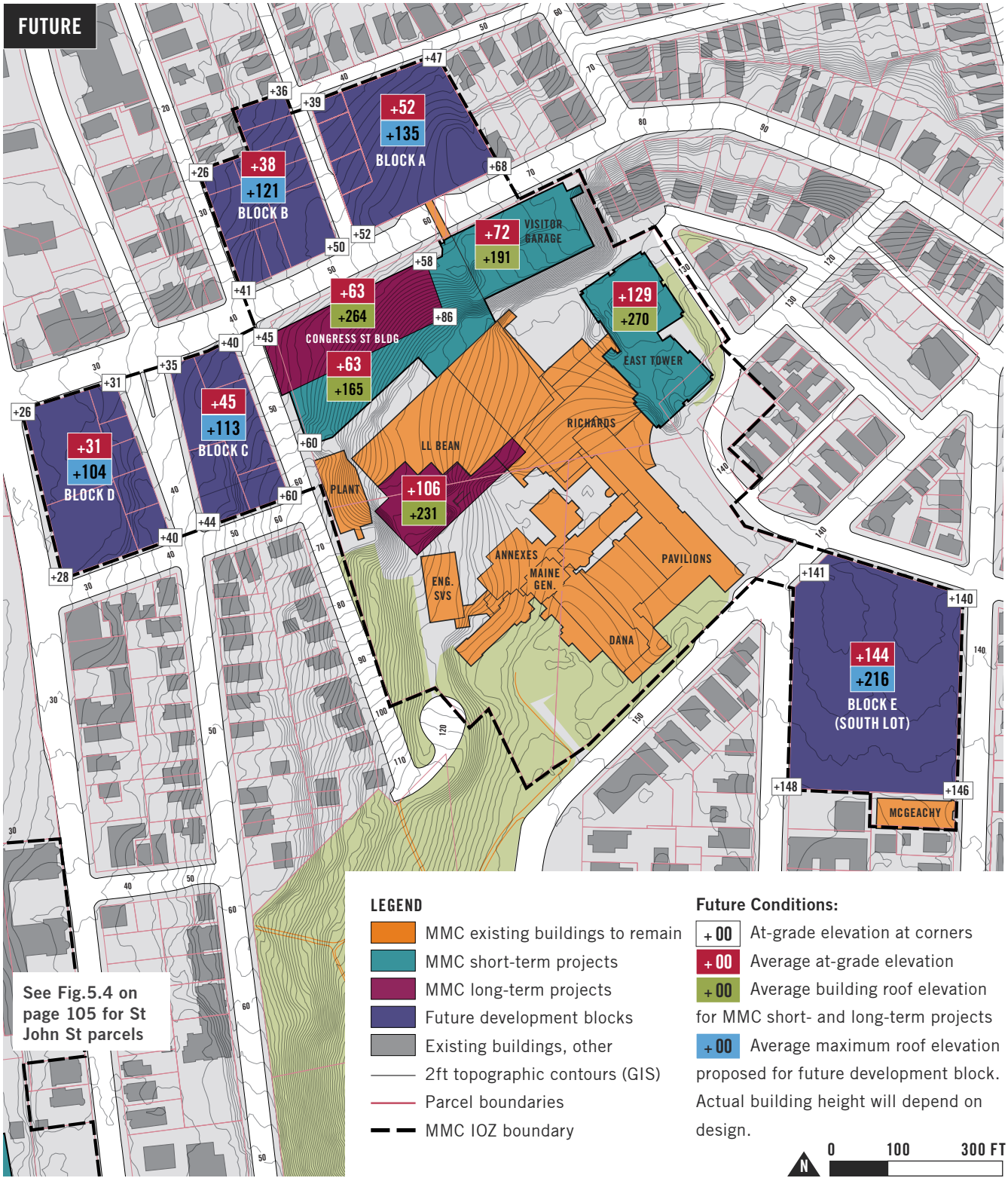
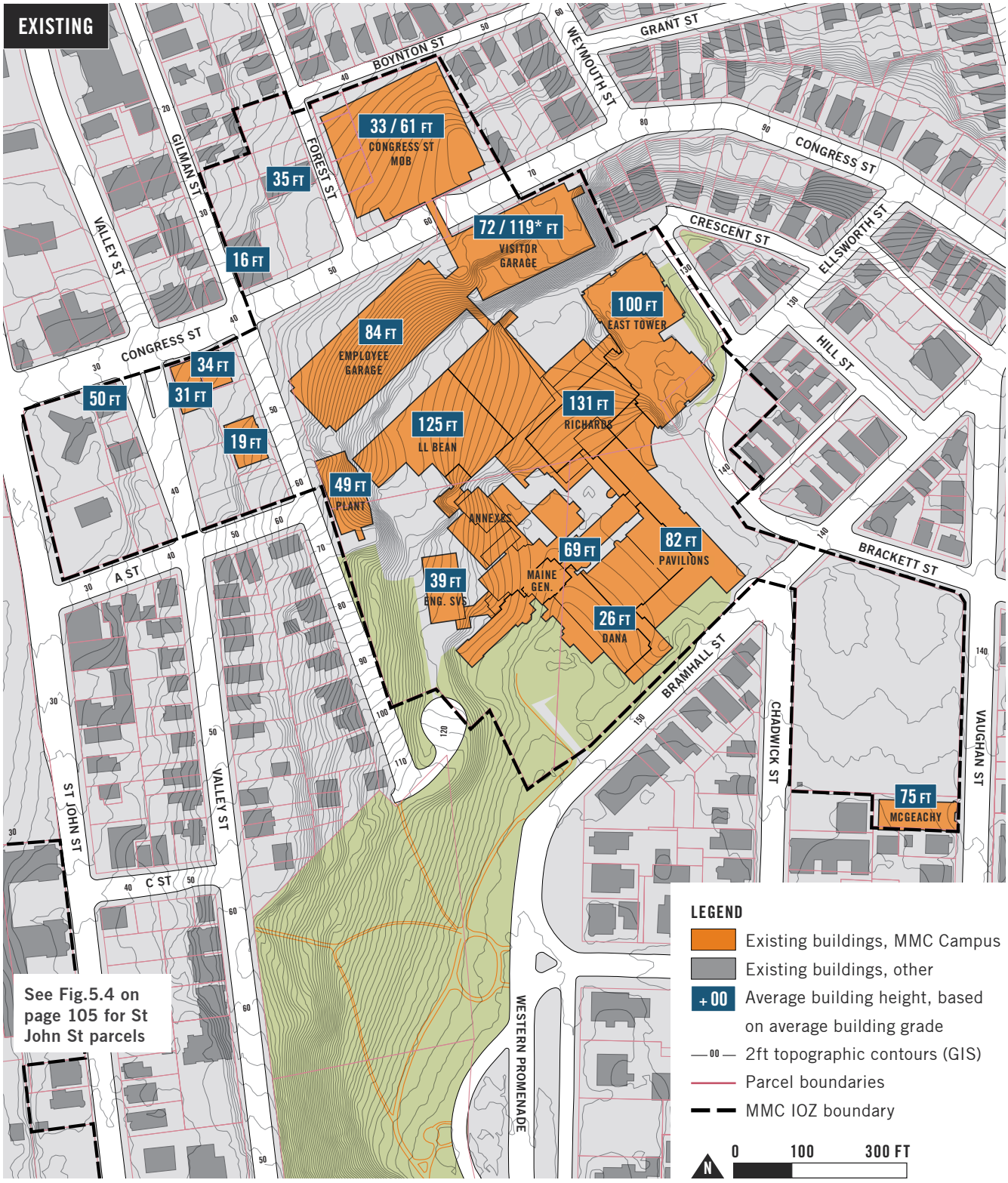
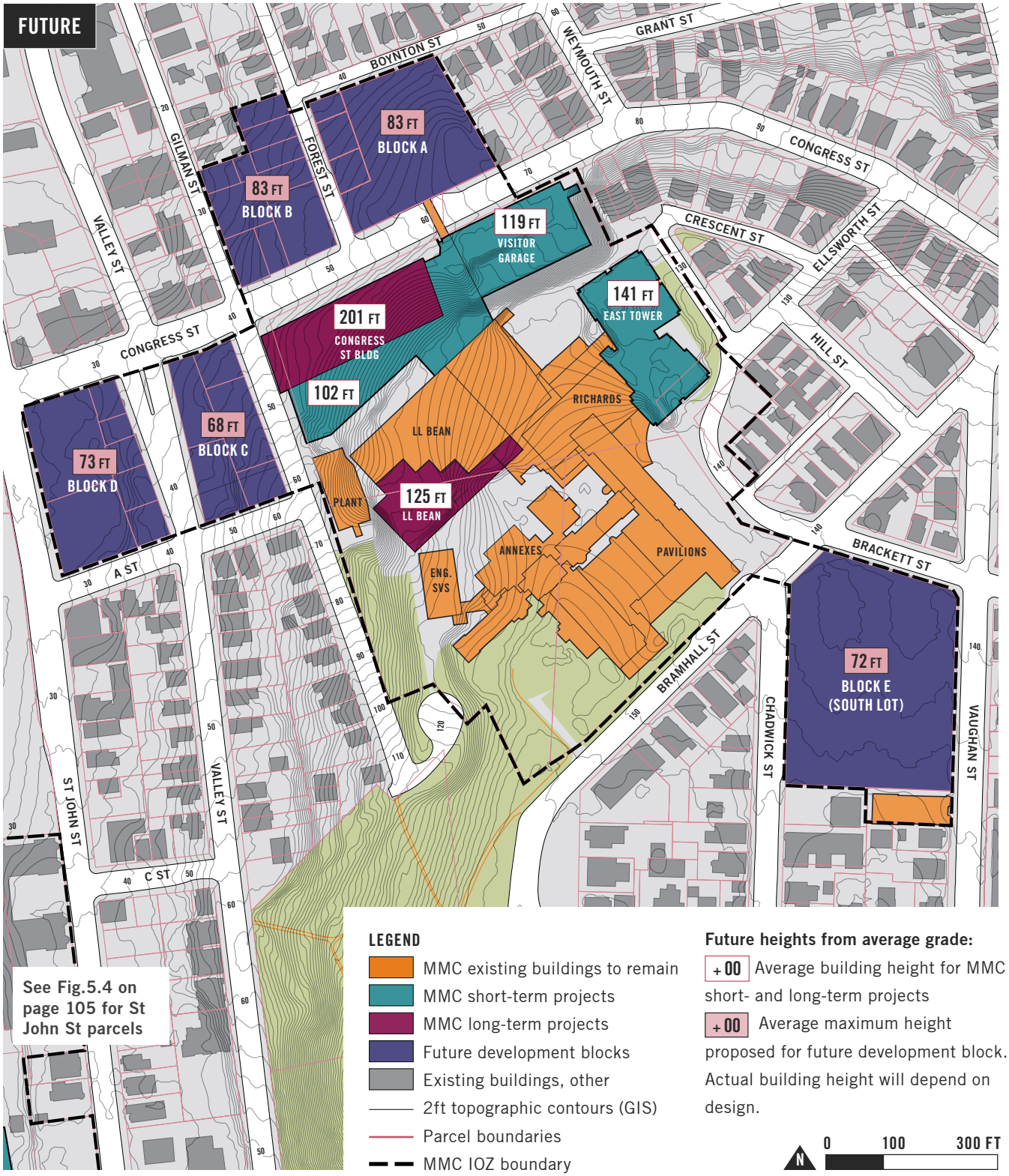


Fig.5.7 Existing Structures within IOZ: Average Building Heights at Average Grade



* Height of existing elevator tower on the Visitor Garage, excluding mechanical room on top of tower.

Fig.5.8 MMC Short- and Long-Term Projects: Average Building Heights at Average Grade



TRANSITIONAL ZONES

In accordance with urban design best practices, MMC has identified "transitional zones" along the edges of the IOZ boundary that abut residential zones where the height of new development can step down to better integrate with the character of local residential streets and neighborhoods. A diagram illustrating this concept is shown in **Fig.5.9** below**.** The location of specific transitional zones within the IOZ is illustrated in **Fig.5.10** on the following page.

Transition zones are designed to create a consistent scale of development on either side of a given public street. To achieve this goal, most transition zones dictate a height limit matching the maximum height allowed by the zone across the street. The specific depth of the transition zone where the height limit applies is typically determined by using the "transitional height plane" test whereby a 45˚ angle line is extended inward from the maximum height line. This test ensures that taller structures on the inner side of the parcel do not negatively impact views from the public street whose character is being preserved.

MMC has used this widely accepted practice to identify and set a 50-ft depth to transition zones illustrated in **Fig.5.10** and required as part of the Regulatory Framework. Diagrams illustrating the testing of key MMC IOZ transitional zones with the "transitional height plane" are included on the following pages.

Fig.5.9 Transition zones: concept diagram

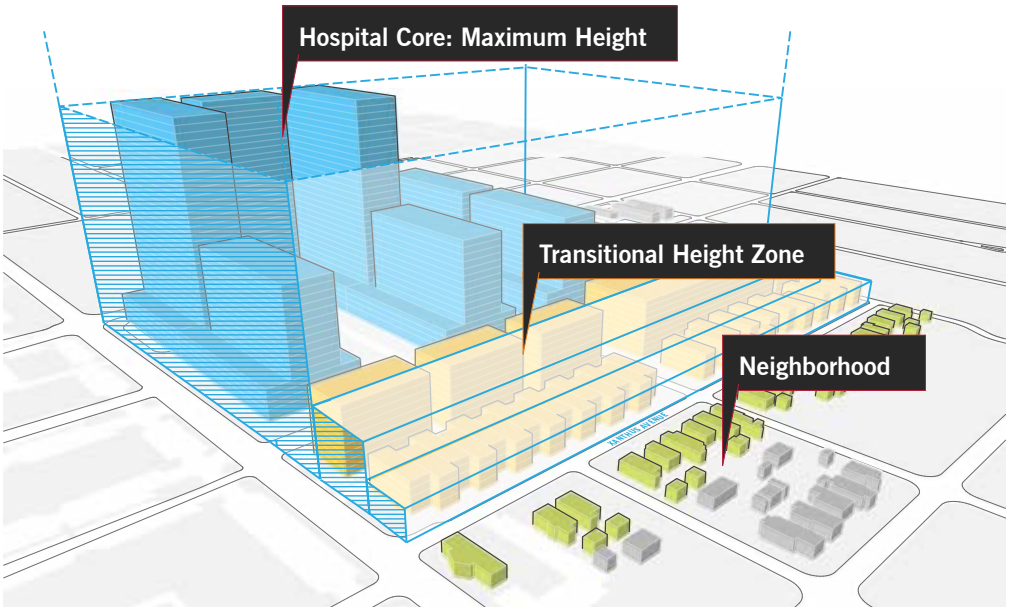


Fig.5.10 Map of proposed transitional zones within MMC IOZ

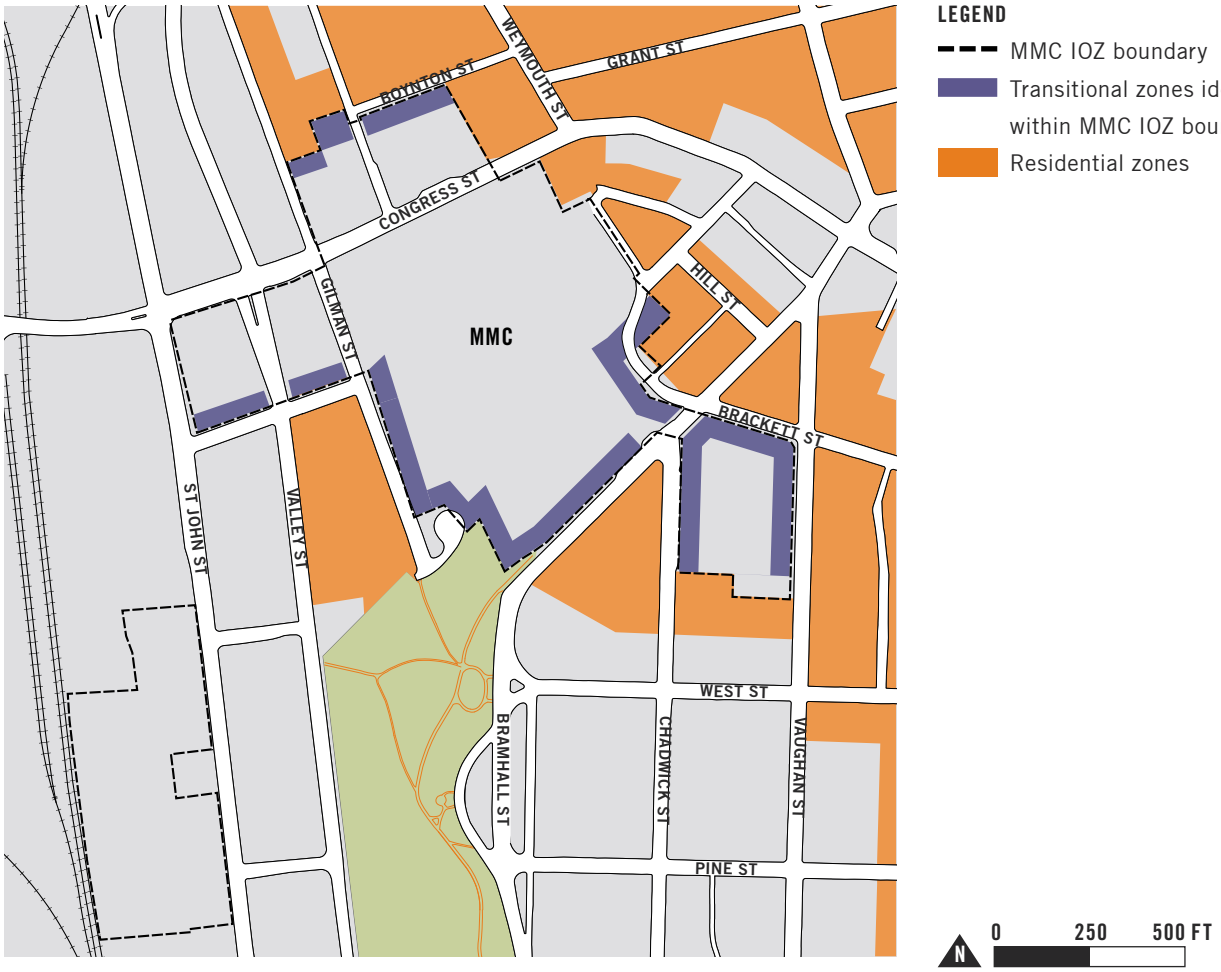
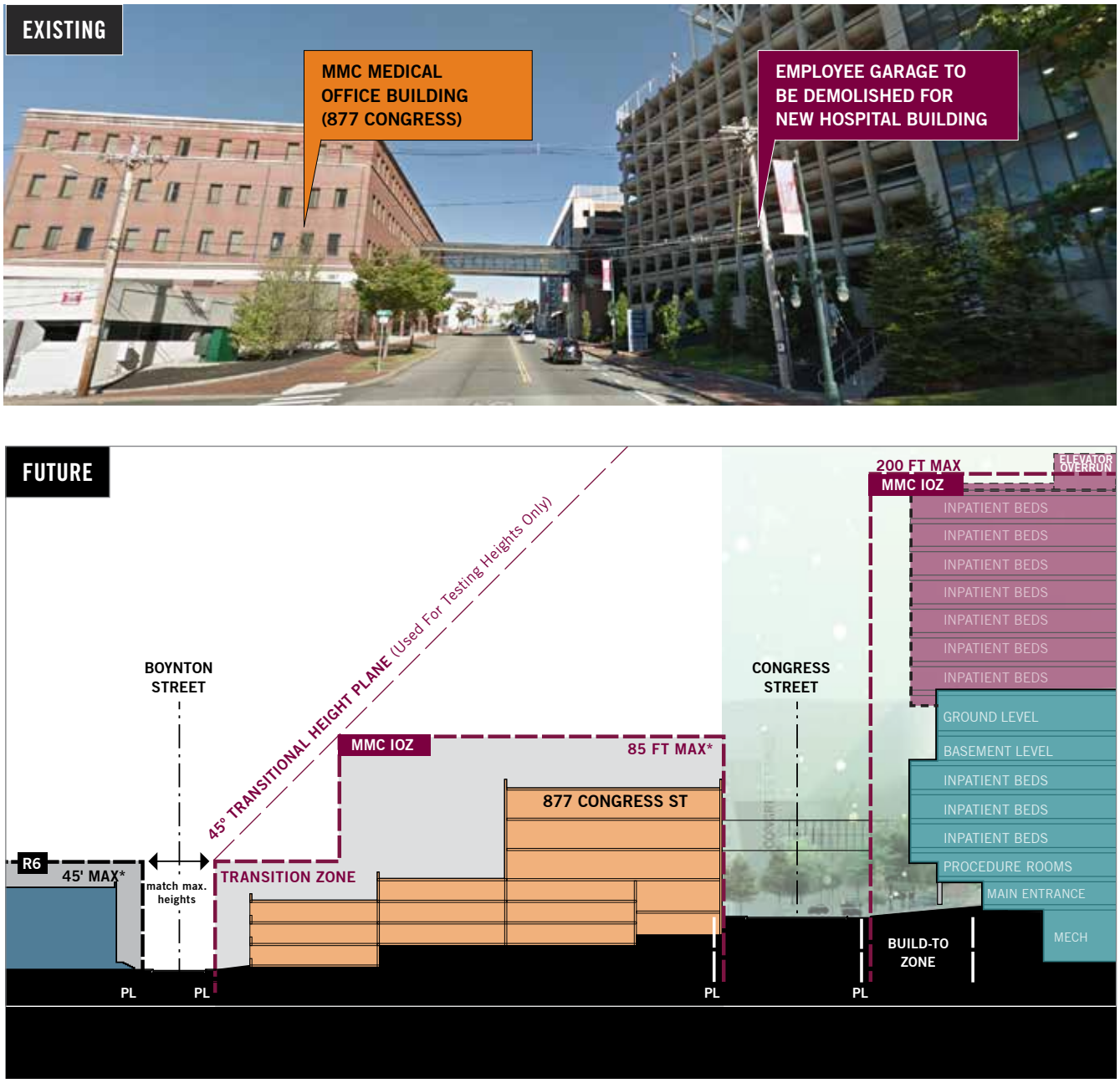
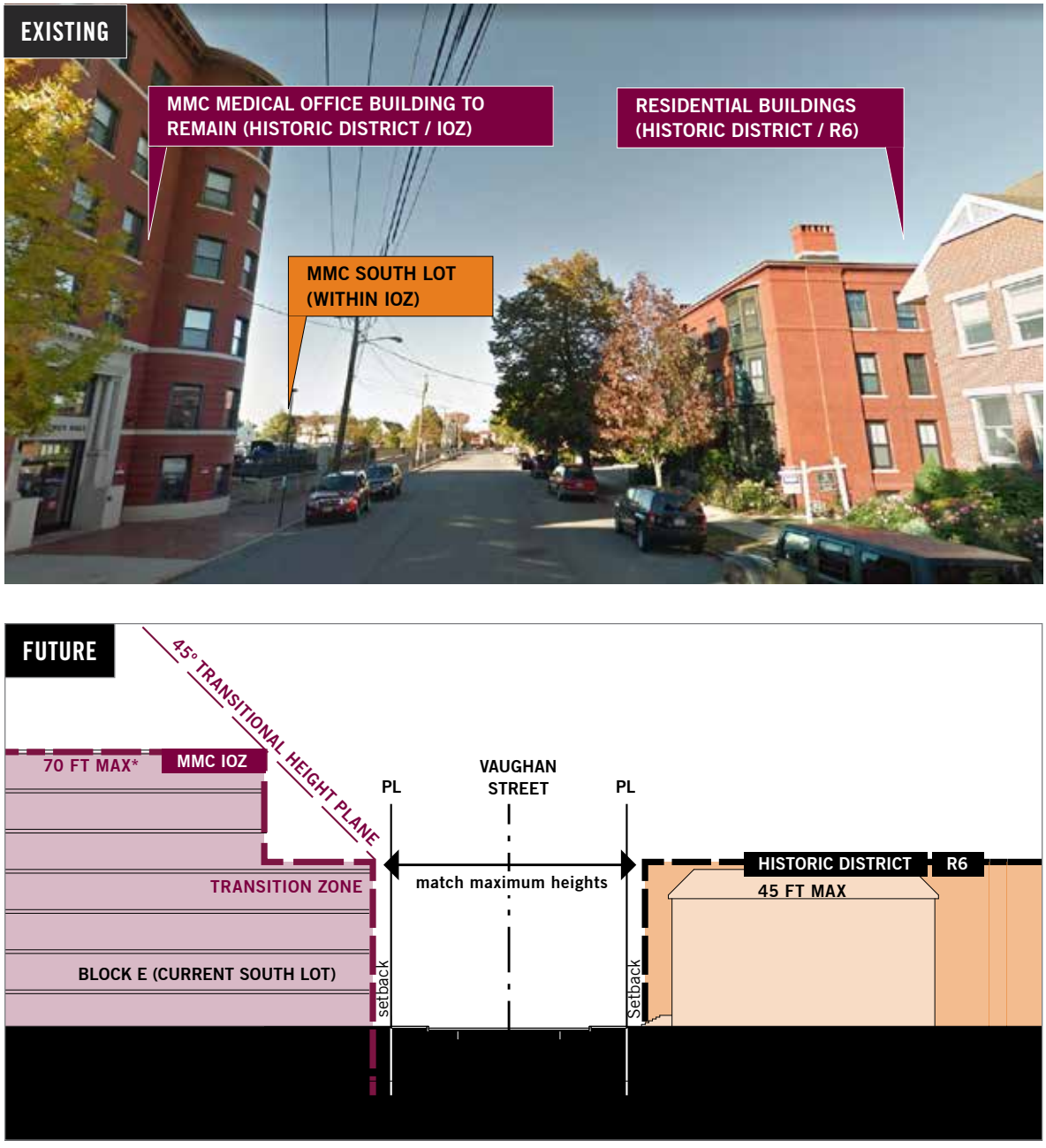


Fig.5.11 Cross-section illustrating height transition from MMC IOZ to Boynton St residential zone north of Congress St



* Average maximum height needed to provide a 75-ft tall structure along Congress St given changes in topography across this site. See "Determining Maximum Heights" on page 104 for details on methodology.

Fig.5.12 Cross-section illustrating height transition from future development Block E (South Lot) within the MMC IOZ to the West End Historic District on Vaughan Street

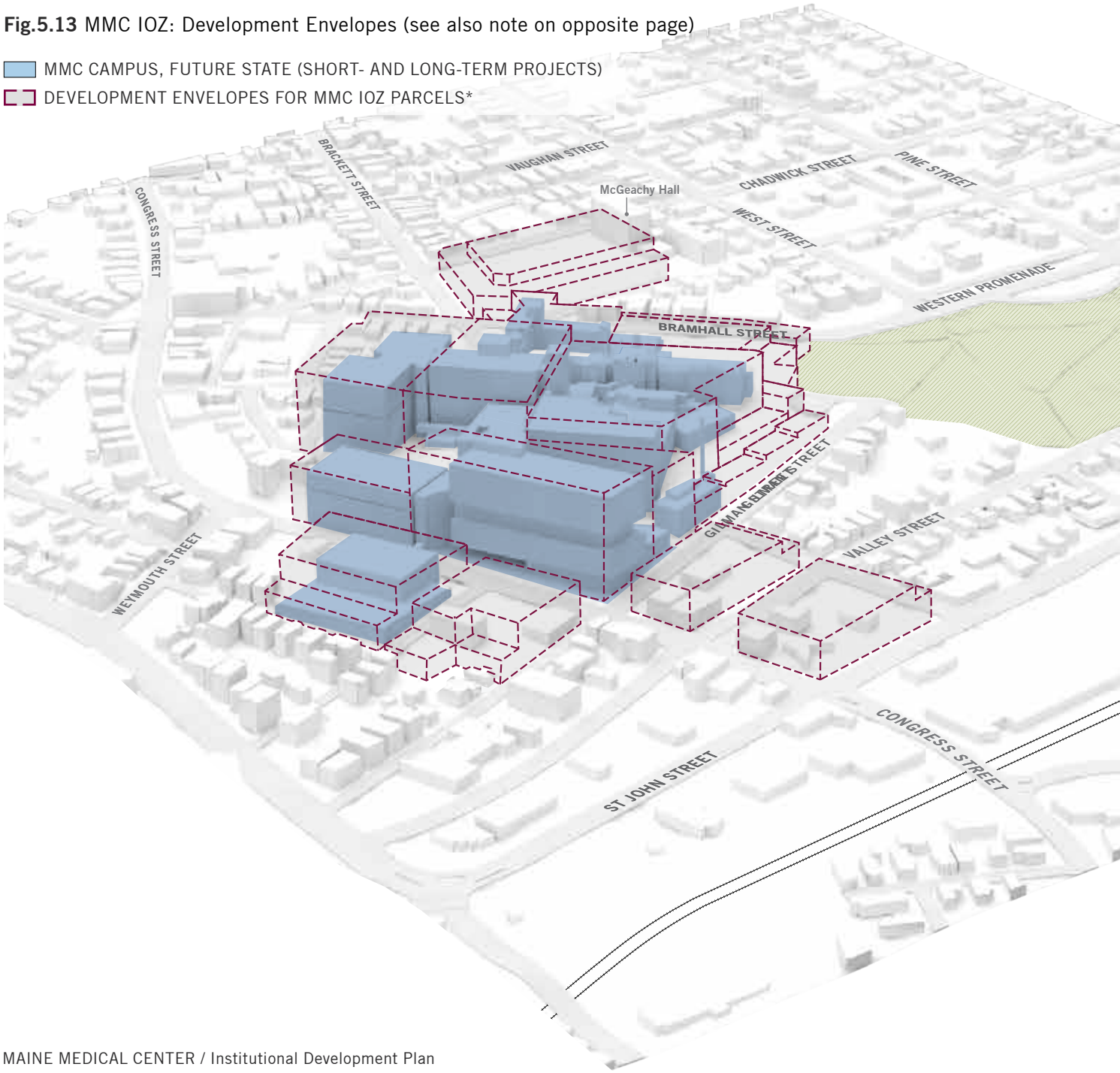


* Average maximum height needed to provide a 75-ft tall structure along Congress St given changes in topography across this site. See "Determining Maximum Heights" on page 104 for details on methodology.

LONG-TERM DEVELOPMENT ENVELOPES

While MMC's Master Facility Plan does not identify specific projects other than those listed on the previous pages (see Fig.2.7 on page 42), all parcels included within MMC's IOZ boundary are considered to be potential zones for redevelopment that supports the effective delivery of healthcare services by MMC to our community in the long-term. Towards this end, MMC has identified context-appropriate uses (see **Table 5.1** at right), development envelopes and design criteria for all IOZ parcels.

Fig.5.13 MMC IOZ: Development Envelopes (see also note on opposite page)



NOTE: **Fig.5.13** illustrates the maximum height envelopes listed in the MMC IOZ Regulatory Framework. Per the IOZ, the development envelopes only apply to properties that MMC holds right, title, or interest at the time of development. All future development within the IOZ boundary is subject to review for compliance with guidelines and requirements included in MMC's IDP, Regulatory Framework and City of Portland site plan review requirements.

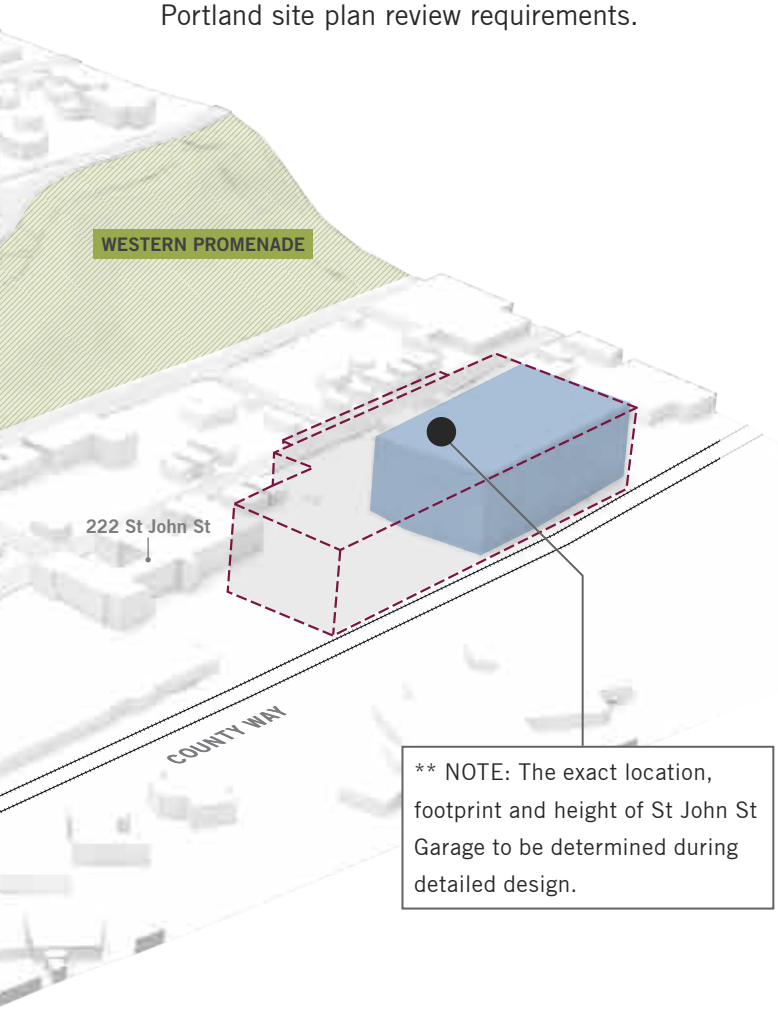


Table 5.1 MMC Potential Future Uses

MMC may locate the following uses within its IOZ boundary:

In addition to the uses permitted in the underlying zone, the following uses are permitted as a matter of right:

Healthcare facilities including but not limited to the following ancillary and/or supporting uses:

- **Hospital**
- **Medical Office / Clinic**
- **Laboratory Center / Services**
- **Research and Development (R&D) Laboratory or Facility**
- **Educational Facility / Conference Center**
- **Administrative / Business Office**
- **Accessory Service or Trade Uses**
- **Guest House**
- **Multi-family housing for healthcare staff and students**
- **Rehab / Skilled Nursing Facility**
- **Retail Facility**
- **Restaurant / Café**
- **Employee Service Amenities**
- **Day Care Center**
- **Fitness Center or Gymnasium**
- **Parking Lot**
- **Parking Garage**
- **Bicycle Storage**
- **Heliport**
- **Antenna Station**
- **Outdoor use areas, such as green areas, parks, gardens, art installations, and other active and passive non-commercial recreation spaces**

DESIGN GUIDELINES

MMC has collaborated with the City of Portland planning staff and sought input from its neighbors to create context-specific "Design Guidelines" for future development within the IOZ boundary. These Guidelines, which are outlined below, are informed by design best practices seen in Portland, and in and around urban hospitals across the US; from City staff recommendations; and from information presented by neighbors in the various public forums held by MMC. They are intended to assist future development in the IOZ to meet the goals and vision for the MMC campus and create context-sensitive buildings.

GENERAL GUIDELINES

MMC will follow these general guidelines for building design within the IOZ boundary:

1. New buildings will be designed to contribute to the campus vision and organizational goals identified in the Master Facility Plan and the Transportation Plan (see Chapters 2 and 3), and best practice design standards for healthcare.

2. The overall composition and experience of the campus will be considered for cohesive identity from approaches along Congress St and I-295.

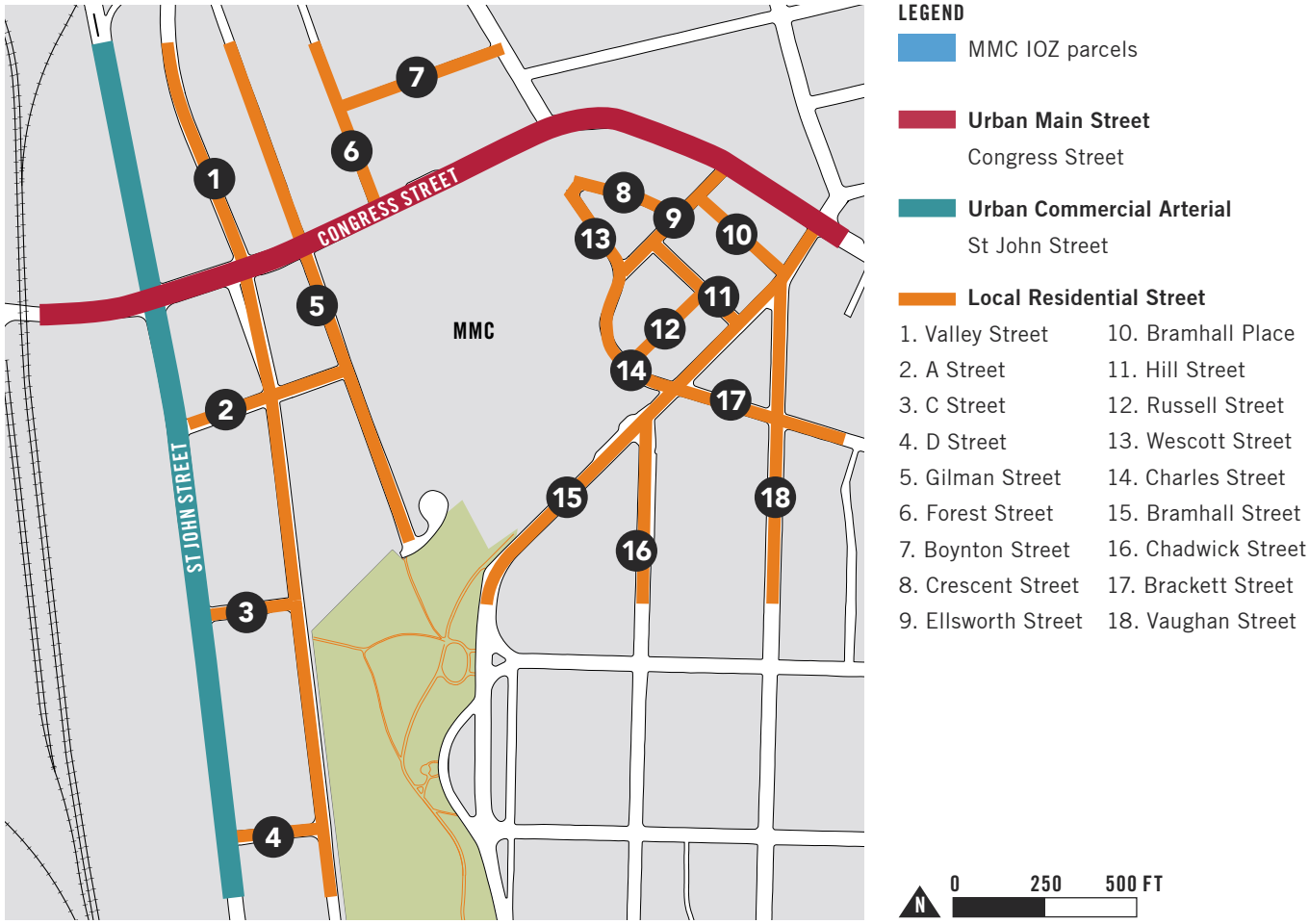
3. Building entrances will be oriented toward, located adjacent to, or accessible from, a sidewalk in a public right-of-way to create a pedestrian-oriented environment.

4. Buildings designs will relate to and be compatible with the existing, or—in areas of change—planned character of residential and commercial neighbors. Design elements and characteristics to consider include:
    - » Building placement and relationship to the street
    - » Overall massing and scale
    - » Roof forms
    - » Proportion, directional expression, and composition of facades
    - » Rhythm of solids to voids
    - » Rhythm and proportion of openings
    - » Rhythm of entries and projections
    - » Relationship of materials, texture, and color
5. Façade materials of buildings will be of high quality, and contribute to an attractive public realm.

6. The design process will consider long views of new buildings including roofs and associated structures to minimize visual impacts and provide visual interest. Rooftop appurtenances will be either screened from view or integrated into the building design, and will not be visible from adjacent streets, Western Promenade, or the Congress Street approach. (The helipad cannot be screened for safety reasons.)

7. Vibrant, contributing and sustainable active ground floors will be provided to add activity and a sense of place to the priority node

Fig.5.14 Typologies of Public Streets in and around MMC IOZ

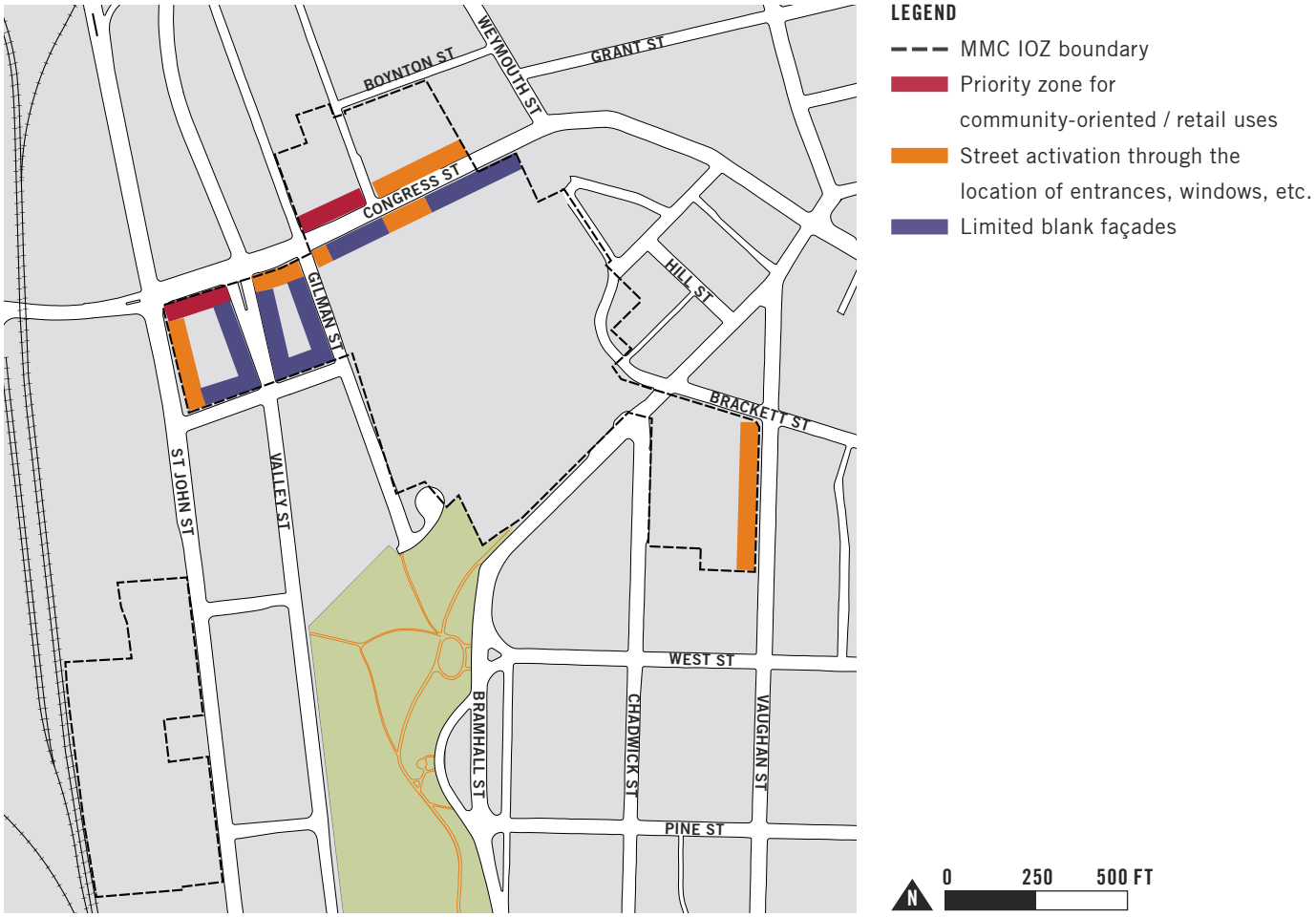


identified in the City's Comprehensive Plan. **Fig.5.15 on page 118** illustrates zones along Congress St deemed to be most suitable for community-oriented uses / retail.

8. In areas where the occurrence of limited blank façades along public right-of-ways are unavoidable due to changes in topography or building use requirements, the following strategies will be used to mitigate visual impact:
   - » providing elements of visual interest along any blank walls facing public streets, and,
   - » working with the City of Portland to ensure adequate lighting of public sidewalks to create a safe pedestrian experience.

Fig.5.15 on page 118 illustrates potential locations of blank walls within the IOZ boundary.

Fig.5.15 Frontage: Types of Activation



9. Any parking structure within the IOZ will:
   - » screen views of cars from public rights-of-way;
   - » provide elements of architectural interest on upper floors to contribute positively to long views and gateway approaches; and,
   - » for garage structures within 20' of the public right-of-way, meet street activation intent according to street type (see **Fig.5.15** above).

BUILDING RELATIONSHIP TO PUBLIC STREET

In walkable urban environments, buildings are designed with pedestrian scale and uses in mind. Buildings contribute to the public realm through the siting and design of street-facing façades, and of lower floors that engage with street-level activity.

A building's relationship to a public street should be informed by the typology of that street, which in turn is defined by the character of existing or planned development lining the street. MMC has identified three distinct typologies of streets within the MMC's IOZ boundary (see **Fig.5.14 on page 117)**. Design guidelines for future redevelopment along these street types are outlined below.

1. Urban Main Street (Congress Street)

Congress St is considered by many to be Portland's "main street". The winding street is defined by "zero-lot line" developments that border the sidewalk, and a series of civic monuments and squares distributed along its length. The IDP planning process has identified an opportunity to extend this "main street" feel from the emergent Bramhall Square (at Bramhall and Congress Sts) all the way to the railroad crossing where Congress St emerges from the influence of the I-295 interchange. MMC aims to contribute positively to the regeneration of Congress St in this area by ensuring orderly redevelopment of abutting IOZ parcels.

MMC buildings abutting Congress St will be designed to:

- provide urban-levels of density;
- create an urban street wall that provides a sense of enclosure to the public realm;
- have their primary orientation towards Congress St;
- activate the public sidewalk with building entrances, lobbies, etc.;
- to the extent possible, given programmatic needs, provide visual interest and ensure pedestrian safety with views into and out of the building along the public sidewalk;
- to the extent possible, given programmatic needs, provide space for community-oriented uses such as services or retail that can be shared between MMC users, neighbors and the broader Portland community; and,
- support the existence of neighborhood amenities such as restaurants and other retail uses providing services to local residents and employees both during the day and evening hours.

The topography and orientation of Congress St in this zone, however, poses significant challenges to achieving some of these design goals. The steady, steep climb of the street makes it impractical for large footprint buildings to align ground floor windows with the rising profile of the sidewalk (see

Fig.5.5 on page 106 for an analysis of building ground elevations). The east-west orientation of the street, combined with the more than 50-ft rise of Bramhall Hill south of Congress St, makes it challenging to provide an urban street wall that does not shade Congress St for most of the time (see shadow studies on page 124). To the extent possible, MMC buildings will utilize the general guidelines related to blank façades to mitigate these conditions (see page 117).

In addition to the guidelines listed above, buildings that have frontage on Congress St and that include parking components will activate portions of or place liner buildings along the ground floor facing Congress St. MMC has no plan to develop a stand-alone garage on Congress St as of the date of this IDP.

2. Urban Commercial Arterial (St John Street)

St John St is a significant arterial linking vehicular traffic between I-295 / Park Drive / Congress Street to the north, and Veterans Memorial Bridge / W Commercial Street to the south. The commercially-zoned street is flanked by a wide variety of uses that hint at its railroad-era origins (warehouses and workers' homes) as well as its current-day arterial use (strip centers and fast food restaurants). While it has some elements of a walkable street such as sidewalks and on-street parking, large stretches of the street prioritize the car with frequent curb-cuts, and street-facing parking lots.

MMC's IOZ boundary abuts St John Street between Congress and A Streets. MMC envisions this block to be redeveloped, in the long-term, in accordance with the Congress St design guidelines outlined on the previous pages. The new development will aim to provide architectural definition to the corner of Congress and St John Streets, and—to the extent possible—extend the character developed for the Congress St frontage along St John St.

3. Local Residential Street

The MMC IOZ boundary is crossed by and abuts a number of local streets that are lined with a wide variety of residential structures ranging from 3-4 story multi-family apartments on Boynton St to single-family mansions along the Western Promenade. During the IDP process, MMC has worked with the City of Portland planning staff, the Planning Board, and neighborhood representatives to identify a balanced approach to redevelopment along local streets that provides appropriate height transition from institutional to residential character. This approach is outlined in detail under "Transitional Zones" on page 110.

Fig.5.16 Photographs illustrating existing character of streets in and around the MMC IOZ

Urban Main Street (Congress Street)



Urban Commercial Arterial (St John Street)



Local Residential Street



CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN (CPTED)

MMC aims to create a safe environment for all in and around its campus. MMC will incorporate the following design strategies that have been demonstrated to deter crime:

- Providing a clean and aesthetically pleasing campus environment that is designed with vandal-resistant materials
- Providing clear and properly-sized signs in safe locations to ensure safe wayfinding
- Ensuring that paths from transit stops, bike storage areas, and parking areas to main pedestrian entrances are well-lit, with clear sight lines
- Designing street-level elevations to minimize potential hideouts
- To the extent possible, given clinical program demands, providing views in and out of building ground floors populated by users to serve as "eyes on the street"
- Generating foot traffic on public sidewalks with pedestrian entrances

MITIGATING IMPACTS THROUGH DESIGN

MMC is committed to addressing any perceived negative impacts that campus development may have on adjoining neighborhoods. This includes actions to mitigate impacts of daily campus operations, which are discussed under "Operational Sustainability" on page 93. A plan for mitigating construction impacts is outlined, along with a plan for continuous neighborhood input and engagement, in the "Neighborhood Engagement" chapter on page 128. This section summarizes strategies that may be used, as appropriate, to minimize negative impacts of proposed new development.

Minimizing Shadow Impacts

In order to understand the potential shadow impact of proposed campus projects on surrounding properties, MMC has prepared detailed shadow studies during the Master Facility Planning process (see **Fig.5.17** through **Fig.5.20** on the following pages). The overall building heights were kept to a minimum to minimize shadow impacts in areas such as Congress St where street alignment and topographic changes contribute to longer shadows. The proposed Congress St Development (see "Short-Term Projects on page 44) was pulled back from the street to the extent possible to minimize this impact, while also providing a more generous public sidewalk that supports pedestrian activity in front of this new gateway structure.

Context-Sensitive Lighting Design

The location and context of buildings are considered in the design of artificial lighting for new development. While a majority of this work is completed later during the design process and presented during Site Plan review, MMC has already incorporated some preliminary concepts related to lighting intensity into its Master Facility Plan. A key example is the concept design for the Congress St Development, which is intended to animate the Congress St frontage 24/7 with light emanating from its glazed circulation and waiting areas facing the street on the lower floors.

Mitigating Wind Impact

Upon final design of applicable site plans, MMC will consult with the City of Portland's Arborist to selectively determine the placement of trees or other landscape features on any new landscape areas to minimize any wind impacts created by the mass of new development.

Preserving and Enhancing Viewsheds

MMC understands the significance of historic and gateway viewsheds to the Portland community. The Maine General Hospital, a landmark civic building situated atop a hill, was designed to complement the sweeping views of the Fore River from the Western Promenade. Likewise, MMC will design new buildings along Congress St to provide an aesthetically pleasing gateway experience for all entering into the peninsula at this point.

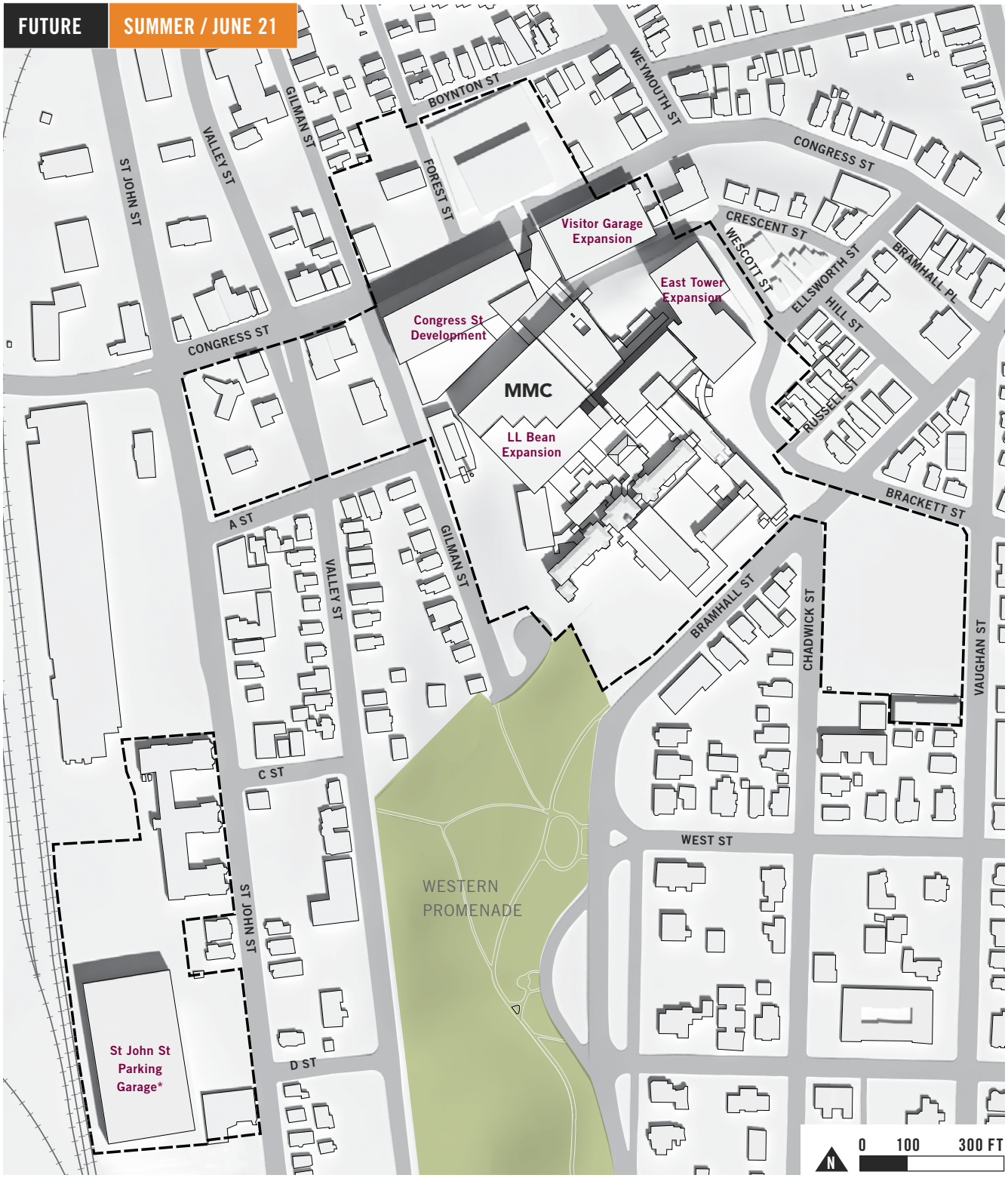
MMC embraces the historic Western Promenade as a site from which to take in views of the countryside and the White Mountains, and a valuable open space amenity for campus users as well as for the broader community.

MMC has met with the Parks Department to review the potential impact of the proposed 222 St John St Garage to public views from the Western Promenade towards the White Mountains, and will work to mitigate potential impacts through design. MMC will also work to minimize potential impacts to the Maine Central Railroad Building as a designated historic landmark.

Fig.5.17 Computer-generated shadow study / Existing conditions on June 21, noon



Fig.5.18 Computer-generated shadow study / Proposed long-term projects on June 21, noon

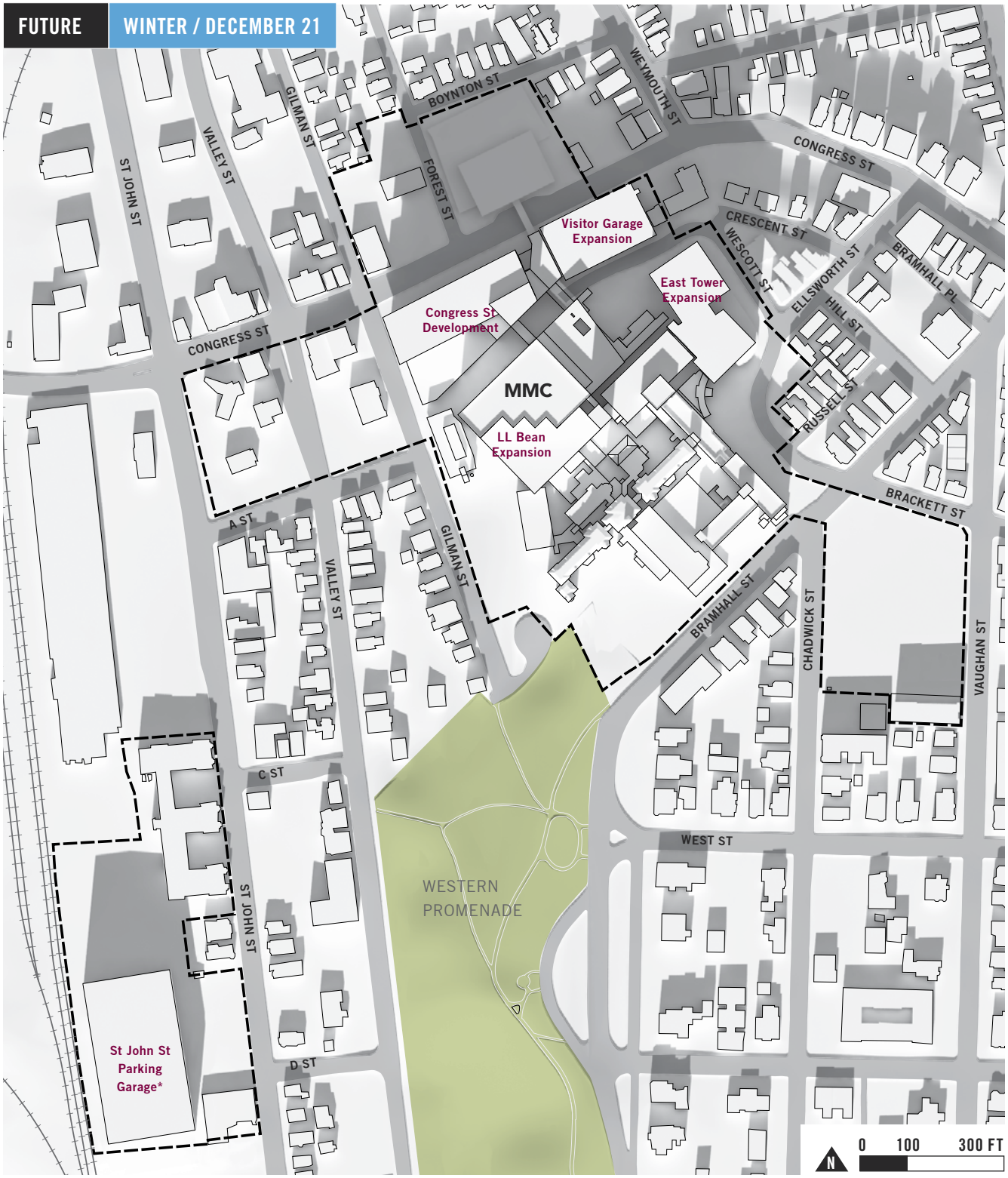


* NOTE: Exact garage location and footprint to be determined during detailed design.

Fig.5.19 Computer-generated shadow study / Existing conditions on December 21, noon



Fig.5.20 Computer-generated shadow study / Proposed long-term projects on December 21, noon



* NOTE: Exact garage location and footprint to be determined during detailed design.

CHAPTER SIX

NEIGHBORHOOD ENGAGEMENT

Maine Medical Center strives to be a good neighbor to surrounding communities. Ongoing dialogue and exchange of information and ideas is a core tenant of MMC's neighborhood engagement plan.



ONGOING COMMUNITY ENGAGEMENT

MMC's number one priority is superior patient care. In order to achieve this goal, it must address its employees' needs. However, MMC also recognizes that realizing its vision depends on its success as a corporate citizen and a neighbor.

MMC's main campus is situated at the intersection of several diverse residential and mixed-use neighborhoods. MMC considers itself a part of the West End, Western Promenade, Parkside, St John Valley, and Libbytown neighborhoods (see **Fig.1.5 on page 19**). MMC values its role in these neighborhoods and seeks to be a productive force in maintaining their health and quality of life. To this end, MMC endeavors to maintain an open dialogue with its neighbors, to quickly and fairly resolve disputes, and to ensure that its growth enhances its neighborhoods' vibrancy, economy, and livability. Building and maintaining trust is essential to successfully achieving these shared goals. MMC commits to building and maintaining trust not only by providing superior care to its neighbors and the larger community, but by clearly communicating and consistently engaging its neighbors on both the institution's core mission and neighborhood concerns.

It is important for MMC, its neighbors and the City to maintain the dialogue that has been established during the development of MMC's IDP. As a result, MMC proposes the following ongoing community engagement to ensure the surrounding neighbors are kept apprised of MMC's future development plans, and to understand any neighborhood issues related to the operations of the MMC campus, the following engagement process shall be established:

- On a quarterly basis, MMC's Chief Operating Officer shall host a group meeting comprised of the following members:
  - » the President or Chair (or a designee of the same) of the following Neighborhood Associations: St John Valley, Western Promenade, West End, Parkside, and Libbytown
  - » The Director of Planning at the City of Portland, and,
  - » The District 2 Portland City Councilor
- The group shall develop a Charter by which these quarterly meetings shall be conducted and minutes shall be made of each meeting. The Charter and the minutes shall be delivered to the City's Neighborhood and Island Liaison within 30 days of their adoption.
- In addition, the group shall annually complete a "checklist of actions" to be addressed by the group and the completed checklist shall also be filed with the City's Neighborhood and Island Liaison.

- To further an open dialogue, MMC will engage neighbors in more routine dialogue during major planning efforts. These meeting invitations shall also be extended to the Director of Planning at the City of Portland and to the District 2 Councilor.
- During construction, MMC shall provide contact information for a designated community liaison on its website for day-to-day inquiries and comments. Inquiries and comments shall be logged by MMC and responses shall be provided by MMC in a timely fashion.
- MMC shall also employ social media to make information about a pending project readily available to the public. This shall include a dedicated website page and a dedicated email address for residents to ask questions, provide suggestions or voice concerns.
- Finally, MMC will set up a text alert system to notify any subscriber of advance construction impacts which may be necessary during construction.

CONSTRUCTION MANAGEMENT PRINCIPLES

The following section provides an overview of the construction management principles that MMC has identified to minimize impacts from noise, vibrations, ground movement, truck traffic, and other construction related factors to the surrounding buildings and communities. It is MMC's full intent to schedule and conduct operations in a manner that will minimize, to the extent feasible, the disturbance to the public in areas adjacent to the work and to occupants of buildings in the vicinity. MMC will adhere to the Construction Management Template requirements attached to the IDP as Appendix A.

COMMUNICATION INITIATIVES

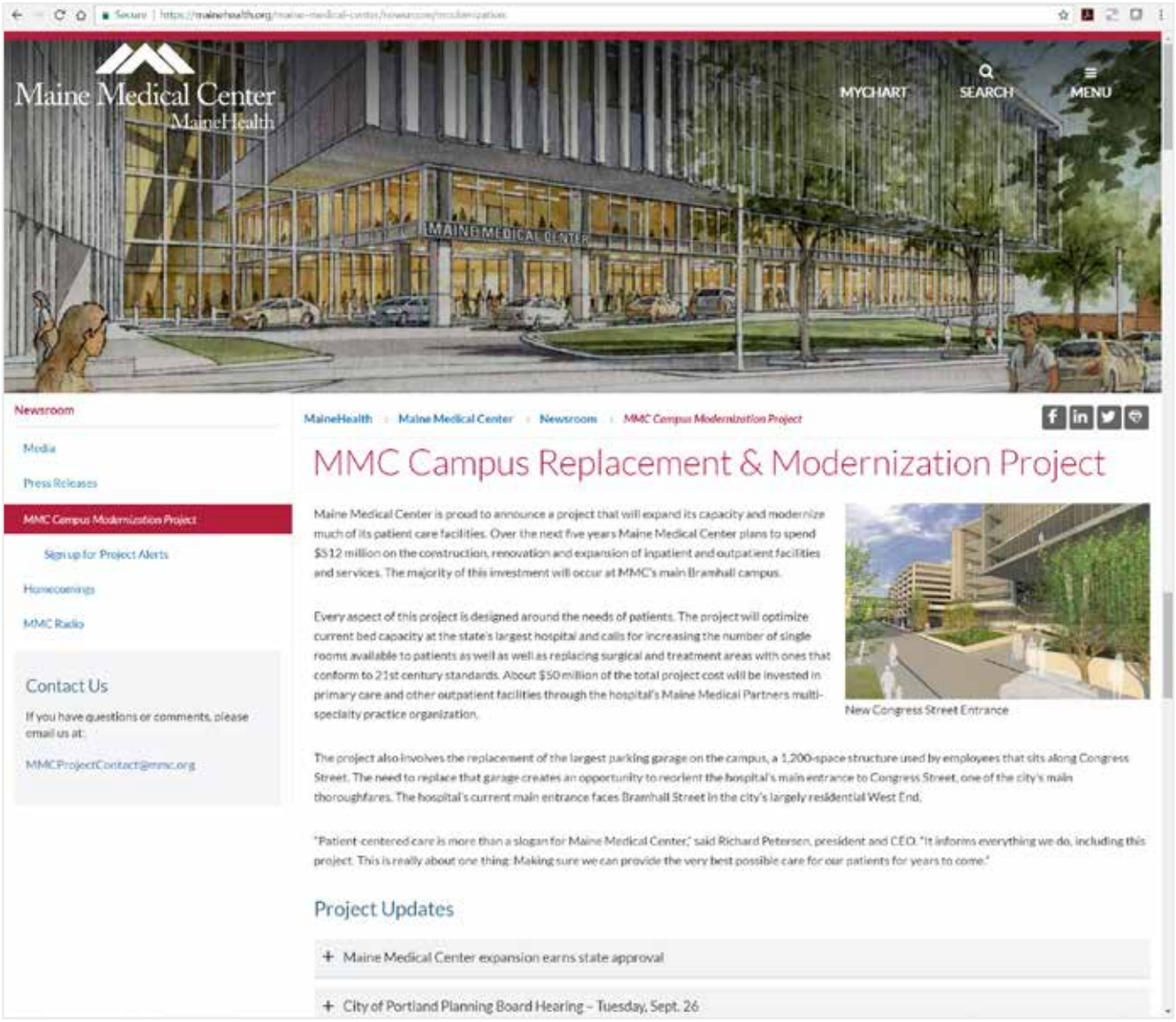
MMC will provide a method of communication between City of Portland, neighbors, and the construction team based on the anticipated impact of the construction project. For large construction projects, MMC will use its website, social media, and provide a dedicated email address to enable communication with its neighbors.

For short-term projects identified in the Master Facility Plan, MMC will implement a communication strategy using social media and texting to alert surrounding neighbors of activities that may cause disruption.

MMC has created a dedicated webpage on its website devoted to the short-term projects to inform the public of important information related to the Project (http://www.mmc.org/modernization).

Information and updates on the Project are regularly posted including project updates, neighborhood meeting minutes, Portland Planning Board information related to the project, news releases, fact sheets and frequently asked questions. As construction commences, important alerts regarding construction activity such as activities impacting roadways, potential creation of dust, vibration, or noise, etc. will also be posted. To the extent possible, MMC will provide two week advance notice of such activities.

Fig.6.1 Screenshot of MMC Website dedicated to the Project at http://www.mmc.org/modernization.



MMC has created a dedicated email address that allows members of the public to ask questions and provide information. These emails will be answered in a timely fashion by the people directly involved in the construction activities.

Information about the construction project will be proactively shared on a regular basis for the duration of the project.

CONSTRUCTION SCHEDULE

MMC will provide an estimated project schedule at the beginning of a construction project and provide regular updates through-out construction. The frequency of construction schedule updates will be determined by the project's estimated impact on the surrounding area.

CONSTRUCTION MANAGEMENT PLAN

Prior to construction, MMC will develop comprehensive Logistics and Safety Program. Maintaining normal campus operations and public safety, and minimizing impacts to areas surrounding the campus, will be the primary considerations in this process. MMC will utilize the City's Construction Management Plan template to develop a Construction Management Plan that will be submitted with a Site Plan application.

PROJECT WORK HOURS

Construction work hours will be predetermined before the start of any construction project and limited in order to minimize impact on the areas surrounding campus and to complete the project expediently.

PUBLIC SAFETY AND ACCESS

Pedestrian walkways and business access will be clearly marked and maintained through-out the construction period.

In general, secured fencing will be used to isolate construction areas from pedestrian traffic and Police Details will be provided, when necessary, to facilitate traffic flow. MMC will work to ensure the sidewalk protection minimizes impact to pedestrian and vehicular flow. The specific configuration of sidewalk protection and pedestrian access around the site will vary depending on the phase of the work being performed. Construction procedures will be designed to meet all OSHA safety standards for specific site construction activities. MMC will provide sufficient temporary site lighting to ensure the safety of all pedestrians accessing the sidewalks around the site, including lighting at all covered pedestrian walkways, until permanent street lights are installed. Residents will be able to contact MMC at a designated email posted prominently on the project website (see **Fig.6.1 on page 132**). MMC will also provide regular updates to the Fire Department regarding any detours necessitated by construction.

CONSTRUCTION NOISE IMPACTS

MMC is committed to mitigating construction noise impacts. Increased community sound levels, however, are an inherent consequence of construction activities. When these events are scheduled, advance notice will be provided.

CONSTRUCTION TRAFFIC AND PARKING IMPACTS

Construction Workers

For Short-Term Projects, the number of workers required during the construction will vary with an estimated average daily workforce of 150 during the peak of construction. Jobsite personnel shall park at an off-site parking area and will be shuttled to the construction site. MMC will work with the Construction Management Company to identify an off-site parking location and shuttle service. No personal vehicles will be allowed to park at the project construction site or in the adjacent residential streets. The construction company and its subcontractors shall encourage the use of public transportation by their workers, if available.

Truck Routes and Volumes

Truck routes shall be as far away as possible from residential and other sensitive uses.

MMC may install wayfinding signage at strategic locations identifying no travel zones for construction vehicles. Once at the site, all vehicles will be brought within the fence line and will make every attempt to avoid queueing on public roadways, unless during specific times, as addressed on the site logistics plans.

Construction Staging Areas

Construction staging areas shall be as far away as possible from residential and other sensitive uses.

CONSTRUCTION AIR QUALITY IMPACTS

To reduce emission of fugitive dust and minimize impacts on the local environment, MMC will adhere to a number of strictly enforced mitigation measures. These include the use of wetting agents to control and suppress dust; covering stock piles of soils and trucks transporting debris; managing construction practices to reduce unnecessary transfers of loose materials; periodic cleaning of streets and sidewalks; and, use of wheel wash stations.

IMPACT TO SURROUNDING BUILDINGS AND RESIDENCES

Foundation surveys of surroundings buildings and homes will be completed within a reasonable distance from the anticipated center of construction and in accordance with current regulations. The results of foundational surveys will be shared with the City of Portland and the property owner.

MMC COMMUNITY BENEFITS

MMC provides much to the City of Portland community including employing over 2,000 Portland Residents. These benefits are not only to our adjacent neighbors but also to the residents elsewhere in the City and the state of Maine.

SMOKING POLICY AND RELATED INITIATIVES

MMC, as a health care institution, understands that smoking is an addiction that has harmful effects—effects from directly inhaling nicotine, as well as the effects of second hand smoke. The effects are serious and can be life threatening. In order to advance its vision to make the people in Maine the healthiest in America, MMC, like other businesses in the City of Portland—including the City itself—has instituted a no smoking policy on its premises.

But the hospital also recognizes that addiction is difficult to overcome and the ability to quit smoking is often difficult. That is why MMC offers assistance to its employees, patients and visitors to quit smoking and to reduce and eliminate noxious fumes in the environment. MMC provides free smoking cessation classes to its employees. It offers free nicotine gum to visitors to the hospital in an effort to reduce the desire to smoke. MMC has conducted periodic "walk-abouts" in the neighborhood to talk with people about smoking and its health impacts.

Neighborhoods throughout the City all deal with unwanted smoke. MMC has heard the concerns of its neighbors relating to people walking on the public sidewalks in their neighborhoods while smoking.

Whether or not people smoking in MMC's adjacent neighborhoods are affiliated with the Hospital, MMC has taken significant measures to respond in a positive fashion to these concerns. MMC provides education about smoking and resources to assist in quitting (such as providing the hotline telephone number for the Center for Tobacco Independence). The Hospital has taken steps to alleviate the unsightliness of cigarette butts on public streets near its campus. As documented in its MMC Neighborhood Council Meeting minutes of June 23, 2016, MMC has purchased 30 "butt butlers" for use by the City in areas around the MMC main campus. In 2016, MMC and the neighbors collaboratively walked the neighborhood and identified areas for installation of the butt butlers.

At the request of the neighborhood representatives, MMC also modified its smoking policy as follows:

- Limits the distance from entrances within which individuals can smoke from 50 feet to 20 feet;
- Remove MMC Tobacco Free signs installed along the perimeter of the open "South Lot" (Bramhall, Chadwick, Vaughan, and Brackett Sts).
- Letter to employees sent by the MMC CEO and COO regarding these changes and the expectations for employees to abide by them
- MMC has hired a trash removal vendor to collect cigarette butts and trash in the areas surrounding the hospital. This vendor

provides such service between April 1 and first snow, on M, W, and F at 4–6 hours per day.

- MMC has a telephone line dedicated to the receipt of concerns from neighbors regarding MMC related events in their neighborhoods.

MMC is committed to its ongoing efforts to address this public health issue of tobacco use.

NEIGHBORHOOD GARDEN

The St John Valley Neighborhood (SJVNA) requested the use of property owned by MMC at 268-270 Valley St. In an effort to respond to the neighbors, MMC contacted the City for guidance on how it permitted use of public property for such community gardens. MMC fashioned an agreement with SJVNA which mimicked the Agreement used by the City for use of its land by gardening neighbors. As of June 2016 SJVNA was looking into procuring insurance of the same type required by the City.

NEIGHBORHOOD CLEAN UP DAYS

MMC has sponsored neighborhood clean-up days in the past in an effort to partner which its adjacent Neighborhood Associations to beautify the neighborhood. It has supplied lunch, trash bags, gloves and water for those participating.

SNOW BAN PARKING

MMC allows its neighbors the use of its parking garage at 887 Congress St on those days when the City calls a snow ban.

CITY-WIDE BENEFITS

MMC is actively involved in giving back to the City of Portland. The following initiatives provide some examples of the actions undertaken by MMC to give back to the community.

- MMC-Preble St Learning Collaborative: MMC nurse practitioners, primary care residents, medical students, and MMC Homeless Health Partners, have provided services to the most vulnerable underserved people in Portland, allowing them access to quality, barrier-free health care.
- Portland School Based Health Clinics were successful due to the partnership between MMC and Portland Public Health.
- Portland School Athletic Contributions: The Sports Medicine division at MMC's Family Medicine Center provides physical exams and training room support for area school teams, marathons and other sports events.
- MMC RN Health Fairs: MMC RN's routinely hold community health fairs on MMC's time to benefit vulnerable populations. Locations of health fairs include: the Preble St Teen Center, Boys and Girl's Club of Portland, and the Florence House, a permanent shelter for chronically homeless women. The events are frequently accompanied by a collection of supplies.

- Sagamore Village Health Center: MMC has provided staff and support at the Sagamore Health Resource Center, a community-based nurse managed clinic that provided public health, primary care and mental health services to residents. MMC collaboration with the USM School of Nursing and Portland Housing Authority in providing these services. In addition to staff and administrative support, MMC provided direct financial support to the Health Clinic.

- MMC Care Partners: A "safety net" program designed to provide care for those who cannot afford commercial insurance but are not eligible for government programs. CarePartners provides administrative support to help serve the target population, including comprehensive eligibility assessment, care management, and access to low cost or free pharmaceuticals.

- Virology Treatment Center: A resource to patients and physicians caring for patients with HIV / AIDS; it also provides education and conducts clinical trials, including many that otherwise would not be available in the community.

- International Clinic: Provides services and healthcare education to immigrants and refugees from around the world who have settled in Portland.

- Northern New England Poison Center: MMC is the home of the NNEPC. The NNEPC provides a 24x7 hotline and chat service to provide 24x7 consultation with healthcare professionals and the public regarding accidental pediatric or geriatric poisonings, therapeutic errors and adverse effects/ interactions, management of drug- or poison-related suicide attempts and substance abuse misadventures, environmental exposure, food poisoning and other toxic exposures. The Center also provides education for the public and healthcare professionals, including school nurses and law enforcement, assists with preparedness and toxic-surveillance for events including food or water contamination/ tampering, weapons of mass destruction, regional antidote management, and infectious disease.

- Sexual Assault Response Services of Maine (SARSSM): MMC, through its Emergency Department, teaches classes to support SARSSM. Emergency department members present at meetings and conferences in support of these services.

- The Maine Medical Center Research Institute (MMCRI) is the largest hospital-based biomedical research facility in northern New England. Many clinicians author scholarly work or participate in various studies and research activities, and the institute offers a summer

student program. Residents and community members participate in clinical trials to manage and treat diseases and medical conditions, which would otherwise not be available in the community.

- MMC Classroom Facilities at the MMC Dana Center are used by health care mission focused community groups for meetings and educational sessions. Local Chapters of Alcoholics Anonymous, Al-Anon, the National Alliance for the Mentally Ill and Take Off the Pounds Sensibly meet weekly at the Dana Center. HOPE Support Group, Making Strides against Breast Cancer, an Autism Parent Support Group, and Survivors of Suicide are some of the organizations that make use of MMC's facilities on a weekly basis throughout the year.
- MMC's Certified Nursing Assistant (CNA) Program: In affiliation with Portland Adult Education this program has graduated approximately 1,200 graduates to date. Offered 3 times a year at no charge to students, this state-approved 180-hour course incorporates experienced MMC nursing staff as faculty/ mentors within classroom presentations, skills labs, and supervised clinical experiences. Clinical nurses and others throughout MMC instruct and mentor these student team members, highlighting MMC's belief in CNAs as integral to the comfort, care, and outcomes of our patients and services. An average of 75 participants attend per session. Near the end of this eleven-week program, students take the state certification examination during the course at no cost to the student.
- Medical Explorers: Provides opportunity for High School students to experience a combination of lecture, experiential learning, and hand-on skills practice. MMC also offers summer internships and opportunities through the school year for High School students to meet, observe and interact with many disciplines in the medical profession.
- Doc for a Day: MMC provides students, chosen from underrepresented minority groups or educationally or economically disadvantaged backgrounds, an overview of what is involved in becoming a physician, and participate in hands on clinical activities in the simulation lab.
- Disaster Preparedness and Emergency Services: MMC is deeply involved in disaster planning at the local and State levels. It is one of three state Regional Resource Centers for Emergency Preparedness, and the hospital has a full-time Director of Emergency preparedness. Additionally, MMC is a member Southern Maine Regional Resource Center for Health Emergency Preparedness, which coordinates all Emergency Preparedness Activities of the Southern 4 Counties of Maine including: York, Cumberland, Sagadahoc and Lincoln. These Public Healthcare Emergency services include

Fig.6.2 Photographs from Community Benefit Events Supported by MMC



The Annual Maine Children's Cancer Program (MCCP) Walk



Tobacco Cessation Program



Park Clean-Up

services and support to other local Hospitals and Medical Centers, Laboratories, Clinics and Ambulatory Centers, Assisted Living and Long Term Care Facilities and Home Health Agencies in the greater Portland Community.

- Financial Support to Community Agencies: MMC supports financially and provides in kind services to various community agencies and sponsors events throughout the City, including the Heart Walk; American Cancer Society walk, Hospice of Southern Maine, Let's Go Program, Ronald McDonald House, March of Dimes and National Multiple Sclerosis Society. MMC and its employees participate in the United Way, which donations benefit numerous local agencies.

APPENDICES

Appendix A / Construction Management Plan Template

Appendix A: Construction Management Plan Template

DRAFT 7-31-2017 General Construction Management Plan Template

Construction Management Plan
General Template
[Applicant and Project Name]

Construction Management Plans shall depict the overall planning, coordination, and control of a construction site, including phases as applicable, from beginning to completion. The City's goal for a construction management plan is to support a safe construction site and protect the public safety, accessibility (including preserving accessible pedestrian, bicycle, and vehicular modes of transport throughout the city), and welfare during construction. In addition, the construction management plan shall minimize construction impacts in their duration and magnitude to the surrounding area and develop an effective communication process for resolving concerns and conflicts.

The Construction Management Plan will be submitted as part of the Site Plan Review and it shall address the construction logistics for a project. The Construction Management Plan shall include the following submissions: 1) a construction management site plan, 2) a construction schedule (time frame); and 3) a written narrative addressing the categories below.

A. Construction Management Principles
The following narrative provides an overview of the construction management principles that the [Applicant and Contractor] has identified to minimize impacts from the construction, such as noise, vibrations, ground movement, truck traffic, and other construction related factors to the surrounding building and communities.

B. Development Review of Construction Management Plan
[Applicant and Contractor] shall submit a construction management plan that provides a comprehensive logistics and safety program for the construction project, which will be reviewed and approved as part of the site plan review process. The plan minimizing impacts to areas surrounding the building/construction site will be primary considerations in the process. The following details define the intended approach to the successful management of the project construction and the construction management plan will address the general conditions contained below.

C. Performance Guarantees, Inspection Fees, Preconstruction Meeting, and Permits
Prior to scheduling a preconstruction meeting and the issuance of any city required permits, [Applicant and Contractor] shall meet all of the requirements contained in Section 14-530. Development review fees and post approval requirements and 14-532. General requirements and enforcement of Portland's Land Use Code.

Other permits, as applicable, include

1. **Street Opening and Street Occupancy Permits:** Construction activity in the public right-of-way are controlled by Chapter 25 and sewer and stormwater system connections are controlled by Chapters 24 and 32 of the Land Use Code. All required permits shall be obtained through the Department of Public Works and the requests shall conform with the approved construction management plan.

DRAFT

2. **Blasting:** Blasting, if required, shall conform with all measures of Article VIII. Regulation of Explosives in the Land Use Code and Section 3.7 Standards for Blasting and Regulation of Explosives in Portland's Technical Manual.
3. **Building Code:** Employ the best practices, as applicable, of Chapter 33 Safeguards During Construction, from the 2009 International Building Code.

D. Construction Administration and Communication

[Applicant and Contractor] will work diligently to implement a communication strategy as outlined below. The communication strategy is intended to ensure that all construction operations are performed in accordance with all agreements, ordinances and special permits applicable to this project. The Construction Manager will work closely with adjacent abutters, businesses and all parties informed, as far in advance as possible, of scheduled work, particularly work anticipated to cause significant noise, vibrations, or dust. The final construction management plan shall provide for the following:

1. Contact Person and contact information for the [applicant and contractor] and who is available 24 hours
2. Construction Signage posted on the site with Contact Information for Contractor
3. Describe any additional communication strategies
4. All construction site signage is temporary and shall be removed at project completion.

E. Construction Schedule

1. The contractor shall submit a schedule or time line for the construction project, including any Phasing.
2. Hours of Construction. Construction may occur during the daytime hours as defined in Section 17-18. Construction Activities for Building permit (Attachment 1) and Section 25-129. Noise, dust and debris (Attachment 2).
3. Extended Hours or Night Work: Pursuant to Section 17-18, this section not apply to emergency utility work or "Situations where the public works authority or the office of building inspections determines that the construction activity is of a unique character which cannot reasonably be completed or performed during the permitted hours and which is not of a recurring nature, provided that prior to engaging in such activity the contractor or his representatives gives notice of the time and scope of such proposed activity, the notice to be given in a manner approved by the public works authority."
4. Material Deliveries: Schedule and designated location for delivery of materials and boxed goods.

F. Security & Public Safety

1. The Construction Management Plan will depict all proposed fencing or other barriers and access gates (with knox locking devices) with the intent of separating pedestrian and vehicle circulation from the construction site.
2. Structures undergoing construction, alteration, or demolition operations, including those in underground locations, shall comply with NFPA 1 Chapter 16. *Safeguarding Construction, Alteration, and Demolition Operations.*
3. Fire Safety Program. An overall construction of demolition fire safety program shall be developed. Essential items to be emphasized include the following:
    - Good Housekeeping
    - On-site security

DRAFT

- Installation of new fire protection systems as construction progresses
- Preservation of existing systems during demolition
- Organization and training of an on-site fire brigade
- Development of a pre-fire plan with the local fire department
- Rapid communication
- Consideration of special hazards resulting rom previous occupancies
- Protection of existing structures and equipment from exposure fires resulting from construction, alteration, and demolition operations

4. Blasting, if required, shall conform with all measures of Article VIII. Regulation of Explosives in the Land Use Code and Section 3.7 Standards for Blasting and Regulation of Explosives in Portland's Technical Manual.
5. Any proposed temporary security lighting shall be shown on CMP and all fixtures shall be full cutoffs.

G. Construction Permitting and Traffic Control Plans

1. Construction Activity in Public Streets: Construction activity in the public right-of-way is controlled by Chapter 25 Article VII of the City Code of Ordinances. Required licenses and permits, restrictions on activity, and fees & area are outlined in that Chapter. Rules and Regulations for Excavation Activity are available through the Street Opening Clerk at the Department of Public Works. At no time can construction activity including delivery vehicles close or block streets or affect public safety access without prior notice and approval of the Department of Public Works.
2. Sewer and Stormwater: Sewer and stormwater water system connections are controlled by Chapters 24 and 32 of the City Code of Ordinance. Required permits for new connections and/or abandonment of existing connections are available through the Street Opening Clerk at the Department of Public Works. Rules and Regulations for these utility systems are available through the City Engineer's office of the Department of Public Works and in Section II of the Technical Manual.

3. Traffic Control Plans: Construction activity that impacts the existing public street system must be controlled to protect the safety of the construction workers and all modes of the traveling public. Projects that will occur along arterial and or collector streets are required to submit a satisfactory 'maintenance of traffic" (MOT) plan prior to any site plan, subdivision, or street opening permit approval. MOT plans may be required for projects that have impacts on local streets.

   Maintenance of Traffic (MOT) plans shall provide for the safe passage of the public through or along the construction work zone. On a case-by-case basis, applicants may be allowed to close a street and/or detour a mode of traffic when absolutely necessary for safety. MOT plans shall employ the appropriate techniques and devices as called for n the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD). In addition:

   - Construction speed signing may be used as needed to slow traffic
   - Traffic Control signs shall not be placed where they are an obstruction to bicycles or pedestrians.
   - In extreme situations, flaggers may be required.

DRAFT

- Police detail is required at lighted intersections and may be requested by the City's transportation engineer or his designee.

All existing modes of travel in work zone area shall be accommodated if impacted by the activity. The safe passage of pedestrians, bicyclists, transit providers, and motorists are of equal importance when planning out the work zone; no pre-existing travel mode may be eliminated without the express approval of the Department of Public Works. The MOT should also address on-street parking impacts, including deliveries and parking for adjoining businesses and property owners, analysis of roadway capacity or diversion capacity if street closure or change to roadway capacity is required, and coordination with other on-going or future construction or utility projects in the vicinity.

- Traffic control bicycle and pedestrian facilities or routes through work zones shall be maintained until the bicycle and pedestrian facilities or routes are ready for safe operation. Traffic control will not be removed to allow auto travel at the expense of bicycle and pedestrians.
- Barrier systems utilized to separate the construction activity from the public street and /or sidewalk shall not inhibit sight distances, particularly for visibility of pedestrians and bicyclists.
- ADA compliance shall be maintained.

Use of public parking spaces or the blockage of any portion of sidewalk for the purpose of construction activity shall require an occupancy permit and appropriate fee as assessed by the Department of Public Works.

H. Site Management and Controls

The final Construction Management Plan will address maintaining the site in a safe condition and will include the following:

1. Regular trash and debris removal
2. Street cleaning and damage controls
3. Dust controls- The construction shall comply with Portland's requirements under Section 25-129 on Noise, dust and debris (Attachment 2).
4. Noise: The construction shall comply with Portland's requirements under Section 17-18 of the City Code (Attachment 1) and Section 25-129 on Noise, dust and debris Attachment 2).
5. Rodent Control will be provided, if applicable, by a professional exterminator and consistent with Chapter 22 of the City Code.
6. Snow Removal: Pursuant to Section 25-173 Contractors to ensure a safe means of travel within the work zone.
    1) Snow/ice removal or commence automatically from (1" of snow and up) or Ice
    2) Remove snow as needed within the work zone, including parking spaces & not to block any driveways or site lines with the piles of snow.
    3) Clear all walks & ramps with the work zone
    4) Sand or Salt as needed
    5) Clear all basin or drainage to help snow melt
    6) This would include Monday-Friday Sat/Sunday/Holidays

DRAFT

I. Erosion Control and Preservation of Trees

1. The [contractor] shall install all erosion and sedimentation controls as depicted on the approved erosion and sedimentation control plan prior to the pre-construction meeting for inspection by the City. The contractor shall regularly inspect the control measures, no less than weekly and after significant storm events, and maintain any installed temporary or permanent stormwater management systems in working order. The contractor shall document all inspection activities and corrective actions and be prepared to provide these documents for inspection by the City, Maine Department of Environmental Protection or the U.S. Environmental Protection Agency upon request.
2. The [contractor] shall maintain all tree and landscaping preservation measures as depicted on the landscaping plan (Exhibit) within the area of construction.
3. The storage of materials shall be identified and avoid being located under/near trees.

J. Construction Staging Area

1. The Construction Management Plan shall depict location of the material staging areas, the location on onsite temporary construction trailers, the location on onsite truck delivery holding areas, the location onsite truck washing stations, masonry mixing stations, the general location of the construction security fence and the general location of temporary construction dumpsters. An open storage areas shall be shown on the plan.
2. Delivery Truck Holding Areas On-Site: The delivery holding area shall be shown on the plan and shall not be blocked during construction. On days when the construction activities require multiple truck deliveries, these deliveries will be carefully scheduled so that there is always adequate on-site area for the holding of the trucks until they can be unloaded. Once at the site all vehicles well be brought within the fence line and will make every attempt to avoid queueing on public streets.
3. Delivery Truck Holding Areas Off-Site: In the event that adequate on-site area for holding of trucks is not available, an off-site marshalling area will be utilized for trucking. The designated off-site location will be identified in the construction management plan.

K. Parking During Construction

1. Construction Parking: Adequate parking for construction workers shall be provided on site or arrangements for off-street parking at an off-site location shall be provided. The parking arrangements shall be included in the construction management plan.
2. Parking: Where existing facilities are remaining in operation during construction, the construction management plan shall identify how the parking for employees and others shall be managed.
3. Truck Routes and Volumes: The Construction Management Plan shall address the designated truck routes and expected truck volumes.

L. Special Measures as Necessary

For construction work that will take place over a long period (e.g. 12 months or more), involve major demolition/ deep excavation/ piling and/or special construction techniques, or are located near sensitive uses (e.g. medical care facilities, schools), the Construction Management Plan should provide details and demonstrate that all appropriate special measures have been taken to avoid, minimize, or possibly compensate for potential impacts. This may include taking baseline measurements before construction, such as arranging to

DRAFT

photograph the foundations of nearby properties upon consent of the owners, in order to assess any future impacts of vibration, noise, etc.

DRAFT

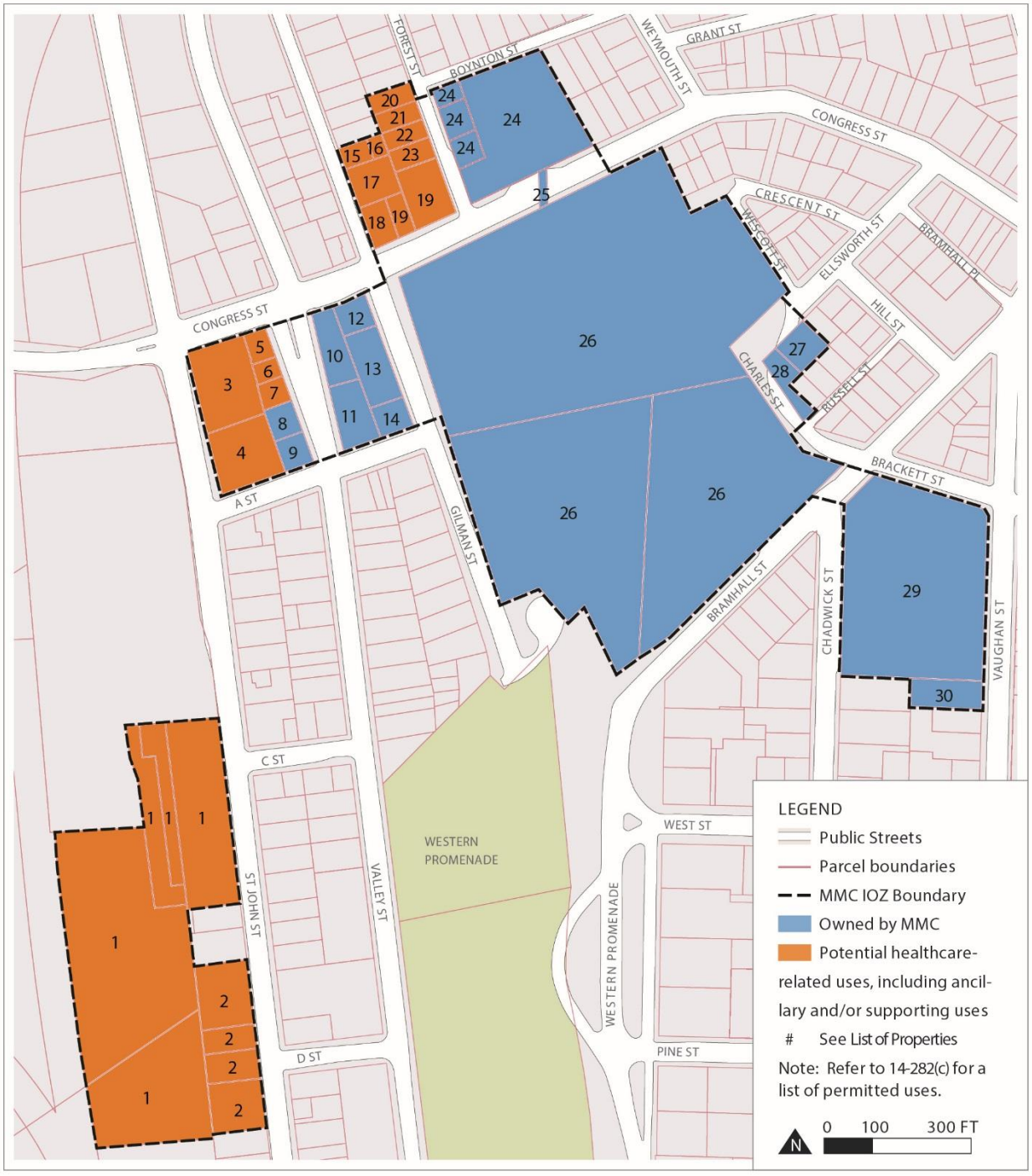
PERKINS+WILL

14-282. Maine Medical Center Institutional Overlay Zone Regulatory Framework.

(a) Applicability. All development proposed by Maine Medical Center (MMC) within the boundary of the Institutional Overlay Zone (IOZ) shall be consistent with the approved Institutional Development Plan (IDP), consistent with the Comprehensive Plan, and meet applicable standards of the land use code, unless such standards are superseded by the following Regulatory Framework. This Regulatory Framework shall govern future development by MMC within the IOZ unless amended by the Portland City Council upon formal application of MMC.

1. The MMC Institutional Overlay Zone shall have the boundaries depicted in the map, below, and shall include the properties listed in the table, below.

MMC IOZ Boundary



List of Properties Included in the MMC IOZ

Map#	Legal Description	Address	Acreage	Ownership
1	64-A-2-8-9-11 74-A-7 / 75-A-6	222 St John St	4.6516	Owned by others
2	68-D-1-3-13-14-16	180 St John St	0.9494	Owned by others
3	65-G-1	950 Congress St	0.4628	Owned by others
4	64-B-1	275 St John St	0.4163	Owned by others
5	65-G-2	942 Congress St	0.0659	Owned by others
6	65-G-3	940 Congress St	0.0482	Owned by others
7	65-G-4	274 Valley St	0.0667	Owned by others
8	65-G-5	268-270 Valley St	0.0978	MMC
9	64-B-2	262-266 Valley St	0.0895	MMC
10	65-H-1	932 Congress St	0.1864	MMC
11	65-H-9	261 Valley St	0.2185	MMC
12	65-H-2	930 Congress St	0.1040	MMC
13	65-H-5	52 Gilman St	0.2384	MMC
14	65-H-8	44 Gilman St	0.1128	MMC
15	65-E-22	85 Gilman St	0.0565	Owned by others
16	65-E-32	85 Gilman St	0.0282	Owned by others
17	65-E-24	81 Gilman St	0.1653	Owned by others
18	65-E-28	919 Congress St	0.1059	Owned by others
19	65-E-29-30	909 Congress St	0.3233	Owned by others
20	65-E-19	22 Forest St	0.0826	Owned by others
21	65-E-21	18 Forest St	0.0831	Owned by others
22	65-E-23	14 Forest St	0.0826	Owned by others
23	65-E-25	12 Forest St	0.0883	Owned by others
24	53-I-1-2-3-12	887 Congress St	1.3400	MMC
25	53-X-1	Congress St Air Rights and Pedestrian Walkway	---	MMC
26	53-D-7 54-H-1 64-C-1	22 Bramhall St	12.563	MMC
27	54-C-6	34 Ellsworth St	0.1341	MMC
28	54-C-10	40 Ellsworth St	0.1155	MMC
29	54-I-1	308 Brackett St	2.5200	MMC
30	63-B-8	214 Vaughan St	0.1983	MMC

Notes:

1. Properties owned by MMC are listed under MMC or MMC Realty Corp.
2. MMC will not extend its functionally-related Bramhall campus hospital operations beyond the boundary of the IOZ within the City of Portland without further amendment to the IDP. This includes any expansion of functionally-related operations that displace residential uses outside of the IOZ boundary. A functional relationship is defined as uses or activities that are traditionally or customarily linked to the day-to-day operations of the MMC Bramhall Campus that would relocate a significant proportion of the total employee population or activities.

(b) Updates and amendments.

1. It is intended that the IDP will be updated on a regular basis to ensure that the data is current and that the document remains accurate. Accordingly, monitoring reports will be filed every three years and shall include a summary of progress on IDP implementation and of acquisitions and divestment since the date of IDP approval. At the time of the submission of the monitoring report, MMC shall identify any updates to the IDP which may result from updated master planning, changes in baseline information, or changes in the adjacent neighborhoods which affect MMC, to allow the IDP to remain current. Updates and minor amendments not described below shall be reviewed administratively by the Planning Authority.

2. Minor amendments that impact phasing of the long-term development blocks or change the approach to parking, transportation, neighborhood engagement or design shall be reviewed by the Planning Board for consistency with the objectives of the IDP. In addition to consistency with the objectives of the IDP, review of phasing and development program amendments shall focus on integration with the campus and impacts on transportation or infrastructure. This review may occur simultaneously with the site plan review of an anticipated project.

3. Major amendments shall be reviewed by the Planning Board and are required under the following circumstances:

    a. A change to the Regulatory Framework is required;

    b. The IDP is no longer representative of the institutional mission or approach to community as a result of redevelopment in the area or City upgrades to neighborhood planning (such as roadway changes, infrastructure upgrades, community design, lighting, etc.); or

    c. Development proposed by MMC is inconsistent with the master facility plan, transportation plan intent, design plan intent, or environment and infrastructure plan intent identified in the IDP.

4. Annual monitoring reports will be submitted for MMC's Transportation Demand Management (TDM) Plan. TDM monitoring reports shall include a summary of progress toward targets established in the TDM Plan.

(c) Uses. In addition to the uses permitted in the underlying zone, the following uses are permitted as a matter of right.

List of Uses Permitted by Right within the IOZ	
Healthcare facilities including but not limited to the following ancillary and/or supporting uses: • Hospital • Medical Office / Clinic • Laboratory Center / Services • Research and Development (R&D) Laboratory or Facility • Educational Facility / Conference Center • Administrative / Business Office • Accessory Service or Trade Uses • Guest House • Multi-family Housing for Healthcare Staff and Students • Rehab / Skilled Nursing Facility	• Retail Facility • Restaurant / Cafe • Employee Service Amenities • Day Care Center • Fitness Center or Gymnasium • Parking Lot • Parking Garage • Bicycle Storage • Heliport • Antenna Station • Outdoor use areas, such as green areas, parks, gardens, art installations, and other active and passive non-commercial recreation spaces

1. Mixed Uses: In recognition that Maine Medical Center is part of a mixed-use area of the City, with important existing services and businesses that serve the local and wider community, healthcare facility development fronting onto Congress Street and St. John Street shall activate the public realm, to the extent able, with uses such as service and retail/restaurant, landscaping, active building entrances, pocket parks, etc., on the ground or other publicly accessible level, consistent with the design intent contained in the approved Institutional Development Plan (IDP). In areas identified in the IDP as "Priority zone for

commercially oriented/retail uses," usable ground floor retail, restaurant, or comparable community-oriented use that provides services to local residents and employees both during the day and evening hours is required. In areas labeled "Street activation through location of windows, entrances, etc.," usable ground floor retail, restaurant, or community oriented use is encouraged to the extent practicable. Such uses, where constructed or facilitated as part of a healthcare related development, are expressly permitted whether ancillary or supporting the healthcare facility or not, and shall be open and welcoming to the general public in addition to employees or visitors of Maine Medical Center.

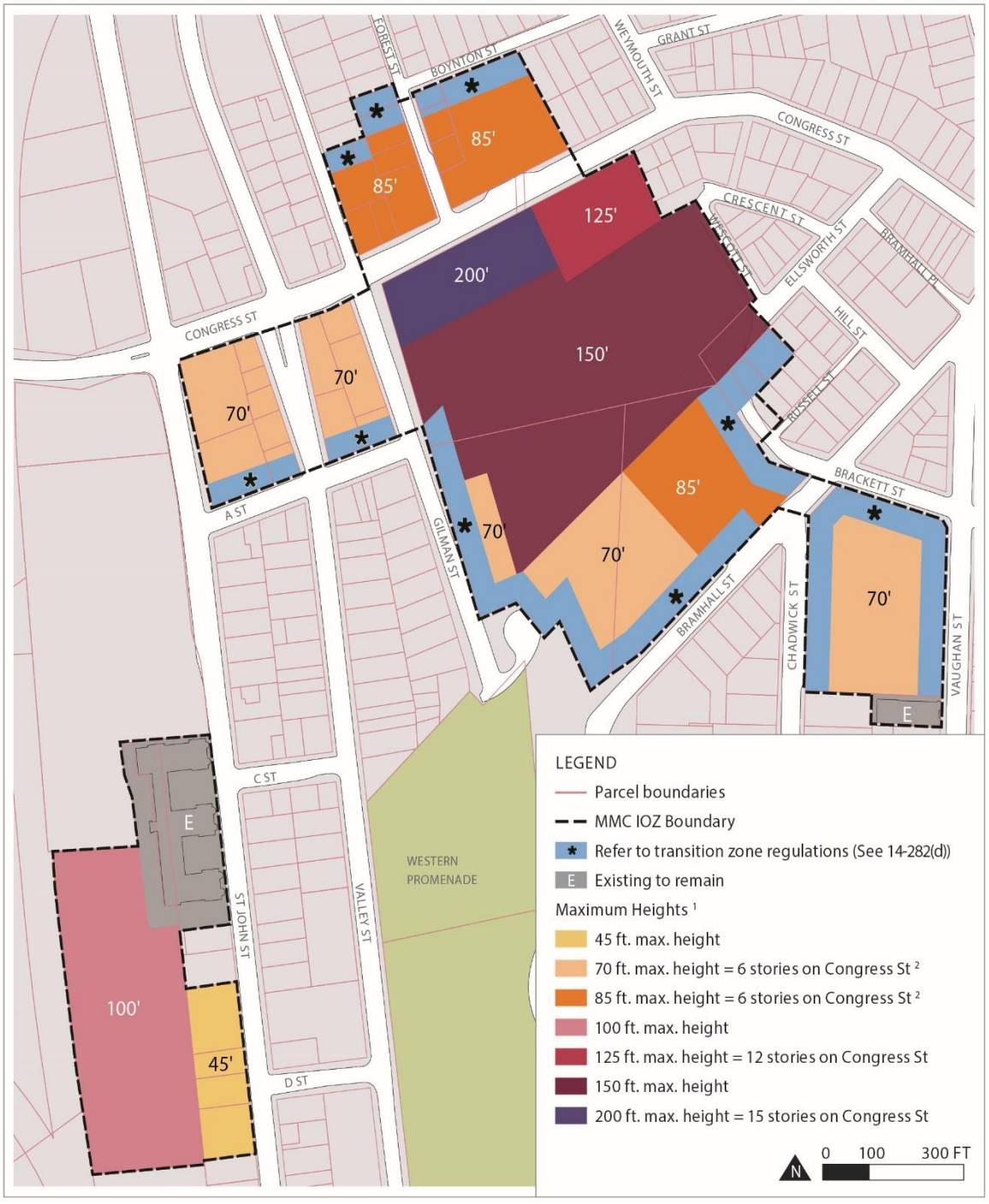
(d) Dimensional requirements. The MMC Institutional Overlay Zone shall have the dimensional requirements listed in the table and depicted in the maps, below.

Dimensional Requirements	
Max. Building Heights	Max. building heights for new buildings within the IOZ shall be governed by the Maximum Building Heights Map, or by the Transition Zones clause of this table (see below) for those buildings located in Transition Zones. Refer to IDP "Chapter 5. Design" for methodology on determining heights.
Minimum Building Heights	Three stories, except in transition zones, where the minimum building height shall be two stories. Minimum building heights shall not apply to building awnings, associated kiosks, pavilions or similar building components.
Maximum Building Length	Length of proposed parking garage at 222 St John St shall not exceed 500 feet as measured roughly parallel to St John St.
Minimum Building Setbacks	Minimum building setbacks shall be governed by the Minimum Setbacks Map. Additional requirements are listed in the Transition Zones and Congress Street Build-to-Zone sections of this table.
Congress Street Build-to-Zone*	A Build-to-Zone is identified for some properties that abut Congress Street. See Minimum Setbacks Map for the location of Build-to-Zone. i. The Congress Street Build-to-Zone extends between 0 to 40 feet from the right-of-way boundary. ii. Buildings located in these parcels must have a minimum of 70% of the façade facing Congress Street located within the

Transition Zones	Transition zones are identified inside the IOZ boundary in areas where the IOZ abuts or is located across a public right-of-way from a residential zone or a historic-designated district. See Maximum Building Heights Map for location of transition zones. i. Transition zones shall extend 50 feet into the parcel from the parcel boundary. ii. Transition zones that abut a Residential zone with or without an intervening public right-of-way shall have a maximum height limit that matches the maximum height permitted within that Residential zone. iii. In areas where the IOZ abuts a Residential zone without an intervening public right of way, minimum side and rear yard requirements of the abutting Residential zone apply within the IOZ boundary, unless noted otherwise in Minimum Setbacks Map.

*A "build-to zone" is the area on the lot where all or a portion of the street-facing building facade must be located, measured as a minimum and max. yard (setback) range from the public right-of-way boundary.

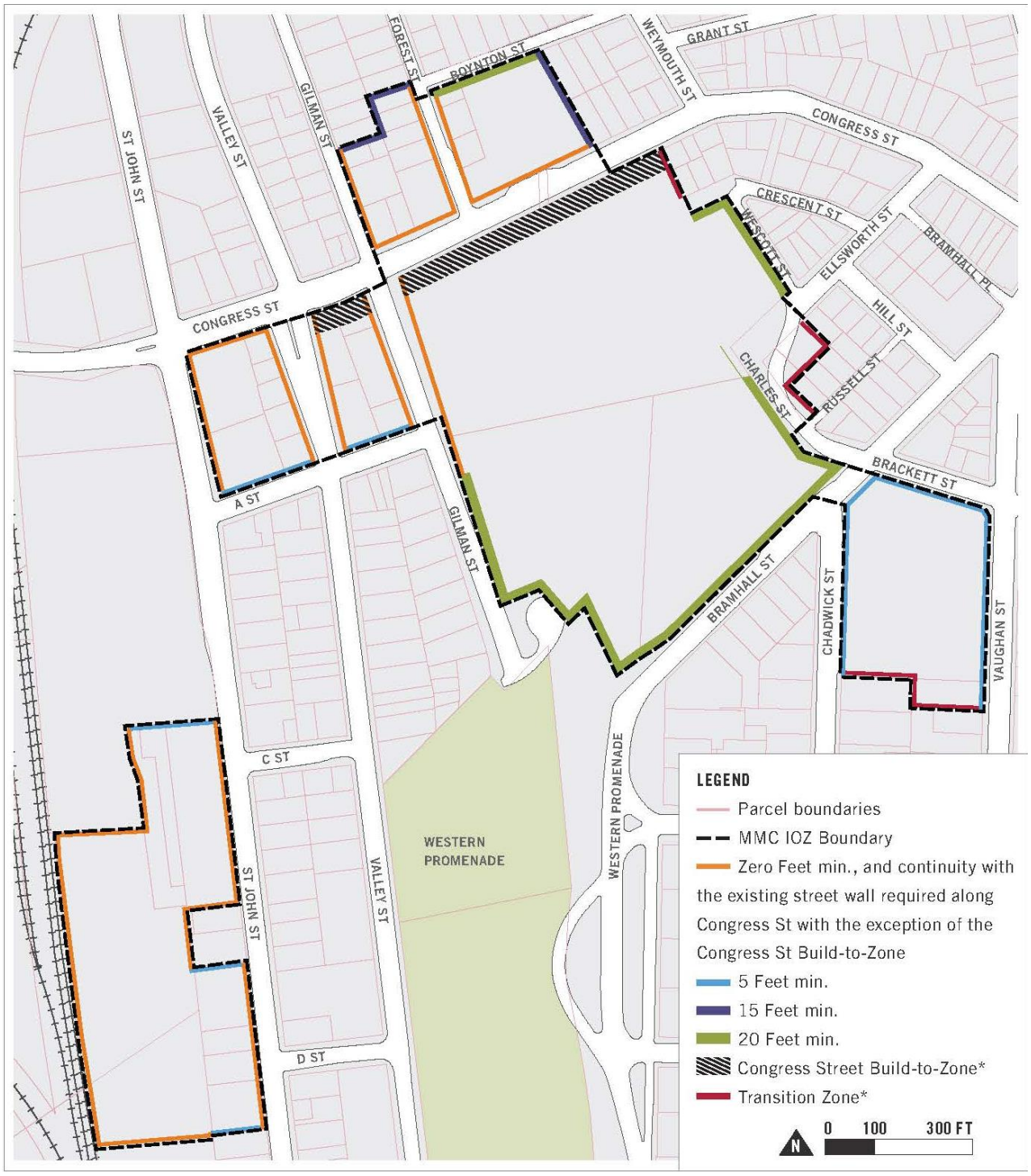
Maximum Building Heights



Notes: 1. Minimum building heights also apply. Refer to 14-282(d).

2. For buildings with residential use above the ground floor, the following height maximums apply: 70 ft. maximum height = 7 stories, and 85 ft. maximum height = 8 stories.

Minimum Setbacks



* **Note:** See Table 4.1 Dimensional Requirements.

(e) Design. New buildings within the IOZ shall adhere to the Design Guidelines set forth in Chapter 5: Design of the IDP and the site plans standards of the City of Portland.

(f) Signs.

1. At the time of first site plan review following IDP approval, a unified campus-wide Signage Plan shall be submitted for review and approval by the Planning Authority. Any update to such plan due to a change in name or logo shall not require amendment to the IDP.

2. Signs shall be designed in accordance with the campus-wide Signage Plan. All signs shall be designed in proportion and character with building facades and adjacent street typology. All signs shall be coordinated with the building and landscaping design and be constructed of appropriate permanent, high quality materials and finishes.

(g) Transportation.

1. Transportation Demand Management (TDM):

   a. At the time of the first site plan review following IDP approval, MMC shall submit a campus- wide TDM Plan substantially in accordance with those TDM objectives and strategies identified in the approved Institutional Development Plan. The TDM Plan may be phased into short-,mid-, and long-term actions to allow for progressive implementation over time.

   b. The TDM Plan shall be designed to provide transportation choice with the goal of reducing parking demand and single-occupancy vehicle trips to and from MMC by employees and visitors.

   c. The TDM Plan shall establish parking and trip reduction targets associated with the short-term (0-2 years), mid-term (2-5 years), and the long-term (5+ years), as well as a data collection plan.

2. Parking:

   a. Parking requirements in the IOZ shall be established at the time of site plan review based on a parking study that includes a campus-wide analysis of demand and supply. The parking demand

study shall determine parking requirements and shall be sufficient to alleviate parking pressure on surrounding neighborhoods.

b. Parking studies developed by MMC shall integrate parking and trip reduction achievements and data contained in the TDM Plan.

(h) Environment. Development proposed by MMC shall be designed to integrate with the surrounding context, including open space and pedestrian networks and infrastructure.

(i) Mitigation measures. MMC shall mitigate site plan impacts to off-premise infrastructure in a manner proportionate to those impacts. Mitigation may include financial or in-kind contributions to existing or planned City projects focused on mitigating the impacts of MMC development. Mitigation contribution shall be determined based on the City's standard procedure in effect at the time of site plan review.

(j) Neighborhood Integration and neighborhood engagement.

1. For the purpose of keeping surrounding residential areas appraised of its future development plans, and to address any neighborhood issues related to the operations of the MMC Bramhall campus, MMC shall adhere to the ongoing community engagement principles identified in the approved Institutional Development Plan.

2. MMC shall conduct ongoing community engagement, including the formation of a Neighborhood Advisory Committee comprised of representatives of MMC, the Parkside neighborhood, the West End neighborhood, the Western Promenade Neighborhood Association, the St. John Valley neighborhood, the Libbytown neighborhood, and the City.

(k) Construction management.

1. At the time of site plan review, MMC shall submit a Construction Management Plan substantially in accordance with those construction management principles identified in the approved Institutional Development Plan for review and approval by the Planning Authority.

2. The Construction Management Plan shall include a construction schedule, as well as strategies for managing neighborhood communication and noise, air quality, traffic, and parking impacts associated with the construction as set forth on the Construction Management Template developed by the City and attached and incorporated to the IDP as Appendix A.

(l) Other requirements.

1. Helipad. MMC shall be governed by the provisions of the Helistop Overlay Zone with the following exceptions:

   a. Setback requirements of Section 14-327(3); and

   b. Fencing requirements of Section 14-327(4).

2. Snow Ban Parking. When the City of Portland declares a Snow Parking Ban, MMC shall make parking available to neighbors in a designated parking area on or near its campus upon the following condition:

   a. Hours: Due to the patterns of patient flow in the hospital, the hours of snow ban parking for registered vehicles during an announced City of Portland Snow Parking Bans are 6:00 p.m. until 6:00 p.m. Vehicles that are not moved out of these parking areas by the applicable time each morning are subject to towing at the owner's expense.

3. Healthy Communities- Recognizing that a stable residential and commercial environment is key to the health of any neighborhood, MMC commits to supporting its existing and future neighbors in the St. John Valley, Parkside, West End, Western Prom and Libbytown neighborhoods. Accordingly, MMC shall implement and participate in the healthy communities programs as described below.

   a. Caring Community Grants- MMC shall develop an annual grant program with available funds of up to $30,000. Goals, priorities, eligibility requirements, program guidelines and allocation approach will be developed by the MMC Neighborhood Council, as described in Chapter 6

of the IDP approved on September 26, 2017. Neighborhood associations or other entities located or operating in the St. John Valley, Parkside, West End, Western Promenade and Libbytown neighborhoods may apply for grant funding relating to the following initiatives:

i. Neighborhood Investment and Infrastructure- focused on creating strong, safe, accessible and vibrant neighborhoods;

ii. Quality of life- Focused on improving access to recreation, arts or cultural experiences in the neighborhoods;

iii. Diversity and Inclusion- Focused on fostering the building of relationships and understanding among diverse groups, including capacity building and outreach activities;

iv. Public Safety- Focused on supporting public safety programs through training programs, equipment or other means in the neighborhoods; and

v. Environmental sustainability- Focused on preventing waste, increasing recycling or supporting other programs that work to improve the environment.

b. Healthy Neighborhoods Program- MMC shall initiate and adopt a memorandum of understanding (MOU) by and between the MMC, the City of Portland, an identified Community Housing Development Organization and any other community partners that may be identified later establishing a Healthy Neighborhoods program. Such a program shall be designed to fund and execute housing and community improvement and development programs in St. John Valley and the other neighborhoods surrounding MMC’s Bramhall Campus.

Portland Maine Yes. Google's good here.

Jean Fraser <jf@portlandmaine.gov>

Notes of 2/15 MMC Site Plan Review Meeting (CMP/Detours)

1 message

Jean Fraser <jf@portlandmaine.gov> Thu, Feb 22, 2018 at 1:05 PM
To: "Errico, Thomas" <thomas.errico@tylin.com>, "Bartlett, Jeremiah" <jbartlett@portlandmaine.gov>, "Hyman, Bruce" <bhyman@portlandmaine.gov>, Keith Gray <kgray@portlandmaine.gov>, "Peverada, John" <jbp@portlandmaine.gov>, "Zazzara, Rhonda" <rjz@portlandmaine.gov>, Robert Thompson <rmt@portlandmaine.gov>, James Sweatt <jjs@portlandmaine.gov>, Eric Nevins <ericn@portlandmaine.gov>, Aaron Pepin <aaronp@portlandmaine.gov>, "Barhydt, Barbara" <bab@portlandmaine.gov>, "O'Brien, Stuart" <sgo@portlandmaine.gov>, "Donaldson, Helen" <hcd@portlandmaine.gov>
Cc: "DiPierro, Philip" <pd@portlandmaine.gov>, "Gautreau, Keith" <kng@portlandmaine.gov>

Hello all

Key points from the 2/15/18 Site Plan Review meeting with MMC:

(Please let me know if I have missed anything important; note that these are intended as an "aid de memoir" and not as formal minutes)

Congress Street Closure and associated detours/emergency access (based on the revised docs and plans attached to this e-mail from Gorrill-Palmer)
Updates from Gorrill-Palmer re traffic detours and associated signage and signals, assuming no alternative to a Congress Street closure (see below- third item):

- RD of GP had developed the option with Boynton one-way inbound, based on feedback from earlier meeting
- Outlined the "three-layer" approach:
  - Signage via variable message signs outside central Portland to encourage different routes into the City
  - Barricades at Congress/St Johns and at Weymouth/Congress to re-route the bulk of traffic
  - Local traffic may use Forest/Boynton inbound
- Outlined the changes needed for each of these (see plans) eg signal at Weymouth/Park (actuated); removal of parking in addition to signage; change ped to concurrent crossing in some places (but RD thought signal timing otherwise OK)
- Key concerns (need more analysis and discussion):
  - Police particularly concerned re the safety of retaining central lane at Congress/St John - rather see it removed even though a number of cars going straight ahead

        - Need for information/maps to MMC patients and visitors and employees - suggest use online data providers to flag closures
        - Need to look closely at impact on peds at signals, especially during ball games and other events
        - Consider impacts on residents and businesses of some routes and semi-closures
        - Introduce Boynton as one-way working a couple of weeks in advance
    - Access to visitors garage during Congress closure (see plan)
        - Via employee garage, channeled and flaggers as needed
        - 200 employees moving out of the employee garage to make up for loss of 2 levels in visitor garage during construcion
    - Emergency Routes (see plan)
        - Clarified that access via Gilman only secondary and only when the "green" route is closed
        - Attendees stressed need for communication and decision-making chart
        - Agreed that from now on there would be smaller follow up meetings a necessary to resolve details
        - Agreed there needed to be monitoring and heavy contractor presence during first few weeks and may need to tweak these plans
    - METRO - MMC to meet with them once plan firmed up
    - DPW noted that the condition of the streets being used for deliveries and detours may require some action in advance eg partial paving - DPW to advise MMC re this after a more detailed site visit - need to avoid delays to the proposed schedule

<u>CMP - East Tower and Visitor Garage</u> (based on revised CMP as attached from Turners)

- Congress St closure anticipated May 7 to June 28 for the installation of precast beams for overbuild of the visitors garage - weather biggest factor
- Turner summarized the revisions to CMP, which included facilitating the ambulance access, adding delivery routes
- Reviewers questioned the proposal to route steel deliveries (from North, June 4 to June 28, starting at 5am) along Washington Ave and Congress
    - City staff advised route should avoid Washington completely due to planned construction work
    - Route must avoid downtown Portland and Congress
    - Keep delivery vehicles on I295 longer - maybe I295 to Forest /Park ? Deering; maybe Fore River Parkway
    - Turners will speak to the trucking company again and get back to us
- Police stressed need for ongoing monitoring and process for making changes to delivery and detour routes after closure starts
- Concern re pedestrian route along Congress by construction area
    - Need ADA ramp
    - Need 9ft for crossing
    - Ensure entire sidewalk available

    - Look at conflicts for peds crossing Weymouth at Congress - need to address
    - Gilman crosswalk needs to be ADA compliant
- Timetable (based on SO (Tuck) discussions with MMC and City Communication Directors)
    - Need for early completion of telephone tree communication structure/contacts to be circulated within about 2 weeks and to be tested ahead by local and regional responders
    - In week after 2/27 PB meeting need schedule that includes lead time and actions
    - Early prep of handouts for employees and visitors plus early website info important

Third Part Review of Constructability

- Kleinfelders consultancy (Jim Wentworth) has been engaged by city to provide independent review of the constructability issues for the East Tower and Visitors Garage, as there was concern regarding the closure of Congress Street (for at least 8 weeks) and whether that closure was essential in view of its impacts
- JW outlined what had gone into the review and amplified on the review Memo (see FINAL REVIEW MEMO attached for details) outlining the pros and cons of a range of construction options
- JW noted that public safety was a key factor as was the need to use this size of crane which requires a long straight area for assembly
- Kleinfelders professional view was that their analysis supported the choice of the proposed option, though they recommended penalties and other disincentives in the contract for going beyond the identified closure time
- Discussion regarding the work schedule for the garage - potentially possible to increase from 5 days/week to 6 or 7- but then the noise etc from construction would also be for more days
- A 6 day working week with a later start on Saturday may be best compromise and potentially could shorten the closure by a few days depending on weather

Next Meeting:

NO MEETING FEBRUARY 22

March 1 Meeting: am holding a meeting slot and room 209 is reserved (and all following thursdays at 9am) but no agenda yet- will in part depend on issues raised at the PB Workshop on Feb 27th

--
Jean Fraser, Planner
City of Portland

874 8728

--
Jean Fraser, Planner
City of Portland
874 8728

---

3 attachments

GP Traffic Analasis of detours & traffic managment 2.14.18.pdf
4469K

CM Plan February 13.pdf
10844K

Kleinfelder MMC -Constructability Review Memo 2-21-2018.pdf
144K

Portland Maine Yes. Google's good here.

Jean Fraser <jf@portlandmaine.gov>

MMC meeting 2/8/18 Brief notes/action

1 message

Jean Fraser <jf@portlandmaine.gov> Mon, Feb 12, 2018 at 4:22 PM
To: "Alexander M. Green" <AGreen@mmc.org>, Keri Ouellette <kouellette@portlandmaine.gov>, "Cameron, Caitlin" <ccameron@portlandmaine.gov>, "O'Brien, Stuart" <sgo@portlandmaine.gov>

Hello all

Below please find my brief "action" notes of the 2/8 MMC meetings- pl let me know if your "take way" was different:

Permitting and Inspections re building permits (relates to the three most urgent permits eg for retail space (under VG), ET and VG; later ones will be CUP cooling tower on roof & chiller; new St John garage; demo existing garage; new hospital building)

- Retail fit up for Turners - MMC to liaise with KO to resolve re use and move forward on the permit
- ET and VG - urgent re ET roof and Tuck to follow up; otherwise MMC to initiate pre-app discussions with SAFEBUILD and keep KO and JF in the loop
- Submission of permit applications to be direct to Permitting and Inspections Department and pay full fees for now
- ET and VG permits will need State FIre Marshall and City Fire Dept reviews

Design (Purpose of meeting was to consider the staff and PB comments and how to address)

- JK from Perkins & Will showed more detailed rendering of ET and clarified where there was "white" on the existing buildings that relate; consider white best for a number of reasons; not done a rendering with silver nor with white cladding brought down
- Discussion of whether white of the new will match existing- not feasible to reclad existing white; MMC explained had looked at options for tone of upper cladding
- Discussion of how ET overbuild will integrate with new hospital building and agreed rendering of latter to show Board
- Discussion of VG and question of adding visual interest (viewed new renderings of proposal from Congress); MMC had considered options but not revised proposals due to constraints
- VG Retail space being fitted out for Turners with long term use in mind- CC suggested this be clarified to Board

- CC and JF suggested that MMC needs to address Board comments on both buildings in some way and to explain what other options have been considered prior to finalizing current option
- MMC clarified glass specs for both ET new windows and VG tower at E end
- CC asked for info re the following and to be submitted for Board:
    - glass specs
    - all materials
    - shades to be used inside ET rooms

Thank you
Jean

--
Jean Fraser, Planner
City of Portland
874 8728

Portland Maine | Yes. Google's good here.

Jean Fraser <jf@portlandmaine.gov>

MMC SP Review Mtg Feb 1, 2018 - MEETING NOTES

1 message

Jean Fraser <jf@portlandmaine.gov> Tue, Feb 6, 2018 at 12:10 PM
To: "Errico, Thomas" <thomas.errico@tylin.com>, "Bartlett, Jeremiah" <jbartlett@portlandmaine.gov>, "Hyman, Bruce" <bhyman@portlandmaine.gov>, "Peverada, John" <jbp@portlandmaine.gov>, James Sweatt <jjs@portlandmaine.gov>, Aaron Pepin <aaronp@portlandmaine.gov>, Eric Nevins <ericn@portlandmaine.gov>, Robert Thompson <rmt@portlandmaine.gov>, Keith Gray <kgray@portlandmaine.gov>, "Zazzara, Rhonda" <rjz@portlandmaine.gov>, "Barhydt, Barbara" <bab@portlandmaine.gov>, "O'Brien, Stuart" <sgo@portlandmaine.gov>, "Donaldson, Helen" <hcd@portlandmaine.gov>, "Alexander M. Green" <AGreen@mmc.org>, Dominic Gagnon <Dominic.Gagnon@colliers.com>, gscholler@tcco.com
Cc: "DiPierro, Philip" <pd@portlandmaine.gov>, "Ryan T. Wingard" <ryan.wingard@wright-pierce.com>, "Michael A. Guethle" <michael.guethle@wright-pierce.com>, Will Conway <wconway@sebagotechnics.com>, Jim Wentworth <JWentworth@kleinfelder.com>, "Cameron, Caitlin" <ccameron@portlandmaine.gov>, "driley@sebagotechnics.com" <driley@sebagotechnics.com>, "Gautreau, Keith" <kng@portlandmaine.gov>

Hello all

Key points from the Site Plan Review meeting with MMC held last **Thursday, February 1, 2018** plus (at end) future meeting agendas:

A. CMP with focus on analysis of detour options for any Congress Street closure - meeting was seeking to find consensus as to the best option

Updates re detour options from Gorrill-Palmer *(circulated summary plans and narrative that included analysis of levels of service at intersections which was sent by e-mail the evening before- this is attached):*

- Outlined two "local" (using Forest & Boynton) options: (A) two-way and (B) one-way on Boynton
- Outline option (C) using St John/Park/Weymouth
- Outlined wider add-on option (E) that diverted in bound vehicles further out in the system eg leaving I295 at different exits
- Acknowledged option (D) to make Park two-way but this was not analysed as it entailed alot of changes to be completed in a short time and not recommended
- Subject to some further information and discussion, the Boynton one-way (B) combined with the add-on option (E) to divert inbound vehicles seemed to be worth considering further

METRO

- MMC had met with METRO who would work with them once final plan in place

- METRO had noted that they would probably need additional drivers and buses to maintain headways

Implications of detours - *attendees highlighted concerns and Bruce Hyman offered to provide a coordinated note regarding key areas of additional info requested [**this is below**] and Gorrill-Palmer will provide updated and expanded info on these as "final package" for next discussion (2/15)*

- Need to remove dedicated ped phase at St John/Congress
- Issues re access and parking for residents on Boynton
- Need for signal modifications eg timing, peds
- Note increase in traffic April-June (+20% - from Police)
- Suggestions for signage, including variable messaging VB and moving MMC sign(s) on I295
- Physical condition of Weymouth and need for emergency service access
- City does not recommend adding traffic to Deering
- See Bruce Hyman's note at end of e-mail

Timeframes/contingencies:

- Concern that the June 28th end date is crucial
- What penalties if this is not met?
- Question of whether can be shorter but keep some buffer (which might have impacts on neighbors)
- Timing of deliveries and where staged crucial to minimize impacts
- Turner to prepare communications info between contractor/MMC security/City re decisions needed if issues arise
- Police suggest have flaggers during the first week

B. Stormwater Review of Site Plan (note that W-P had previously provided review comments and Sebago had responded, so discussion focused on outstanding issues and questions)

- Wright-Pierce (W-P) attended on behalf of City; Sebago Technics (ST) attended on behalf of MMC
- ST explained existing situation:
  - ET sewer goes to Congress combined system; ER stormwater goes to A Street separated system
  - VG has treatment of stormwater on roof which then goes to Congress combined
  - Density of utilities prevents connection so ST consider only way to get stormwater to A street from VG and new hospital building is to pump
- New hospital building on Congress will have subsurface system along Congress to detain, and green roof- ultimately discharge to Congress combined system
- Other items raised by W-P and DPW for MMC to address:
  - Increase storage at visitor garage
  - Reduce disturbance & introduce erosion control etc at construction sites
  - Submit capacity letters

C. TDM- MMC had submitted TDM Plan and City had sent comments recently

- Discussion monitoring- methods of monitoring parking demand - questions
- City expects the TDM to include specific strategies and associated details, and then monitor and review in a year
- TDM needs to go one step beyond IDP
- Planning had seen good examples and will forward these (WEX; Thompsons Point)
- Discussion re bicycle by-ways and how these should be integrated with TDM for MMC - question of whether they would facilitate cycling by MMC staff

D. NEXT MEETINGS

THURS FEB 8 (most do not need to attend)

- **9:30am- 10:00 MMC building permits process**
- **10ish TO 11:00: Design with Jeff K of Perkins & Will**

PLANNING CONFERENCE ROOM (this meeting only)

THURS FEB 15 9AM - final discussion CMP and associated traffic/detours/signage/signals etc (based on a final package from MMC to be circ 2/13/18) in Room 209

Coordinated Note from Bruce:

Here are the consolidated comments from last Thursday's preliminary review of the MMC draft Congress Street detour analysis dated 1/31/18.

The following additional information is requested:

- More documentation of the actual morning and afternoon peak hours that are being referenced as part of the detour planning. It is not stated in the document itself and the Synchro printouts have the same START-STOP times for both the AM-PM analysis period. (It looks like 7AM-8AM are the AM peak hour from the printouts but it should be documented in the narrative and in the tables.)
- More documentation of the peak hour(s) for the detour analysis: do one or both of the actual peak traffic hours change to a different time period based on the amount of traffic that is deducted-credited based on the amount of traffic heading to the Gilman lot and MOB parking and the actual amount of traffic that remains?
- The configuration and specific type of temporary traffic signal equipment proposed for the Weymouth Street/Park Avenue intersection and the means of traffic signal coordination/communication with nearby traffic signals
- All traffic volume information that was used in the analysis to better understand the analysis' assumptions for traffic volumes on Congress Street between St. John and Brahmall. A review by the city of the actual Synchro models is also suggested.
- The specific location, placement and wording of detour signage associated with the proposed detour concept
- The specific recommended deployment of personnel (e.g., flaggers, police officers, etc) at the initiation of the proposed Congress Street detour to actively manage traffic associated with the detour and and coordinated with construction activities/the CMP.

--
Jean Fraser, Planner
City of Portland
874 8728

Congress St Detour 1-31-18 - reduced.pdf
3051K

Portland Maine | Yes. Google's good here.

Jean Fraser <jf@portlandmaine.gov>

Notes of todays meeitng

1 message

Jean Fraser <jf@portlandmaine.gov> Thu, Jan 25, 2018 at 6:10 PM
To: "Alexander M. Green" <AGreen@mmc.org>
Cc: Mark Harris <HARRIM6@mainehealth.org>, "O'Brien, Stuart" <sgo@portlandmaine.gov>

Al

This (below) is what I have sent around internally, as mentioned in earlier e-mail to help keep reviewers in the loop.

thanks
Jean

Key points from todays Site Plan Review meeting with MMC:

East Tower CMP - meeting was seeking to find consensus

Updates from Turner:

- Ambulances will be allowed to use ambulance portal as existing
- Explained penalties if workers park on nearby streets
- Have checked out feasibility of trucks using Ellsworth
- Truck deliveries of steel with be June, July and most of August
- Probably remove bump out in Crescent

Discussion of Access routes:

- A number of alternatives were discussed, looking at pros and cons (eg access from Gilman) as Turner proposals problematic Ellsworth to Congress and reservations over 2-way in Crescent
- MMC noted secondary access via employee garage for cars going to Visitors Garage
- Concluded:
  - Take out bumpout in Crescent to help larger emergency vehicles
  - Best option for exiting trucks is Bramhall via Charles to 295
  - Keep Crescent 2-way (MMC contacting residents long here re need to remove parking)
  - Gilman could be back up access option and arranged if necessary

Congress Street Closure and associated detours/emergency access (this discussion to continue longer; includes third party review of construction plan)

Updates from Turner:

- Current plan is for 8 week closure based on normal working practices, so May 7 to June 28 envisaged
- Compression of time means more trucks in area per day

Updates from Gorrill-Palmer re options for detours:

- Local - Forest/Boynton/Weymouth (for small cars)
- One way system probaly Boynton inbound and park outbound
- Park between Fore River Pkway and St Johns to be two way
- Comparison/analysis to be completed/circulated early next week and discussed at Feb 1 mtg

Discussion of detour options:

- Need to get people out of system further out - need signage
- Police suggest closures on Congress at St John, and Park
- Many felt should avoid pushing traffic to Weymouth
- Deering another option - G-P to include in analysis
- Park 2-way offers benefits but big questions re intersection modifications and signals

Next Meeting:

THURS FEB 1 9am- 10:30 (reviewers attend for their topics within this time)
ROOM 209

- Focus on Congress Closure & detour option
- Some time on TDM
- Some time on Stormwater/Wastewater

--
Jean Fraser, Planner
City of Portland
874 8728

EXTRACT FROM SITE PLAN ORDINANCE

Water Quality, Stormwater Management and Erosion Control:

a. All development must demonstrate that the proposed siteimprovements are designed to minimize the amount of stormwater leaving the site. This must include consideration of the design and location of improvements to minimize the total area of impervious surface on the site and stormwater management techniques to minimize both the volume and rate of runoff from the lot. The stormwater management plan must demonstrate the following:

(i) Any stormwater draining onto or across the lot in its pre-improvement state will not be impeded or re-directed so as to create ponding on, or flooding of, adjacent lots;

(ii) Any increase in volume or rate of stormwater draining from the lot onto an adjacent lot following the improvement can be handled on the adjacent lot without creating ponding, flooding or other drainage problems and that the owner of the lot being improved has the legal right to increase the flow of stormwater onto the adjacent lot;

(iii)Any increase in volume or rate of stormwater draining from the lot onto City property following the improvement can be handled without creating ponding, flooding or other drainage problems and that the owner of the lot being improved has the legal right to increase the flow of stormwater onto the City's property; and

(iv) Any increase in volume or rate of stormwater draining from the lot into the City's separate storm sewer system can be accommodated in the system without creating

downstream problems or exceeding the capacity of the storm sewer system.

b. All development, except Level I minor residential development, shall comply with the standards of Section 5 of the Technical Manual including basic, general and flooding standards, as applicable, to prevent and control the release of pollutants to waterbodies, watercourses, wetlands and groundwater, and reduce adverse impacts associated with increases or changes in flow, soil erosion and sedimentation.

c. All development, except Level I minor residential development, that are located within the watershed of an Urban Impaired Stream shall comply with the Urban Impaired Stream standards pursuant to Maine DEP Chapter 500 Stormwater Management Rules, as described in Section 5 of the Technical Manual.

d. Level I: minor residential development shall comply with basic erosion control standards, as described in Section 6 of the City of Portland Technical Manual.

e. Development shall not pose a risk of groundwater contamination either during or post-construction, as described in Sections 5 and 9 of the Technical Manual.

f. Development shall provide for adequate and sanitary disposal of sewage as described in Section 2 of the Technical Manual.

(c) *Public Infrastructure and Community Safety Standards.*

1. *Consistency with City Master Plans*:

a. All developments shall be designed so as to be consistent with City Council approved master plans and facilities plans and with off-premises infrastructure, including but not limited to sewer and stormwater, streets, trails, pedestrian and bicycle network, environmental management or other public facilities (see Section 15 of the Technical Manual).

b. The site plan shall include suitable easements, rights and improvements to connect or continue off-premises public infrastructure as may be required by the reviewing authority.

2. *Public Safety and Fire Prevention*: **[excluded from this extract]**

3. *Availability and Adequate Capacity of Public Utilities*:

a. The development shall not overburden sanitary sewers and storm drains, water lines, or other public infrastructure and utilities. Development shall provide adequate utility capacity and distribution network on-site and in connection to surrounding locations and facilities.

b. Electrical service shall be underground unless otherwise specified for industrial uses, or if it is determined to be unfeasible due to extreme cost, the need to retrofit properties not owned by the applicant or complexity of revising existing overhead facilities.

c. Installation of new or upgrades to existing sanitary sewers, storm drains, water lines or other utilities shall meet the provisions outlined in Section 2 and Section 9 of the Technical Manual.

d. All development within 200 feet of a public sanitary collection and treatment system shall connect sanitary sewer lines into the nearest available public sewer. If a public sanitary collection and treatment system is not available, a private wastewater system may be used according to the requirements of Chapter 24 of the City Code and Section 2 of the Technical Manual.

e. All sanitary sewer and stormwater utilities proposed as part of the development shall be designed to City standards as specified in Section 2 and Section 4, Chapter 500 Stormwater Management Standards, of the Technical Manual.

f. All residential development of 20 units or more, commercial development and industrial development shall provide for the temporary storage and timely removal of all trash and recyclable materials including, at a minimum, paper, corrugated cardboard, plastics and metals. Storage containers for recyclable materials shall be separated from trash containers. All exterior storage of trash and recyclables shall be screened from view from public sidewalks, streets and adjacent properties.

4. Reserved.

MMC TDM PLAN | City Review Comments 1/24/18 (Tom Errico, Bruce Hyman, Nell Donaldson)

General

- Add date to title page.

Context

Transit:

- Provide information on #9/#1/Breez/Zoom. These all run on Congress and will provide service to future front door.

Current Travel Behavior

Existing Mode Share:

- Include absolute numbers on graphs (i.e. ~860 people are taking shuttle, 100 carpooling, 88 walking, etc.)
- Commuting survey should be completed annually.

Geospatial Analysis:

- Include absolute figures (e.g. ~1080 MMC employees live within a 3 mile radius, 320 live within a mile).
- Is there data on usage of UCar Share?

Program Goals

- This section begins with a discussion on peak parking demand, but the goal/metric is framed as a 'trip reduction.' This section should be consistent re goals and metrics.
- Baseline should also be more clearly identified (e.g. if there are ~2700 MMC employees driving alone to work every day (based on the survey), this = X SOV trips. Target (2%) of these trips = X. A table may be helpful to show this information.
- Plan should be clear on how the metric will be monitored. If metric is trips, MMC will need to monitor trips. If parking demand, same. What method is proposed? Counts or surveys? Traffic or parked vehicles.
- The shift of 65 employees over five years seems under-achieving.
- Monitoring should be annual.

Parking & TDM Strategies

Current GOB Strategies:

- Figure 6 should include both the existing and proposed bike network (see attached markup).
- The TDM plan notes that vanpool and carpool vehicles will get preferential parking spaces in the new employee garage. The location of the new garage may actually be a barrier for increased carpooling. We would suggest identifying spaces on-campus.
- The 'pay for parking' section is in the future tense. This should be in the future strategies section.
- The plan should also clarify the cost for parking – is it $3 per week or bi-weekly? Paying for parking (and allowing cash out) is potentially one of the most significant things the hospital could do to shift mode share. Fees could/should be increased significantly.

Enhanced (Future?) Strategies:

- In the bike discussion, note that many of the proposed bike network connections serve MMC.
- Explain how enhanced transit subsidies will work. How will MMC administer the program?
- Also, are there METRO system/operational enhancements that could influence MMC employee use?
- Provide incentives for those who walk or bike.

New Program Elements:

- Narrative states that MMC 'is currently exploring the following options.' MMC needs to commit to strategies in the TDM plan.
- Short-term strategies should be 1-2 years to align with the short-term goals.
- The short-term strategies include improving data collection capabilities with a reference to the long-term strategies. This should be fleshed out in the short-term if it is included as a short-term action.
- The plan should also include mid-term actions (3-5 year). Otherwise there is a gap between short & long-term.

- There are only two long-term strategies identified. Are there other, more targeted strategies that MMC could pursue in the future?

Education and Marketing Strategies

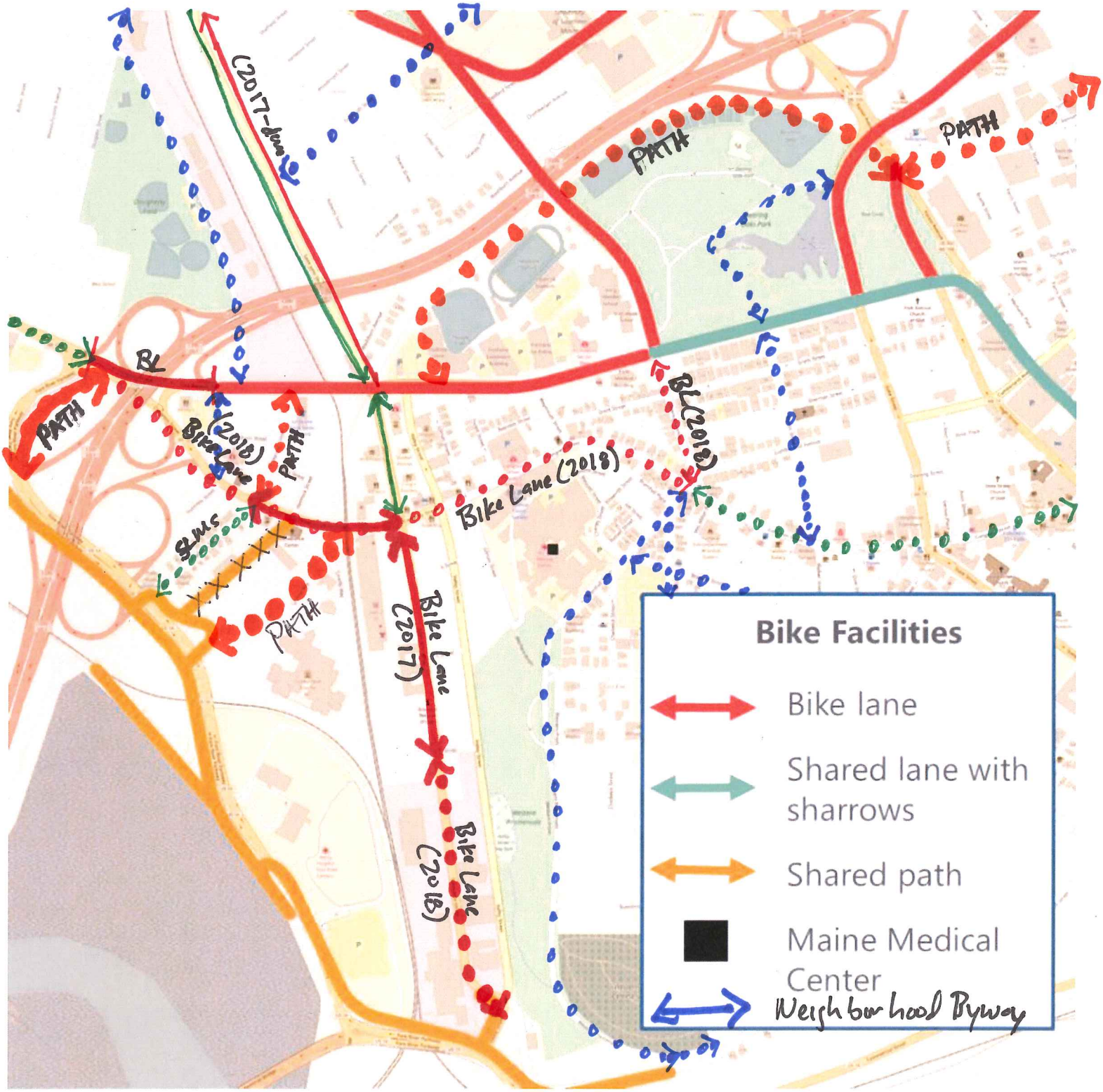
- Include a timeframe for these strategies.
- What about challenges/incentives outside of GoMaine? MMC could provide their own.
- What about connections to HR/employee health programs?

Comprehensive Data and Goal Monitoring

- As above, data collection and monitoring should be annual at the least (as per the IOZ). Monitoring reports should be submitted to the city's Planning Division and include a summary of progress toward plan targets.
- Establishing a strong data collection system is critical. We strongly suggest that MMC incorporate technologies that will provide useful and accurate information for assessing transportation data.

UPDATED EXISTING + FUTURE BIKEWAY NETWORK

FIGURE 6 Bicycle Network Surrounding MMC



1/16/18
BATH/PAUD.

WRIGHT-PIERCE
Engineering a Better Environment

MEMORANDUM

TO:	Jean Fraser, Planner	**DATE:**	1/25/2018
FROM:	Michael Guethle, PE; Ryan Wingard, PE	**PROJECT NO.:**	13982A
SUBJECT:	Bramhall St. - 22; MMC East Tower and Visiting Parking (PEZ.2017.289)		

Wright-Pierce has reviewed the Level III Site Plan Application information provided for the East Tower and Visiting Parking redevelopment proposed at 22 Bramhall Street. The project will include adding three levels of parking to the existing parking garage, relocating the heliport to the East Tower, and adding 2 floors to the East Tower. The work will add 0 square feet of new impervious surfaces, will add 0 square feet of new building surfaces, will add 225 parking spaces, and will add 137,961 square feet of building floor area.

Documents Reviewed by Wright-Pierce:

- Level III Site Plan application, dated (most recent) January 8, 2018.
- Engineering Permitting Plans, dated (most recent) January 8, 2018.

Comments:

1) Level III Site Plan applications with the City of Portland must submit a stormwater plan pursuant to the regulations of MaineDEP Chapter 500 Stormwater Management Rules. This includes conformance with the Basic, General, and Flooding Standards (Ref: Technical Manual, Section 5. II. Applicability in Portland. C. a.; and Ref: City of Portland Code of Ordinances Sec. 14-526. Site Plan Standards, (b). 3. b.)
    a. Basic Standard: Project Plans and Application should be provided to address erosion and sedimentation requirements, inspection and maintenance requirements, and good housekeeping practices in accordance with MaineDEP Chapter 500, Appendix A, B, and C. The applicant has provided information that the project will have no disturbance. The applicant shall provide information confirming proposed construction practices for concrete installation, including location of concrete washout, and protection for down-gradient storm drain inlets. Construction

Management Plan submitted includes mention of sweeping sidewalks to remove trash and debris; storm drain inlets shall be protected in sidewalk locations adjacent to the project. The applicant shall provide information relative to the control of construction equipment mud tracking.

b. General Standard: no additional impervious surfaces are being added to the facility. Applicant shall submit statement and reasoning for the facility not being subject to the General Standard, or report on how the project meets the terms and conditions of the General Standard.

c. Flooding Standard: No additional impervious surfaces are being added to the facility. Applicant shall submit statement and reasoning for the facility not being subject to the Flooding Standard, or report on how the project meets the terms and conditions of the Flooding Standard.

2) Connection to Existing System:

a. The existing facility currently discharges to a combined sewer system. The applicant shall provide the following:

i. For floor drains not exposed to roof runoff, an oil-water separator connected to the sanitary sewer. Locations of oil-water separator shall be confirmed on the engineering permitting plans, and detailed.

ii. For floor drains exposed to roof runoff, a proposed connection to the separated storm sewer system on A Street shall be evaluated.

iii. The applicant shall address the potential to separate existing combined sanitary and stormwater flows in the East Tower to help reduce the impact of storm drainage on the existing combined sewer system.

iv. It is understood that the sewers adjacent to the facility are near capacity to serve new development. Applicant shall demonstrate opportunity to offset proposed new sewer flows.

v. Proposed and existing connections to the sewer and stormwater system shall be indicated on the proposed engineering permitting plans.

vi. Details of connections, pipes, structures shall be provided.

3) Confirmation of adherence to the Technical Manual and Site Plan Standards regarding storm drain and sewer shall be provided.

WRIGHT-PIERCE
Engineering a Better Environment

MEMORANDUM

TO:	Jean Fraser, Planner	**DATE:**	2/7/2018
FROM:	Michael Guethle, PE; Ryan Wingard, PE	**PROJECT NO.:**	13982A
SUBJECT:	Bramhall St. - 22; MMC East Tower and Visiting Parking (PEZ.2017.289)		

Wright-Pierce has reviewed the Level III Site Plan Application information provided for the East Tower and Visiting Parking redevelopment proposed at 22 Bramhall Street, including the updated plans and response to comments received. The project will include adding three levels of parking to the existing parking garage, relocating the heliport to the East Tower, and adding 2 floors to the East Tower. The work will add 0 square feet of new impervious surfaces, will add 0 square feet of new building surfaces, will add 225 parking spaces, and will add 137,961 square feet of building floor area.

Documents Reviewed by Wright-Pierce:

- Level III Site Plan application, dated (most recent) February 5, 2018.
- Engineering Permitting Plans, dated (most recent) February 5, 2018.
- Construction Management Plan, dated (most recent) February 1, 2018

Comments:

1) Level III Site Plan applications with the City of Portland must submit a stormwater plan pursuant to the regulations of MaineDEP Chapter 500 Stormwater Management Rules. This includes conformance with the Basic, General, and Flooding Standards (Ref: Technical Manual, Section 5. II. Applicability in Portland. C. a.; and Ref: City of Portland Code of Ordinances Sec. 14-526. Site Plan Standards, (b). 3. b.)
    a. Basic Standard: The applicant has confirmed that no additional impervious surfaces are being added to the facility, the proposed work is not causing a change of use, and no site disturbance is proposed. As such, the project is not subject to the requirements of the Basic Standard. Information provided in the updated

Construction Management Plan indicates that downstream catch basin inlets will be protected.

b. General Standard: The applicant has provided information that no additional impervious surfaces are being added to the facility and that the proposed work is not causing a change of use. As such, the project is not subject to the requirements of the General Standard.

c. Flooding Standard: The applicant has provided information that no additional impervious surfaces or changes of use are occurring as part of the proposed development. As such, the project is not subject to the requirements of the Flooding Standard.

2) East Tower Expansion Connections:

a. The applicant has provided information confirming that the East Tower storm runoff currently discharges to a separated storm sewer system, and that the proposed construction will also discharge to the separated storm sewer system. The roof connections are internal to the facility and no additional information regarding the East Tower Expansion is requested at this time.

b. It is understood that the sewers adjacent to the facility are near capacity to serve new development. The applicant has indicated that increases to dry-weather sanitary flows are minimal, and has submitted a Wastewater Capacity Application for review by the Department of Public Works.

3) Visitor Garage Expansion

a. The existing facility currently discharges to a combined sewer system within Congress Avenue. The applicant has provided a Stormwater Management Report from 2004, indicating stormwater rates to the separate storm sewer in the A-Street corridor.

i. The information provided indicates that the separate storm drain within the A-street corridor is at or near capacity during the modeled 10-year, 24-hour rain event, but that capacity may be available for lower interval rain events.

ii. Plan 2D Boundary Survey indicates a connection or stub connection leading from the catch basin on the south side of the Visitor Garage that may allow for connection from the Visitor Garage roof drain into the separate storm drain system. The applicant shall provide the following:

1. An updated boundary survey in the vicinity of "Plan 2D Boundary Survey" with utility elevations, pipe sizes, and pipe materials in accordance with the City's Chapter 14 and Technical Manual requirements for a Boundary Survey. Anecdotal information regarding the difficulty for construction in this corridor was discussed in the February 1 meeting. However, a sewer pipe crossing currently exists in this corridor, as does a storm drain or storm drain stub. City staff need additional information regarding existing utilities to confirm if a connection to the separate storm drain will be feasible or not.
2. If a connection from the Visitor Garage roof to the separate storm drain that conveys flows to the A Street corridor is feasible, then the applicant shall provide:
    a. A connection that allows for a 1" rain event to be conveyed to the separate storm drain on A Street, consistent with the City's Long-Term CSO Control Plan.
    b. An overflow connection that conveys larger interval storm events towards the combined sewer on Congress Avenue.

iii. For floor drains not exposed to roof runoff, flows shall be conveyed to an oil-water separator connected to the combined sewer. Locations of oil-water separator shall be confirmed on the engineering permitting plans, and detailed.

4) If new connections to the municipal system are constructed, then confirmation of adherence to the Technical Manual and Site Plan Standards regarding storm drain, sewer, and connections to the existing system shall be provided.

5) General Comments:
    a. Ability to Serve letters from affected utilities are required as part of the Level III Application process. Ability to Serve Letter from Central Maine Power has been provided.
    b. The plans should note a location for snow storage or provide a written snow storage plan. The proposed conditions are very similar to the existing conditions. If all snow is removed from the site in the existing conditions, then a statement from the applicant indicating method of removal and that snow removal protocol will not be changed will suffice for this item. If snow is stored on site, snow storage locations shall be indicated.

Portland Maine Yes. Google's good here.

Caitlin Cameron <ccameron@portlandmaine.gov>

Re: MMC Design review

Caitlin Cameron <ccameron@portlandmaine.gov> Thu, Feb 15, 2018 at 2:27 PM
To: "Fraser, Jean" <jf@portlandmaine.gov>

1) Design submission for Planning Board workshop 2/27 - Staff suggest the PB workshop submission include at least a written narrative addressing the design points below which may also include some visual examples of past design iterations. The PB workshop presentation should definitely includes visual responses to some of these points as we discussed in the meeting last week.

The following comments/questions from the Planning Board should be addressed regarding design:

- Mixed feelings about use of white panels - too sterile or stark contrast, not recessive enough?

1. Provide renderings showing options for material choices, grey or silver were specifically mentioned
2. Respond to question about re-cladding existing white on building

- Address request for integration:

1. Integration of existing building elements and new - looks like an addition
2. Clarify integration of East Tower proposal related to future campus design
3. Integration into neighborhood (especially at the edges, entrances, blank walls, retail)

- Long-term plan for Congress Street retail facade improvements
- How will streetscape at South Entrance change when new entrance is added on Congress Street?
- Screening of mechanicals on garage
- Concerns with parking garage design - rooftop fence quality, facade improvements

2) Design Comments - Based on the design meeting last week, staff continue to have the following comments/questions on the current proposal:

- **East Tower:** Staff, aligned with PB comment, continue to have some concern about the facade integration of the new and existing - especially in overall facade composition, proportion, and articulation. The existing building has a high level of articulation while the proposed new is much more minimal. Please clarify where new metal panel is proposed and where existing to remain and the strategy around getting those to match or blend. Staff suggest you consider articulation strategies in the new section that address these integration concerns whether that is a horizontal band, dimensional elements, color or other strategies.

- **Garage:** There are two opportunities to update or improve the design character of the garage - the fall protection fence, especially on the top level, and the metal screens.

--
Caitlin Cameron, AICP, Associate AIA, LEED AP
Urban Designer
Planning & Urban Development Department
389 Congress Street
Portland, ME 04101
phone: (207) 874-8901
email: ccameron@portlandmaine.gov

MEMORANDUM

To: FILE

From: Jean Fraser

Subject: Application ID: 2017-289

Date: 2/21/2018

1/17/2018

Circulation--The ambulance emergency room entrance should remain open to one way traffic. The area can be difficult to maneuver in its current design. Making the patient delivery area a two way drop off doesn't seem achievable.
2/21/2018 The plan has been changed to accommodate one way traffic through the ambulance bay at MMC. Some additional landscaping will be done to allow the ambulance approach from Crescent Street. An alternative ambulance route for ambulances will be via Gilman Street.

1/17/2018

2/21/2018 Congress Street will be closed for several weeks. Ambulances destined for the hospital will follow the same detour as other traffic. Fire apparatus responding from the peninsula will make route adjustments when responding West of Deering Avenue.

Portland Maine Yes. Google's good here.

Jean Fraser <jf@portlandmaine.gov>

PEZ 2017-289: MMC East Tower and Visitor Parking Garage - Site Plan Requirements

1 message

Bruce Hyman <bhyman@portlandmaine.gov> Fri, Feb 23, 2018 at 11:42 AM
To: Jean Fraser <jf@portlandmaine.gov>
Cc: Barbara Barhydt <bab@portlandmaine.gov>, Jeremiah Bartlett <jbartlett@portlandmaine.gov>, Tom Errico <thomas.errico@tylin.com>, Caitlin Cameron <ccameron@portlandmaine.gov>, Keith Gray <kgray@portlandmaine.gov>, Stuart O'Brien <sgo@portlandmaine.gov>

Good morning Jean,

The following are my review comments and recommendations on the Site Plan application for the MMC East Tower and Visitor Parking Garage components, touching upon: Bicycle Parking; ADA-Compliance at both locations; and, Street Lighting on Congress Street.

Bicycle Parking

Based on the information submitted in Submission S-2 Bicycle Parking, the total quantities of parking appear to be sufficient to meet the bicycle parking requirements for the MMC campus.

The type of bicycle parking provided, based upon images supplied in the latest Draft TDM Plan (Feb. 13th, 2018) is in some cases deficient per the Technical Manual to securely park bicycles and encourage bicycle commuting. Some of the bicycle racks secure the front wheel only and do not provide the required two points of contact between the bicycle frame and bicycle rack. This is shown in the photograph in the TDM plan where users are securing their bicycles to the ends of the racks, not in the mid-portion where they are intended by this design. See below.



These bicycle racks do not meet the functional requirements of the Technical Manual, Section 1.15, so-called "wheel-benders". Photo Source: MMC Draft TDM Plan, dated February 13, 2018.

Bicycle parking requirements are outlined in the Technical Manual in Section 1.15. It states, in part:
"Bicycle parking shall:
• Provide secure, durable racks that maintain bicycles in an upright position and to which bicycles can be affixed with customary lock and cable mechanisms. Fence-type ("wheel bender") racks designed to secure the front wheel only are prohibited. (emphasis added, excerpt)"

The other types of bicycle racks illustrated in the Draft TDM Plan (and other types) do meet the functional requirements for bicycle parking. See below.



These bicycle racks do meet the functional requirements of the Technical Manual, Section 1.15. Photo Source: MMC Draft TDM Plan, dated February 13, 2018.

The applicant is to inventory the type and number of bicycle parking spaces within the MMC Campus at each location to ensure that, at a minimum, 1) the total number of racks that meet the parking standards equals the number required and 2) also meets the standard that bicycle racks are adequately distributed within the MMC Campus at main building entrances, also as required by the Technical Manual.

East Tower ADA-Compliance/Accessibility

The sidewalks and curb ramps serving crosswalks along the frontage of the East Tower appear to meet ADA-accessibility requirements. The curb ramps on the opposite side of the street do not appear to meet ADA due to what appear to be worn detectable warning panels (being comprised of concrete pavers). The applicant is to assess the condition of the detectable warning panels at each crosswalk serving the East Tower site and replace those that are not compliant due to their condition with cast iron detectable warning panels.



Source: Google Streetview, Aug. 2017.

Visitor Garage ADA-Accessibility

The applicant is to confirm that the driveway on Congress Street for the Visitor Garage (for both the entrance and exit) is ADA-compliant for a pedestrian access route for a minimum width of 5' where it meets the back of sidewalk. The maximum allowable cross-slope is 2%.

The applicant is to also confirm that the sidewalk grades on the approaches to the driveway are ADA-compliant for their cross-slope (also 2% maximum for a minimum of 5' clear width) and running slope (it may not exceed specific slopes for different distances and in some instances may not exceed the running slope of the adjacent street).

The applicant is to correct any noted ADA-accessibility issues along the Visitor Garage frontage on Congress Street.



The current driveway at the Visitor Garage. Source: Google Streetview, Aug. 2017.

Pedestrian/Street Scale Lighting on Congress Street

The current pedestrian scale lighting provided along the frontage of the Visitor Garage (and Employee garage to be demolished in Ph III) is not of the same scale as the remainder of Congress Street (where it has both pedestrian and street scale lighting) where it has been implemented within the Downtown Lighting District within the Municipal Street Lighting Standards.

Along the Visitor Garage frontage, the applicant is to replace the existing pedestrian-scale luminaires and add the street lighting luminaire/lamp (3000K, LED) with top bracket to the existing assembly to create street lighting consistent with this vicinity to be activated as the principal visitor entrance with the completion of Phase III.



The current pedestrian-only scale lighting along the Congress Street frontage. Source: Google Streetview, Aug. 2017.



The current standard for pedestrian and street-scale lighting on Congress Street. Source: Google Streetview, Aug. 2017.

Please do not hesitate to contact me if you or the applicant has any questions on the abov

--

Bruce Hyman
Transportation Program Manager
Transportation Division

Department of Planning & Urban Development
389 Congress Street
Portland, Maine 04101
(207) 874-8717 phone

bhyman@portlandmaine.gov
http://www.portlandmaine.gov/1363/Transportation-Division
Yes! Transportation's Good Here ....

Portland Maine Yes. Google's good here.

Jean Fraser <jf@portlandmaine.gov>

Fwd: MMC CMP and detours- to PB Workshop on 2/27

1 message

Jean Fraser <jf@portlandmaine.gov> Fri, Feb 23, 2018 at 11:32 AM
To: "Fraser, Jean" <jf@portlandmaine.gov>

From: **James Sweatt** <jjs@portlandmaine.gov>
Date: Fri, Feb 23, 2018 at 9:50 AM
Subject: Re: MMC CMP and detours- to PB Workshop on 2/27
To: Jean Fraser <jf@portlandmaine.gov>
Cc: "O'Brien, Stuart" <sgo@portlandmaine.gov>, "Barhydt, Barbara" <bab@portlandmaine.gov>

Hello Jean,

The Police Department have taken great effort to evaluate the proposed construction at Maine Medical Center to include the closure of Congress St. The material presented by several city departments, and the MMC staff have determined the safest way to build the parking garage further is to close Congress St. We are obviously concerned with the impact to the neighborhood and greater Portland community.

We have read, and was present during Kleinfelder's presentation of the engineering data and crane placement recommendations. It appears it will be necessary to close Congress St for the 8 week period that Turner construction has projected. It will be imperative that Turner keep to this schedule and we would recommend incentives to open Congress St sooner and substantive penalties for delays beyond 8 weeks. It will be crucial that the closure of Congress Street not extend past June 29th to avoid conflict with the highest summer traffic flow.

We have presented recommendations and participated in the construction detour plan. With the available details and traffic projections, the plan presented at the 2/15/18 meeting appears to be the best option during the road closure and construction of the East Tower and garage over-build. Having said that, we believe the detour has to be monitored throughout the closure to insure it meets the needs of the area. Changes may be necessary after traffic patterns develop around the detour.

It is our experience that traffic changes are unpredictable even with thorough planning. We believe Maine Medical Center must educate it's employees and the many visitors on the best ways to access the hospital to reduce confusion with motorists. MMC must stay engaged with the community and be thoughtful to continue to address the community needs as they change through the construction project. MMC must communicate to the community on numerous platforms to keep the community informed. MMC must have

a robust staff dedicated to work with day to day complaints this extensive project will produce. Project staff must maintain direct communication with city departments throughout the project using prearranged communication channels.

Turner construction must also manage the delivery of concrete casts to Congress St and steel to East Tower in a manner to avoid large vehicles with heavy loads moving during morning commuter hours (0700-1000) and afternoon hours (1500-1800). We continue to recommend the delivery and staging of large vehicles before and after normal commuting hours to reduce the impact on traffic and pedestrians.

A parking plan for construction workers has been developed and Turner has expressed a commitment to hold those workers and contractors accountable. We believe this needs to be followed through on to minimize some of the negative impacts on the neighborhood.

There are still many details that have to be resolved. We look forward to further meetings with city staff and MMC partners to formalize the details at we proceed through this process. MMC and their partners seem to be willing to accept suggestions that are being presented. We would suspect a written document would memorialize the traffic expectations for the MMC project.

Overall the Police Department would prefer a construction options that did not involve the closure of Congress Street, however the proposed plan seems to be the best option short of that.

Thank you.

Memorandum

Portland Public Works - Engineering

To: Jean Fraser, Planner
From: Keith Gray, PE – City Engineer, Jeremiah Bartlett, PE - Transportation Systems Engineer and Water Resources
Date: 2-23-19
Subject: 22 Bramhall Street_MMC East Tower & Visiting Parking (2017-289)

The following comments/concerns are in regards to the Level III Site Application prepared by Sebago Technics, on behalf of the applicant, Maine Medical Center, with last plan revision submitted on February 22, 2018. Please feel free to contact me with questions.

Construction Management Plan:

The applicant has proposed to close Congress Street for an eight (8) duration for the vertical expansion construction of the existing visitor parking garage. As presented today, the Department of Public Works, along with Kleinfelder, has reviewed the constructability options and determined that the closure is the best approach to mitigate long term community and safety impacts. It should be noted that we have reflected that this closure may well have been avoided with strategic planning from the applicant prior to Site Plan submission but that time has passed and we are moving forward with the closure.

We have reviewed the draft MMC detour plan associated with the Congress Street closure and offer the following comments:

1.) Weymouth Street is in poor condition, and with the significant increase in traffic, including heavy vehicles, the infrastructure is not capable of accommodating additional traffic. In order to maintain a tight construction schedule, the applicant shall pursue a two-step course of action.
    a. First, a short-term paving/patching project shall be considered to stabilize Weymouth during the course of the detour project.
    b. Second, a more comprehensive outcome shall be constructed post detour, which would ideally address the unusual crown of the road. As with any paving project done in Portland, ADA considerations shall be part of the outcomes.

2.) Paving conditions for Forest and Boynton Streets shall also be investigated and any interventions/mitigation identified for those streets included in outcomes.

3.) More detail needs to be provided on the temporary traffic signal to be located at Weymouth Street and Park Ave. The signal shall meet all state and federal requirements for operation, and accommodation of pedestrians. Details shall be provided on timing and potential time of day or direct coordination with adjacent signals at St. John Street and Deering Ave. The location shall be monitored to determine operation and a count completed after two weeks to determine if the location is

operating as intended. Consideration shall be given to whether this location would likely make a more permanent signal location candidate.

Combined Sewer Overflow Comments:

The City's ordinance does require the Department of Public Works approval prior to stormwater discharge connections into a storm sewer, combined sewer or natural outlet. The Department, through the development review process, has historically requested that new developments and redevelopments make connections to the separated storm drain systems when they are present or at a minimum provide separate service lines to the street when a combined system exists. There is a separated storm drain available in Gilman Street and we would request that the applicant tie into the storm drain due to the City's ongoing requirements and efforts to mitigate CSO activity. The City's Chapter 24 Sewer ordinance states:

"(c) Stormwater shall be discharged to such sewers as are specifically designated as combined sewers or storm sewers, or to a natural outlet approved by the Department of Public Works. Industrial cooling water or unpolluted process waters may be discharged, on approval of the Department of Public Works, to a storm sewer, combined sewer or a natural outlet. (Ord. No. 263-96, 5-20-96; Ord. 129-14/15, 1-21-2015, Effective 1-1-2016)"

The applicant's visitor parking garage facility drains into a combined sewer. This combined sewer is tributary to the City's most active CSO, CSO location #17, which overflows at the intersection of Marginal Way and Preble Street. The City is under an EPA mandated Long Term Control Plan to mitigate CSO activity around the City. The City's current CSO permit focuses on reducing CSO activity in the Back Cove South sewer service area. The CSO # 17 is located in this target service area.

It should be noted that the City is currently in the process of conducting a City wide sewer inflow and infiltration study as required by the EPA. One of the outcomes of this study could result in the City to look at changing the City Ordinance to require private property owners to separate stormwater flows out of the combined sewers when a separated storm drain is available in the street, regardless of development.

Portland Maine Yes. Google's good here.

Jean Fraser <jf@portlandmaine.gov>

Helicopter Pad Relocation Noise Studies

1 message

Jean Fraser <jf@portlandmaine.gov> Fri, Feb 16, 2018 at 4:40 PM
To: "Alexander M. Green" <AGreen@mmc.org>, Will Conway <wconway@sebagotechnics.com>
Cc: "O'Brien, Stuart" <sgo@portlandmaine.gov>, "Barhydt, Barbara" <bab@portlandmaine.gov>

Al

I appreciate that the recent Memo (attached 1-2-18) summarizes the outcome of the recent noise studies, but as noted in the PB Memo we would like to document the data comparing helicopter sound levels currently at a given location compared to what they are predicted to be (at the same location) with the relocated helipad, especially given the likely increase in the numbers of flights.

While I appreciate that the Russell Acoustics, LLC May 2017 sound study (attached) used the same locations as the original study, it does not include this data for all of these locations.

Could you please send the recent data that shows the ambient, helicopter sound (based on the current helicopter pad location), and predicted helicopter sound (new location, main pad) for each of the nine CP locations so that we can see the data that underpins the submitted summary. Could you please send that data in a table linked to the plan of the locations.

Also I have a couple questions having looked at the studies conducted in 2004/2005 and the associated reviewer comments:

- The original study conducted by consultants for MMC in 2004(by Resource Systems Engineering) noted that the location of the helipad on the top of the employee garage was beneficial regarding noise as this location would "...enable the existing and proposed buildings to block sound propagation to noise sensitive areas to the west and south." Could you ask your consultants to advise as to whether relocation of the helipad (albeit higher) out from "behind" those buildings will increase sound levels in different community locations than were studied in 2004.

- The City's sound consultant at that time (2004) noted that the direction the helicopter was facing when on the pad could make a significant difference in the sound levels nearby. Could you please confirm that the orientation of the helicopter on the relocated pad will be the same as for the current pad.

MEMORANDUM

TO: City of Portland – Planning Board

FROM: Jim D. Wentworth, P.E.

DATE : February 21st, 2018

SUBJECT: Maine Medical Center – Constructability Review

Kleinfelder was tasked by the City of Portland's Planning Department to assist in the constructability review for the vertical expansion of Maine Medical Center's existing visitors parking garage.

Maine Medical Center along with Turner Construction have submitted a construction option matrix to the City of Portland with five construction options outlined which have been investigated as part of this project's development.

These options were the starting points for Kleinfelder's review; and ultimately upon review were the *clear choice options* that this type of project and site would warrant. In order to develop a project of this magnitude, it is necessary to vet out construction options from each side of the parking garage (North, South, and East, and West, as well as from within the garage, as is shown in the Cast in Place Option 1. An additional Option 6 was added which investigated the construction from the East end of the visitor garage.

As you will see further in this memo, Option 4 is the recommended option by Kleinfelder and is also the favored option of Maine Medical Center. This memo summarizes the review by Kleinfelder of the five options presented, but also investigates some additional pertinent data Kleinfelder has associated with these options.

This site poses a challenging and congested construction site, and many factors such as overall public safety (*general public, hospital staff, and contractor staff*), traffic movements, construction type (*parking garage*), construction equipment and capacities (*crane*), and duration (*schedule*) all play a role in a successful project.

Documents that have been reviewed as part of this effort include:

- Visitor Garage Construction Option Comparison (Matrix)
- Maine Medical Center Construction Management Plan -Traffic and Road Closure studies: January 2nd, 2018
- Maine Medical Center Construction Management Plan - Logistics Plans and Studies-East Towers and Visitors Garage, Central Utility Plant: Last update February 9th, 2018, pages 1-29

© 2016 Kleinfelder

KLEINFELDER 151 Capitol Street, Suite 2, Augusta, ME 04330 p | 207.623.0648 f | 207.623.0486

- Maine Medical Center/Turner – Construction Management Plan-East Tower, Visitor Garage, Central Utility Plant. Last Updated February 13th, 2018 for PB February 27th, 2018
- 440 Ton Leibherr Crane Chart and Boom/Jib Configuration: February 5th, 2018
- Email from Dominic Gagnon with data assumptions for Option 1: CIP, and Option 2: South side retaining walls: February 9th, 2018
- Submitted Congress Street Cross Section with Crane Layout: February 12th, 2018

The following are each option listed with constructability comments and recommendation:

Option 1- Cast in Place (CIP)

- Cast in Place (CIP) concrete is not a preferred nor typical construction technique used in parking garage construction due to concrete quality control, longevity of structure, time/schedule, and overall increased cost. The existing MMC employee garage is a cast in place structure and has these maintenance and longevity issues. (i.e. efflorescence, concrete spalling, resistance to deicing chemicals)
- SGH Engineering has determined that the overall structure was designed to handle an additional 3 stories at approximately 80-85 lbs. per square foot. Kleinfelder was not tasked to perform independent calculations to verify these loading parameters. However, in our engineering judgement, a CIP structure could likely weigh more than a precast structure based on additional reinforcing steel needed for post tensioning along with additional concrete in the post tensioning anchorage zones. This is solely based on engineering judgement and not calculations.
- For a CIP structure, the existing visitor garage interior and exterior support columns and walls would most likely also need to be reinforced in order to handle any additional weight that a CIP structure and the support formwork/falsework would pose to the structure.
- Without performing and bearing capacity calculations, it is likely that the existing foundation and support soil that exists under the building would need reinforcement to hold a CIP type structure.
- Based on overall constructability for these long Double Tee beams the following are factors that would add cost and duration into a CIP type structure:
    - Forming, concrete placement, concrete curing for Double Tee type beams would be labor intensive which would add cost and affect duration of project schedule.
    - ***A crane would still be needed to perform the work for lifting formwork materials, steel tendons, concrete, and other various construction materials, therefore impacts to traffic to Congress Street would still occur frequently. It is our opinion, without fully developing a full construction schedule for a CIP type structure that the duration and temporary impacts to traffic, associated with CIP construction, would cumulatively be more than the 8 weeks of associated shutdown currently proposed with Option 4. Due to CIP concrete curing and forming this type of project could take up to 4-6 months to complete.***
    - Post tensioning the tendons, grouting, and equipment/ jacks to perform this post tensioning in place would be needed. A post tensioning procedure would be very difficult to perform with accuracy in this type of location and environment. (i.e. Staging of post tensioning jacking equipment, worker falsework)

© 2016 Kleinfelder

KLEINFELDER 151 Capitol Street, Suite 2, Augusta, ME 04330 p | 207.623.0648 f | 207.623.0486

- There is a high probability that the entire parking garage would need to be empty during this type of construction operations based on temporary falsework and shoring needs to cast the concrete in place would be from a bottom up approach. (All floors to be braced from ground up).

Based on the information provided and reviewed, ***Option 1 is not recommended.***

Option 2- South Side Approach

- Overall Safety of Area: The location of the Emergency room entrance/exit is located on the South side of the visitor parking garage and therefore general *public safety and emergency access* of this public service would be extremely limited if this option was chosen.
- Two retaining walls exists along the South side of the existing parking garage. Kleinfelder did not have access to as built plans of these two retaining walls nor was scoped to perform any structural check calculations on these two walls.
    - Based on the design loadings, per email of Dominic Gagnon February 9th, 2018 per SGH Engineering; the retaining walls as designed assumed a vertical surcharge pressure in the order of 500 pounds per square foot for the wall. It is reasonable to state that the 440 T Liebherr crane as proposed, with a frame weight of approximately 94,800 lbs. and allowable counterweight of 341,800 lbs. distributed over a total track area of 240 square feet (3'11"x30'8" each track), without accounting for the boom and precast units, has the ability to produce in excess of *1800 lbs. per square foot of surcharge*.
    - A slightly smaller crane than the 440T Liebherr could be used from this South side of the garage; however surcharge pressures of 1500-1800 lbs. per square foot would not be unreasonable to experience for the crane size needed to lift the 30 ton precast units.
    - MMC and Turner investigated a 600 Ton hydraulic crane for this option, also this crane was also ruled out due to wall surcharge capacity and overall site logistics.
- Temporary shoring of these two retaining walls is not a feasible option based on their location. Any type of shoring such a sheet pile type wall, soldier pile wall, or pile platform would need crane access to perform the temporary work as well. It is not known, but assumed, that there are buried utilities in this section of roadway which would complicate any pile driving or shoring processes.
- There is limited *safe area* to operate any type of crane swing radius on this South side of the building. This area is terraced with a retaining wall. The total area is approximately 120 ± feet by 100 ± feet. A safe area for a crane to operate would be a minimum 60± feet by 60± feet which is not available.
- Overall staging of materials in the area on the South side would be limited.
- Delivery and access of precast units (85' long truck) to the South side would be limited based on turning movements associated with street configurations, on street parking, and utility pole locations around the area.

Based on the information provided and reviewed, ***Option 2 is not recommended.***

© 2016 Kleinfelder www.kleinfelder.com
KLEINFELDER 151 Capitol Street, Suite 2, Augusta, ME 04330 p | 207.623.0648 f | 207.623.0486

Option 3- North Side Approach, One lane

- Congress Street is approximately 43’9”± curb to curb based on cross section provided by Turner.
- The sidewalk abutting the visitor garage is approximately 10’6”± in width.
- The sidewalk on the North side of Congress is approximately 11’ ±in width.
- The proposed 440 Ton Liebherr Crane is approximately 45 feet in length from front of track to back of counterweight. This crane configuration takes up the majority of the roadway and overhanging 2-3± feet of the sidewalk.
- The Main boom on the crane cannot operate totally vertical and will use all of the available 10’6”± sidewalk area to face the garage.
- There is no available *safe width* for emergency or passengers vehicles to travel through the area based on the crane operating parameters.
- There is limited available width (7-8 feet ±) for protected pedestrian traffic along the North sidewalk.

Based on the information provided and reviewed, ***Option 3 is not feasible or recommended.***

Option 4- North Side Approach, Two lane (Road Closure)

- Safety-All work is completed in closed section of road, there will be no vehicular traffic present in the area. Overall this option is the safest for general public and contractor based on constructability.
- This option has similar site and crane parameters as Option 3, but calls for a shutdown Congress Street for 8 weeks.
- The 440 T Liebherr crane configuration is needed to reach up and over existing parking garage for lifting and reach capacity reasons to install the 30 Ton precast Double tee beams.
- Two other type of cranes where investigated: Mobile Hydraulic, and Tower Crane.
    - Each crane has limitations:
        - A Tower Crane, which is typically used in building construction, does not have the 30 Ton capacity for the distance needed to lift the precast beams and set them into place.
        - A mobile crane does not have the 30 Ton capacity to reach up and over the building.
- The 440 T Liebherr crane will have two sections of crane boom: Main Boom-161 feet, Jib-161 feet. (320 ± feet).
- A 300 foot length of Congress from pedestrian skybridge to Weymouth is necessary to assemble the crane along with its boom and jib.
- A single phase power utility line exists at corner of Congress and Weymouth which will not affect boom assembly.
- There is no additional street or sidewalk width with this crane configuration to safely use this option with emergency vehicular traffic.
- Delivery of the 85 foot long precast units for this option from Weymouth to Congress is feasible.

© 2016 Kleinfelder www.kleinfelder.com
KLEINFELDER 151 Capitol Street, Suite 2, Augusta, ME 04330 p | 207.623.0648 f | 207.623.0486

Based on the information provided and reviewed, ***Option 4 is recommended.***

Incentive/disincentives for allowable closure days (User cost/day), liquidated damages for end dates (Cost/day), traffic detours and signage, are all parameters that can be employed by the City to minimize the closure efforts with Option 4.

Option 5- Crane Placed in vacant Employee parking garage area

- This option poses construction scheduling delays and logistics, based on current schedule of additions onto visitor garage complete (2018), and new East Tower heliport complete (2019).
- The new employee parking garage on St. John would need to be constructed (2019) prior to demolition of existing employee garage.
- A crane with 480 ± lineal feet of boom/jib would be needed to reach up and over elevator/stairwell that currently exists between two parking garages.
    - This is an additional ***160 lineal feet*** of boom/jib added to the current 440T crane configuration proposed.
- Safety of general public working over ***LIVE*** stairwell needs to be taken into consideration.
- Crane assembly along Congress has limitations on South side of pedestrian skybridge:
    - Approximate 500 ± feet would be needed from pedestrian skybridge into Valley Street to assemble crane, boom and jib (480 ± feet from bullet above)
    - Closure of Congress to assemble crane.
    - Utility line interferences and needed utility relocations: Three phase power lines at Congress and Forest, Congress and Gilman, Congress and Valley.
    - Hospital main electrical feed from Gilman

Based on the information provided and reviewed, ***Option 5 is not recommended.***

Option 6- Crane Placed on East side of Visitor garage

- The existing medical building that was constructed within the last 10 years and is located on this East side of the visitor parking garage would need to be demolished and rebuilt with this option. This would have substantial costs with no value added.
- This option also would pose construction scheduling delays and logistics, based on current schedule of additions onto visitor garage complete (2018), and new East Tower heliport complete (2019).
- The steep slope in this location would case a need for temporary retaining wall to be built to support Crescent Street.
- A similar size Crane as the Liebherr 440 Ton crane would be needed as in Option 5 to construct the addition.

© 2016 Kleinfelder

KLEINFELDER 151 Capitol Street, Suite 2, Augusta, ME 04330 p | 207.623.0648 f | 207.623.0486

- Impacts to traffic on Congress Street would still occur due to building demolition, crane assembly/disassembly, and delivery of precast units, which would in cumulative duration would account for more than the eight weeks for Option 4.

Based on this information, **Option 6 is not recommended.**

Schedule Overview

The overall construction schedule of an 8 week closure of Congress Street was reviewed and is listed below as *Schedule 1*. This schedule allows for 8 precast pieces set per day. It is realistic that 10 precast pieces may be set a day or even 12 pieces. It is also realistic that construction delays such as deliveries and/or adverse weather conditions may cause delays and allow only 6 pieces to be set per day.

Two other schedule scenarios were investigated based on 8 pieces per day.

Schedule 2 assumes a 6 days a week schedule and resulted in a 7 week closure.

Schedule 3 assumes a 7 days a week schedule and resulted in a 6 week closure.

It is recommended that the 8 week schedule be allowed, but set with allowable penalties for not opening on time.

It is not recommended to go to a 7 day work week as shown in Schedule 3. Consideration needs to be given in any schedule that as days get added to the work week there exists safety concerns with rested employees, decreased efficiency, a work area increase for complacency, as well as increase in cost premiums.

- *Schedule 1*
  - 8 week -5 day/week-8 pieces (assumed) per day-proposed
- *Schedule 2*
  - 7 week -6 day/week-8 pieces per day- Open by June 18th-19th
- *Schedule 3*
  - 6 week-7 day plus holiday-Open by June 8th-9th

In conclusion, taking all the project parameters into consideration:

- Safety to the overall general public
- Existing building and wall capacities
- Crane capacities and locations
- Schedule duration
- Impacts to Congress Street

Closing Congress Street for an 8 week duration is the recommendation that Kleinfelder fully supports and would have proposed if developing this type of project independently for a client. It is recommended that the City work with Maine Medical Center to tighten up the schedule, as previously mentioned in this memo, with the use of incentive/disincentives, liquated damages associated with possible street damage, proper detour signing, and proper public outreach campaign.

© 2016 Kleinfelder www.kleinfelder.com
KLEINFELDER 151 Capitol Street, Suite 2, Augusta, ME 04330 p | 207.623.0648 f | 207.623.0486

WRIGHT-PIERCE
Engineering a Better Environment

MEMORANDUM

TO:	Jean Fraser, Planner	**DATE:**	3/21/2018
FROM:	Michael Guethle, PE; Ryan Wingard, PE	**PROJECT NO.:**	13982A
SUBJECT:	Bramhall St. - 22; MMC East Tower and Visiting Parking (PEZ.2017.289)		

Wright-Pierce has reviewed the Level III Site Plan Application information provided for the East Tower and Visiting Parking redevelopment proposed at 22 Bramhall Street, including the updated plans and response to comments received. The project will include adding three levels of parking to the existing parking garage, relocating the heliport to the East Tower, and adding 2 floors to the East Tower. The work will add 0 square feet of new impervious surfaces, 0 square feet of disturbed surfaces, and 0 square feet of new building surfaces. The project will add 225 parking spaces, and will add 137,961 square feet of building floor area.

Documents Reviewed by Wright-Pierce:

- Level III Site Plan application, dated (most recent) March 14, 2018.
- Planning Board Public Workshop Documents, dated March 1, 2018.
- Engineering Permitting Plans, dated (most recent) February 22, 2018.
- Construction Management Plan, dated (most recent) February 14, 2018.

Comments:

1) Visitor Garage Expansion
    a. The existing facility currently discharges to a combined sewer system within Congress Avenue. There has been previous discussion about separating the proposed building expansion to the A Street separate storm drain.
        i. DPW issued a memorandum on 2/23/2018 indicating that connections to combined sewers required prior approval from the Department of Public Works *(Ord. No. 263-96, 5-20-96; Ord. 129-14/15, 1-21-2015, Effective 1-1-2016)*

ii. The applicant has provided an updated Boundary Survey. Associated with the updated boundary survey were certain details and descriptions of utilities within the project corridor, indicating their location adjacent to existing building locations and existing retaining walls with building supports.

iii. Information was also provided confirming that two 6" pipes discharging into the existing separated storm system were discontinued sewer services from when the system was a combined sewer, and that these pipes terminate before the existing retaining wall. These pipes therefore are not ideal connections for a proposed roof leader.

iv. A presentation was provided by the applicant and the applicant's representative at the Public Workshop on 2/27/2018 that further reviewed the utility corridor. At this presentation, more information was provided indicating utility locations adjacent to existing buildings and existing retaining walls with building supports.

b. A meeting with the Applicant, Sebago Technics (Applicant's Representative), City of Portland Planning, and Department of Public Works was held on 3/15/2018 to determine next steps.

i. The City Planning, Department of Public Works, and Review Staff recognize the high difficulty of removing the existing roof leader connections from the combined sewer. As such, the Department of Public Works will allow the existing connection to remain.

ii. In consonance with City Code section 14-282, "Maine Medical Center Institutional Overlay Zone", Section (i), "MMC shall mitigate site plan impacts to off-premise infrastructure in a manner proportionate to those impacts."

1. The Department of Public Works is requesting that future phases of development at the Maine Medical Center Campus seek to detain

more water than required in the regulatory framework, if these items are economically feasible.

c. The applicant has indicated that no floor drains are proposed for parking decks not exposed to roof runoff (rain). If any floor drains not exposed to roof runoff are installed, flows shall be conveyed to an oil-water separator connected to the combined sewer, and this shall be coordinated with the Department of Public Works.

2) General Comments:

a. Ability to Serve letters from affected utilities are required as part of the Level III Application process. Ability to Serve Letter from Central Maine Power has been provided.

Planning and Urban Development Department
Planning Division

Subject: IOZ Design Review – 22 Bramhall (Maine Medical)

Written by: Caitlin Cameron, Urban Designer

Date of Review: Friday, March 16, 2018

This memo summarizes the applicable design guidelines and staff review for the projects at 22 Bramhall Street – East Tower and Visitor Garage expansion. These two projects are reviewed according to the adopted IOZ IDP and Regulatory Framework standards.

In the case of both proposals, the new construction is limited to vertical expansion of existing buildings. The proposals do not alter the footprints, plans, existing materials, or access points to each building. Therefore, the design evaluation is generally limited to the impact on the overall campus design, long views to the campus, and Congress Streetscape.

- **Planning Board comments and questions** from the February 27th meeting are summarized in **bold and underlined**.
- *Staff questions/comments and unmet guidelines in red*

Design Review Comments*:*

IDP Design Guidelines

1. New buildings will be designed to contribute to the campus vision and organizational goals identified in the Master Facility Plan and the Transportation Plan, and best practice design standards for healthcare.

East Tower: The stated MMC vision includes integrating inside and outside – achieved here through the internal circulation and window size and placement, as well as a "50 year palette" that selects materials based on cues from nature to create timeless environment. This vision includes Sky, Sea, and Land as concepts for material/color selection. The white metal panel and large curtain wall system intend to evoke the "sky" – light, recessive, neutral. The white material was also selected to tie into the existing metal panel as well as meet goal of a cohesive campus design. The design is largely informed by structural and constructability constraints. **Planning Board commented that they like the concept of bringing outside in but found that the outward expression of that idea was not strong enough.**

Visitor Garage: The architectural character remains consistent by continuing the existing material palette and expression. In the case of Congress Street, the City's priority is the building interface with the street – keeping the urban street wall edge, activating the ground floor, providing a sense of scale and enclosure for the pedestrian.

2. The overall composition and experience of the campus will be considered for cohesive identity from approaches along Congress Street and I-295.

East Tower: **Planning Board generally found that the proposal is cohesive with the future vision as presented in the 2/27 materials.** The applicant provided a view from I-295 that further demonstrates the intent for the East Tower expansion to visually contribute to the planned new character of the campus. The white material selection is intended to be a cohesive element throughout the campus moving forward.

Visitor Garage: The architectural character remains largely the same as the existing condition and is found to be consistent with the established character. The building addition increases the visibility of the campus from those long views. The applicant revised the screens to extend above the top deck, addressing the comments about the visual interest of the roofline.

3. Building entrances will be oriented toward, located adjacent to, accessible from, a sidewalk in a public right-of-way to create a pedestrian-oriented environment.

East Tower: Not applicable – entrances remain the same with existing ground floor.

Visitor Garage: The existing building has two retail entrances facing Congress Street to be activated with the construction field office. There are also steps with a door to access the circulation tower for the garage. From Crescent Street, there is a pedestrian path and doorway to the garage – see CPTED comment below.

4. Building designs will relate to and be compatible with the existing, or – in areas of change – planned character of residential and commercial neighbors. Design elements and characteristics to consider include:

- Building placement and relationship to the street

- Overall massing and scale

- Roof forms

- Proportion, directional expression, and composition of facades

- Rhythm of solids to voids

- Rhythm and proportion of openings

- Rhythm of entries and projections

- Relationship of materials, texture, and color

East Tower: **Some board members were concerned that the white panel will not achieve the desired effect of changing with the sky and natural light and therefore would not actually be recessive.** Staff, upon observation of the existing building, feel confident that the white panel will achieve the desired effect and will change in character related to the light and atmosphere. **There was additional comment on the white panel – members felt that the existing white elements in the campus design are not strong enough to take as inspiration for the new additions; why is a color that is a minor detail becoming a major design decision? White feels stark and while it may fit into a campus vision, there is concern about how this approach meets the guidelines regarding neighborhood integration/context.** The applicant selected

white panel to tie into the existing white details, but also for the purpose of relating to the future planned character of the campus. Taken in view of the campus as a whole, there is an argument to be made that the white will become a strong design element throughout the campus. When viewed together, the white of the East Tower will be cohesive with the other new buildings.

Finally, the board commented on the composition and proportion of the addition and commented that the design is lacking a base/middle/top which is a well-established approached to building design and façade composition. Staff continue to agree that the proportions of the façade composition as a whole are not ideal. However, given the limitations on the structure and construction for this addition, staff find that the solution is acceptable. The approach of a base/middle/top was difficult to achieve given the particulars of the existing building and the inability to make major modifications to the mechanical area of the building. The applicant showed staff previous iterations of the design and understand and agree with the rationale for the current proposal. Staff further find that the composition is more successful when viewed from long distances and in the context of the campus.

Visitor Garage: The massing, roof forms, rhythms, and material relationships remain mostly unchanged from the existing conditions. The screens will be extended up and around the sides of the building to further address the desire to for visually interesting roof lines.

5. Façade materials of buildings will be of high quality, and contribute to an attractive public realm.

East Tower: The applicant indicated the material choices are limited by construction constraints as well as the existing material palette. The proposal is simple white metal panel intended to visually blend with the existing white materials as well as provide a light, recessive quality to the increase in mass and height. Visual interest will be provided by material pattern, fenestration, and shadow lines created by angled windows on each façade. **Planning Board continues to be concerned about the choice of white panel – concern is not for the quality but for the contribution to the public realm and appropriateness, especially as it relates to the long views and neighboring context.** The applicant provided a view from I-295 to make the case that the white panel selection meets the intent to tie the East Tower expansion to the future character of the campus. The image shows how these buildings will be viewed together from certain vantage points.

Visitor Garage: The proposal maintains the existing material palette of brick, concrete, and metal screen. **Planning Board is concerned about the prominence of the garage on Congress Street and the lack of visual interest and contribution to the public realm by using the existing material palette.** In response to the Planning Board's comments, the applicant revised the elevation to extend the screens above the top deck adding visual interest to the roofline, screening the fall protection. There is a gap between the existing screen and the new screen to add some visual relief and to differentiate the existing from new façade. These screens will wrap around the corners of the building.

*6. The design process will **consider long views** of new buildings including roofs and associated structures to minimize visual impacts and **provide visual interest**. Rooftop appurtenances will be*

either screened from view or integrated into the building design, and will not be visible from adjacent streets, Western Promenade, or the Congress Street approach (helipad excluded).

East Tower: Planning Board commented that the simple roof form does not have enough visual interest for the long views.

Visitor Garage: **Congress Street is a major street and this building will become even more visible from long views as it grows in height. The garage proposal lacks visual interest from long views – articulation and visual interest are important for the garage in the forefront of the campus. Planning Board asks that the applicant re-evaluate the approach. The roofline is an element where visual interest could be added - Planning Board commented that the simple roof form does not have enough visual interest for the long views.** The applicant revised the screens in response to these comments. The screens will extend higher to provide a varied roofline that also screens the fall protection fence. The screening will wrap around the corners. There will be a reveal between the existing and new screens to give a visual break, as well as a literally break between the existing and new construction. These elements address the Board comments by adding some dynamic elements to the roofline in a way that is structurally feasible.

7. Vibrant, contributing and sustainable active ground floors will be provided to add activity and a sense of place to the priority node identified in the City's Comprehensive Plan.

East Tower: Not applicable

Visitor Garage: This has been addressed through the fit out and activation of the construction field office.

8. In areas where the occurrence of limited blank facades along public rights-of-way are unavoidable due to changes in topography or building use requirements, the following strategies will be used to mitigate visual impact:

- providing elements of visual interest along any black walls facing public streets, and,

- working with the City of Portland to ensure adequate lighting of public sidewalks to create a safe pedestrian experience.

East Tower: Not applicable

Visitor Garage: Met - See comment 7. above.

9. Any parking structure within the IOZ will:

- screen views of cars from the public rights-of-way

- provide elements of architectural interest on upper floors to contribute positively to long views and gateway approaches

- for garage structures within 20' of the public right-of-way, meet street activation intent according to street type

East Tower: Not applicable

Visitor Garage: Screening requirement is met - Screening methods will follow the established existing design – solid wall with metal mesh railing with a trellis accent – this current condition successfully screens cars/headlights from Congress and Crescent streets. **Planning Board commented on the lack of visual interest on upper floors and feel this guideline is not met – roofline, façade material, fall protection/screen design are possible architectural elements that can address this guideline.** The applicant has addressed these comments with changes to the screen elements – see staff comments 6. above.

Street activation guideline is met, see comments 7. above.

Building Relationship to Public Street

1. ***Urban Main Street (Congress Street)***

   MMC buildings abutting Congress St will be designed to:

   - *Provide urban-levels of density*
   - *Create an urban street wall that provides a sense of enclosure to the public realm*
   - *Have their primary orientation towards Congress Street*
   - *Activate the public sidewalk with building entrances, lobbies, etc.*
   - *To the extent possible, given programmatic needs, provide visual interest and ensure pedestrian safety with views into and out of the building along the public sidewalk*
   - *To the extent possible, given programmatic needs, provide space for community-oriented uses such as services or retail that can be shared between MMC users, neighbors, and the broader Portland community*
   - *Support the existence of neighborhood amenities such as restaurants and other retail uses providing services to local residents and employees both during the day and evening hours.*

   In addition to the guidelines listed above, buildings that have frontage on Congress Street and that include parking components will activate portions of or place liner buildings along the ground floor facing Congress Street.

East Tower: Not applicable

Visitor Garage: The building addition maintains the urban street wall already established. The existing building's primary orientation is towards Congress Street. Entrances are not proposed to be changed – there are several existing entrances oriented to Congress Street. For activation, see comment 7. above.

Crime Prevention Through Environmental Design (CPTED)

MMC will incorporate the following design strategies that have been demonstrated to deter crime:

- *Providing a clean and aesthetically pleasing campus environment that is designed with vandal-resistant materials*
- *Providing clear and properly-sized signs in safe locations to ensure safe wayfinding*
- *Ensuring that paths from transit stops, bike storage areas, and parking areas to main pedestrian entrances are well-lit, with clear sight lines*
- *Designing street-level elevations to minimize potential hideouts*
- *To the extent possible, given clinical program demands, providing views in and out of building ground floors populated by users to serve as "eyes on the street"*
- *Generating foot traffic on public sidewalks with pedestrian entrances*

East Tower: No changes to the site lighting or ground level building interface are proposed. Staff are not concerned about the CPTED in this location due to the level of activity, visibility, and lighting present in the ground floor design.

Visitor Garage: No changes proposed to lighting. The applicant has confirmed there are some current safety concerns with the circulation tower. The lighting levels and visibility on the Congress Street sidewalk and steps are fine. However, the hidden corners inside the stairs have created nuisance problems. The application does not currently include a plan to address this issue. Staff recommend that a condition of approval include a proposal here.

Mitigating Impacts Through Design

Minimizing Shadow Impacts - Shadow impacts were evaluated as part of the IDP process. Both projects increase building height and will inevitably have some shadow impact – the garage height will increase the shadow cast across Congress Street but, as the applicant has argued, shadows on Congress Street are unavoidable due to the terrain, orientation, and street position. Refer to Plan 13 for shadow analysis of the approved IDP building heights – a couple of residential buildings are impacted in the winter by the increased height.
Context-Sensitive Lighting Design – No changes to site lighting proposed.
Mitigating Wind Impact – No information was provided to evaluate this item.
Preserving and Enhancing Viewsheds – The building expansions do not impact Western Promenade viewsheds. Each of these expansions will increase the visibility of the campus from multiple long views (see application materials). The applicant hopes that the long view impact will strengthen the cohesiveness of the campus.

Regulatory Framework

1. ***Mixed Uses: . . .*** *healthcare facility development fronting onto Congress Street and St. John Street shall activate the public realm, to the extent able, with uses such as service and retail/restaurant, landscaping, active building entrances, pocket parks, etc., on the ground or other publicly accessible level, consistent with the design intent contained in the approved IDP. . . .*

   East Tower: Not applicable

   Visitor Garage: Met - See comment 7. above.

Portland Maine | Yes. Google's good here.

Jean Fraser <jf@portlandmaine.gov>

Notes of 3/15/18 MMC Check-in Mtg- Detour issues; Schedule & Communication Plan

1 message

Jean Fraser <jf@portlandmaine.gov> Mon, Mar 19, 2018 at 12:10 PM
To: Keith Gray <kgray@portlandmaine.gov>, "Bartlett, Jeremiah" <jbartlett@portlandmaine.gov>, "Errico, Thomas" <thomas.errico@tylin.com>, "Peverada, John" <jbp@portlandmaine.gov>, "Hyman, Bruce" <bhyman@portlandmaine.gov>, Robert Thompson <rmt@portlandmaine.gov>, "O'Brien, Stuart" <sgo@portlandmaine.gov>, James Sweatt <jjs@portlandmaine.gov>, Aaron Pepin <aaronp@portlandmaine.gov>, Eric Nevins <ericn@portlandmaine.gov>
Cc: "Barhydt, Barbara" <bab@portlandmaine.gov>, "Zazzara, Rhonda" <rjz@portlandmaine.gov>, "Donaldson, Helen" <hcd@portlandmaine.gov>, "DiPierro, Philip" <pd@portlandmaine.gov>

Hello all

Key points from the **3/15/18** Site Plan Review meeting with MMC:

(Please let me know if I have missed anything important; note that these are intended as an "aid de memoir" and not as formal minutes, though will be in the PB reports so they are aware of the scale and nature of the discussons)

CONGRESS STREET CLOSURE - Physical upgrades needed

- **WEYMOUTH STREET** with reference to Keith Grays' Memo (attached)
  - Turners had scheduled to do some repairs before detour started, and then do complete overlay after the detour
  - KG's Memo was questioned; KG explained his request for milling off the surface, doing localized repairs and the resurfacing; he indicated that "repairs-only" would not work as needs too much re surface (base OK)
  - Turners Project Manager felt that milling off central surface would not stand up to the detour and they would need to do more and close down Weymouth for a week in late April prior to detour
  - KG noted that if they do this then it may trigger need for ADA compliance
  - KG confirmed that his assessment was attempting to keep the work and cost to a minimum, and that he expected his approach would not need any substantial further work to be necessary after the detour (though need to check afterwords to see if any repairs needed)
  - DG asked if MMC has to bring it all up to ADA standards and answer was this depends on what they disturb

- ADA issues also relate to/depend on where the detour is intensifying pedestrian/vehicular conflicts (eg TE felt additional pedestrian accommodations needed at Congress/Weymouth and Weymouth/Park - see below)
- Later in the meeting KG noted that the City was completing the paving of the travel lane and sidewalks along State Street - to involve partial lane closure being done latter part of April- suggested that maybe the contractor doing this could do the work in Weymouth since already geared up - KG will share the State Street schedule and follow up regarding coordination of these
- Police noted this a concern - Park Ave westbound a potential bottleneck as no alternative route

- **RADII FOREST TO BOYNTON RIGHT TURN**
  - Regarding the turning radius at Boynton/Forest, KG and TE both were concerned and requested seeing turning template of a fire truck making the right turn into Boynton from Forest
  - UPDATE: 3/16 RD of G-P had done the autoturn and MMC has concluded they need to modify that radii and it will be part of the updated MOT that will be in the PB Packet

- **PEDESTRIAN ACCOMMODATIONS AT CONGRESS/WEYMOUTH AND WEYMOUTH/PARK**
  - At the meeting TE and others expressed concern that the detour traffic would make it difficult/unsafe for pedestrians trying to cross at each end of Weymouth Street
  - <u>UPDATE 3/16:</u> Sebago has prepared details for temporary crosswalks and these will be in the MOT

- **METRO** Stop inbound on Park just before Weymouth Street
  - Metro had requested that the stop be relocated about 40 feet west and have a concrete slab created between the curb and sidewalk for bus passengers
  - Note that parking spaces would need to be removed but DPW have authority to close 2 parking spaces
  - Question as to whether METRO would want the stop and pad to remain permanently - if not, is it worth pouring the pad? BH to check with METRO

- **SIGNAL AT WEYMOUTH/PARK**
  - KG requested that this be left in place for a couple of weeks *after* the detour finishes so that the City can do counts at this location

- **FOREST/CONGRESS** lane detail
  - Short section of outbound lane to be left open in front of MOB for access for ambulances etc
  - Police concerned re night issues here

- **SIGNAGE**
  - Signage Plan in MOT needs some updating - but is detailed enough for now

- City staff will review the spray-painted sign locations
- Variable message signs being discussed with MDOT

- **COORDINATION WITH MDOT** (see last item in the attachment)
  - All has been agreed; MMC will provide the variable message boards

CONGRESS STREET CLOSURE - COORDINATION RE SEADOGS GAMES

- There are about 22 Seadogs Home games during the period of the closure
- Seadogs hire police for crossing in front of stadium
- Public comment at PB had highlighted large number of peds throughout the area before/after a game, including at Boynton (PM weekday particularly problematic)
- SO requested specific *Seadogs Management Plan* that thinks through and addresses the pedestrian issues
- JS suggested flaggers at key points would help
- AG of MMC confirmed he would set up a meeting with Seadogs and invite City reps
- UPDATE: Al arranged mtg for 3/16 but it was very brief due to Seadogs misunderstanding- some points:
  - Getting message out: Seadogs can get info out to ticketbuyers about access and parking changes
  - Peds from MOB garage to stadium: JP does not think it will be a problem; DG suggested Turners can monitor and include that monitoring in the "script" for the first weeks; TE considered that they should take some action ahead of the first game based on the monitoring of the detour over the first week (JP noted that Opening Day had biggest crowds in April then lower until weather is warmer)
  - Traffic congestion in area: Seadogs have policeman at Park ped crossing but concern that more control needed. DG said Turners could have flaggers available to help; need to clarify to what extent flaggers can direct traffic here.

CONGRESS STREET CLOSURE SCHEDULE (see attached draft)

- Closure starts May 7 Monday and trucks with crane pieces start arriving immediately
- AG ran through the schedule - last day is June 28th
- Turners doing a more detailed schedule- showed it to group; its under development and will be circulated week of 3/19 along with Communication Tree
- Crescent needs to be 2-way in advance so can bring in construction fencing etc (discussed signage to ensure no parking there)
- Will have a separate meeting with Police regarding a police detail at each end of the detour
- CMP removing /relocating lines in early May
- Police concerned schedule does not build in a buffer, with completion just before July 4th weekend - DG explained that schedule includes buffer because of conservative estimates as to beams per day etc.
- This schedule OK for PB Report

PRESENTATION FOR COUNCILORS, PUBLIC AND PLANNING BOARD (discussion of attached draft)

- TE suggested:
  - Need to address public comments at PB meeting re using State Street - speak more to the need for detours to get back to original route as soon as possible (add into chart)
  - Show whats happening to peds- this also raised at PB
  - Explain whats happening re METRO
  - Address PB concerns re Seadogs games
- Further discussion at 3/16 Seadogs meeting: TE asked if they were going to address the question that arose at the PB workshop about how much the volumes on Park will change- MMC has a graphic re volumes that will go into the MOT and the presentation will refer.

COMMUNICATIONS PLAN (see attached draft)

- Update regarding discussions with neighbors re loss of parking during detour- MMC have had meeting with Crescent residents and will have meeting with Boynton residents next week
- MMC will be circulating flyers to all neighbors in affected area (flyer includes where residents can park during detour and how to get a tag to use those parking areas)
- Matt Wickenheiser (Senior Communications Manager, MMC) ran through the Communication Plan and is liaising with Jessica Grondin of the City

SCHEDULE of MEETINGS:

- **22 MARCH THURS MTG- MAY NOT BE HELD- WILL CONFIRM**
- **27 MARCH:** Planning Board anticipated to give (conditional) Site Plan approval including re CMP for East Tower and Visitors Garage - final comments requested from reviewers by 3/21
- **Thursdays 9AM**: Please keep the Thursday 9am slot available for ongoing meetings with MMC on the Congress Street closure (as needed) and the St Johns Garage Site Plan. Let Jean or Nell know if you have an item that you would like on the agenda.

--

Jean Fraser, Planner
City of Portland
874 8728

2 attachments

MMC CMP-MOT- Comm Plan Update for 3.15.18 mtg.pdf
1747K

Weymouth Street Pavement Memo-DPW.doc
32K

Portland Maine | Yes. Google's good here.

Jean Fraser <jf@portlandmaine.gov>

MMC Site Plan Check In meeting 3/1/2018

1 message

Jean Fraser <jf@portlandmaine.gov> Mon, Mar 5, 2018 at 6:10 PM
To: "Errico, Thomas" <thomas.errico@tylin.com>, "Hyman, Bruce" <bhyman@portlandmaine.gov>, "Peverada, John" <jbp@portlandmaine.gov>, James Sweatt <jjs@portlandmaine.gov>, "O'Brien, Stuart" <sgo@portlandmaine.gov>
Cc: "Zazzara, Rhonda" <rjz@portlandmaine.gov>, "DiPierro, Philip" <pd@portlandmaine.gov>, "Donaldson, Helen" <hcd@portlandmaine.gov>, "Barhydt, Barbara" <bab@portlandmaine.gov>, "Bartlett, Jeremiah" <jbartlett@portlandmaine.gov>, Keith Gray <kgray@portlandmaine.gov>, Aaron Pepin <aaronp@portlandmaine.gov>, Eric Nevins <ericn@portlandmaine.gov>, Robert Thompson <rmt@portlandmaine.gov>

Hello all

Key points from the **3/1/18** Site Plan Review meeting with MMC:

(Please let me know if I have missed anything important; note that these are intended as an "aid de memoir" and not as formal minutes)

Congress Street Closure - DELIVERY ROUTES

- At the 2/15 meeting reviewers questioned the proposal to route steel deliveries (from North, June 4 to June 28, starting at 5am; 3-4 /day) along Washington Ave and Congress
  - City staff advised route should avoid Washington completely due to planned construction work
  - Route must avoid downtown Portland and Congress
  - Keep delivery vehicles on I295 longer - maybe I295 to Forest /Park ? Deering; maybe Fore River Parkway
  - Turners were going to speak to the trucking company again and get back to us

- Turners had discussed further with trucking company
  - Looked at a number of alternatives
  - Those at the meeting preferred the incoming route to be High to Congress to Ellsworth
  - Those at the meeting basically OK with exit route (Bramhall to Deering to Park) but may need tweaking re turn onto Park

Congress Street Closure - COORDINATION RE SEADOGS GAMES

- There are about 22 Seadogs Home games during the period of the closure

- Seadogs hire police for crossing in front of stadium
- Public comment at PB had highlighted large number of peds throughout the area before/after a game, including at Boynton (PM weekday particularly problematic)
- SO requested specific *Seadogs Management Plan* that thinks through and addresses the pedestrian issues
- JS suggested flaggers at key points would help
- AG of MMC confirmed he would set up a meeting with Seadogs and invite City reps

Congress Street Closure - COORDINATION WITH MDOT

- MDOT need to approve closure of Congress; variable message boards on I295; temporary signal at Weymouth
- Meeting likely Monday afternoon 3/5

Congress Street Closure - COORDINATION WITH METRO

- SO and BH will meet with METRO
- SO requested a *METRO Management Plan* to clarify changes

Congress Street Closure - Package of info needed

- MMC was requested to provide (asap) a *Presentation* re the detours that can be used to inform others eg councilllors and residents; to include what was considered re detours and how the plan has been developed
- A final single detour schedule and responsibilities for action was requested of Turners prior to start of deours and closure; DRAFT for submission (may be separate docs) on March 12th :
    - *Framework Schedule* needed for PB Hearing (final needed by 3/21)
    - Between now and when construction starting: Management and Action Plans as follows:
        - *Signage Plan* (work being done and maintained by North East Safety) (RD's Signage Plan needs some revisions as suggested) (sign locations being marked in orange paint week of 3/19 to 3/23)
        - *Signals Plan* (run by Jeremiah Bartlett)
        - *Communication Plan* and *Telephone Tree* including re media - to clarify who to contact directly (who will always answer 24 hrs) to take decisions re any problems during the closure
        - *Seadogs Management Plan (see notes above)*
        - *METRO Management Plan (see notes above)*
        - *Advance Work Plan* regarding what and who to upgrade street eg striping and paving
        - *Schedule* running up to and including the closure- when signals set to flashing (suggested 1 week ahead); when Boynton goes one-way (suggested 2 weeks ahead) to include other actions such as who inspecting and monitoring
        - Include a *Tracking System* for complaints so action is immediate

SCHEDULE BETWEEN NOW AND CONGRESS ST CLOSURE:

- **12 MARCH:** MMC submit the plans and schedules as listed above
- **15 MARCH:** Meet room 209 (9am) to discuss the submitted package - will include communications folks
    - Likely to be last discussion as part of the site plan review; meetings to continue in order to coordinate and will move to Turners Construction office under the East Tower
- **27 MARCH:** Planning Board anticipated to give Site Plan approval including re CMP for East Tower and Visitors Garage - final comments requested from reviewers by 3/21
- **Thursdays 9AM**: Please keep the Thursday 9am, slot available for ongoing meetings with MMC on the St Johns Garage Site Plan; Nell Donaldson in Planning will coordinate re those

Next Meeting:

March 15 Meeting: Room 209 9am - *to discuss the more detailed plans (as listed above and to be circulated 3/12) that comprise the overall Construction Management during the Congress Street closure*

(NO MEETING THURSDAY MARCH 8TH)

--
Jean Fraser, Planner
City of Portland
874 8728

Portland Maine Yes. Google's good here.

Jean Fraser <jf@portlandmaine.gov>

Notes of 2/15 MMC Site Plan Review Meeting (CMP/Detours)

1 message

Jean Fraser <jf@portlandmaine.gov> Thu, Feb 22, 2018 at 1:05 PM
To: "Errico, Thomas" <thomas.errico@tylin.com>, "Bartlett, Jeremiah" <jbartlett@portlandmaine.gov>, "Hyman, Bruce" <bhyman@portlandmaine.gov>, Keith Gray <kgray@portlandmaine.gov>, "Peverada, John" <jbp@portlandmaine.gov>, "Zazzara, Rhonda" <rjz@portlandmaine.gov>, Robert Thompson <rmt@portlandmaine.gov>, James Sweatt <jjs@portlandmaine.gov>, Eric Nevins <ericn@portlandmaine.gov>, Aaron Pepin <aaronp@portlandmaine.gov>, "Barhydt, Barbara" <bab@portlandmaine.gov>, "O'Brien, Stuart" <sgo@portlandmaine.gov>, "Donaldson, Helen" <hcd@portlandmaine.gov>
Cc: "DiPierro, Philip" <pd@portlandmaine.gov>, "Gautreau, Keith" <kng@portlandmaine.gov>

Hello all

Key points from the 2/15/18 Site Plan Review meeting with MMC:

(Please let me know if I have missed anything important; note that these are intended as an "aid de memoir" and not as formal minutes)

Congress Street Closure and associated detours/emergency access (based on the revised docs and plans attached to this e-mail from Gorrill-Palmer)
Updates from Gorrill-Palmer re traffic detours and associated signage and signals, assuming no alternative to a Congress Street closure (see below- third item):

- RD of GP had developed the option with Boynton one-way inbound, based on feedback from earlier meeting
- Outlined the "three-layer" approach:
  - Signage via variable message signs outside central Portland to encourage different routes into the City
  - Barricades at Congress/St Johns and at Weymouth/Congress to re-route the bulk of traffic
  - Local traffic may use Forest/Boynton inbound
- Outlined the changes needed for each of these (see plans) eg signal at Weymouth/Park (actuated); removal of parking in addition to signage; change ped to concurrent crossing in some places (but RD thought signal timing otherwise OK)
- Key concerns (need more analysis and discussion):
  - Police particularly concerned re the safety of retaining central lane at Congress/St John - rather see it removed even though a number of cars going straight ahead

        - Need for information/maps to MMC patients and visitors and employees - suggest use online data providers to flag closures
        - Need to look closely at impact on peds at signals, especially during ball games and other events
        - Consider impacts on residents and businesses of some routes and semi-closures
        - Introduce Boynton as one-way working a couple of weeks in advance
    - Access to visitors garage during Congress closure (see plan)
        - Via employee garage, channeled and flaggers as needed
        - 200 employees moving out of the employee garage to make up for loss of 2 levels in visitor garage during construcion
    - Emergency Routes (see plan)
        - Clarified that access via Gilman only secondary and only when the "green" route is closed
        - Attendees stressed need for communication and decision-making chart
        - Agreed that from now on there would be smaller follow up meetings a necessary to resolve details
        - Agreed there needed to be monitoring and heavy contractor presence during first few weeks and may need to tweak these plans
    - METRO - MMC to meet with them once plan firmed up
    - DPW noted that the condition of the streets being used for deliveries and detours may require some action in advance eg partial paving - DPW to advise MMC re this after a more detailed site visit - need to avoid delays to the proposed schedule

<u>CMP - East Tower and Visitor Garage</u> (based on revised CMP as attached from Turners)

- Congress St closure anticipated May 7 to June 28 for the installation of precast beams for overbuild of the visitors garage - weather biggest factor
- Turner summarized the revisions to CMP, which included facilitating the ambulance access, adding delivery routes
- Reviewers questioned the proposal to route steel deliveries (from North, June 4 to June 28, starting at 5am) along Washington Ave and Congress
    - City staff advised route should avoid Washington completely due to planned construction work
    - Route must avoid downtown Portland and Congress
    - Keep delivery vehicles on I295 longer - maybe I295 to Forest /Park ? Deering; maybe Fore River Parkway
    - Turners will speak to the trucking company again and get back to us
- Police stressed need for ongoing monitoring and process for making changes to delivery and detour routes after closure starts
- Concern re pedestrian route along Congress by construction area
    - Need ADA ramp
    - Need 9ft for crossing
    - Ensure entire sidewalk available

    - Look at conflicts for peds crossing Weymouth at Congress - need to address
    - Gilman crosswalk needs to be ADA compliant
- Timetable (based on SO (Tuck) discussions with MMC and City Communication Directors)
    - Need for early completion of telephone tree communication structure/contacts to be circulated within about 2 weeks and to be tested ahead by local and regional responders
    - In week after 2/27 PB meeting need schedule that includes lead time and actions
    - Early prep of handouts for employees and visitors plus early website info important

Third Part Review of Constructability

- Kleinfelders consultancy (Jim Wentworth) has been engaged by city to provide independent review of the constructability issues for the East Tower and Visitors Garage, as there was concern regarding the closure of Congress Street (for at least 8 weeks) and whether that closure was essential in view of its impacts
- JW outlined what had gone into the review and amplified on the review Memo (see FINAL REVIEW MEMO attached for details) outlining the pros and cons of a range of construction options
- JW noted that public safety was a key factor as was the need to use this size of crane which requires a long straight area for assembly
- Kleinfelders professional view was that their analysis supported the choice of the proposed option, though they recommended penalties and other disincentives in the contract for going beyond the identified closure time
- Discussion regarding the work schedule for the garage - potentially possible to increase from 5 days/week to 6 or 7- but then the noise etc from construction would also be for more days
- A 6 day working week with a later start on Saturday may be best compromise and potentially could shorten the closure by a few days depending on weather

Next Meeting:

NO MEETING FEBRUARY 22

March 1 Meeting: am holding a meeting slot and room 209 is reserved (and all following thursdays at 9am) but no agenda yet- will in part depend on issues raised at the PB Workshop on Feb 27th

--
Jean Fraser, Planner
City of Portland

874 8728

--
Jean Fraser, Planner
City of Portland
874 8728

---

3 attachments

GP Traffic Analasis of detours & traffic managment 2.14.18.pdf
4469K

CM Plan February 13.pdf
10844K

Kleinfelder MMC -Constructability Review Memo 2-21-2018.pdf
144K

Portland Maine Yes. Google's good here.

Jean Fraser <jf@portlandmaine.gov>

MMC meeting 2/8/18 Brief notes/action

1 message

Jean Fraser <jf@portlandmaine.gov> Mon, Feb 12, 2018 at 4:22 PM
To: "Alexander M. Green" <AGreen@mmc.org>, Keri Ouellette <kouellette@portlandmaine.gov>, "Cameron, Caitlin" <ccameron@portlandmaine.gov>, "O'Brien, Stuart" <sgo@portlandmaine.gov>

Hello all

Below please find my brief "action" notes of the 2/8 MMC meetings- pl let me know if your "take way" was different:

Permitting and Inspections re building permits (relates to the three most urgent permits eg for retail space (under VG), ET and VG; later ones will be CUP cooling tower on roof & chiller; new St John garage; demo existing garage; new hospital building)

- Retail fit up for Turners - MMC to liaise with KO to resolve re use and move forward on the permit
- ET and VG - urgent re ET roof and Tuck to follow up; otherwise MMC to initiate pre-app discussions with SAFEBUILD and keep KO and JF in the loop
- Submission of permit applications to be direct to Permitting and Inspections Department and pay full fees for now
- ET and VG permits will need State FIre Marshall and City Fire Dept reviews

Design (Purpose of meeting was to consider the staff and PB comments and how to address)

- JK from Perkins & Will showed more detailed rendering of ET and clarified where there was "white" on the existing buildings that relate; consider white best for a number of reasons; not done a rendering with silver nor with white cladding brought down
- Discussion of whether white of the new will match existing- not feasible to reclad existing white; MMC explained had looked at options for tone of upper cladding
- Discussion of how ET overbuild will integrate with new hospital building and agreed rendering of latter to show Board
- Discussion of VG and question of adding visual interest (viewed new renderings of proposal from Congress); MMC had considered options but not revised proposals due to constraints
- VG Retail space being fitted out for Turners with long term use in mind- CC suggested this be clarified to Board

- CC and JF suggested that MMC needs to address Board comments on both buildings in some way and to explain what other options have been considered prior to finalizing current option
- MMC clarified glass specs for both ET new windows and VG tower at E end
- CC asked for info re the following and to be submitted for Board:
    - glass specs
    - all materials
    - shades to be used inside ET rooms

Thank you
Jean

--
Jean Fraser, Planner
City of Portland
874 8728

Portland Maine | Yes. Google's good here.

Jean Fraser <jf@portlandmaine.gov>

MMC SP Review Mtg Feb 1, 2018 - MEETING NOTES

1 message

Jean Fraser <jf@portlandmaine.gov> Tue, Feb 6, 2018 at 12:10 PM
To: "Errico, Thomas" <thomas.errico@tylin.com>, "Bartlett, Jeremiah" <jbartlett@portlandmaine.gov>, "Hyman, Bruce" <bhyman@portlandmaine.gov>, "Peverada, John" <jbp@portlandmaine.gov>, James Sweatt <jjs@portlandmaine.gov>, Aaron Pepin <aaronp@portlandmaine.gov>, Eric Nevins <ericn@portlandmaine.gov>, Robert Thompson <rmt@portlandmaine.gov>, Keith Gray <kgray@portlandmaine.gov>, "Zazzara, Rhonda" <rjz@portlandmaine.gov>, "Barhydt, Barbara" <bab@portlandmaine.gov>, "O'Brien, Stuart" <sgo@portlandmaine.gov>, "Donaldson, Helen" <hcd@portlandmaine.gov>, "Alexander M. Green" <AGreen@mmc.org>, Dominic Gagnon <Dominic.Gagnon@colliers.com>, gscholler@tcco.com
Cc: "DiPierro, Philip" <pd@portlandmaine.gov>, "Ryan T. Wingard" <ryan.wingard@wright-pierce.com>, "Michael A. Guethle" <michael.guethle@wright-pierce.com>, Will Conway <wconway@sebagotechnics.com>, Jim Wentworth <JWentworth@kleinfelder.com>, "Cameron, Caitlin" <ccameron@portlandmaine.gov>, "driley@sebagotechnics.com" <driley@sebagotechnics.com>, "Gautreau, Keith" <kng@portlandmaine.gov>

Hello all

Key points from the Site Plan Review meeting with MMC held last **Thursday, February 1, 2018** plus (at end) future meeting agendas:

A. CMP with focus on analysis of detour options for any Congress Street closure - meeting was seeking to find consensus as to the best option

Updates re detour options from Gorrill-Palmer *(circulated summary plans and narrative that included analysis of levels of service at intersections which was sent by e-mail the evening before- this is attached):*

- Outlined two "local" (using Forest & Boynton) options: (A) two-way and (B) one-way on Boynton
- Outline option (C) using St John/Park/Weymouth
- Outlined wider add-on option (E) that diverted in bound vehicles further out in the system eg leaving I295 at different exits
- Acknowledged option (D) to make Park two-way but this was not analysed as it entailed alot of changes to be completed in a short time and not recommended
- Subject to some further information and discussion, the Boynton one-way (B) combined with the add-on option (E) to divert inbound vehicles seemed to be worth considering further

METRO

- MMC had met with METRO who would work with them once final plan in place

- METRO had noted that they would probably need additional drivers and buses to maintain headways

Implications of detours - *attendees highlighted concerns and Bruce Hyman offered to provide a coordinated note regarding key areas of additional info requested [**this is below**] and Gorrill-Palmer will provide updated and expanded info on these as "final package" for next discussion (2/15)*

- Need to remove dedicated ped phase at St John/Congress
- Issues re access and parking for residents on Boynton
- Need for signal modifications eg timing, peds
- Note increase in traffic April-June (+20% - from Police)
- Suggestions for signage, including variable messaging VB and moving MMC sign(s) on I295
- Physical condition of Weymouth and need for emergency service access
- City does not recommend adding traffic to Deering
- See Bruce Hyman's note at end of e-mail

Timeframes/contingencies:

- Concern that the June 28th end date is crucial
- What penalties if this is not met?
- Question of whether can be shorter but keep some buffer (which might have impacts on neighbors)
- Timing of deliveries and where staged crucial to minimize impacts
- Turner to prepare communications info between contractor/MMC security/City re decisions needed if issues arise
- Police suggest have flaggers during the first week

B. Stormwater Review of Site Plan (note that W-P had previously provided review comments and Sebago had responded, so discussion focused on outstanding issues and questions)

- Wright-Pierce (W-P) attended on behalf of City; Sebago Technics (ST) attended on behalf of MMC
- ST explained existing situation:
  - ET sewer goes to Congress combined system; ER stormwater goes to A Street separated system
  - VG has treatment of stormwater on roof which then goes to Congress combined
  - Density of utilities prevents connection so ST consider only way to get stormwater to A street from VG and new hospital building is to pump
- New hospital building on Congress will have subsurface system along Congress to detain, and green roof- ultimately discharge to Congress combined system
- Other items raised by W-P and DPW for MMC to address:
  - Increase storage at visitor garage
  - Reduce disturbance & introduce erosion control etc at construction sites
  - Submit capacity letters

C. TDM- MMC had submitted TDM Plan and City had sent comments recently

- Discussion monitoring- methods of monitoring parking demand - questions
- City expects the TDM to include specific strategies and associated details, and then monitor and review in a year
- TDM needs to go one step beyond IDP
- Planning had seen good examples and will forward these (WEX; Thompsons Point)
- Discussion re bicycle by-ways and how these should be integrated with TDM for MMC - question of whether they would facilitate cycling by MMC staff

D. NEXT MEETINGS

THURS FEB 8 (most do not need to attend)

- **9:30am- 10:00 MMC building permits process**
- **10ish TO 11:00: Design with Jeff K of Perkins & Will**

PLANNING CONFERENCE ROOM (this meeting only)

THURS FEB 15 9AM - final discussion CMP and associated traffic/detours/signage/signals etc (based on a final package from MMC to be circ 2/13/18) in Room 209

Coordinated Note from Bruce:

Here are the consolidated comments from last Thursday's preliminary review of the MMC draft Congress Street detour analysis dated 1/31/18.

The following additional information is requested:

- More documentation of the actual morning and afternoon peak hours that are being referenced as part of the detour planning. It is not stated in the document itself and the Synchro printouts have the same START-STOP times for both the AM-PM analysis period. (It looks like 7AM-8AM are the AM peak hour from the printouts but it should be documented in the narrative and in the tables.)
- More documentation of the peak hour(s) for the detour analysis: do one or both of the actual peak traffic hours change to a different time period based on the amount of traffic that is deducted-credited based on the amount of traffic heading to the Gilman lot and MOB parking and the actual amount of traffic that remains?
- The configuration and specific type of temporary traffic signal equipment proposed for the Weymouth Street/Park Avenue intersection and the means of traffic signal coordination/communication with nearby traffic signals
- All traffic volume information that was used in the analysis to better understand the analysis' assumptions for traffic volumes on Congress Street between St. John and Brahmall. A review by the city of the actual Synchro models is also suggested.
- The specific location, placement and wording of detour signage associated with the proposed detour concept
- The specific recommended deployment of personnel (e.g., flaggers, police officers, etc) at the initiation of the proposed Congress Street detour to actively manage traffic associated with the detour and and coordinated with construction activities/the CMP.

--
Jean Fraser, Planner
City of Portland
874 8728

Congress St Detour 1-31-18 - reduced.pdf
3051K

Portland Maine | Yes. Google's good here.

Jean Fraser <jf@portlandmaine.gov>

Notes of todays meeitng

1 message

Jean Fraser <jf@portlandmaine.gov> Thu, Jan 25, 2018 at 6:10 PM
To: "Alexander M. Green" <AGreen@mmc.org>
Cc: Mark Harris <HARRIM6@mainehealth.org>, "O'Brien, Stuart" <sgo@portlandmaine.gov>

Al

This (below) is what I have sent around internally, as mentioned in earlier e-mail to help keep reviewers in the loop.

thanks
Jean

Key points from todays Site Plan Review meeting with MMC:

East Tower CMP - meeting was seeking to find consensus

Updates from Turner:

- Ambulances will be allowed to use ambulance portal as existing
- Explained penalties if workers park on nearby streets
- Have checked out feasibility of trucks using Ellsworth
- Truck deliveries of steel with be June, July and most of August
- Probably remove bump out in Crescent

Discussion of Access routes:

- A number of alternatives were discussed, looking at pros and cons (eg access from Gilman) as Turner proposals problematic Ellsworth to Congress and reservations over 2-way in Crescent
- MMC noted secondary access via employee garage for cars going to Visitors Garage
- Concluded:
  - Take out bumpout in Crescent to help larger emergency vehicles
  - Best option for exiting trucks is Bramhall via Charles to 295
  - Keep Crescent 2-way (MMC contacting residents long here re need to remove parking)
  - Gilman could be back up access option and arranged if necessary

Congress Street Closure and associated detours/emergency access (this discussion to continue longer; includes third party review of construction plan)

Updates from Turner:

- Current plan is for 8 week closure based on normal working practices, so May 7 to June 28 envisaged
- Compression of time means more trucks in area per day

Updates from Gorrill-Palmer re options for detours:

- Local - Forest/Boynton/Weymouth (for small cars)
- One way system probaly Boynton inbound and park outbound
- Park between Fore River Pkway and St Johns to be two way
- Comparison/analysis to be completed/circulated early next week and discussed at Feb 1 mtg

Discussion of detour options:

- Need to get people out of system further out - need signage
- Police suggest closures on Congress at St John, and Park
- Many felt should avoid pushing traffic to Weymouth
- Deering another option - G-P to include in analysis
- Park 2-way offers benefits but big questions re intersection modifications and signals

Next Meeting:

THURS FEB 1 9am- 10:30 (reviewers attend for their topics within this time)
ROOM 209

- Focus on Congress Closure & detour option
- Some time on TDM
- Some time on Stormwater/Wastewater

--
Jean Fraser, Planner
City of Portland
874 8728

ANNE B. PRINGLE

44 Neal Street Portland, ME 04102-3527
oldmayor@maine.rr.com

January 23, 2018

Planning Board
City of Portland
389 Congress Street
Portland, ME 04101

Re: Maine Medical Center

Dear Planning Board Members:

I am sorry that, due to he icy road conditions, I will be unable to attend today's workshop.

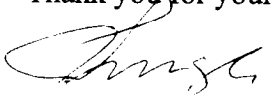
As you know, I have been participating in the MMC Expansion Group for over a year, representing Western Prom Neighborhood Association. This comment however is being made personally, not for that organization.

1) I am concerned, as has been expressed by staff, about the choice of the color white for the façade of the East Tower addition. While I appreciate the architects' "Sky, Sea, and Land" design concept, it seems to me that the massive white metal wall will be glaringly institutional and will not visually blend with the brick below. I am not advocating for brick, but for a more recessive color or different material (e.g. copper). While white panels frame the existing windows below, it seems to me a more compatible color and/or material would not be the jarring counterpoint that the proposed white panels present. As noted by staff, this issue is especially important if this design approach informs future choices in later phases.

2) Almost everyone acknowledges that it has been a disappointment that the Congress Street retail space has been vacant since it was partially finished many years ago. I understand that the space will be used for construction purposes. But I think it is essential to establish a requirement that a use be in place in that space within so many months after the project completed or a penalty of some sort will be assessed. While not an ideal space, especially in its unfinished condition, there must be some viable use for that space that will enliven the street, as required in the IDP!

3) I think it is very important to develop a realistic detour plan for Congress Street during the time it is closed during construction. The initial detour plan to divert traffic within the neighborhood does not make any sense, in my view. Unlike the debacle on State Street during the recent closure, the City should affirmatively direct traffic to a well-developed detour route, not just leave the heavy volume of traffic that uses Congress Street to find its own way…

Thank you for your consideration of these comments.



Comments for board re: maine med expansion

Kate Beever <kate@mainemusicandhealth.com> Feb 27, 2018 1:27 PM
Posted in group: **Planning Board**

Hi there,
I am working late this evening and can't make the meeting, but I'd love to learn more - I'll be reading through the materials as they're posted.
I've heard that MMC is planning to expand in place, and I have some questions about the plans for keeping the area accessible to both patients and staff. I understand having the emergency department right in town, but I don't see why the rest of the hospital needs to take over any more space in the west end. Portland is becoming so overcrowded and the park there is one of the few green spaces with a nice view that's staying untouched.
Aside from views and grass, as someone who contracts weekly at the hospital I find it frustrating to find parking each week when I'm seeing clients. Employees there can park at the satellite lot and bus in- if you have an 8 hour shift, that's fine. But for short shifts, when we need to get in and out quickly to see clients elsewhere, there is only limited street parking up to two hours. The hospital garage is almost always full, particularly in the winter when residents seem to be using it for personal use.
I'm lucky enough to be healthy enough to park farther away and walk, but there are patients and families who have similar trouble finding parking and access to the hospital.
I hope there is a plan in place to remedy this situation in the long term, but more so in the short term - while construction is happening, where will all those cars go?
Thank you.
Kate

--
Maine Music & Health, LLC
Kate Beever, MA, MT-BC
Neurologic Music Therapist
REMO HealthRHYTHMS Facilitator
(207) 233-8734
www.mainemusicandhealth.com

February 28, 2018
15466

Jean Fraser, City Planner
City of Portland
389 Congress Street
Portland, ME 04101

Response to Peer Review Comments dated February 7, 2018
Maine Medical Center, East Tower and Visitor Parking

Dear Jean:

We are writing to provide supplemental information and respond to review comments presented in a memorandum From Wright Pierce Engineers dated February 7, 2018 regarding the above referenced applications.

The attached information documents existing subsurface conditions on the Maine Medical Center campus, specifically related to below grade construction along the access road at the southwest corner of the visitor parking garage, between the visitors garage and the emergency department drop-off area, with its below grade electrical room.

The text of the comments from the City's February 7, 2018 memorandum is presented below for reference followed by our response. Additional information is attached as noted.

1) *Level III Site Plan applications with the City of Portland must submit a stormwater plan pursuant to the regulations of MaineDEP Chapter 500 Stormwater Management Rules. This includes conformance with the Basic, General, and Flooding Standards (Ref: Technical Manual, Section 5. II. Applicability in Portland. C. a.; and Ref: City of Portland Code of Ordinances Sec. 14-526. Site Plan Standards, (b). 3. b.)*
   a) *Basic Standard: The applicant has confirmed that no additional impervious surfaces are being added to the facility, the proposed work is not causing a change of use, and no site disturbance is proposed. As such, the project is not subject to the requirements of the Basic Standard. Information provided in the updated Construction Management Plan indicates that downstream catch basin inlets will be protected.*
   b) *General Standard: The applicant has provided information that no additional impervious surfaces are being added to the facility and that the proposed work is not causing a change of use. A s such, the project is not subject to the requirements of the General Standard.*
   c) *Flooding Standard: The applicant has provided information that no additional impervious surfaces or changes of use are occurring as part of the proposed*

development. As such, the project is not subject to the requirements of the Flooding Standard.

Noted. There are no proposed changes to the site that would increase impervious area, alter drainage patters or increase the rate or volume of Stormwater runoff.

2) *East Tower Expansion Connections:*
   a) *The applicant has provided information confirming that the East Tower storm runoff currently discharges to a separated storm sewer system, and that the proposed construction will also discharge to the separated storm sewer system. The roof connections are internal to the facility and no additional information regarding the East Tower Expansion is requested at this time.*

Noted.

   b) *It is understood that the sewers adjacent to the facility are near capacity to serve new development. The applicant has indicated that increases to dry-weather sanitary flows are minimal, and has submitted a Wastewater Capacity Application for review by the Department of Public Works.*

Noted.

3) *Visitor Garage Expansion*
   c) *The existing facility currently discharges to a combined sewer system within Congress Avenue. The applicant has provided a Stormwater Management Report from 2004, indicating stormwater rates to the separate storm sewer in the A-Street corridor.*
      i) *The information provided indicates that the separate storm drain within the A-street corridor is at or near capacity during the modeled 10-year, 24-hour rain event, but that capacity may be available for lower interval rain events.*

The storm drainage system approved by the Planning Board in 2004 and constructed in 2004-2007 for the east Tower is connected to a separated storm drain in A Street constructed by the City of Portland in the late 1990's.

As part of the 2004 approvals, which included the construction of the East Tower and the Visitors Garage, Maine Medical Center constructed on site storm drains to fully separate sewers and storm drains at the perimeter of the campus. The project extended the A Street Storm to Gilman Street and constructed new public storm drains to fully separate runoff

The redevelopment separated and redirected Stormwater runoff from approximately 6.3 acres of existing development from the combined sewers in Crescent St, Ellsworth St, and Congress St to the separated storm drain in A St. A 6' treatment unit diameter unit was installed in the Visitors Garage and a 10' diameter unit was installed in Gilman St.

There are no changes proposed which would increase the rate or volume of runoff from the site when compared to the approved plan. The storm drainage system approved in 2004 tributary to A Street was designed to the capacity of the existing A Street storm drain such that the pipe

would flow crown full in a 10 year storm event without surcharging inlets in a 25 year event. Additional tributary area is likely to exceed this criteria

ii) Plan 2D Boundary Survey indicates a connection or stub connection leading from the catch basin on the south side of the Visitor Garage that may allow for connection from the Visitor Garage roof drain into the separate storm drain system. The applicant shall provide the following:

(1) An updated boundary survey in the vicinity of "Plan 2D Boundary Survey" with utility elevations, pipe sizes, and pipe materials in accordance with the City's Chapter 14 and Technical Manual requirements for a Boundary Survey. Anecdotal information regarding the difficulty for construction in this corridor was discussed in the February 1 meeting. However, a sewer pipe crossing currently exists in this corridor, as does a storm drain or storm drain stub. City staff need additional information regarding existing utilities to confirm if a connection to the separate storm drain will be feasible or not.

A revised boundary survey plan with structures labels as well as rim and invert elevations has been submitted separately.

We have attached additional documentation further illustrating the existing subsurface conditions adjacent to the Visitors Garage and request a meeting with City Staff to more fully explain our concerns related to the feasibility of making a connection from the visitor garage to the separated drain system.

Attachment 1 to this letter included plans presented to city staff on February 1 ,2018 identifying the existing sewer and storm drain connections from the East Tower and Visitors Garage constructed under the 2004 site plan approval. There are no proposed changes that would increase or alter stormwater runoff when compared to the approved plans.

Attachment 2 includes additional record plan information related to the subsurface utilities at the southwest corner of the visitor garage. These include the Utility Plans and Profile drawings for work associated with the Bramhall Campus Expansion project. This project was reviewed by the City staff and approved by the Planning Board in 2004 and constructed from 2004 -2007. The Bramhall Expansion project included the construction of the East Tower, Visitor Garage, Emergency Department renovations, the reconstruction of Westcott Street and construction of the Central Utility Plant.

The utility work included the complete reconstruction the Access Road between the Visitor Garage. Utilities constructed within the access road include:

- Separated storm drains diverting 7 acres of the campus to the separated sewer in A Street
- A 12" water main

- Concrete encased conduit and manhole systems entering the electrical vault below the Emergency Department parking area that includes:
    - The Campus' three (3) primary electrical feeds (owned by CMP)
    - The campus' emergency power feeds from the Central Utility plans
    - Public and private telecommunications cable and fiber optic system
- Mechanical piping serving the main campus from the Central Utility plant including
    - Steam feed and Condensate return
    - Chilled water and return water

Each of these systems converge in the access road, in the vicinity of a drain manhole (identified as DMH# 22098 on the survey plan and is highlighted as DMH-112 on the design plans sheet C300) at the southwest corner of the parking garage. It is our understanding that it it's this structure which the review comments refer to as a potential location for connection.

Attachment 3 also includes design plans for the Visitor Garage's earth retention system. The earth retention wall was constructed in 2004 to support a 40' to 60' vertical excavation for the construction of the garage. The retaining wall is a soldier pile and lagging wall with reinforced concrete facing backed with insulation and drainage board. The soldier piles are supported by post tensioned grouted tiebacks which extend 44 to 76 feet horizontally behind the wall. With the top row of tiebacks between 8' and 9' below grade. The area the Staff has suggested for a storm drain connection is highlighted on Sheets SCF-2, SCF-3 and detail 1A on Sheet SFC-4.

It is our opinion that making a drainage connection to DMH #22098 (DMH-112) or the catch basin CB# 22087 (CB-204) is not feasible due to interferences with other existing utilities and due to the potential risk associated with excavating behind the Visitor Garage earth retention system.

The staff comments correctly note that a sewer penetration of this wall does exist, as does a penetration for electrical conduit shown on the earth retention plans. These penetrations through the wall were carefully designed and coordinated with design-build contractor responsible for the design and installation of the retaining wall and tie backs and with the floor and spandrel locations of the garage.

The existing penetrations are reinforced to maintain the integrity of the wall and are spaced to avoid tie backs. We do not recommend cutting new penetrations through this wall. The wall was not designed with future penetrations in mind and have concerns regarding potential risk/liability associated modifying this wall or excavating in close proximity to the tie back tendons behind it.

It is also noted that all of the utility structures, duct banks and electrical manholes in the access road at this location were constructed prior to the installation of retaining wall tie backs and tendons. This was an intentional sequence of construction employed to mitigate risks associated with excavating in close proximity to the highly tensioned tie back tendons.

The staff comments note a drainage stub as a potential connection. We understand this to be a reference to the line shown projecting to the northeast from structure CB#22087 (CB-112). We

have investigated this opening in the manhole. This is not a drain stub that extends as far as the survey plan implies. This line represents the location of a temporary sewer pipe stub that was cored into the structure during the 2004-2007 construction as temporary means to convey a former sewer in this location to Gilman Street, while the Visitor Garage and the permanent sewer was under construction.

It appears that this opening is generally oriented toward the adjacent sewer manhole. The stub was cut and capped and sealed close to the structure after construction and prior to the installation of the adjacent sewer manhole, electrical manholes and duct banks. We believe that access to this entrance into the manhole is now obstructed by these other structures. Due to the tight clearances of the subsurface utilities in this area, excavations were backfilled with flow able concrete fill in this area.

> *(2) If a connection from the Visitor Garage roof to the separate storm drain that conveys flows to the A Street corridor is feasible, then the applicant shall provide:*
> *(a) A connection that allows for a 1" rain event to be conveyed to the separate storm drain on A Street, consistent with the City's Long-Term CSO Control Plan.*
> *(b) An overflow connection that conveys larger interval storm events towards the combined sewer on Congress Avenue.*

As noted above we do not consider a connection of the Visitor Garage roof to the separated sewer to be feasible given the utility conflicts and potential impacts to the earth retention system. The building design team is currently reviewing additional implications related to the Visitor Garage structure associated with this proposal. These include:

- Such a connection would necessitate exposed horizontal piping in an un heated structure. This is not a recommended practice. All of the existing roof deck piping is plumbed vertically down the center of the structure to avoid this condition.
- Potential penetration's of the existing garage structure deck. The existing structure includes pre-tensioned T-beam construction with the parking surface integral the beams top flange. These decks were not designed or intended for coring or penetrations.

The performance standards of Section 14-526(b)3.a.(i)-(iv) specifically relate to mitigating proposed *increases* in stormwater runoff. As a vertical expansion of the buildings there is no increase or change in the rate or volume of runoff generated by the site and is therefore not expected to have any new or increased impacts during wet weather or CSO events.

The Performance Standards in Section 14-526(c)3.a. relates to sewer capacity. As discussed in response to previous comments the project proposes a minimal change in the dry weather sewer flows. The project does not increase the number of patient beds in the building. The increase in flow is associated with additional staff and a net addition of six (6) staff toilets and

two (2) sinks. This is not expected to have any measureable impact on the combined sewer system.

iii) For floor drains not exposed to roof runoff, flows shall be conveyed to an oil-water separator connected to the combined sewer. Locations of oil-water separator shall be confirmed on the engineering permitting plans, and detailed.

The proposed projects are vertical expansions of the upper stories of existing structures, utilizing existing internal plumbing connections. No Floor drains are proposed.

4) If new connections to the municipal system are constructed, then confirmation of adherence to the Technical Manual and Site Plan Standards regarding storm drain, sewer, and connections to the existing system shall be provided.

The proposed projects are vertical expansions of the upper stories of existing structures, utilizing existing internal plumbing connections. No site work or new connections to the existing utility systems are proposed.

5) General Comments:

d) Ability to Serve letters from affected utilities are required as part of the Level III Application process. Ability to Serve Letter from Central Maine Power has been provided.

We have requested an ability to serve confirmation from the Portland Water District and have not received it at this time

e) The plans should note a location for snow storage or provide a written snow storage plan. The proposed conditions are very similar to the existing conditions. If all snow is removed from the site in the existing conditions, then a statement from the applicant indicating method of removal and that snow removal protocol will not be changed will suffice for this item. If snow is stored on site, snow storage locations shall be indicated.

The proposed projects are vertical expansions of the upper stories of existing structures, there no changes to the snow removal operations proposed.

Sincerely,

SEBAGO TECHNICS, INC.

Daniel L. Riley , PE
Vice President, Engineering

DLR:jg
Enc.

ATTACHMENT 1

Bramhall Campus Expansion Utility Plans

NOTE:
SEE SHEET C302 FOR UTILITY SCHEDULES.

General Notes:

1. SEE ELECTRICAL PLANS FOR CONDUIT SCHEDULES FOR ALL DUCT BANKS SHOWN WITH — — — — SYMBOL. UNDERGROUND ELECTRICAL AND TELECOMMUNICATIONS CONDUITS SHOWN WITH —UGE— AND —UGT— SYMBOLS SHALL BE CONSTRUCTED AS CONCRETE ENCASED DUCT BANKS WITH THE NUMBER OF CONDUITS INDICATED ON THE SITE UTILITY PLANS. SEE ELECTRICAL PLANS FOR DETAILS OF DUCT BANK CONSTRUCTION.

2. ELECTRICAL AND TELECOMMUNICATIONS DUCT BANK DIMENSIONS INDICATED ON THESE PLANS ARE SHOWN FOR UTILITY COORDINATION. THE ELECTRICAL SITE CONTRACTOR MAY ALTER THE DUCT BANK ARRANGEMENT PROVIDED THAT REQUIRED CLEARANCES FROM ADJACENT UTILITIES ARE MAINTAINED. SEE ELECTRICAL PLANS AND SPECIFICATIONS FOR SHOP DRAWING REQUIREMENTS FOR ELECTRICAL SITE WORK.

3. REFER TO SHEET C302 FOR STORM DRAINAGE AND SANITARY SEWER SCHEDULES. REFER TO SHEETS C305 THROUGH C308 FOR UTILITY PROFILES AND STRUCTURE STATION/OFFSET LOCATIONS.

4. SEE NOTE 10.

5. THE CONSTRUCTION OF ALL WATER MAINS, SERVICES, HYDRANTS, VALVES AND OTHER APPURTENANCES SHALL BE IN CONFORMANCE WITH PORTLAND WATER DISTRICT STANDARDS.

6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL SITE UTILITY DEMOLITION AND CONSTRUCTION WITH THE PROJECT PHASING AND LOGISTICS PLANS (BY OTHERS).

7. THE CONTRACTOR IS RESPONSIBLE FOR SCHEDULING AND COORDINATING ANY INTERRUPTION UTILITY SERVICE TO THE HOSPITAL WITH THE OWNER AND UTILITY COMPANIES. THE CONTRACTOR SHALL PROVIDE A MINIMUM OF 72 HOURS NOTICE PRIOR TO UTILITY SERVICE INTERRUPTION.

8. THE SITE CONTRACTOR SHALL FIELD VERIFY THE EXISTING UTILITY SERVICE CONNECTIONS TO PROPERTIES ABUTTING THE PROJECT SITE. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING UTILITY SERVICE TO ABUTTING PROPERTIES BY TEMPORARY OR PERMANENT MEANS THROUGHOUT THE CONSTRUCTION PERIOD.

9. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN, DETAILS AND INSTALLATION OF TEMPORARY EARTH RETENTION AND EXCAVATION SUPPORT (SHEET PILING, SOLDIER PILES AND LAGGING OR OTHER APPROVED SYSTEM) TO PROTECT EXISTING STRUCTURES FOUNDATIONS AND UTILITIES TO REMAIN. EXCAVATION SUPPORT SYSTEMS SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER, REGISTERED IN THE STATE OF MAINE. CONTRACTOR SHALL FURNISH, INSTALL MONITOR AND MAINTAIN EXCAVATION SUPPORT SYSTEMS CAPABLE OF SUPPORTING EXCAVATION SIDEWALKS AND OF RESISTING SOIL AND HYDROSTATIC PRESSURE AND SUPERIMPOSED CONSTRUCTION LOADS.

10. MECHANICAL PIPING IS SHOWN AT LOCATION REQUIRED FOR UTILITY COORDINATION. REFER TO MECHANICAL PLANS AND SPECIFICATION. THE CONTRACTOR SHALL PROVIDE SHOP DRAWINGS OF THE MECHANICAL PIPING SYSTEM AS IN THE PROJECT SPECIFICATIONS.

11. THIS PLAN SHOWS PROPOSED SITE LIGHTING FIXTURES. CONTRACTOR IS RESPONSIBLE FOR FURNISHING AND INSTALLING CONCRETE LIGHT POLE BASES AND ALL FIXTURES, CONDUIT AND WIRING, EXCEPT FOR BUILDING WALL MOUNTED FIXTURES. SEE ELECTRICAL PLANS BY OTHERS FOR SITE LIGHTING CONDUIT AND WIRING. SEE DETAIL 6/C601 FOR TYPICAL CONCRETE LIGHT POLE BASE. CONTRACTOR TO CONFIRM BASE DIMENSIONS AND DETAILS WITH ARCHITECTURAL PLANS BY OTHERS.

MARK	ISSUE DATE	DESCRIPTION
RFI 223	12/11/07	RFI NUMBER 223 – PACKAGE H
BUL 11	05/14/07	BULLETIN NUMBER 11
BUL 08	02/14/06	BULLETIN NUMBER 08 – PACKAGE C
BUL 07	11/18/05	BULLETIN NUMBER 07 – PACKAGE C
BUL 04	11/01/05	BULLETIN NUMBER 04 – PACKAGE C
BUL 03	10/21/05	BULLETIN NUMBER 03 – PACKAGE C
BUL 02	08/09/05	BULLETIN NUMBER 02 – PACKAGE C
BUL 01	07/14/05	BULLETIN NUMBER 01 – PACKAGE C

Issue Log

Key Plan

TRO
ARCHITECTURE
PLANNING
ENGINEERING
INTERIOR DESIGN
The Ritchie Organization
80 Bridge Street
Newton, MA 02458-1134
617-969-9400

Maine Medical Center

Pkg C - Site Utitlities

Portland, Maine MMC Project No. 21846

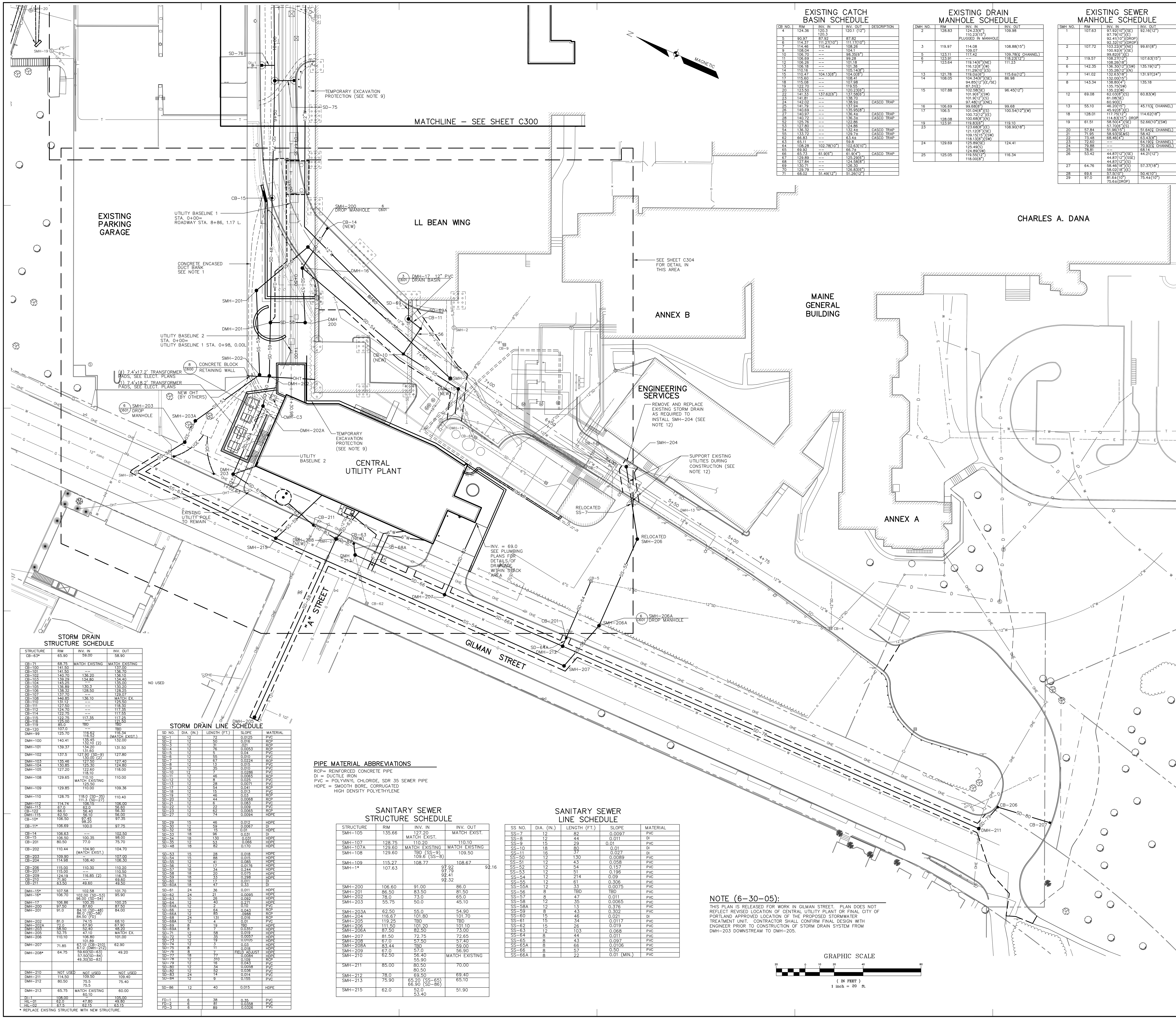
Drawing Title

UTILITY PLAN

GRAPHIC SCALE
(IN FEET)
1 inch = 20 ft.

Commission No.	4677	Date Issued	08/31/04
Scale	1"=20'	Sheet Number	PKG-C
Drawn By	MAL		C300
Approved By	DLR		
Filename	01046U		

Copyright © 2004 The Ritchie Organization



EXISTING CATCH BASIN SCHEDULE

CB NO.	RIM	INV. IN	INV. OUT	DESCRIPTION
4	124.36	120.3 120.3	120.1 (12")	
5	90.97	87.92	87.82	
6	114.37	111.27(10")	111.17(10")	
7	114.46	110.4±	108.26	
9	108.04	--	104.1	
10	106.70	--	98.35(6")	
11	106.69	--	99.28	
12	106.26	--	101.18	
13	106.18	--	101.38	
14	110.16	--	105.14(8")	
15	110.47	104.13(8")	104.0(8")	
17	115.60	--	108.41	
18	115.08	--	107.98	
19	122.70	--	119.55	
20	123.50	--	120.23(6")	
22	141.33	137.62(6")	137.58(6")	
23	141.81	--	138.70	
24	142.02	--	138.9±	CASCO TRAP
25	141.79	--	137.94	
26	140.69	--	135.95(8")	
27	140.97	--	136.4±	CASCO TRAP
28	140.72	--	136.3±	CASCO TRAP
52	125.76	--	122.86	
53	127.80	--	124.86	
54	136.32	--	132.4±	CASCO TRAP
55	133.72	--	129.7±	CASCO TRAP
62	66.83	--	63.4±	CASCO TRAP
63	65.11	--	59.8	
64	108.28	102.78(10")	102.63(10")	
65	69.92	--	66.7±	
66	65.73	61.9(6")	61.9(4")	CASCO TRAP
67	129.89	--	125.29(6")	
68	127.84	--	124.58(8")	
69	130.71	--	126.30	
70	129.79	--	126.83(6")	
71	68.02	51.49(12")	51.26(12")	

EXISTING DRAIN MANHOLE SCHEDULE

DMH NO.	RIM	INV. IN	INV. OUT
2	128.83	124.23(6") 110.23(15") PLUGGED IN MANHOLE	109.98
3	119.97	114.08 109.07	108.88(15")
5	123.11	117.42	109.78(℄ CHANNEL)
6	123.91	--	118.23(12")
7	123.64	119.14(6")(NE) 116.12(8")(W) 111.29(10")(S)	111.23
13	121.78	119.0±(6")	115.6±(12")
14	108.05	104.34(6")(SE) 94.85(12")(E/SE) 87.31(E)	86.98
15	107.88	102.58(SE) 101.9(6")(SW) 101.9(12")(S) 97.48(12")(NE)	96.45(12")
16	106.69	99.68(8")	99.68
17	106.5 128.08	101.04(8")(S) 100.72(12")(E) 100.68(8")(N)	100.54(12")(W)
19	123.91	119.83(6")	119.10
23		123.68(8")(E) 121.12(8")(SE) 109.15(15")(SW) 118.13(8")(SW)	108.90(18")
24	129.69	125.89(SE) 125.49(S) 124.89(SW)	124.41
25	125.05	119.55(12") 118.00(8")	116.34

EXISTING SEWER MANHOLE SCHEDULE

SMH NO.	RIM	INV. IN	INV. OUT
1	107.63	97.92(10")(SE) 97.79(10")(E) 92.41(10")(DROP) 92.32(10")(DROP)	92.16(12")
2	107.72	103.22(6")(NE) 100.92(6")(SE) 99.82(6")(E)	99.61(8")
3	119.57	108.27(12") 108.26(18")	107.63(15")
6	142.35	136.30(12")(SW) 135.26(12")(N)	135.19(12")
7	141.02	132.63(18") 132.00(15")	131.97(24")
8	143.34	138.80(4") 135.75(SW) 135.22(W)	135.18
12	69.08	62.03(8")(S) 61.08(SE) 60.90(E)	60.83(W)
13	55.10	46.20(15") 45.92(8")(E)	45.11(℄ CHANNEL)
18	128.01	117.75(12") 114.83(15") DROP	114.62(18")
19	61.51	58.50(4")(SE) 57.70(6")(S)	52.66(10")(SW)
20	57.84	51.96(15")	51.64(℄ CHANNEL)
21	71.95	58.93(SE&S)	58.42
22	73.48	68.46(4")	63.43(8")
23	72.60	--	64.19(℄ CHANNEL)
24	79.88	--	70.92(℄ CHANNEL)
25	78.81	--	68.14
26	53.42	44.87(12")(SE) 44.87(12")(SSE) 44.87(12")(S)	44.21(12")
27	64.76	58.46(18")(S) 58.02(18")(E)	57.37(18")
28	69.6	57.5(10")	50.4(10")
29	97.0	81.6±(10") 75.6±(DROP)	75.4±(10")

General Notes

1. SEE ELECTRICAL PLANS FOR CONDUIT SCHEDULES FOR ALL DUCT BANKS SHOWN WITH — — — SYMBOL. UNDERGROUND ELECTRICAL AND TELECOMMUNICATIONS CONDUITS SHOWN WITH ——UGE—— AND ——UGT—— SYMBOLS SHALL BE CONSTRUCTED AS CONCRETE ENCASED DUCT BANKS WITH THE NUMBER OF CONDUITS INDICATED ON THE SITE UTILITY PLANS. SEE ELECTRICAL PLANS FOR DETAILS OF DUCT BANK CONSTRUCTION.

2. ELECTRICAL AND TELECOMMUNICATIONS DUCT BANK DIMENSIONS INDICATED ON THESE PLANS ARE SHOWN FOR UTILITY COORDINATION. THE ELECTRICAL SITE CONTRACTOR MAY ALTER THE DUCT BANK ARRANGEMENT PROVIDED THAT REQUIRED CLEARANCES FROM ADJACENT UTILITIES ARE MAINTAINED. SEE ELECTRICAL PLANS AND SPECIFICATIONS FOR SHOP DRAWING REQUIREMENTS FOR ELECTRICAL SITE WORK.

3. REFER TO SHEET C302 FOR STORM DRAINAGE AND SANITARY SEWER SCHEDULES. REFER TO SHEETS C305 THROUGH C308 FOR UTILITY PROFILES AND STRUCTURE STATION/OFFSET LOCATIONS.

4. SEE NOTE 10.

5. THE CONSTRUCTION OF ALL WATER MAINS, SERVICES, HYDRANTS, VALVES AND OTHER APPURTENANCES SHALL BE IN CONFORMANCE WITH PORTLAND WATER DISTRICT STANDARDS.

6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL SITE UTILITY DEMOLITION AND CONSTRUCTION WITH THE PROJECT PHASING AND LOGISTICS PLANS (BY OTHERS).

7. THE CONTRACTOR IS RESPONSIBLE FOR SCHEDULING AND COORDINATING ANY INTERRUPTION UTILITY SERVICE TO THE HOSPITAL WITH THE OWNER AND UTILITY COMPANIES. THE CONTRACTOR SHALL PROVIDE A MINIMUM OF 72 HOURS NOTICE PRIOR TO UTILITY SERVICE INTERRUPTION.

8. THE SITE CONTRACTOR SHALL FIELD VERIFY THE EXISTING UTILITY SERVICE CONNECTIONS TO PROPERTIES ABUTTING THE PROJECT SITE. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING UTILITY SERVICE TO ABUTTING PROPERTIES BY TEMPORARY OR PERMANENT MEANS THROUGHOUT THE CONSTRUCTION PERIOD.

9. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN, DETAILS AND INSTALLATION OF TEMPORARY EARTH RETENTION AND EXCAVATION SUPPORT (SHEET PILING, SOLDIER PILES AND LAGGING OR OTHER APPROVED SYSTEM) TO PROTECT EXISTING STRUCTURES FOUNDATIONS AND UTILITIES TO REMAIN. EXCAVATION SUPPORT SYSTEMS SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER, REGISTERED IN THE STATE OF MAINE. CONTRACTOR SHALL FURNISH, INSTALL MONITOR AND MAINTAIN EXCAVATION SUPPORT SYSTEMS CAPABLE OF SUPPORTING EXCAVATION SIDEWALKS AND OF RESISTING SOIL AND HYDROSTATIC PRESSURE AND SUPERIMPOSED CONSTRUCTION LOADS.

10. MECHANICAL PIPING IS SHOWN AT LOCATION REQUIRED FOR UTILITY COORDINATION. REFER TO MECHANICAL PLANS AND SPECIFICATION. THE CONTRACTOR SHALL PROVIDE SHOP DRAWINGS OF THE MECHANICAL PIPING SYSTEM AS IN THE PROJECT SPECIFICATIONS.

11. THIS PLAN SHOWS PROPOSED SITE LIGHTING FIXTURES. CONTRACTOR IS RESPONSIBLE FOR FURNISHING AND INSTALLING CONCRETE LIGHT POLE BASES AND ALL FIXTURES, CONDUIT AND WIRING, EXCEPT FOR BUILDING WALL MOUNTED FIXTURES. SEE ELECTRICAL PLANS BY OTHERS FOR SITE LIGHTING CONDUIT AND WIRING. SEE DETAIL 16/C602 FOR TYPICAL CONCRETE LIGHT POLE BASE. CONTRACTOR TO CONFIRM BASE DIMENSIONS AND DETAILS WITH ARCHITECTURAL PLANS BY OTHERS.

12. CONSTRUCTION NOTES FOR RFI 18 SANITARY SEWER CONSTRUCTION AT SMH 204:

A. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN, DETAILS AND INSTALLATION OF TEMPORARY EARTH RETENTION AND EXCAVATION SUPPORT TO PROTECT EXISTING STRUCTURES AND TO SUPPORT EXISTING UTILITIES AFFECTED BY EXCAVATION AND SEWER CONSTRUCTION. CONTRACTOR SHALL SUPPORT AND PROTECT THE EXISTING HIGH PRESSURE GAS MAIN, 12" WATER MAIN AND OTHER AFFECTED UTILITIES. ANY TEMPORARY SHUT DOWN OF EXISTING UTILITIES REQUIRED FOR CONSTRUCTION SHALL BE SCHEDULED IN ADVANCE BY THE CONTRACTOR WITH THE AFFECTED UTILITY COMPANY AND THE MAINE MEDICAL CENTER.

B. CONTRACTOR MAY REMOVE THE EXISTING STORM DRAIN ALONG THE ACCESS DRIVE CURB LINE AS REQUIRED TO INSTALL SMH-204. CONTRACTOR SHALL REPLACE STORM DRAIN REMOVED NEW CORRUGATED HDPE DRAIN PIPE OF MATCHING DIAMETER.

C. THE NEW STORM DRAIN MAY BE CONNECTED TO THE EXISTING DRAIN LINE AND ALIGNED AROUND SMH-204 WITH ELBOWS, FITTINGS AND/OR AND FLEXIBLE ADAPTERS AS REQUIRED TO BY-PASS SMH-204.

STORM DRAIN STRUCTURE SCHEDULE

STRUCTURE	RIM	INV. IN	INV. OUT
CB-63*	65.90	59.00	58.90
CB-71	68.75	MATCH EXISTING	MATCH EXISTING
CB-100	141.50		137.00
CB-101	141.50	--	136.70
CB-102	140.70	136.20	136.10
CB-103	139.29	134.80	134.40
CB-104	145.25	--	135.00
CB-105	136.89	130.3	130.20
CB-106	138.32	128.50	128.25
CB-107	137.70	--	129.07
CB-108	~~140.85~~	136.10	MATCH EX.
CB-110	131.12	--	125.50
CB-111	127.50	--	118.30
CB-112	124.70	--	117.35
CB-114	122.75	--	117.55
CB-115	122.75	117.35	117.25
CB-116	125.00	--	121.50
CB-119	85.0	TBD	TBD
CB-120	107.0	--	TBD
DMH-99	125.70	116.62 116.52	116.34 (MATCH EXIST.)
DMH-100	140.41	135.45 132.10 (2)	132.00
DMH-101	139.37	134.20 131.60	131.50
DMH-102	137.5	127.90 (SD-9) 130.00 (2)	127.80
DMH-103	135.46	127.50	127.40
DMH-104	130.85	125.30	124.80
DMH-105	127.20	122.60 118.10	118.00
DMH-108	129.65	110.10 MATCH EXISTING 125.50	110.00
DMH-109	129.85	110.00	109.36
DMH-110	128.75	118.0 (SD-35) 111.3 (SD-27)	110.40
DMH-112	114.74	106.15	106.00
DMH-113	67.0	62.0	56.60
CB-122	66.0	56.40	56.30
DMH-115	62.50	56.10	56.00
CB-10*	106.50	97.45 98.20	97.35
CB-11*	106.69	100.0	97.75
CB-14	106.63	--	102.50
CB-15	106.50	100.35	98.00
CB-201	80.50	77.0	75.70
CB-202	110.44	104.90 (MATCH EXIST.)	104.70
CB-203	109.90	–	107.00
CB-204	114.98	106.40	106.30
CB-206	115.00	110.30	110.20
CB-207	115.00	--	110.50
CB-209	124.19	116.85 (2)	116.75
CB-210	71.90	--	69.60
CB-211	63.50	49.60	49.50
DMH-15*	107.58	102.58	101.70
DMH-16*	106.70	102.00 (SD-53) 96.00 (SD-54)	95.90
DMH-17	106.86	100.35	100.25
DMH-200	97.50	87.60	87.50
DMH-201	91.0	84.10 (SD-48) 86.0 (SD-58) 84.50 (FD)	84.00
DMH-202	81.0	74.15	68.10
DMH-202A	72.0	67.90	67.90
DMH-203	58.50	52.40	48.20
DMH-205	52.75	47.10	MATCH EX.
DMH-206	110.10	106.80 101.89	101.00
DMH-207	71.85	67.10 (CB-210) 67.0 (DMH-212)	62.90
DMH-208*	64.75	59.60(SD-63) 57.50(SD-84) 49.30(SD-83)	49.20
DMH-210	NOT USED	NOT USED	NOT USED
DMH-211	114.50	109.50	109.40
DMH-212	80.50	75.5 75.5	75.40
DMH-213	65.75	MATCH EXISTING 60.10	60.00
DI-1	108.00	–	105.00
HIL-01	62.0	47.80	49.80
HIL-02	67.5	62.15	63.15

* REPLACE EXISTING STRUCTURE WITH NEW STRUCTURE.

STORM DRAIN LINE SCHEDULE

SD NO.	DIA. (IN.)	LENGTH (FT.)	SLOPE	MATERIAL
SD-1	12	72	0.0125	PVC
SD-2	12	50	0.016	RCP
SD-3	12	31	.021	RCP
SD-4	12	76	0.0053	RCP
SD-5	12	5	0.04	PVC
SD-6	12	55	0.010	PVC
SD-7	12	67	0.0224	RCP
SD-8	12	13	0.015	PVC
SD-9	12	35	0.010	PVC
SD-10	12	7	0.0286	PVC
SD-11	12	46	0.0065	RCP
SD-12	12	8	0.025	PVC
SD-13	12	28	0.0071	PVC
SD-17	12	54	0.041	RCP
SD-18	12	15	0.013	PVC
SD-19	12	46	0.03	RCP
SD-20	12	44	0.0068	RCP
SD-21	12	6	0.083	PVC
SD-22	12	22	0.009	PVC
SD-23	12	62	0.0065	RCP
SD-27	12	74	0.0094	HDPE
SD-29	15	46	0.012	HDPE
SD-30	12	59	0.0067	DI
SD-32	18	15	0.01	HDPE
SD-33	18	96	0.031	DI
SD-34	18	130	0.031	HDPE
SD-35	12	53	0.066	HDPE
SD-48	18	82	0.170	HDPE
SD-53	15	28	0.018	HDPE
SD-54	15	88	0.015	HDPE
SD-55	12	41	0.085	HDPE
SD-56	12	17	0.0176	HDPE
SD-57	18	34	0.244	HDPE
SD-58	18	20	0.075	HDPE
SD-59	18	33	0.298	HDPE
SD-60	18	17	0.011	DI
SD-60A	18	47	0.33	DI
SD-61	24	36	0.011	HDPE
SD-62	24	21	0.0095	HDPE
SD-63	10	26	0.092	HDPE
SD-64	12	40	0.271	HDPE
SD-64A	12	2	0.10	PVC
SD-66	12	64	0.043	RCP
SD-66A	12	85	.0988	RCP
SD-68	24	131	0.016	RCP
SD-68A	12	4	0.01	PVC
SD-69	8	19	TBD	HDPE
SD-69A	8	7	0.0357	HDPE
SD-71	12	58	0.019	HDPE
SD-72	12	35	0.0057	HDPE
SD-73	12	19	0.0105	HDPE
SD-74	12	3	0.03	HDPE
SD-75	8	11	0.018	HDPE
SD-76	8	7	FIELD ADJUST	HDPE
SD-77	18	77	0.0084	HDPE
SD-78	12	310	0.109	RCP
SD-79	12	16	0.043	PVC
SD-80	12	34	0.0058	PVC
SD-82	12	52	0.036	PVC
SD-83	24	14	0.014	PVC
SD-84	12	9	0.155	PVC
SD-86	12	40	0.015	HDPE
FD-1	6	38	0.35	PVC
FD-2	6	81	0.0358	PVC
FD-3	6	89	0.0326	PVC

PIPE MATERIAL ABBREVIATIONS

RCP= REINFORCED CONCRETE PIPE
DI = DUCTILE IRON
PVC = POLYVINYL CHLORIDE, SDR 35 SEWER PIPE
HDPE = SMOOTH BORE, CORRUGATED HIGH DENSITY POLYETHYLENE

SANITARY SEWER STRUCTURE SCHEDULE

STRUCTURE	RIM	INV. IN	INV. OUT
SMH-105	135.66	127.20 MATCH EXIST.	MATCH EXIST.
SMH-107	128.75	110.20	110.10
SMH-107A	129.60	MATCH EXISTING	MATCH EXISTING
SMH-108	129.60	TBD (SS-9) 109.6 (SS-8)	109.50
SMH-109	115.27	108.77	108.67
SMH-1*	107.63	97.92 97.79 92.41 92.32	92.16
SMH-200	106.60	91.00	86.0
SMH-201	86.50	83.50	81.50
SMH-202	78.0	73.0	65.0
SMH-203	55.75	50.0	45.10
SMH-203A	62.50	55.0	54.90
SMH-204	116.67	101.80	101.70
SMH-205	119.25	TBD	TBD
SMH-206	111.50	101.20	101.10
SMH-206A	87.50	82.50	73.00
SMH-207	81.50	72.75	72.65
SMH-208	67.0	57.50	57.40
SMH-208A	83.44	TBD	59.00
SMH-209	67.0	57.0	56.90
SMH-210	62.50	56.40 55.90	MATCH EXISTING
SMH-211	85.00	80.50 80.50	70.00
SMH-212	78.0	69.50	69.40
SMH-213	75.90	65.20 (SS-65) 66.90 (SD-86)	65.10
SMH-215	62.0	52.0 53.40	51.90

SANITARY SEWER LINE SCHEDULE

SS NO.	DIA. (IN.)	LENGTH (FT.)	SLOPE	MATERIAL
SS-7	12	82	0.0097	PVC
SS-8	12	44	0.011	DI
SS-9	15	29	0.01	PVC
SS-10	18	80	0.01	DI
SS-11	16	37	0.027	DI
SS-50	12	130	0.0089	PVC
SS-51	12	43	0.058	PVC
SS-52	12	54	0.157	PVC
SS-53	12	51	0.196	PVC
SS-54	12	214	0.09	PVC
SS-55	12	61	0.306	PVC
SS-55A	12	33	0.0075	PVC
SS-56	8	TBD	TBD	PVC
SS-57	8	47	0.011	PVC
SS-58	12	35	0.0065	PVC
SS-58A	12	13	0.376	PVC
SS-59	8	43	0.302	PVC
SS-60	15	46	0.021	DI
SS-61	15	34	0.0117	PVC
SS-62	15	26	0.019	PVC
SS-63	12	103	0.068	PVC
SS-64	8	44	0.011	PVC
SS-65	8	43	0.097	PVC
SS-65A	8	66	0.0106	PVC
SS-66	8	57	0.50	PVC
SS-66A	8	22	0.01 (MIN.)	PVC

NOTE (6-30-05):

THIS PLAN IS RELEASED FOR WORK IN GILMAN STREET. PLAN DOES NOT REFLECT REVISED LOCATION OF CENTRAL UTILITY PLANT OR FINAL CITY OF PORTLAND APPROVED LOCATION OF THE PROPOSED STORMWATER TREATMENT UNIT. CONTRACTOR SHALL CONFIRM FINAL DESIGN WITH ENGINEER PRIOR TO CONSTRUCTION OF STORM DRAIN SYSTEM FROM DMH-203 DOWNSTREAM TO DMH-205.

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

MARK	ISSUE DATE	DESCRIPTION
BUL 11	05/14/07	BULLETIN NUMBER 11
BUL 09	03/31/06	BUL 09
BUL 08	02/14/06	BULLETIN NUMBER 08 - PACKAGE C
BUL 07	11/18/05	BULLETIN NUMBER 07 - PACKAGE C
BUL 03	10/21/05	BULLETIN NUMBER 03 - PACKAGE C
	10/05/05	PROGRESS SET
BUL 01	07/14/05	BULLETIN NUMBER 01 - PACKAGE C
	05/25/05	FINAL PLANS TO CITY

Issue Log



Key Plan

TRO
ARCHITECTURE
PLANNING
ENGINEERING
INTERIOR DESIGN
The Ritchie Organization
80 Bridge Street
Newton, MA 02458-1134
617-969-9400

Maine Medical Center

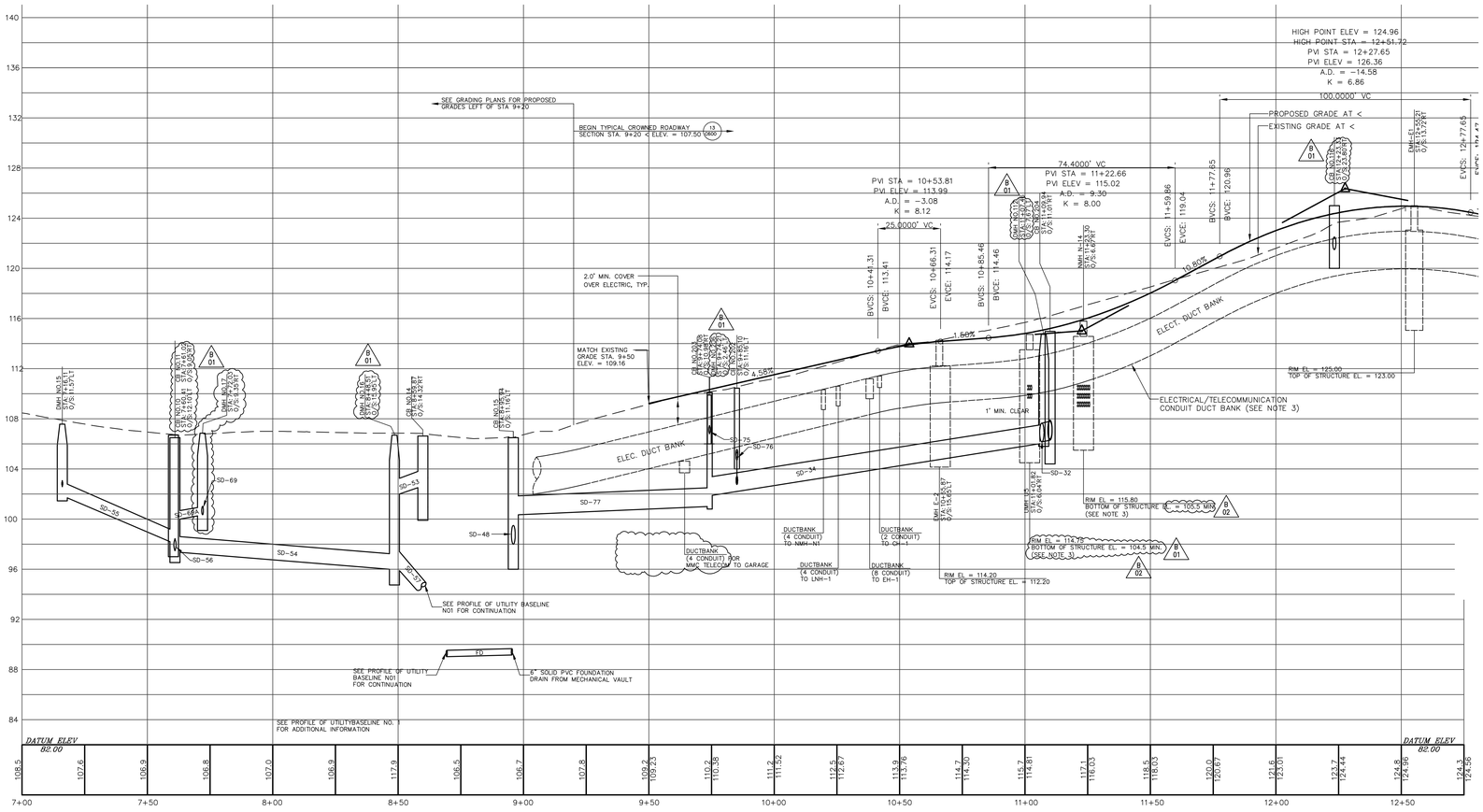
Pkg C - Site Utitlities
Portland, Maine MMC Project No. 21846

Drawing Title
UTILITY PLAN

0 10 20 40 80

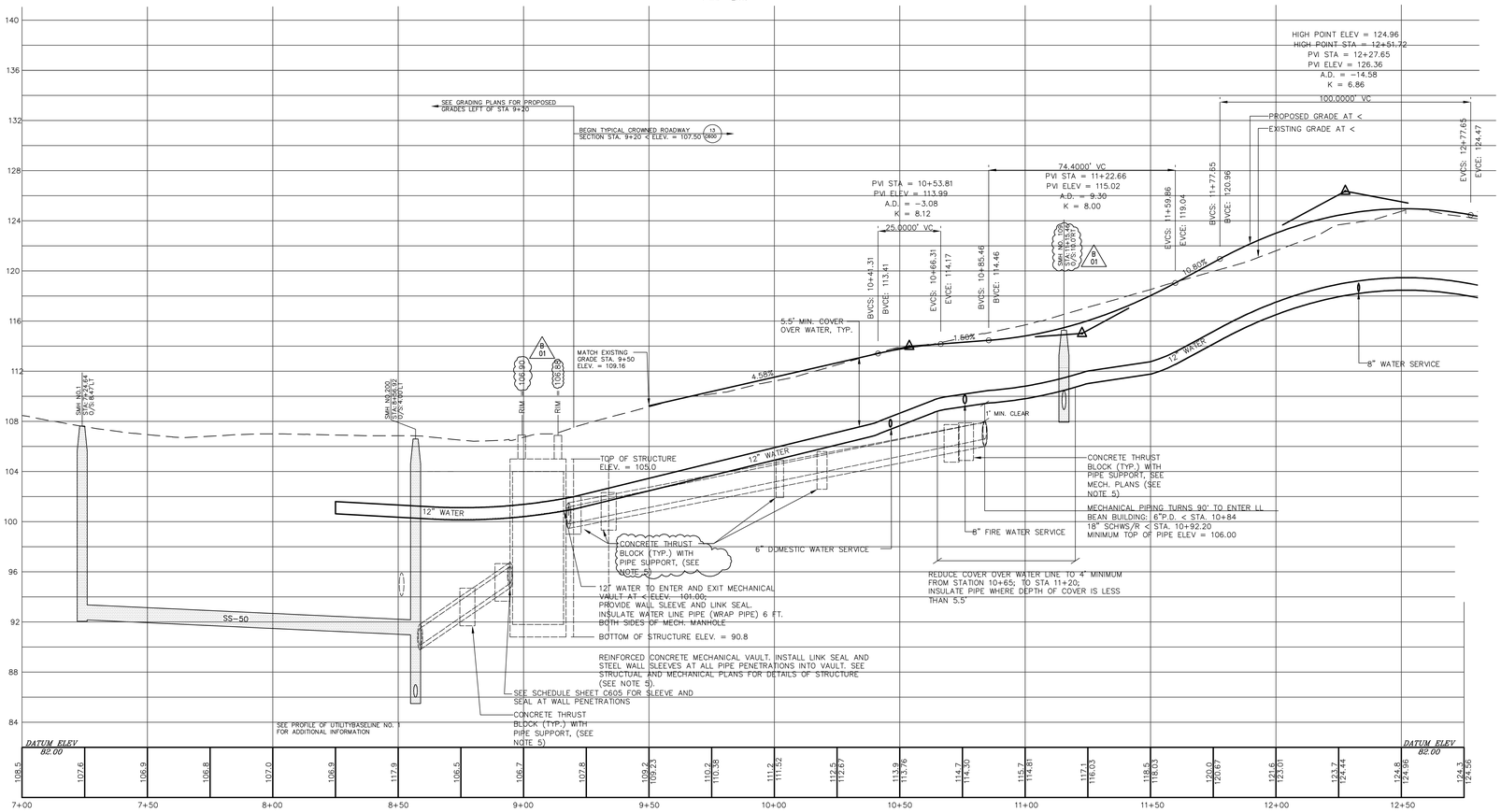
Commission No.	4677	Date Issued	08/31/04
Scale	1"=20'	Sheet Number	PKG-C
Drawn By	MAL		C302
Approved By	DLR		
Filename	01046U		

Copyright © 2004 The Ritchie Organization



PROFILE: STORM DRAIN, ELECTRICAL AND GAS PIPING (STA. 7+00 TO STA. 12+75)

SCALE: 1"=20' HORIZ.
1"=4' VERT.



PROFILE: SAN. SEWER, WATER AND MECHANICAL PIPING (STA. 7+00 TO STA. 12+75)

SCALE: 1"=20' HORIZ.
1"=4' VERT.

General Notes:

1. SEE SHEET C302 FOR DRAINAGE AND SANITARY SEWER SCHEDULES.
2. FOR CLARITY ONLY PROPOSED UTILITIES ARE SHOWN UNLESS OTHERWISE INDICATED. REFER TO EXISTING CONDITIONS AND SITE DEMOLITION PLANS.
3. ELECTRICAL/TELECOMMUNICATIONS CONDUIT DUCTBANK DIMENSIONS ARE SHOWN FOR UTILITY COORDINATION. THE CONTRACTOR MAY ALTER THE PROPOSED DUCT BANK ARRANGEMENT PROVIDED THAT REQUIRED CLEARANCES FROM ADJACENT UTILITIES ARE MAINTAINED. REFER TO ELECTRICAL PLANS AND SPECIFICATIONS FOR: DUCT BANK SCHEDULE, DETAILS OF DUCT BANK CONSTRUCTION, ELECTRICAL MANHOLE DETAILS AND SHOP DRAWING REQUIREMENTS FOR SITE ELECTRICAL WORK.
4. SEE STRUCTUAL PLANS FOR WALL PENETRATION REINFORCEMENT DETAILS SEE SHEET C605 FOR SHCEDULE OF WALL SLEEVE AND SEALS
5. MECHANICAL PIPING IS SHOWN TO ESTABLISH REQUIRED GRADES FOR UTILITY COORDINATION. THE CONTRACTOR SHALL PROVIDE SHOP DRAWINGS OF THE MECHANICAL PIPING SYSTEM AS REQUIRED IN THE PROJECT SPECIFICATIONS. LOCATION OF THRUST BLOCK AND MOMENT GUIDES ARE SHOW HERE FOR INFORMATION ONLY AND ARE SUBJECT TO CHANGE

MARK	ISSUE DATE	DESCRIPTION
BUL 03	10/21/05	BULLETIN NUMBER 03 – PACKAGE C
BUL 02	08/09/05	BULLETIN NUMBER 02 – PACKAGE C
BUL 01	07/14/05	BULLETIN NUMBER 01 – PACKAGE C
	05/25/05	FINAL PLANS TO CITY
PERMIT	09/16/04	PERMIT SET
BID	08/31/04	BID SET

Issue Log



Key Plan

TRO
Architecture
Planning
Engineering
Interior Design
The Ritchie Organization
90 Bridge Street
Newton, MA 02458-1134
617-969-9400

Maine Medical Center

Pkg C - Site Utitlities
Portland, Maine MMC Project No. 21846

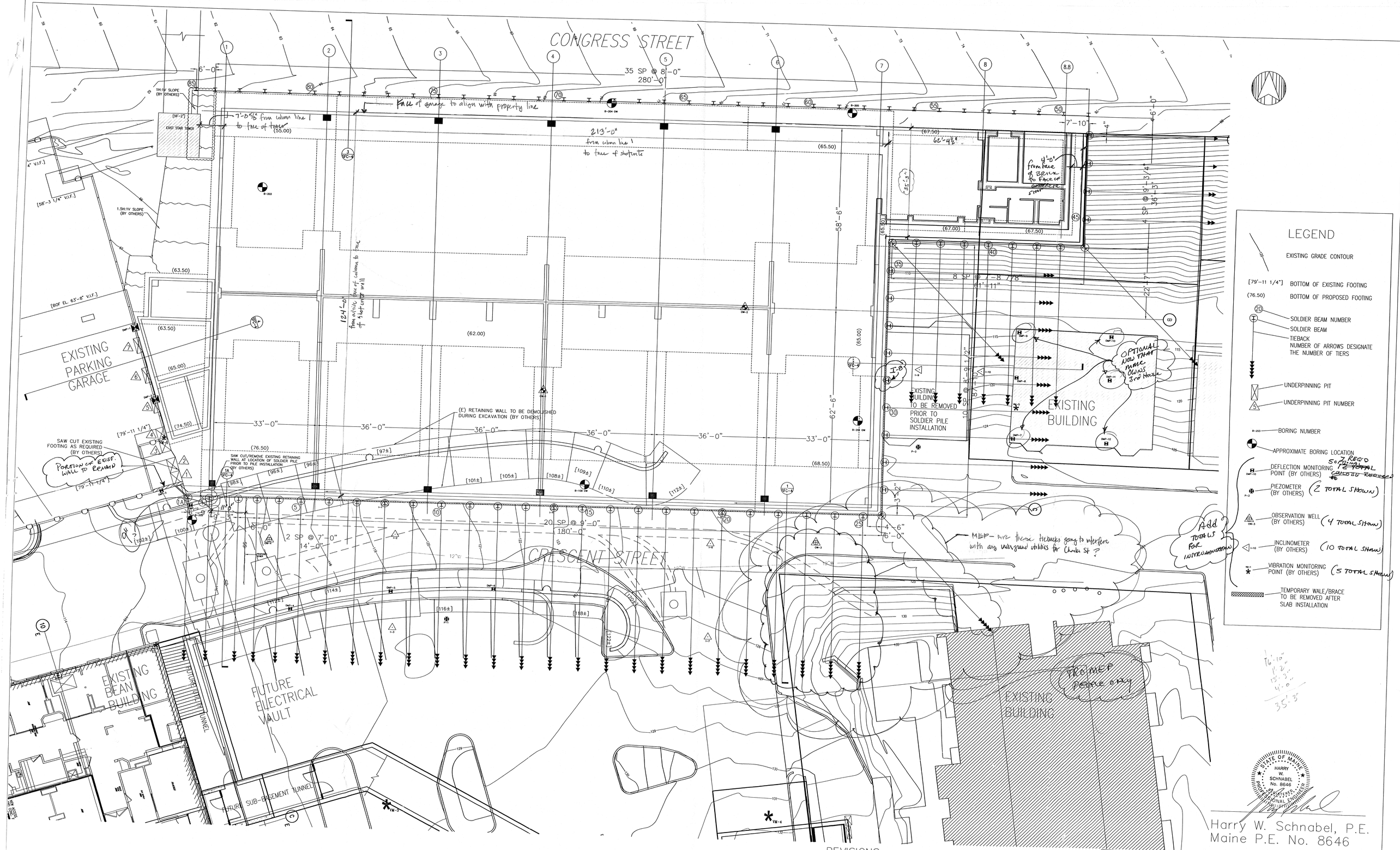
PROFILE: CRESCENT/WESCOTT/ CHARLES STREETS

Construction No.	4677	Date Issued	08/31/04
Scale	AS SHOWN	Sheet Number	PKG-C
Drawn By	MAL		C305
Approved By	DLR		
Project No.	01046U		

Copyright © 2004 The Ritchie Organization

ATTACHMENT 2

Garage Earth retention Plans



Harry W. Schnabel, P.E.
Maine P.E. No. 8646

See P20831 and E603 in Package F

REVISIONS

NO	DATE	DESCRIPTION
1	03/01/05	ENGINEER'S PEER REVIEW COMMENTS
2	05/05/05	ENGINEER'S FINAL PEER REVIEW
3	07/25/05	REVISED SHORING LOCATION

THESE DRAWINGS ARE THE PROPERTY OF SCHNABEL FOUNDATION COMPANY AND MAY NOT BE USED, COPIED, OR ALTERED, WITHOUT WRITTEN PERMISSION FROM SCHNABEL FOUNDATION COMPANY

COPYRIGHT 2004 SCHNABEL FOUNDATION COMPANY

Schnabel Foundation Company
Engineers and Contractors
200 Turnpike Road
Southborough, Massachusetts
Atlanta • Boston • Denver • Chicago
Houston • Los Angeles • Philadelphia

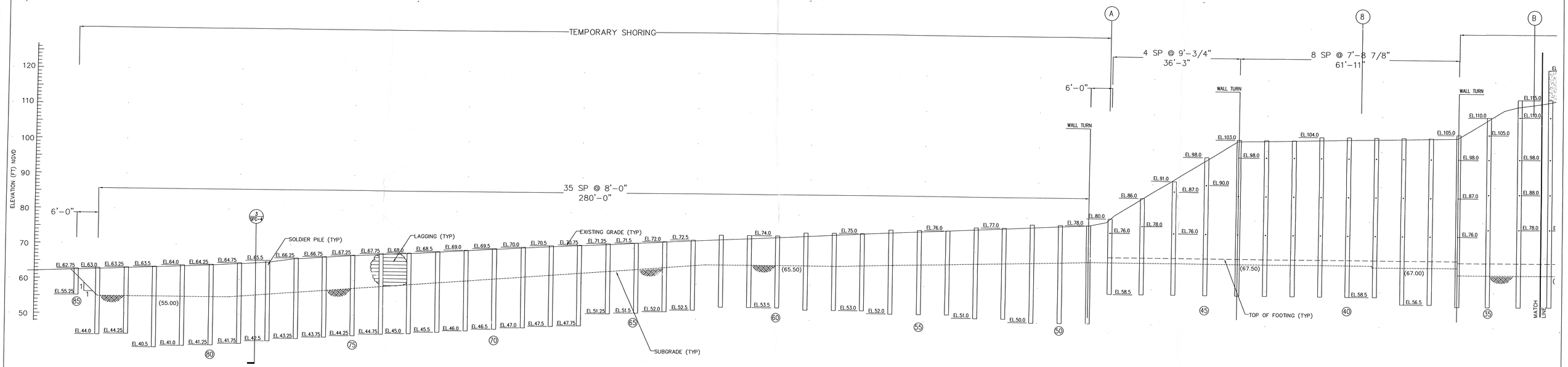
EXCAVATION SUPPORT PLAN

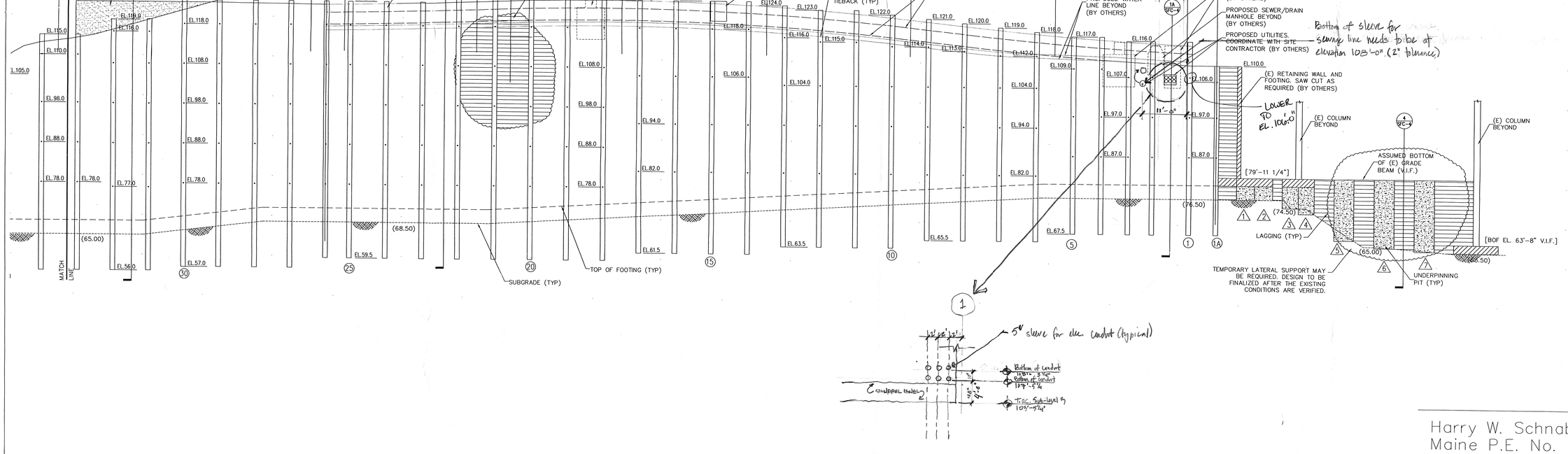
MAINE MEDICAL CENTER PARKING GARAGE

Portland, Maine

Date: 12/10/04 | Job Number: 06-3634

Scale: 3/32"=1'-0" | Drawing No: SFC-2





THESE DRAWINGS ARE THE PROPERTY OF SCHNABEL FOUNDATION COMPANY AND MAY NOT BE USED, COPIED, OR ALTERED, WITHOUT WRITTEN PERMISSION FROM SCHNABEL FOUNDATION COMPANY

COPYRIGHT 2004 SCHNABEL FOUNDATION COMPANY

STATE OF MAINE — HARRY W. SCHNABEL No. 8646 — REGISTERED PROFESSIONAL ENGINEER

Harry W. Schnabel, P.E.
Maine P.E. No. 8646

REVISIONS

NO	DATE	DESCRIPTION
1	03/01/05	ENGINEER'S PEER REVIEW COMMENTS
2	05/05/05	ENGINEER'S FINAL PEER REVIEW
3	07/25/05	REVISED SHORING LOCATION

Schnabel Foundation Company
Engineers and Contractors
200 Turnpike Road
Southborough, Massachusetts
Atlanta • Boston • Denver • Chicago
Houston • Los Angeles • Philadelphia

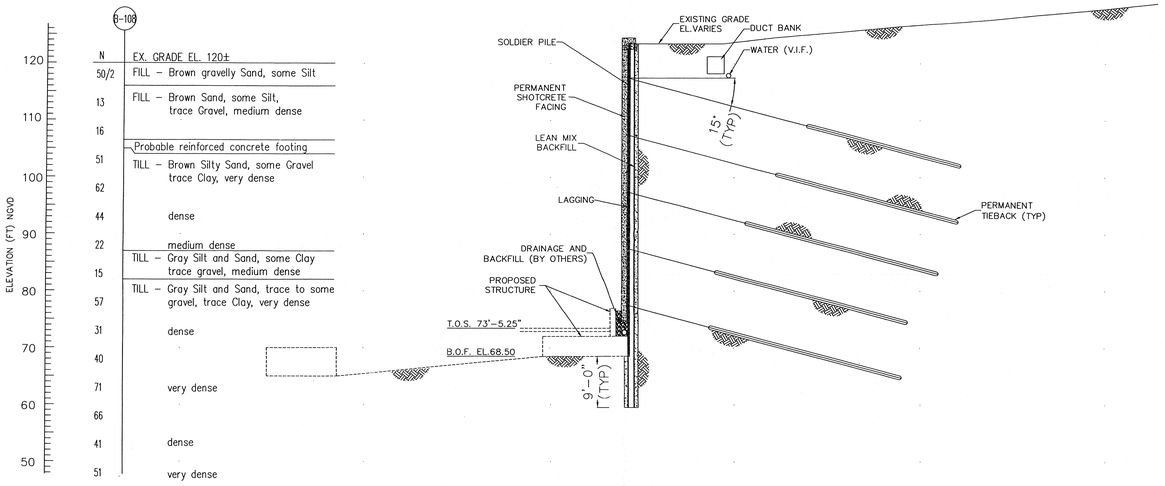
EXCAVATION SUPPORT ELEVATIONS

MAINE MEDICAL CENTER PARKING GARAGE

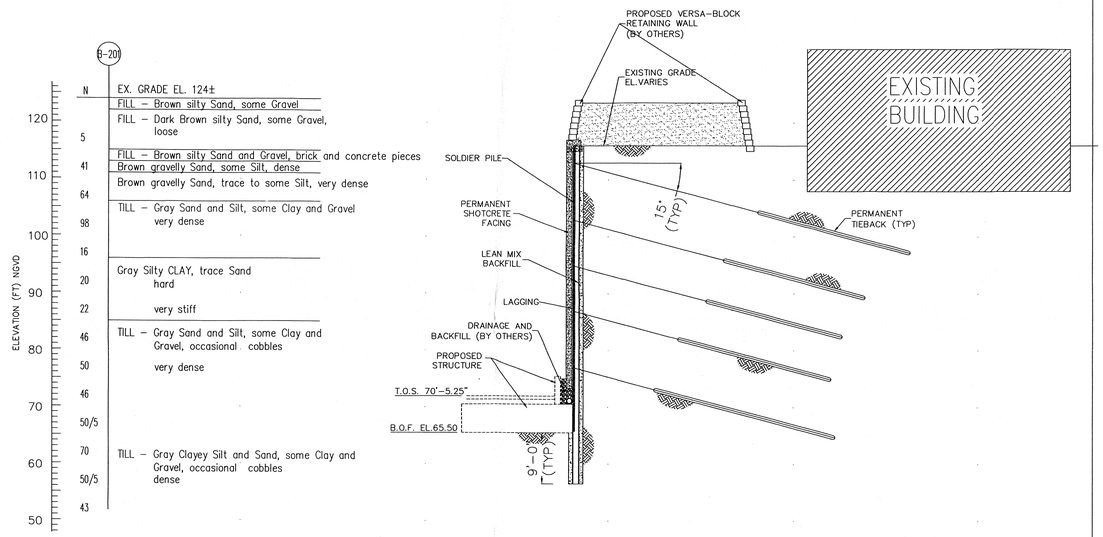
Portland, Maine

Date: 12/10/04 | Job Number: 06-3634

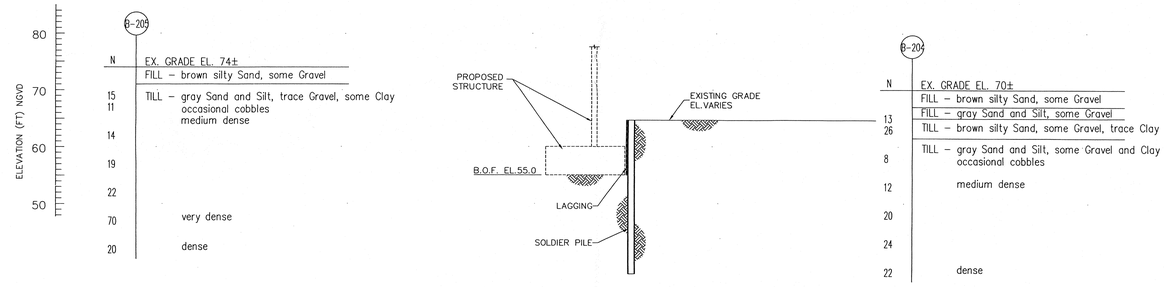
Scale: 3/32"=1'-0" | Drawing No: SFC-3



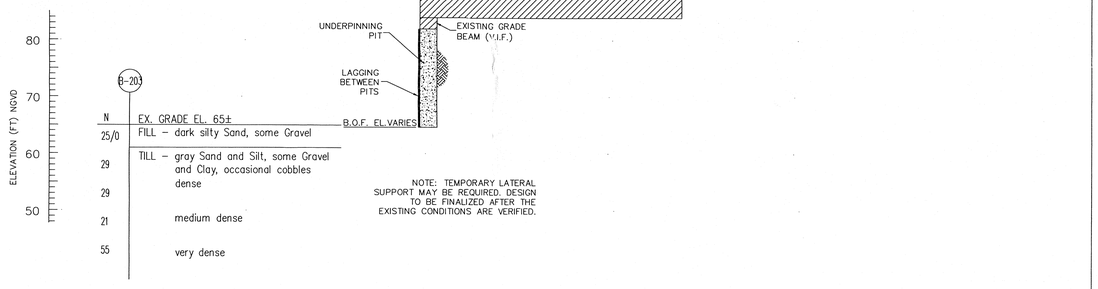
SECTION 1



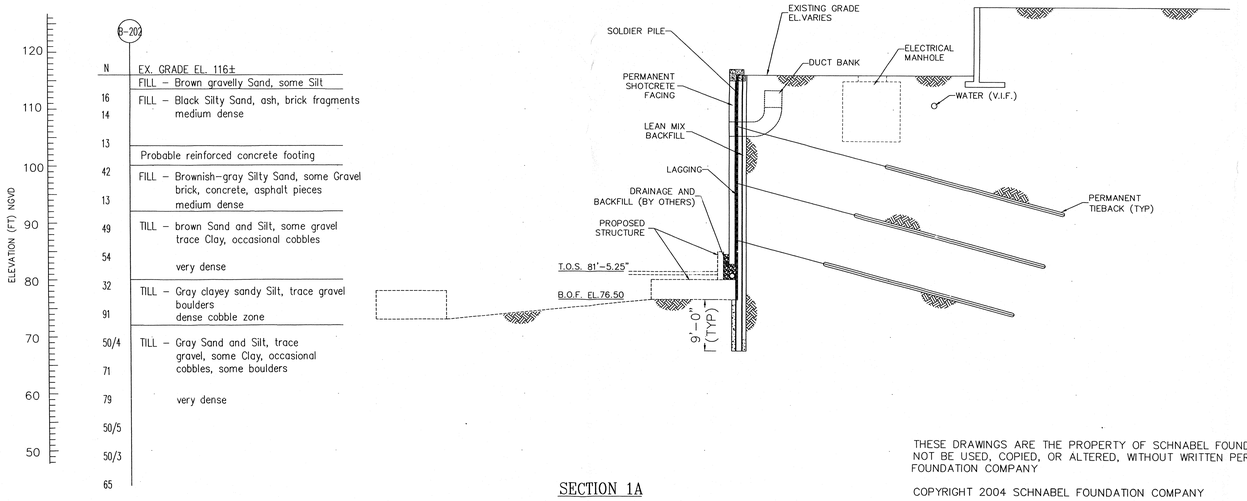
SECTION 2



SECTION 3



SECTION 4



SECTION 1A

THESE DRAWINGS ARE THE PROPERTY OF SCHNABEL FOUNDATION COMPANY AND MAY NOT BE USED, COPIED, OR ALTERED, WITHOUT WRITTEN PERMISSION FROM SCHNABEL FOUNDATION COMPANY

COPYRIGHT 2004 SCHNABEL FOUNDATION COMPANY

STATE OF MAINE
HARRY W. SCHNABEL
No. 8646
REGISTERED PROFESSIONAL ENGINEER

Harry W. Schnabel, P.E.
Maine P.E. No. 8646

REVISIONS

NO	DATE	DESCRIPTION
1	03/01/05	ENGINEER'S PEER REVIEW COMMENTS
2	05/05/05	ENGINEER'S FINAL PEER REVIEW
3	07/25/05	REVISED SHORING LOCATION

EXCAVATION SUPPORT SECTIONS

MAINE MEDICAL CENTER PARKING GARAGE

Portland, Maine

Schnabel Foundation Company
Engineers and Contractors
200 Turnpike Road
Southborough, Massachusetts
Atlanta • Boston • Denver • Chicago
Houston • Los Angeles • Philadelphia

Date: 12/10/04 | Job Number: 06-3634

Scale: 3/32"=1'-0" | Drawing No: SFC-4

Portland Water District

FROM SEBAGO LAKE TO CASCO BAY

March 21, 2018

Will Conway
Sebago Technics
75 John Roberts Road Suite 4A
South Portland, ME 04106

Re: Maine Medical Center, PO
Ability to Serve with PWD Water

Dear Mr. Conway:

The Portland Water District has received your request for an Ability to Serve Determination for the noted site submitted on November 3, 2017. Based on the information provided, we can confirm that the District will be able to serve the proposed project as further described in this letter. **Please note that this letter constitutes approval of the water system as currently designed. Any changes affecting the approved water system will require further review and approval by PWD.**

Conditions of Service

The following conditions of service apply:

- The existing 12-inch service at this site may be used by the proposed development as long as the project development team determines that they will provide adequate flow and pressure for the proposed use. If any of the existing services will no longer be used as a result of the development then they must be retired per PWD standards.

- Connections to the water infrastructure are on private property are at the owner/developer's risk to ensure adequate pressure and flow can be provided. The connection on private property must be made after the PWD meter.

Prior to construction, the owner or contractor will need to make an appointment to complete a service application form and pay all necessary fees. The appointment shall be requested through MEANS@pwd.org or by calling 207-774-5961 ext. 3199. Please allow (3) business days to process the service application paperwork. PWD will guide the applicant through the new development process during the appointment.

Existing Site Service

According to District records, the project site does currently have existing water service. A 12-inch diameter domestic service line provides water service to the site. Please refer to the "Conditions of Service" section of this letter for requirements related to the use of this service.

Water System Characteristics

According to District records, there is an 12-inch diameter ductile iron water main in Crescent Street and a public fire hydrant located approximately 10 feet from the site. The most recent static pressure reading was 54 psi on January 23, 2018.

Public Fire Protection

The installation of new public hydrants to be accepted into the District water system will most likely not be required. It is your responsibility to contact the Portland Fire Department to ensure that this project is adequately served by existing and/or proposed hydrants.

Domestic Water Needs

The data noted above indicates there should be adequate pressure and volume of water to serve the domestic water needs of your proposed project. Based on the high water pressure in this area, we recommend that you consider the installation of pressure reducing devices that comply with state plumbing codes.

Private Fire Protection Water Needs

You have indicated that this project will require water service to provide private fire protection to the site. Please note that the District does not guarantee any quantity of water or pressure through a fire protection service. Please share these results with your sprinkler system designer so that they can design the fire protection system to best fit the noted conditions. If the data is out of date or insufficient for their needs, please contact MEANS to request a hydrant flow test and we will work with you to get more complete data.

Should you disagree with this determination, you may request a review by the District's Internal Review Team. Your request for review must be in writing and state the reason for your disagreement with the determination. The request must be sent to MEANS@PWD.org or mailed to 225 Douglass Street, Portland Maine, 04104 c/o MEANS. The Internal Review Team will undertake review as requested within 2 weeks of receipt of a request for review.

If the District can be of further assistance in this matter, please let us know.

Sincerely,
Portland Water District



Robert A. Bartels, P.E.
Senior Project Engineer

Maine Medical Center
MaineHealth

PERKINS+WILL

MMC East Tower Expansion – City Design Comments

To:	Al Green
From:	Jeffrey Keilman
Date:	March 19, 2018
Subject:	**MMC East Tower Expansion – City Design Comments – Workshop 2 Response**
Attachments	MMC IDP Design Review_prelim2

The purpose of this memorandum is to document and provide design team responses to the IOZ Design Review as provided by City of Portland Planning and Urban Development Department and follow up meetings and conversations with City of Portland Planning Staff. Comments were developed, collected, and summarized by Caitlin Cameron, Urban Designer and distributed on 03.06.2018. Subsequent meetings with City Staff occurred on 03.07.2018 and 03.152018.

IDP Design Guidelines

Guideline No. 1
New buildings will be designed to contribute to the campus vision and organizational goals identified in the Master Facility Plan and the Transportation Plan, and best practice design standards for healthcare.

MMC's design of the East Tower and Visitor Garage meets this requirement because the design of both the East Tower and Visitor Garage relate to the campus vision as demonstrated in the aerial and long views. The design also further organizes the architectural character of the campus while adhering to best practice standards for healthcare as dictated by designing from the inside out.

Comment No. 1

East Tower: The stated MMC vision includes integrating inside and outside – achieved here through the internal circulation and window size and placement, as well as a "50 year palette" that selects materials based on cues from nature to create timeless environment. This vision includes Sky, Sea, and Land as concepts for material/color selection. The white metal panel and large curtain wall system intend to evoke the "sky" – light, recessive, neutral.

Planning Board commented that they like the concept of bringing outside in but found that the outward expression of that idea was not strong enough.

March 19, 2018
Re: **MMC East Tower Expansion – City Design Comments – Workshop 2 Response**

MMC & Design Team Response

The design as presented contributes to the campus vision and further organizes the campus by linking the current East Tower design of white metal panel, with the proposed addition, further expanding the precedent developed in the Surgery 2 Addition where best practice design standards and interior planning are expressed within the exterior architecture.

City Staff asked if opportunities existed to further express the inside to outside at the corner moments during the 03.07.2018 meeting. The design team noted these studies were undertaken and were not feasible due to existing conditions, construction logistics, existing patient disruption, and programmatic impact it would cause for the helipad on the roof. The design team with MMC also believed the stronger outward expression would be in conflict with the existing East Tower and surround context, in particular, the residential scale.

Visitor Garage: The architectural character remains consistent by continuing the existing material palette and expression. In the case of Congress Street, the City's priority is the building interface with the street – keeping the urban street wall edge, activating the ground floor, providing a sense of scale and enclosure for the pedestrian.

MMC & Design Team Response

The design team has met the City's priority by improving the building's interface with the street – the urban street wall edge will be maintained, the ground floor will be activated by occupying the retail space, and there will be a sense of scale and enclosure for the pedestrian.

Guideline No. 2
The overall composition and experience of the campus will be considered for cohesive identity from approaches along Congress Street and I-295.

This guideline is met because the design of both the East Tower and Visitor Garage was envisioned throughout the design process with long views and campus identity in mind, including both current and future goals. This is demonstrated in the provided renderings that link the buildings on the hill with those along Congress Street in approach and scale.

East Tower: *Planning Board generally found that the proposal is cohesive with the future vision as presented in the 2/27 materials.*

MMC & Design Team Response

The design team with input from MMC chose to represent the future development of clinical structures on the campus within a similar design language. In that case, the East Tower Addition takes its cues from the other more recent projects, specifically Surgery 2 Addition on the Bean building and the proposed future development of the Congress Street project. This approach is highlighted within the campus aerial.

City Staff had no further comments or responses in regards to design approach and composition in regards to East Tower expansion within context of current and future expansion of Bramhall campus during the (2) subsequent meetings. An additional long view of Bramhall Campus was developed after the 03.15.2018

meeting as requested by the City Staff to further reinforce East Tower connections with previous Bean 2 Addition and future Congress Street development.

Visitor Garage: The architectural character remains largely the same as the existing condition and is found to be consistent with the established character. The building addition increases the visibility of the campus from those long views.

MMC & Design Team Response

Long views were developed for further review per recommendation of City Staff. The expansion of the Visitor Garage does increase its height but the ability to see the expansion is limited from long views. However, per comments as heard from the Planning Board and reiterated by City Staff, options were developed on how to modify the existing screening elements on the garage. Upon review, an option that extends the screening above the last spandrel panel was desirable by all that reviewed for it broke the horizontal plane of the roof line and created a layering between the screens, fall protection, and precast concrete panels.

Guideline No. 3
Building entrances will be oriented toward, located adjacent to, accessible from, a sidewalk in a public right-of-way to create a pedestrian-oriented environment.

This guideline is met as both East Tower and Visitor Garage are overbuild conditions and do not create any new building entrances. In addition, the Visitor Garage retail space will be activated as part of the overall projects.

East Tower: Not applicable – entrances remain the same with existing ground floor.

Visitor Garage: The existing building has two retail entrances facing Congress Street to be activated with the construction field office. There are also steps with a door to access the circulation tower for the garage. From Crescent Street, there is a pedestrian path and doorway to the garage

see CPTED comment below.

Guideline No. 4
Building designs will relate to and be compatible with the existing, or – in areas of change –planned character of residential and commercial neighbors. Design elements and characteristics to consider include:

- Building placement and relationship to the street
- Overall massing and scale
- Roof forms
- Proportion, directional expression, and composition of facades
- Rhythm of solids to voids
- Rhythm and proportion of openings
- Rhythm of entries and projections
- Relationship of materials, texture, and color

This guideline is met because the design of both the East Tower and Visitor Garage utilize existing materials, scale, form, detail, and will be compatible with adjacent construction. This is demonstrated though the rooflines, simplicity of details to adjacent construction, and materiality. Proportions, façade expressions, and composition was developed to relate to the planned character for the Bramhall Campus, as it is an area of change. This is seen in the proportion

of fenestration, expression and composition of facades with modern materials to relate to Surgery 2 expansion and future Congress Street building.

East Tower: *Some board members were concerned that the white panel will not achieve the desired effect of changing with the sky and natural light and therefore would not actually be recessive. There was additional comment on the white panel – members felt that the existing white elements in the campus design are not strong enough to take as inspiration for the new additions; why is a color that is a minor detail becoming a major design decision? White feels stark and while it may fit into a campus vision, there is concern about how this approach meets the guidelines regarding neighborhood integration/context. Finally, the board commented on the composition and proportion of the addition and commented that the design is lacking a base/middle/top which is a well-established approached to building design and façade composition.*

MMC & Design Team Response

The white metal panel is the correct response based upon current context, highlighted on the existing top floor of the East Tower, the entire Emergency Department, and the Surgery 2 Addition on Bean which all are critical elements in the long views of the campus. The use of white is also atmospheric as the addition will change in its appearance throughout the ever changing weather in Maine. Anyone who has looked at the current addition will notice the extreme differences in appearance from a sunny day to an overcast day. The use of color and details were also intentional to relate to the clinical programs within the building but to be sensitive to the more diverse mix of materials present within the neighborhoods, primarily the mix of brick and clapboard siding.

The relationships of materials and texture are further refined within the detailing of the windows. Great care was put into how to detail the project as indicated by the submitted details. Knife edge details will further emphasize shadows and provide visual interest in relation to the atmospheric conditions and play with sunlight.

City Staff commented that overall, the rooflines, massing and general approach were acceptable within the (2) follow up meetings.

Visitor Garage: The massing, roof forms, rhythms, and material relationships remain mostly unchanged from the existing conditions.

MMC & Design Team Response

In response to comments as heard from the Planning Board and reiterated by City Staff, options were developed on how to modify the existing screening elements on the garage. Upon review, an option that extends the screening above the last spandrel panel was desirable by all that reviewed for it broke the horizontal plane of the roof line and created a layering between the screens, fall protection, and precast concrete panels.

Guideline No. 5

Façade materials of buildings will be of high quality, and contribute to an attractive public realm.

This guideline is met because the design of both the East Tower and Visitor Garage utilize high quality, high performance systems that provide attractive aesthetic design but also high performing environmental design adding to an attractive public realm.

East Tower: The applicant indicated the material choices are limited by construction constraints as well as the existing material palette. The proposal is simple white metal panel intended to visually blend with the existing white materials as well as provide a light, recessive quality to the increase in mass and height. Visual interest will be provided by material pattern, fenestration, and shadow lines created by angled windows on each façade.

Planning Board continues to be concerned about the choice of white panel – concern is not for the quality but for the contribution to the public realm and appropriateness, especially as it relates to the long views and neighboring context.

MMC & Design Team Response

Façade materials are of high quality and more importantly appropriate performance from a thermal performance to align with the clinical programs within the East Tower Addition. Attention to detailing and current and future context were critical in the material selections. Additional long views have been developed that in conjunction with the campus aerial speak to the new vision and image for the MMC Bramhall Campus. Subsequently, constructability and programmatic drivers were real constraints in selection of materials. In particular, the capacity of the existing structure severely limited façade material choices without significant reinforcement. In addition, limiting disruption to existing patient care areas and the required mechanical systems within the existing penthouse was also critical.

Visitor Garage: The proposal maintains the existing material palette of brick, concrete, and metal screen. *Planning Board is concerned about the prominence of the garage on Congress Street and the lack of visual interest and contribution to the public realm by using the existing material palette.*

MMC & Design Team Response

Long views were developed for further review per recommendation of City Staff. The expansion of the Visitor Garage does increase its height but the ability to see the expansion is limited from long views. However, per comments as heard from the Planning Board and reiterated by City Staff, options were developed on how to modify the existing screening elements on the garage. Upon review, an option that extends the screening above the last spandrel panel was desirable by all that reviewed for it broke the horizontal plane of the roofline and created a layering between the screens, fall protection, and precast concrete panels.

Guideline No. 6

The design process will consider long views of new buildings including roofs and associated structures to minimize visual impacts and provide visual interest. Rooftop appurtenances will be either screened from view or integrated into the building design, and will not be visible from adjacent streets, Western Promenade, or the Congress Street approach (helipad excluded).

This guideline is met because the design of both the East Tower and Visitor Garage are demonstrated with perspectives indicating the long views and visual impacts achieved in unifying the campus. Rooftop screening is utilized in the limited locations where appurtenances would have potentially been visible from street and/or long views.

East Tower: *Planning Board commented that the simple roof form does not have enough visual interest for the long views.*

MMC & Design Team Response

Design team developed long views to indicate the visual interest created by the East Tower addition, in particular with the current Surgery 2 Addition and future Congress Street Development. The roofline of the East Tower Addition was kept simple to not compete with the current composition of various rooflines on campus. The helipad was also a key driver in maintaining a simple approach are various create series safety concerns.

City Staff commented that overall, the rooflines, massing and general approach were acceptable within the (2) follow up meetings.

Visitor Garage: *Congress Street is a major street and this building will become even more visible from long views as it grows in height. The garage proposal lacks visual interest from long views – articulation and visual interest are important for the garage in the forefront of the campus. Planning Board asks that the applicant re-evaluate the approach. Although staff and Planning Board acknowledge it is not realistic to completely redo the siding of the garage, consider options like adding decoration to give three-dimensional life to the façade, laser cut metal panel. The roofline is an element where visual interest could be added - Planning Board commented that the simple roof form does not have enough visual interest for the long views.*

MMC & Design Team Response

Long views were developed for further review per recommendation of City Staff. The expansion of the Visitor Garage does increase its height but the ability to see the expansion is limited from long views. However, per comments as heard from the Planning Board and reiterated by City Staff, options were developed on how to modify the existing screening elements on the garage. Upon review, an option that extends the screening above the last spandrel panel was desirable by all that reviewed for it broke the horizontal plane of the roofline and created a layering between the screens, fall protection, and precast concrete panels.

Guideline No. 7
Vibrant, contributing and sustainable active ground floors will be provided to add activity and a sense of place to the priority node identified in the City's Comprehensive Plan.

This guideline is not applicable to the East Tower as it is an overbuild of an existing structure.

The Visitor Garage design meets this guideline because of the existing retail space on Congress St. Turner will occupy the retail space for the duration of the project.

East Tower: Not applicable

Visitor Garage: This has been addressed through the fit out and activation of the construction field office.

Guideline No. 8
In areas where the occurrence of limited blank facades along public right-of-ways are unavoidable due to changes in topography or building use requirements, the following strategies will be used to mitigate visual impact:

- providing elements of visual interest along any black walls facing public streets, and,

- working with the City of Portland to ensure adequate lighting of public sidewalks to create a safe pedestrian experience.

This guideline is met because the Existing street lighting is preserved and the Congress Street is further activated with the fit out of the existing retail space.

East Tower: Not applicable

Visitor Garage: Met - See comment 7. above.

Guideline No. 9

Any parking structure within the IOZ will:

- screen views of cars from the public rights-of-way
- provide elements of architectural interest on upper floors to contribute positively to long views and gateway approaches
- for garage structures within 20' of the public right-of-way, meet street activation intent according to street type

This guideline is met because the proposed Visitor Garage design with the vertical panels that screen the views of cars, provide architectural interest, and meets the street activation intent with the retail space.

East Tower: Not applicable

Visitor Garage: Screening requirement is met - Screening methods will follow the established existing design – solid wall with metal mesh railing with a trellis accent – this current condition successfully screens cars/headlights from Congress and Crescent streets.

Planning Board commented on the lack of visual interest on upper floors and feel this guideline is not met – roofline, façade material, fall protection/screen design are possible architectural elements that can address this guideline. Street activation guideline is met, see comments 7. above.

MMC & Design Team Response

Long views were developed for further review per recommendation of City Staff. The expansion of the Visitor Garage does increase its height but the ability to see the expansion is limited from long views. However, per comments as heard from the Planning Board and reiterated by City Staff, options were developed on how to modify the existing screening elements on the garage. Upon review, an option that extends the screening above the last spandrel panel was desirable by all that reviewed for it broke the horizontal plane of the roofline and created a layering between the screens, fall protection, and precast concrete panels.

Building Relationship to Public Street

1. Urban Main Street (Congress Street)

MMC buildings abutting Congress St will be designed to:

- Provide urban-levels of density
- Create an urban street wall that provides a sense of enclosure to the public realm
- Have their primary orientation towards Congress Street
- Activate the public sidewalk with building entrances, lobbies, etc.
- To the extent possible, given programmatic needs, provide visual interest and ensure
- pedestrian safety with views into and out of the building along the public sidewalk
- To the extent possible, given programmatic needs, provide space for community oriented
- uses such as services or retail that can be shared between MMC users,
- neighbors, and the broader Portland community
- Support the existence of neighborhood amenities such as restaurants and other
- retail uses providing services to local residents and employees both during the day
- and evening hours.

In addition to the guidelines listed above, buildings that have frontage on Congress Street and that include parking components will activate portions of or place liner buildings along the ground floor facing Congress Street.

East Tower: Not applicable

Visitor Garage: The building addition maintains the urban street wall already established. The existing building's primary orientation is towards Congress Street. Entrances are not proposed to be changed – there are several existing entrances oriented to Congress Street. For activation, see comment 7. above.

Crime Prevention Through Environmental Design (CPTED)

MMC will incorporate the following design strategies that have been demonstrated to deter crime:

- Providing a clean and aesthetically pleasing campus environment that is designed
- with vandal-resistant materials
- Providing clear and properly-sized signs in safe locations to ensure safe wayfinding
- Ensuring that paths from transit stops, bike storage areas, and parking areas to
- main pedestrian entrances are well-lit, with clear sight lines
- Designing street-level elevations to minimize potential hideouts
- To the extent possible, given clinical program demands, providing views in and out of
- building ground floors populated by users to serve as "eyes on the street"
- Generating foot traffic on public sidewalks with pedestrian entrances

East Tower: No changes to the site lighting or ground level building interface are proposed.

Visitor Garage: Please indicate any changes to the site lighting or ground level building interface. Staff would like to better understand how the CPTED guidelines are being met for the pedestrian entrance off Crescent Street to the garage – lighting is critical here.

MMC & Design Team Response

Per neighborhood expansion meetings including MMC and City Staff, it was agreed to lock the existing public stair tower that is accessible from Congress St. This is in an attempt to address potential hangouts that were creating problems for the neighborhood. This modification in conjunction with the activation of the retail space providing eyes on the street will improve the experience dramatically. During the

03.07.2018 meeting, City Staff stated they would review the Crescent Street lighting for the garage and provide comments. This upper level is the Emergency Department drop-off and is active 24 hours a day.

Mitigating Impacts Through Design

Minimizing Shadow Impacts - Shadow impacts were evaluated as part of the IDP process. Both projects increase building height and will inevitably have some shadow impact – the garage height will increase the shadow cast across Congress Street but, as the applicant has argued, shadows on Congress Street are unavoidable due to the terrain, orientation, and street position. Refer to Plan 13 for shadow analysis of the approved IDP building heights – a couple of residential buildings are impacted in the winter by the increased height.

Context-Sensitive Lighting Design – More information is requested regarding site lighting for both projects.

MMC & Design Team Response

All proposed relocated and new fixtures were provided as part of the submission indicating current conditions shall be maintained. The East Tower is not modifying the ground plane and will remain as currently designed. The Visitor Garage will maintain the pedestrian street lights along Congress Street as requested during the original permitting process but improve the street experience with the renovations to the retail space.

Mitigating Wind Impact – No information was provided to evaluate this item.

Preserving and Enhancing Viewsheds – The building expansions do not impact Western Promenade viewsheds. Each of these expansions will increase the visibility of the campus from multiple long views.

Regulatory Framework

1. Mixed Uses: . . . *healthcare facility development fronting onto Congress Street and St John Street shall activate the public realm, to the extent able, with uses such as service and retail/restaurant, landscaping, active building entrances, pocket parks, etc., on the ground or other publicly accessible level, consistent with the design intent contained in the approved IDP. . . .*

East Tower: Not applicable

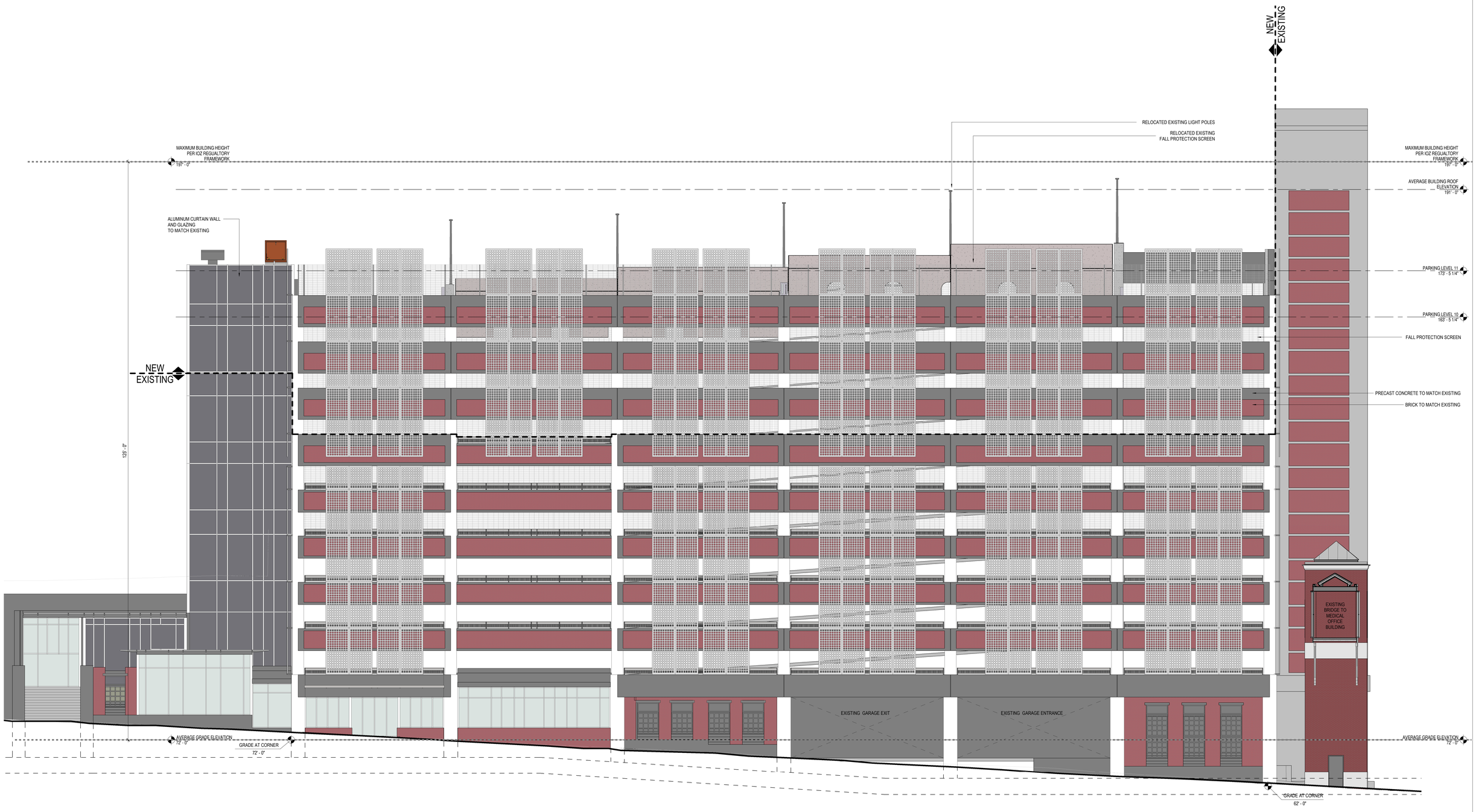
Visitor Garage: Met - See comment 7. above.

East Tower & Visitor Garage Overbuild As Seen from I-295
Date: 03/23/2018



East Tower & Visitor Garage Overbuild As Seen from I-295
Date: 03/23/2018



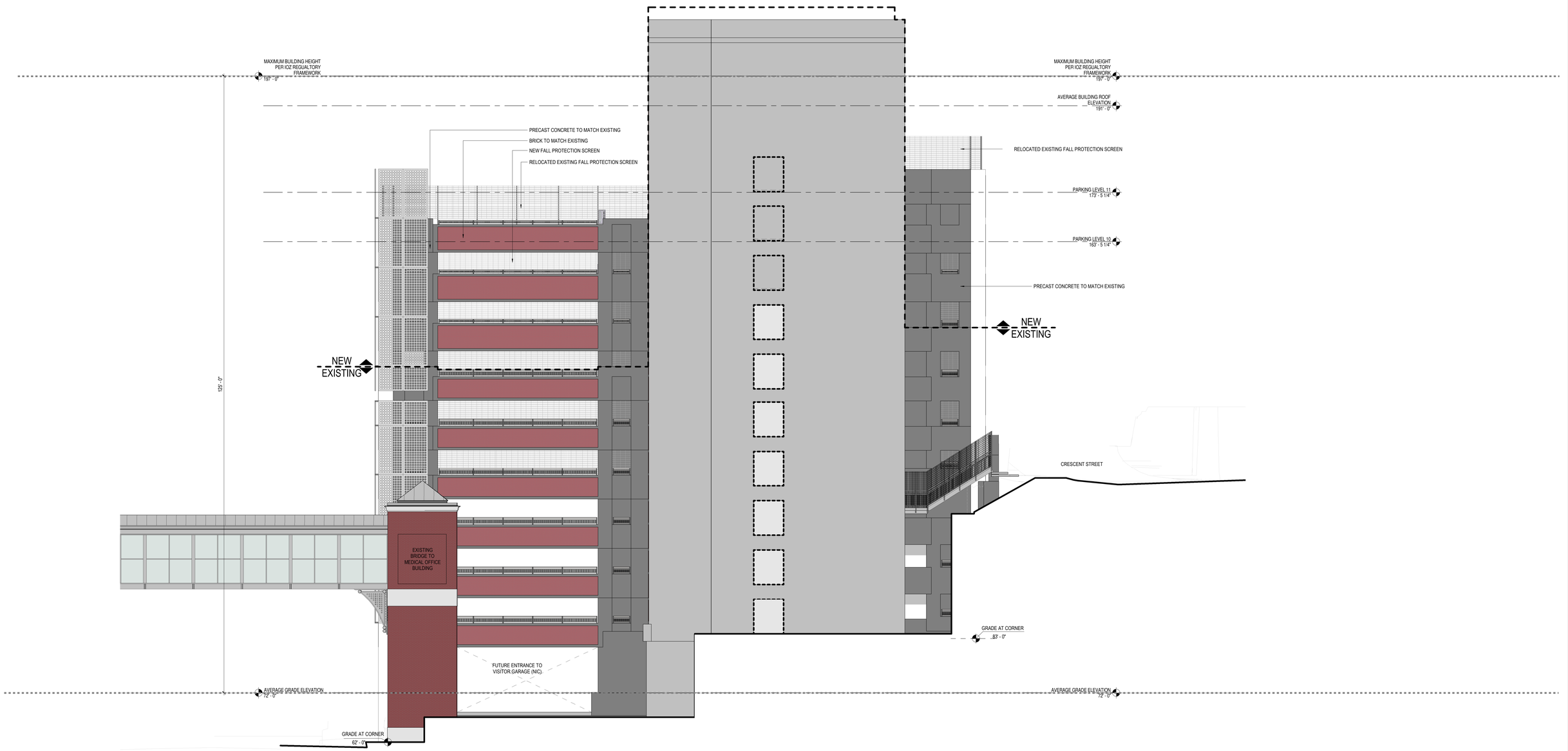


Visitor Garage Expansion

NORTH ELEVATION

PERKINS+WILL

2018.03.22 DOCUMENT SET

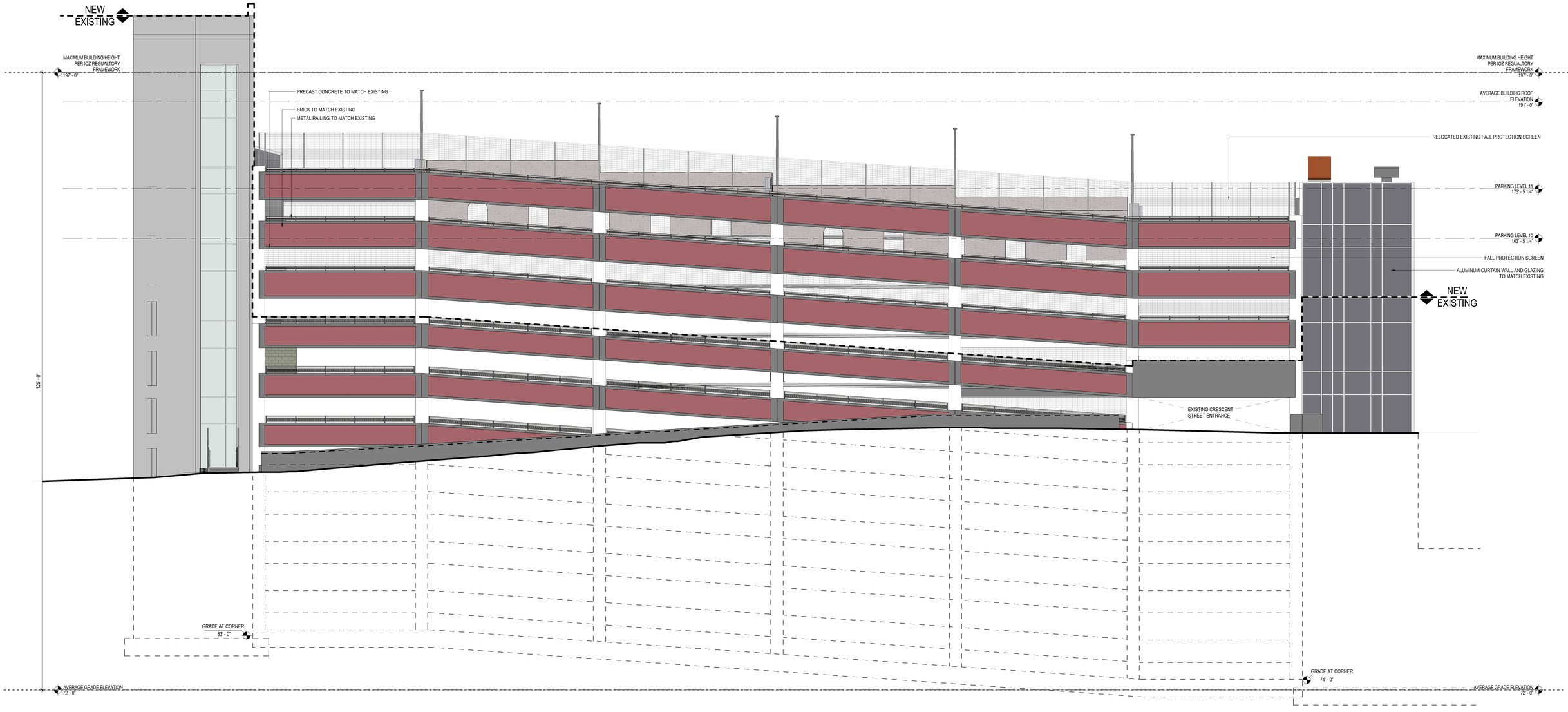


Visitor Garage Expansion

WEST ELEVATION

PERKINS+WILL

2018.03.22 DOCUMENT SET

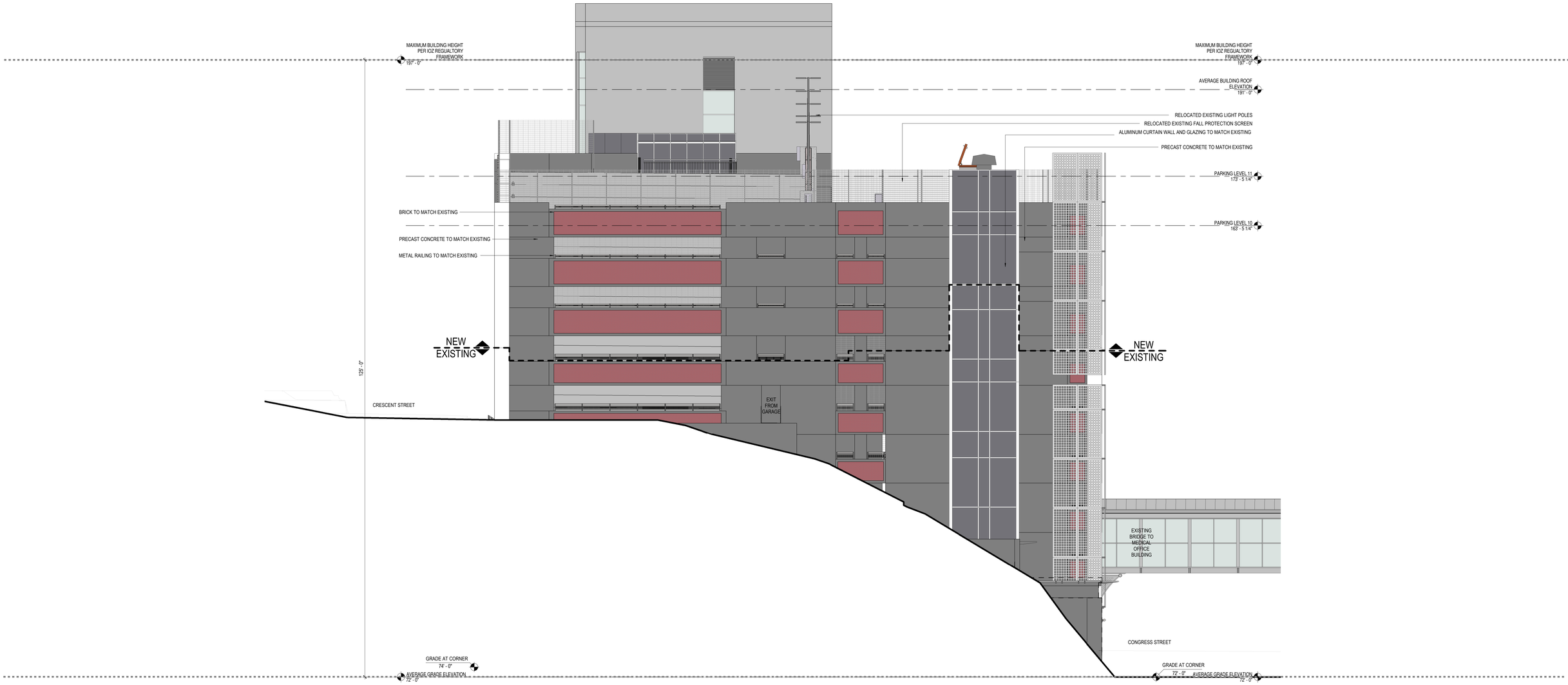


Visitor Garage Expansion

SOUTH ELEVATION

PERKINS+WILL

2018.03.22 DOCUMENT SET



Visitor Garage Expansion

EAST ELEVATION

PERKINS+WILL

2018.03.22 DOCUMENT SET

Maine Medical Center
MaineHealth

March 21, 2018

Jean Fraser, City Planner
City of Portland
Planning Department
389 Congress Street
Portland, ME, 04101

RE: Maine Medical Center Submissions to the Federal Aviation Administration for the East Tower and Visitor Garage Overbuilds

Dear Ms. Fraser,

The purpose of this memo is to provide the information requested for the submissions to the Federal Aviation Administration (FAA) for MMC's East Tower & Visitor Garage overbuild project. There are four submissions to the FAA:

1. Review of height of the East Tower
2. Review of height of the Visitor Garage
3. Review of height of the crane needed for the East Tower overbuild
4. Review of height of the crane needed for the Visitor Garage overbuild

BUILDING SUBMISSIONS

The information submitted to the FAA about the height of the East Tower and Visitor Garage is to receive a determination regarding Obstruction Evaluation / Airport Airspace Analysis (OE/AAA). Structures built within a certain radius of an active runway are required to go through this process (as described below). Given that both the visitor's garage expansion and East Tower expansion do not go above the highest existing built structure on campus, these determinations are expected to be approved.

Requirement as described by the FAA:

> In accordance with 14 CFR Part 77.9, if you propose any of the following types of construction or alteration, you must file notice with the FAA at least 45 days prior to beginning construction:
>
> - any construction or alteration that exceeds an imaginary surface extending outward and upward at any of the following slopes:
>   - 100 to 1 for a horizontal distance of 20,000 ft. from the nearest point of the nearest runway of each airport described in 14 CFR 77.9(d) with its longest runway more than 3,200 ft. in actual length, excluding heliports
>   - 50 to 1 for a horizontal distance of 10,000 ft. from the nearest point of the nearest runway of each airport described in 14 CFR 77.9(d) with its longest runway no more than 3,200 ft. in actual length, excluding heliports

    - 25 to 1 for a horizontal distance of 5,000 ft. from the nearest point of the nearest landing and takeoff area of each heliport described in 14 CFR 77.9(d);
- OR any highway, railroad, waterway or other traverse way for mobile objects, of a height which, if adjusted upward as defined in 14 CFR 77.9(c) would exceed a standard of 14 CFR 77.9 (a) or (b);
- OR your structure will emit frequencies, and does not meet the conditions of the FAA Co-location Policy;
- OR your proposed structure will be in proximity to a navigation facility and may impact the assurance of navigation signal reception;
- OR any construction or alteration exceeding 200 feet above ground level, regardless of location;
- OR any construction or alteration located on an airport described in 14 CFR 77.9(d);
- OR filing has been requested by the FAA.

Applications for FAA review of both the East Tower and Visitor Garage have been submitted. The FAA has assigned the following Aeronautical Study Numbers:

- East Tower – 2018-ANE-2082-OE
- Visitor Garage – 2018-ANE-1813-OE

REVIEW OF THE CRANES

The information submitted to the FAA about the height of the cranes required to complete the East Tower & Visitor Garage overbuilds is to receive a determination regarding Obstruction Evaluation / Airport Airspace Analysis (OE/AAA). The same standard listed above applies.

Applications for FAA review of both the cranes have been submitted. The FAA has assigned the following Aeronautical Study Numbers:

- 2018-ANE-1649-OE
- 2018-ANE-1922-OE

The determinations for each of the cranes are expected to be approved.

Thank you,



Alexander M. Green
Director of Planning

Cc: Mark Harris, Senior Vice President of Planning, MaineHealth
Dennis Morelli, Manager Facilities Development, Maine Medical Center
Will Conway, Sebago Technics

Maine Medical Center
MaineHealth

Planning Board Workshop

Maine Medical Center Site Plan Application #1
East Tower & Visitor Garage Overbuilds

February 27, 2018

PATIENT CENTERED · RESPECT · INTEGRITY · EXCELLENCE · OWNERSHIP · INNOVATION

Contents

- Introduction
- What We Did Last Time
- Planning Board Questions That We Will Address
- Design
- Sewer / Stormwater
- Detours

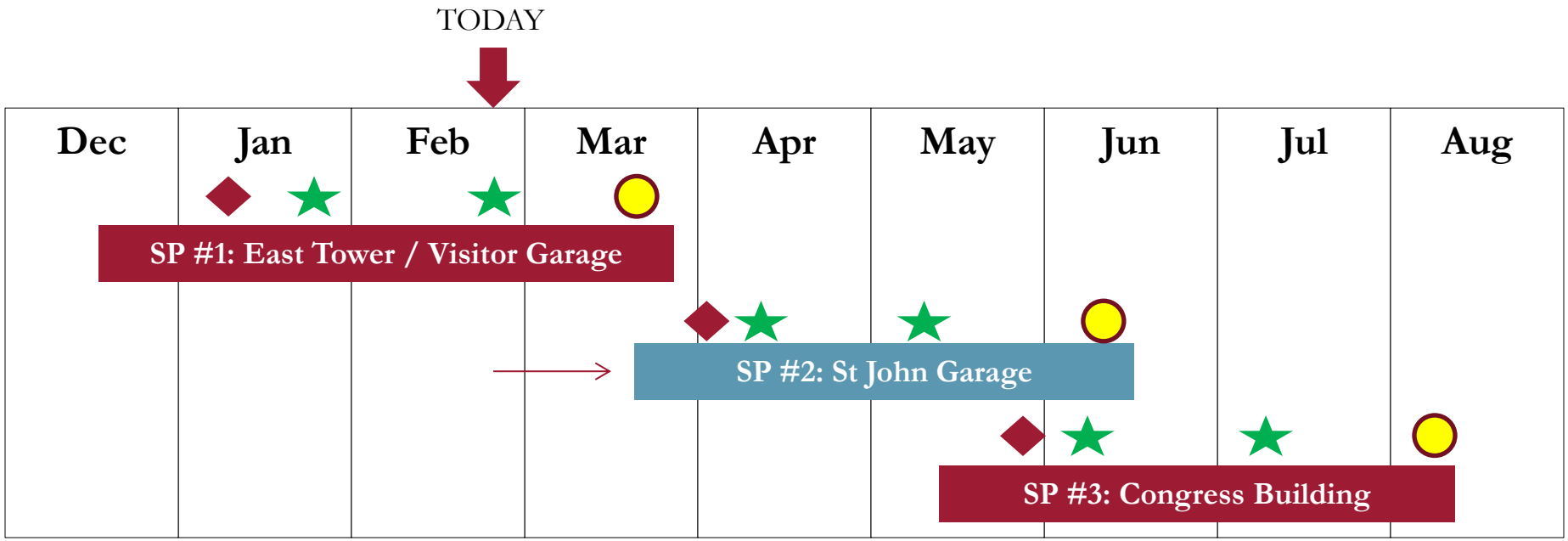


What We Did Last Time

- Site Plan Timeline
- Construction Timeline
- Design Review
- Existing Retail Space
- Helipad Review
- Construction Management Plan Review



Site Plan Timeline



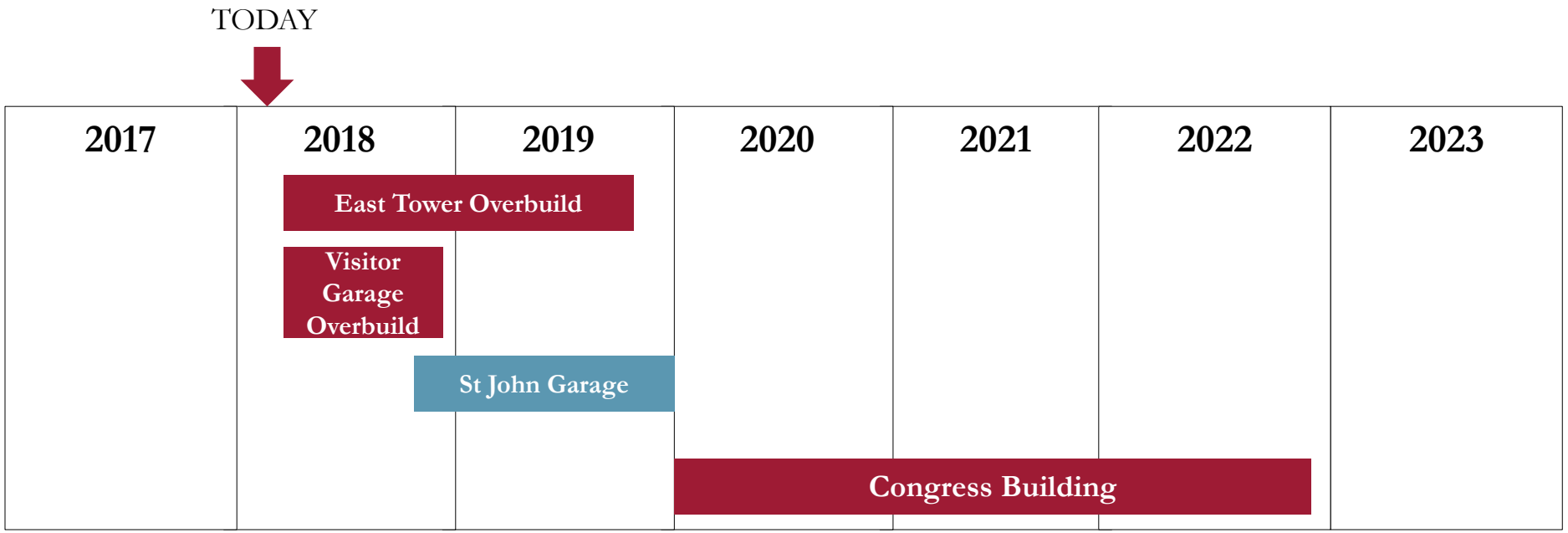
Legend

- Planning Board Workshop
- Planning Board Hearing
- Neighborhood Meeting

Act with kindness and compassion. | Be an active listener. | Be a role model. | Set high standards. | Take responsibility. | Embrace change.

Maine Medical Center
MaineHealth

Construction Schedule Overview



Legend

- Planning Board Workshop
- Planning Board Hearing
- Neighborhood Meeting

Act with kindness and compassion.

Be an active listener.

Be a role model.

Set high standards.

Take responsibility.

Embrace change.

Maine Medical Center
MaineHealth

Helipad Review

- Anticipated increase in helicopter traffic
- Two pads = reduced helicopter shuttling from the jetport
- Additional route to deal with high-wind situations
- No change in sound profile overall
- Helipads are for emergency patient care ONLY

Construction Management Plan Review

Turner Construction Background

- Healthcare construction
- Parking structure overbuild work
- Clinical overbuild
- Congested city environments

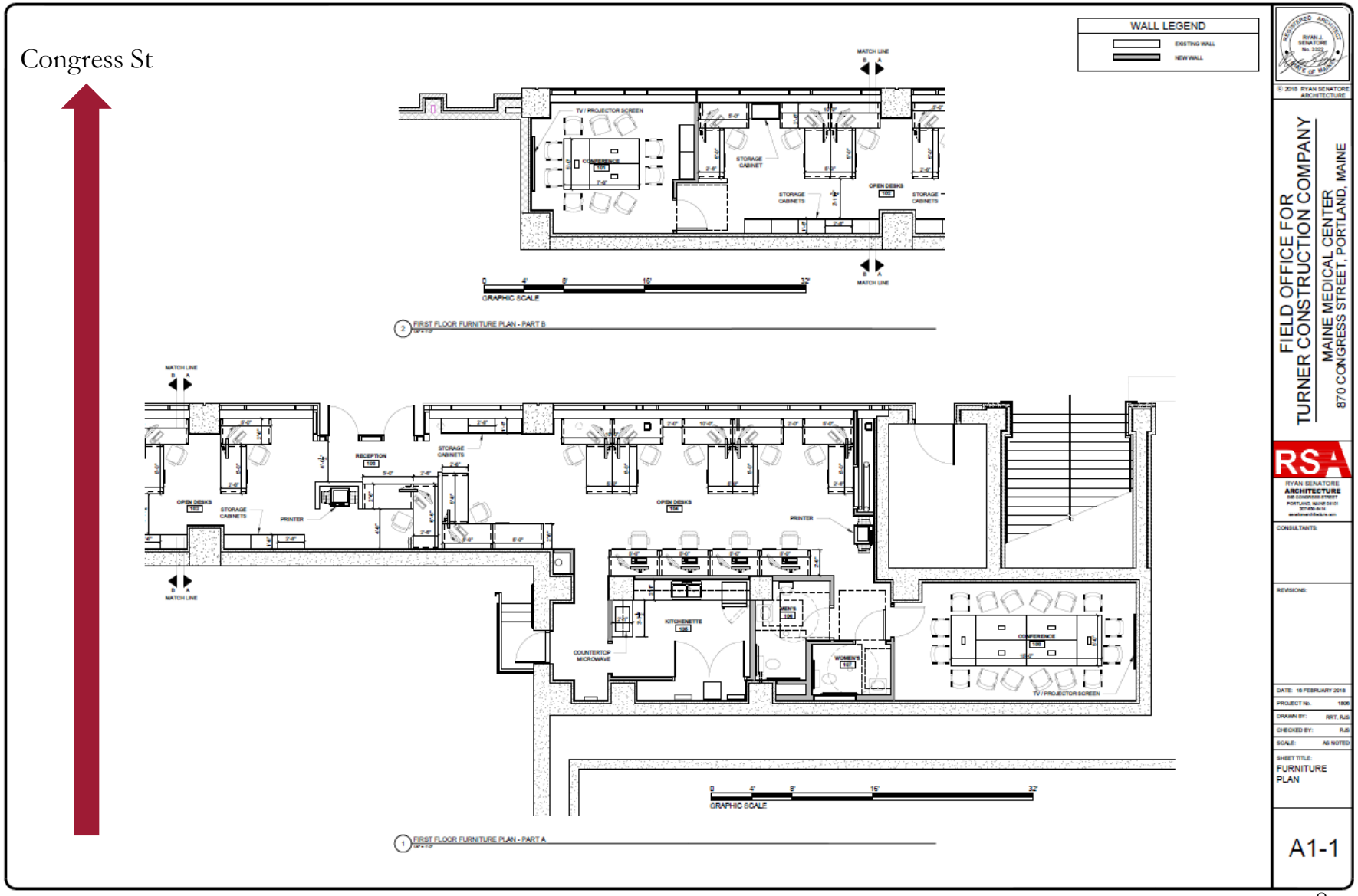
CMP Approach & Challenges

- Minimize impacts to surrounding area
- Open and transparent communications
- Maintain hospital operations
- Safety

Turner

Act with kindness and compassion. Be an active listener. Be a role model. Set high standards. Take responsibility. Embrace change.

Congress St Retail Space



What We Heard from You Last Time

- How will parking be accommodated during the Visitor Garage project?
- Are there any changes planned for the current entrances facing the West End?

Answered in the following slides:

- How does design blend with existing buildings?
- What are alternative East Tower designs?
- How can visual interest be added to the Visitor Garage?
- How does the proposed design tie into future designs?
- What is the detour for Congress St closure?



Design

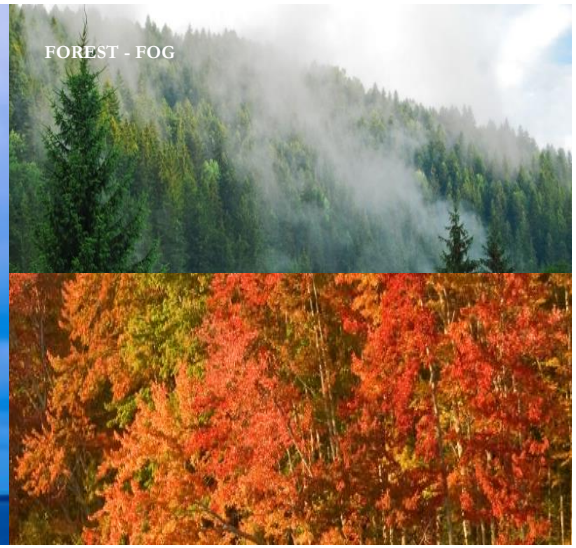
Jeff Keilman, Architect, Perkins + Will



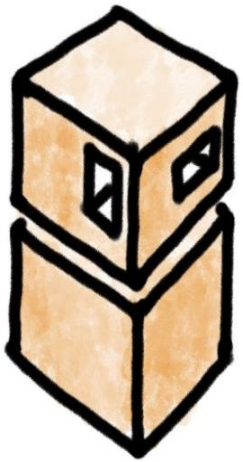
CONCEPT DIAGRAMS







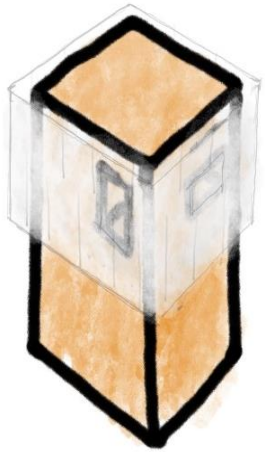
SOLID HEAVY



SOLID / LIGHT



ETHEREAL



CONCEPT DIAGRAMS

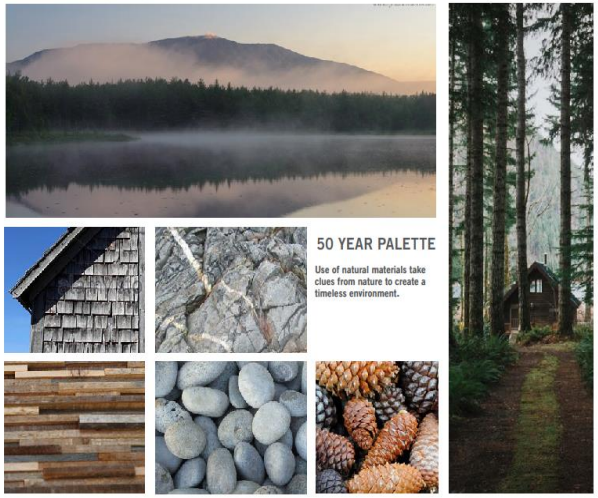


INTEGRATION OF INSIDE AND OUTSIDE

Blurring the lines between the inside and the outside to bring the garden into the hospital.



CIRCULATION



MATERIALS INSPIRED BY MAINE

50 YEAR PALETTE

Use of natural materials take clues from nature to create a timeless environment.

Act with kindness and compassion.

Be an active listener.

Be a role model.

Set high standards.

Take responsibility.

Embrace change.

East Tower


Act with kindness and compassion.
Be an active listener.
Be a role model.
Set high standards.
Take responsibility.
Embrace change.

FLOOR PLAN



Views to White Mountains



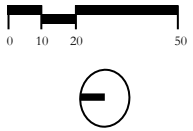
Views to Casco Bay



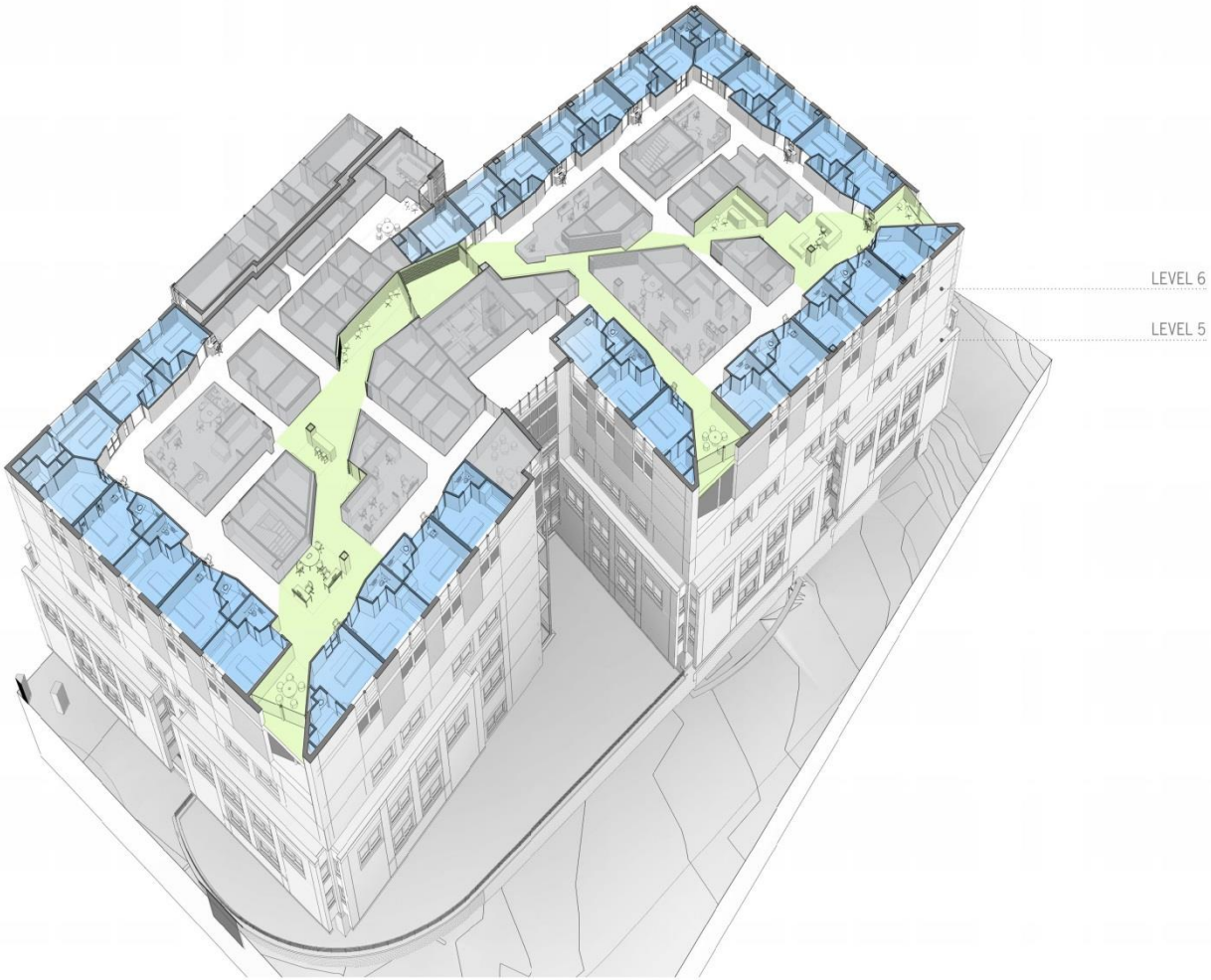
Views to Portland Water Front







AXONOMETRIC









South West V



South West V

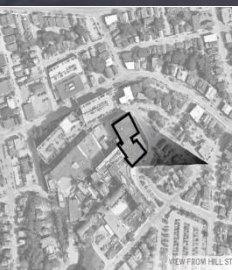






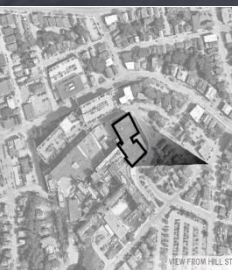






Bramhall and Hill Street





Bramhall and Hill Street








EMERGENCY



ATMOSPHERE











ATMOSPHERE







East Tower Concepts



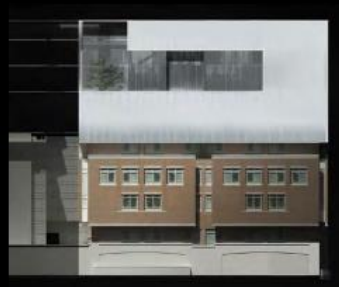




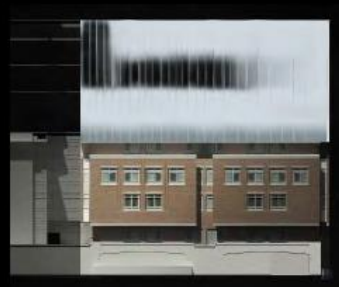


















Visitor Garage



Existing



Proposed



Visual Interest - Banners

WHITE BANNER



DARK BANNER



Visual Interest – Vertical Panels

WHITE VERTICAL SCREENING - PROPOSED



GRAY VERTICAL SCREENING - ALTERNATIVE



Fall Prevention







Alignment with Future Designs



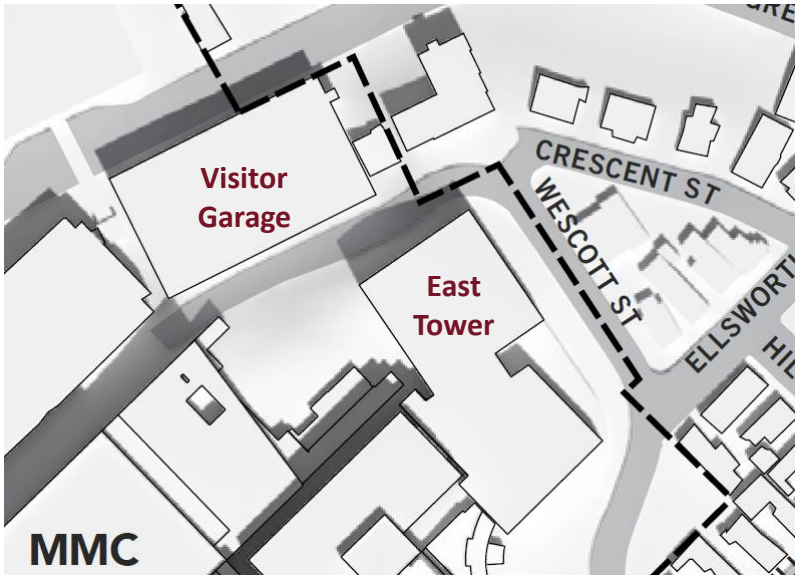
Sewer & Stormwater

Dan Riley, Senior Project Manager, Sebago Technics

Be a role model. Take responsibility. Set high
Embrace change. Be an active listener. standards.
Act with kindness and compassion.

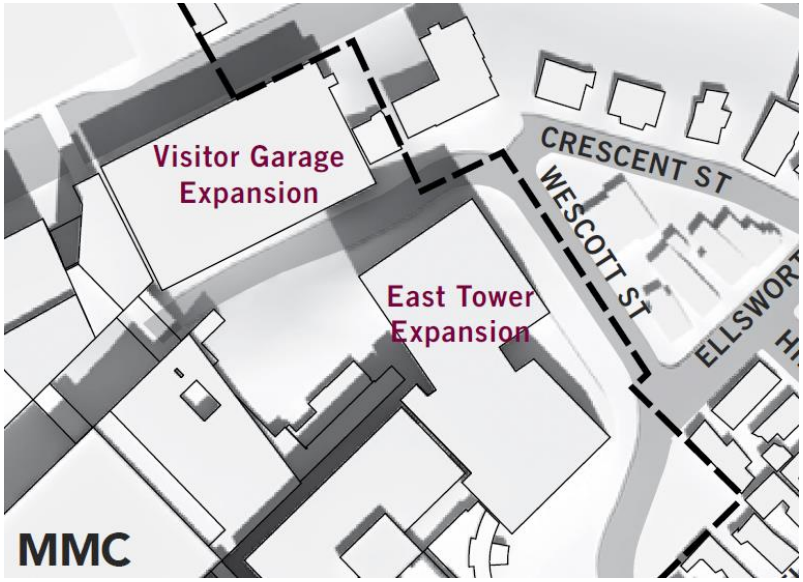
No Change to Impervious Surface

Existing



Source: IDP Fig.5.17 Shadow Study / Existing Conditions (June 21, noon)

Proposed

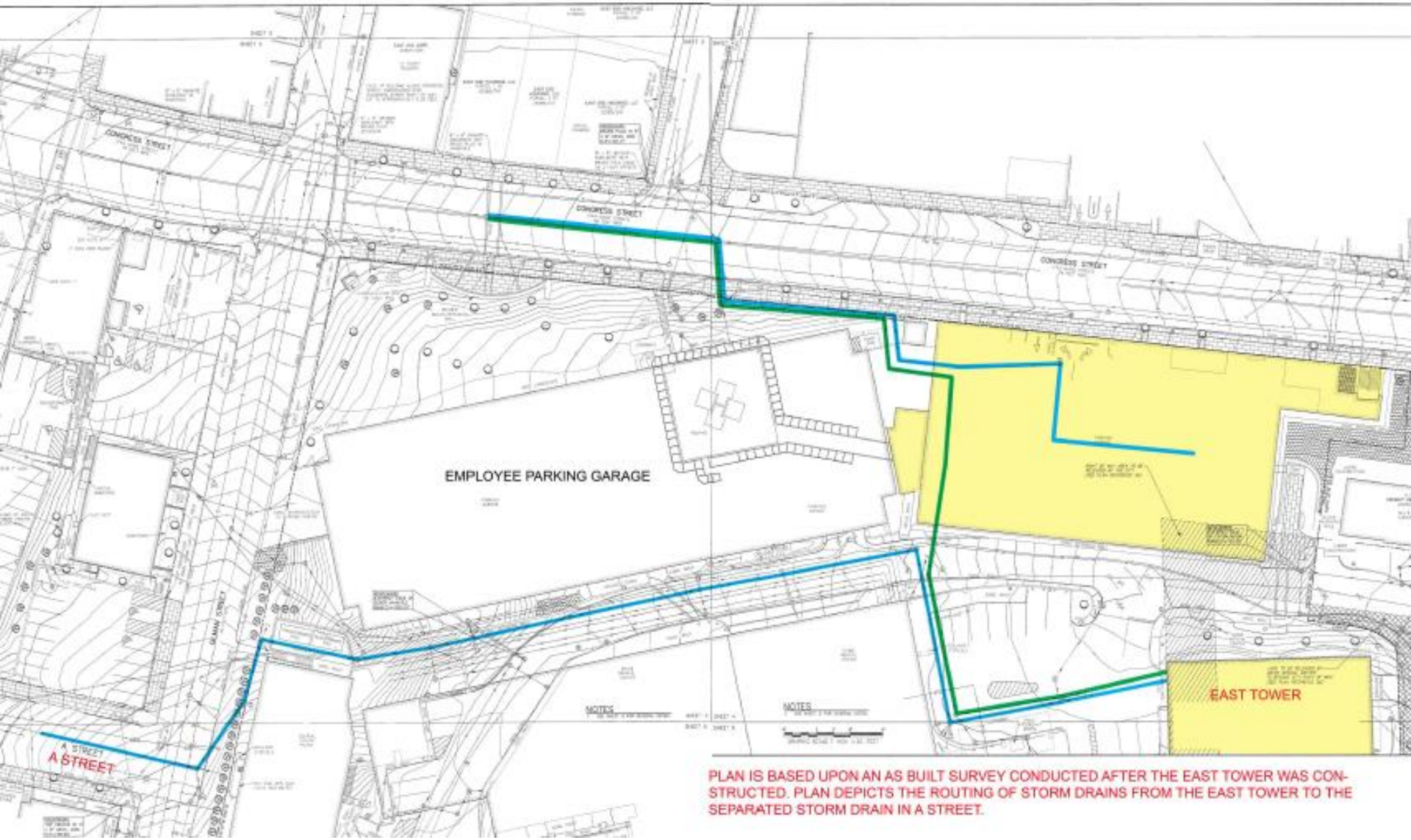


Source: IDP Fig.5.18 Shadow Study / Proposed (June 21, noon)

Existing Conditions

Stormwater

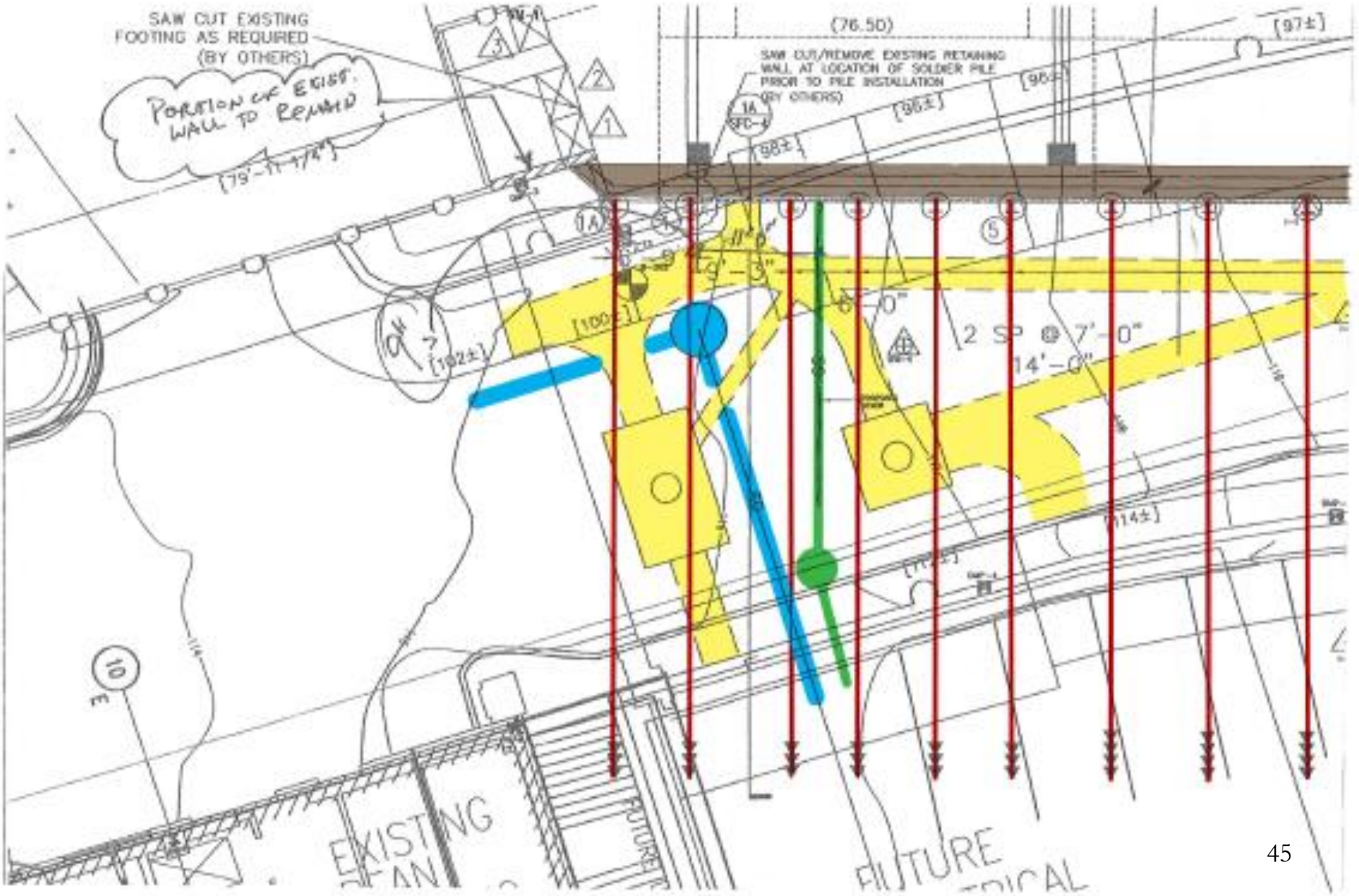
Sewer



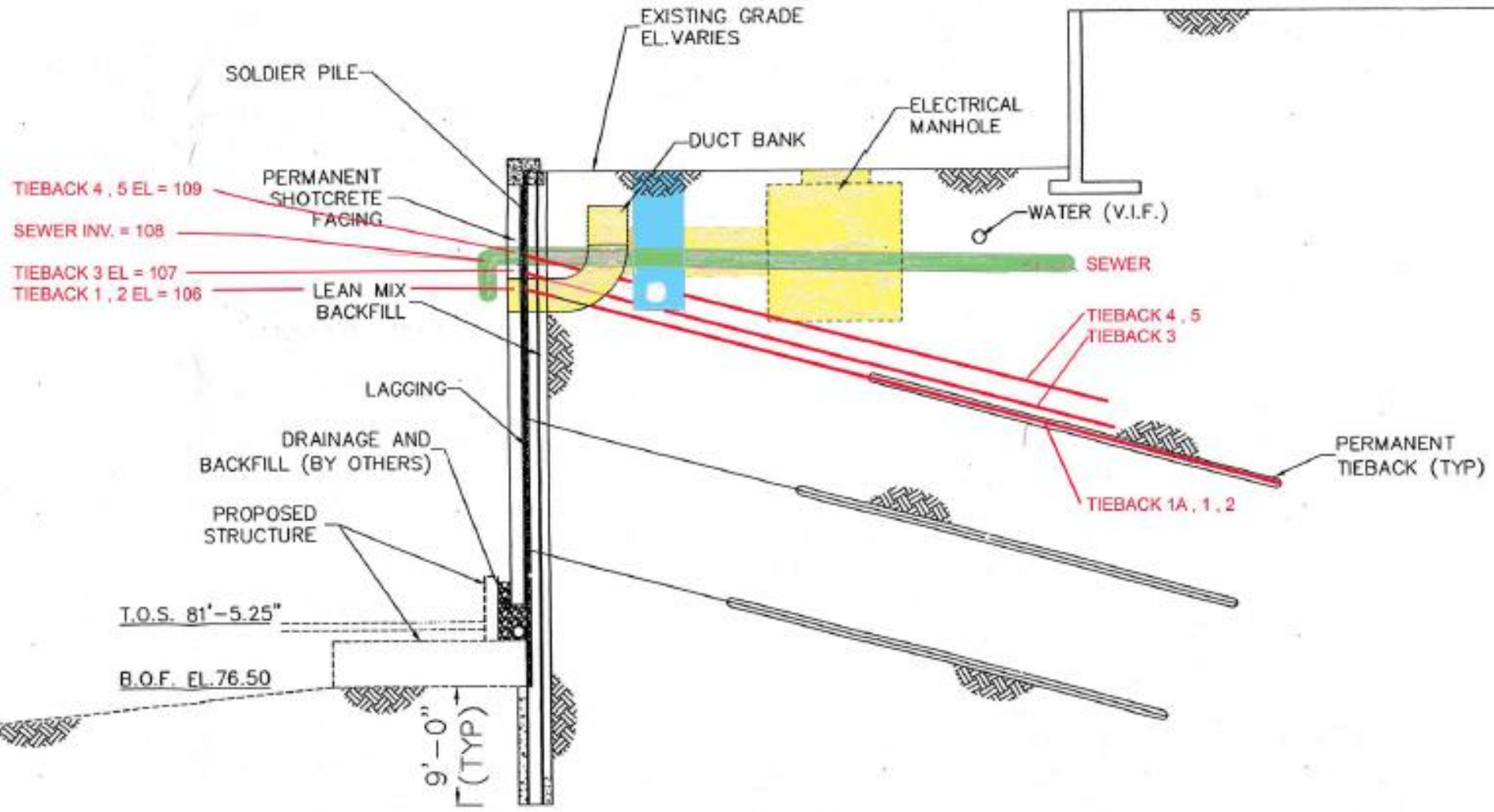
Site Detail with Tieback Locations

Stormwater

Sewer



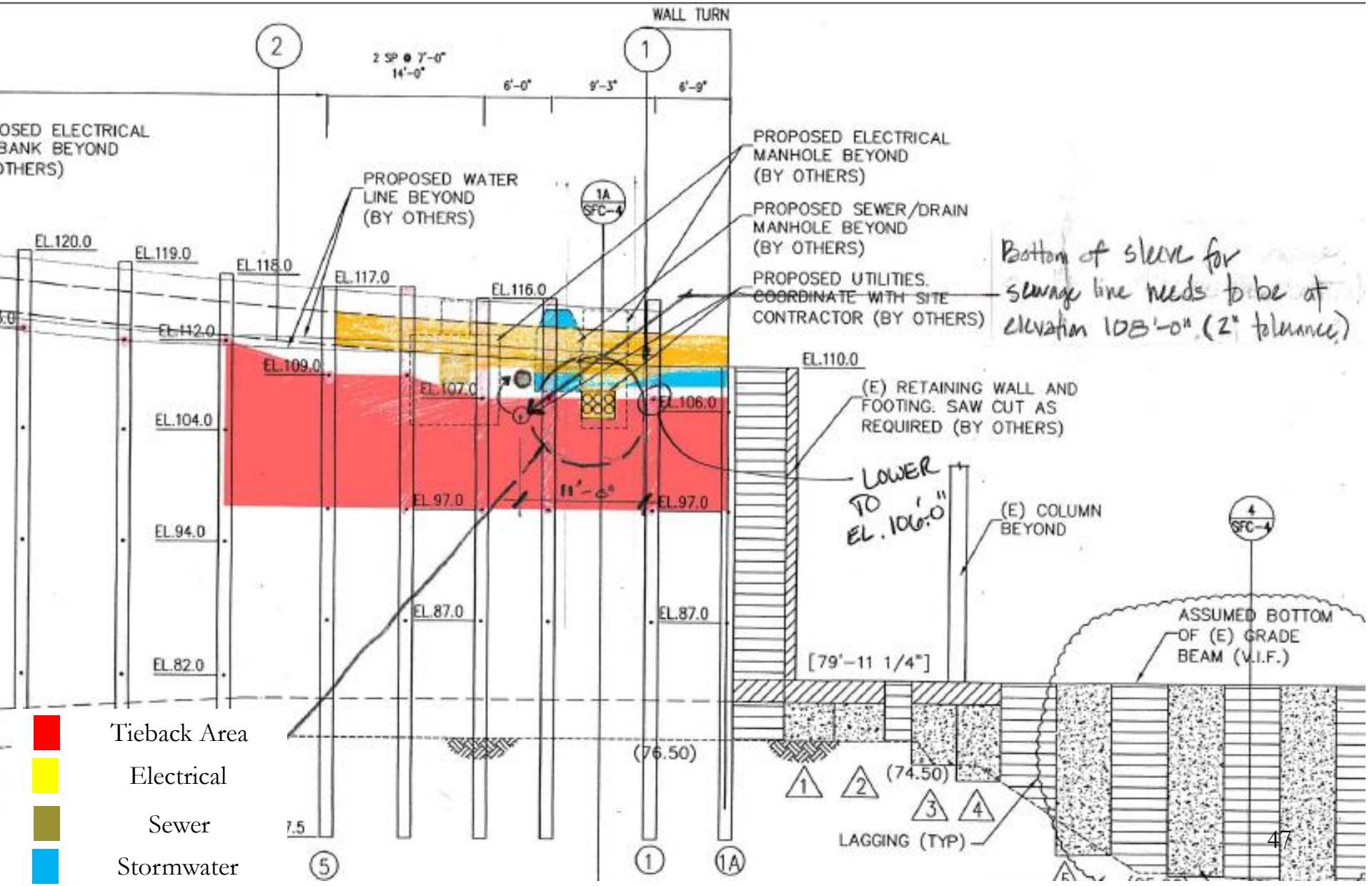
Site Detail with Tieback Locations Cont.



Stormwater

Sewer

Site Detail with Tieback Locations Cont.



Sewer & Stormwater Summary

- Significant safety and liability concerns with redirecting existing infrastructure
- Not feasible to connect to A St separated system
- Need further discussion with the City

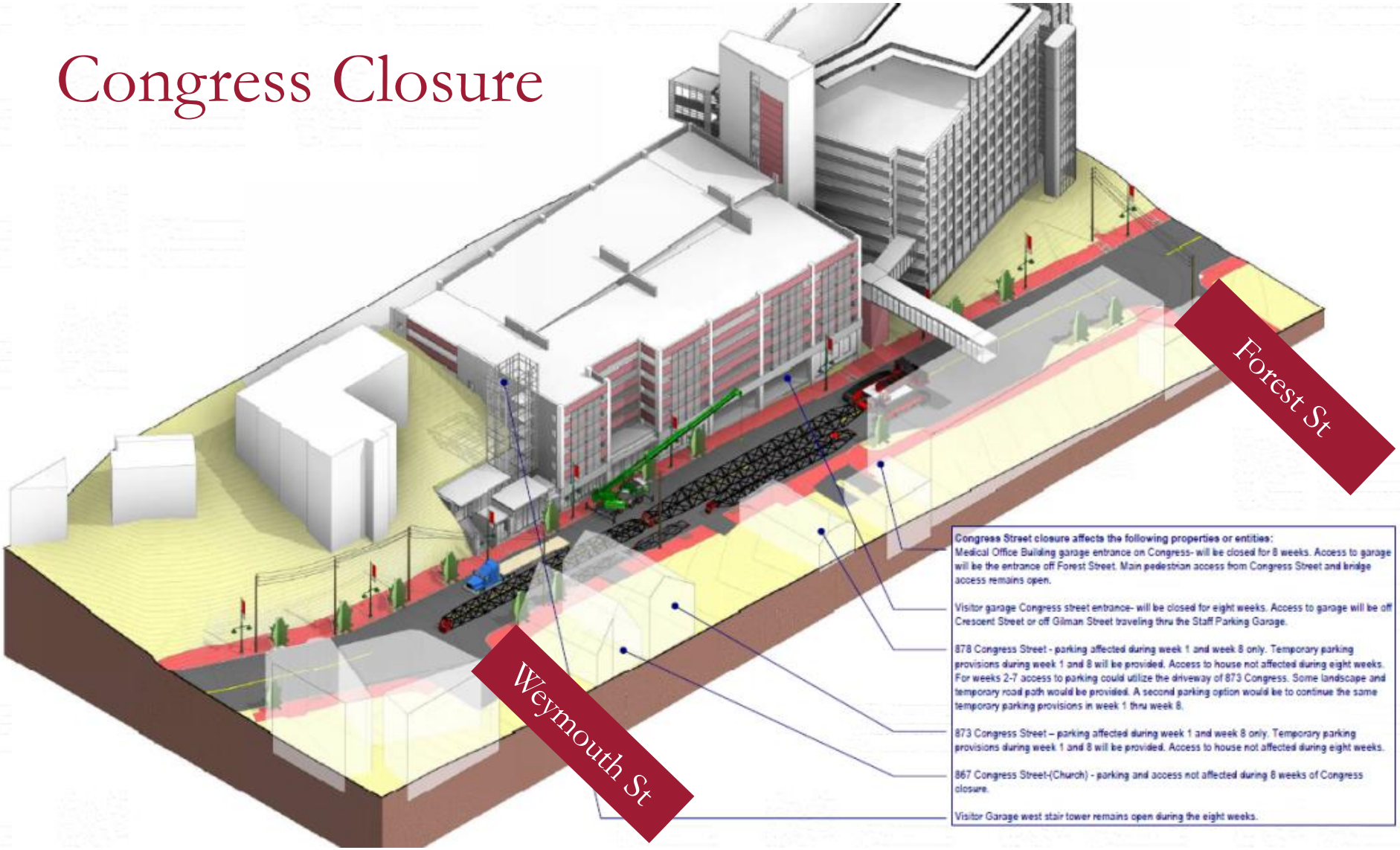


Congress St Detour

Jeff Sanders, Executive Vice President & Chief Operating Officer, MMC

Be a role model. Take responsibility. Set high standards.
Embrace change. Be an active listener.
Act with kindness and compassion.

Congress Closure



Act with kindness and compassion. | Be an active listener. | Be a role model. | Set high standards. | Take responsibility. | Embrace change.

Turner

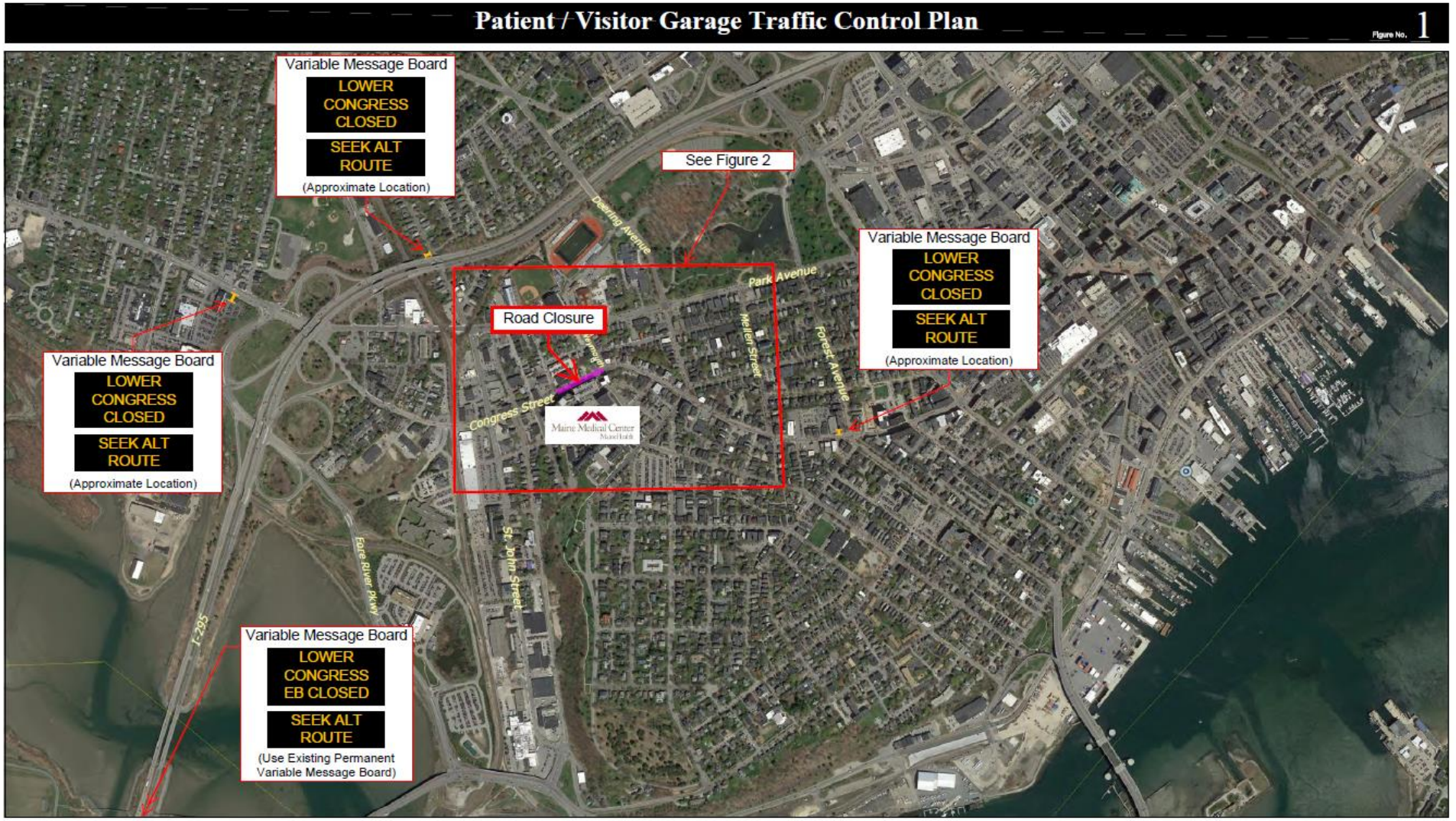
Maine Medical Center
MaineHealth

Congress St Detour Intent

- Minimize the impact of the Congress St closure
- Provide a safe and reliable system for commuters and local traffic
- Reduce the volume of traffic that approaches the closure location to avoid concentrating traffic at the closure
- Ongoing monitoring of traffic to identify opportunities to improve

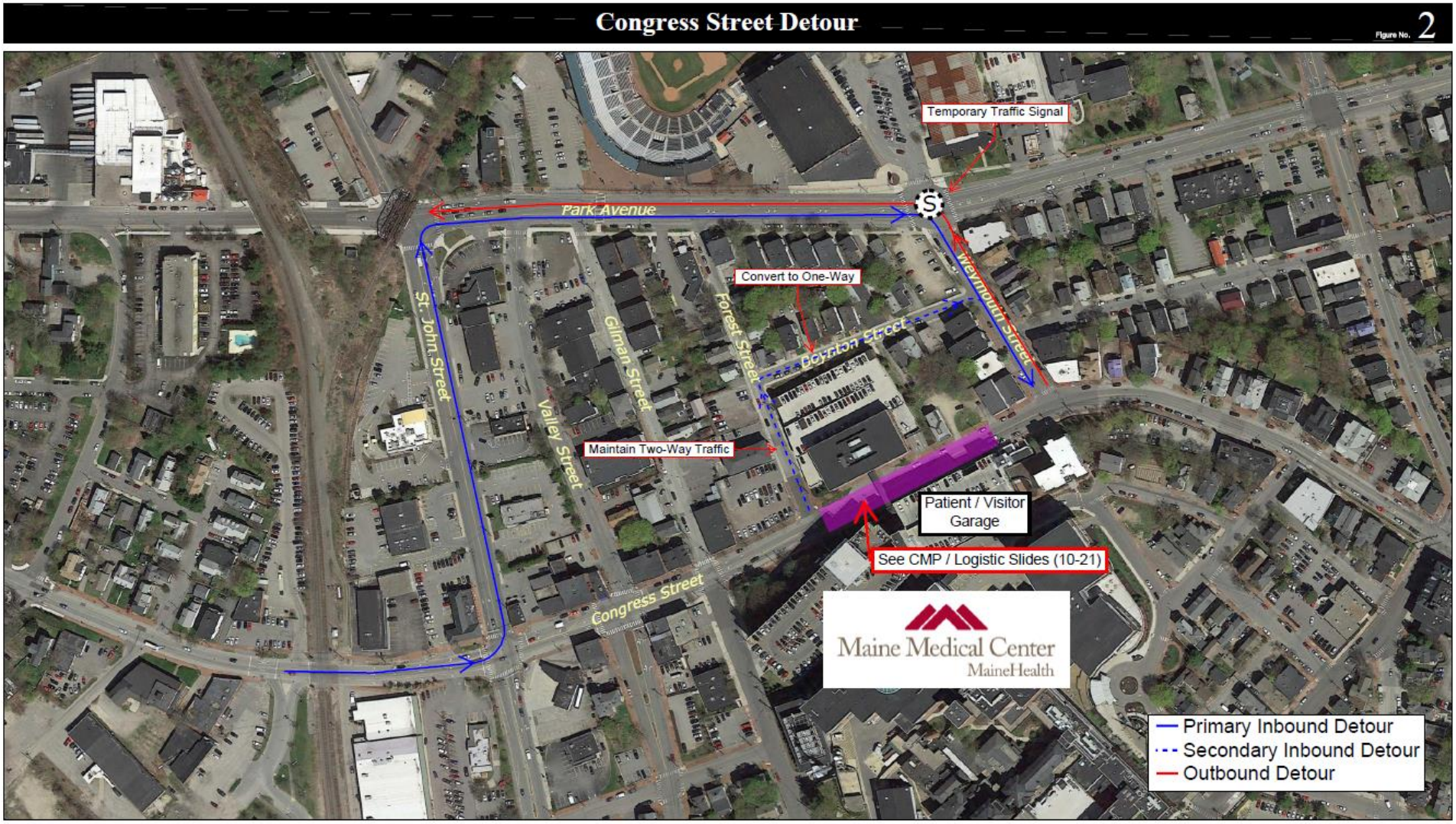


Congress St Detour



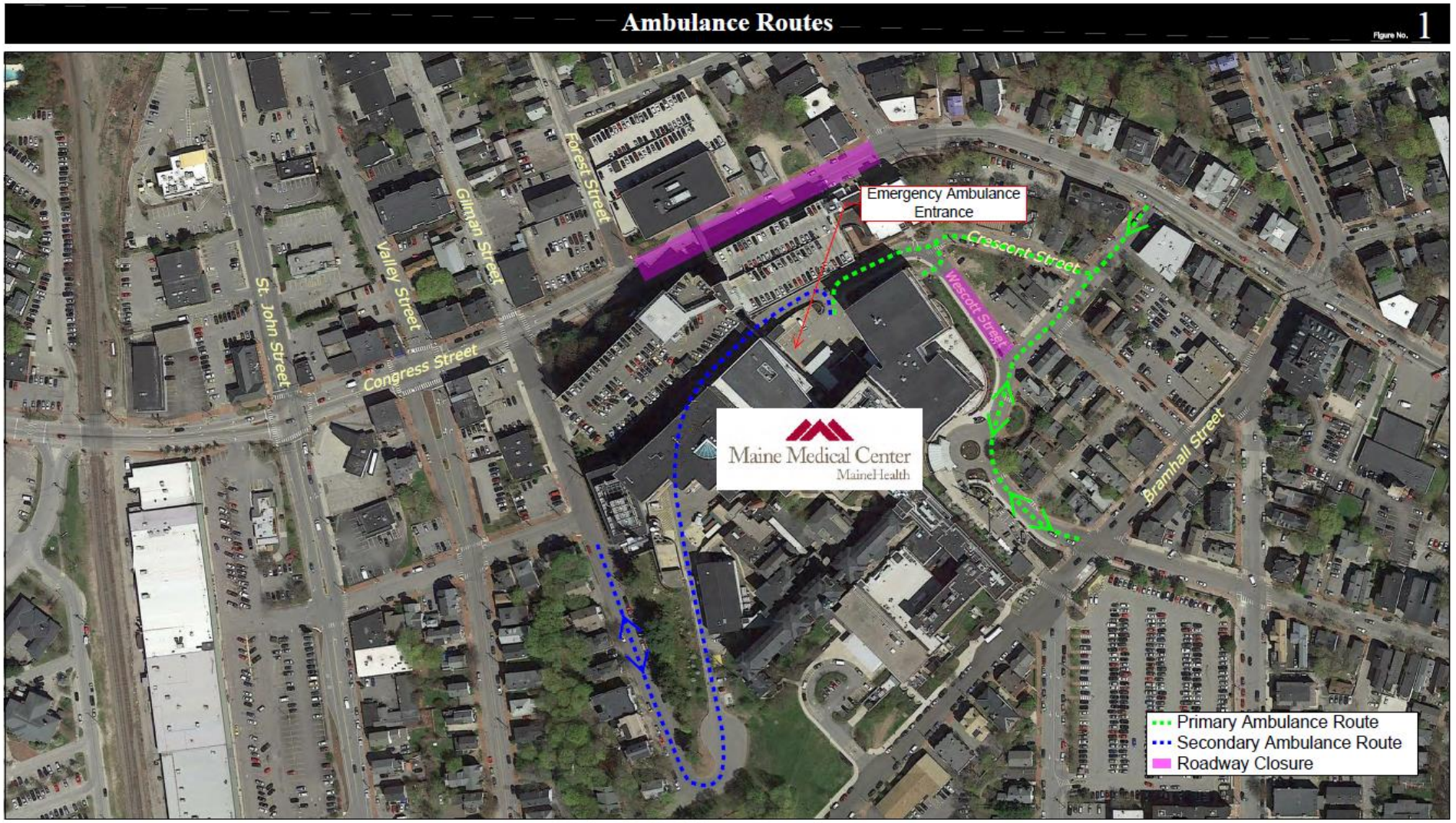
Maine Medical Center Expansion
PORTLAND, MAINE

Congress St Closure (cont.)



Maine Medical Center Expansion
PORTLAND, MAINE

Emergency Access



Maine Medical Center Expansion
PORTLAND, MAINE

Next Steps

Jeff Sanders, Executive Vice President & Chief Operating Officer, MMC

Be a role model. Take responsibility. Set high standards.
Embrace change. Be an active listener.
Act with kindness and compassion.


South West

Maine Medical Center
MaineHealth

March 21, 2018

Jean Fraser, City Planner
City of Portland
Planning Department
389 Congress Street
Portland, ME, 04101

RE: Bike Parking on Maine Medical Center's Bramhall Campus

Dear Ms. Fraser,

The purpose of this memo is to respond to the City of Portland's request to document quantity and location of existing bike parking on Maine Medical Center's Bramhall Campus. This request was made in the City Planning Department's Memo to the Planning Board dated 2/23/18 attachment 12.

QUANTITY OF BIKE PARKING

MMC's Bramhall Campus has 193 bike parking spaces which exceeds the requirements of the City of Portland's Land Use Code 14-526.A.4.b.i.(b).

Land Use Code 14-526.A.4.b.i.(b) states:

> Non-residential structures. Two (2) bicycle parking spaces for every ten (10) vehicle parking spaces for the first one hundred (100) required vehicle parking spaces, plus one (1) bicycle parking space for every twenty (20) required motor vehicle parking space over one hundred (100) required vehicle parking spaces.

MMC has 2,388 on-campus car parking spaces and 489 off-campus car parking spaces for a total of 2,877 parking spaces. The required number of bike parking spaces calculated using the total number of car parking spaces is 159.

MMC's Visitor Garage addition will add 225 on-campus parking spaces for a new total number of car parking spaces of 3,102. The new number of required bike parking spaces calculated using the total number of car parking spaces is 170. There are 11 more bike parking spaces required based on the addition of 225 car parking spaces in the Visitor Garage.

MMC's current number of 193 bike parking spaces exceeds the number of required bike parking spaces in both cases.

LOCATION OF BIKE PARKING

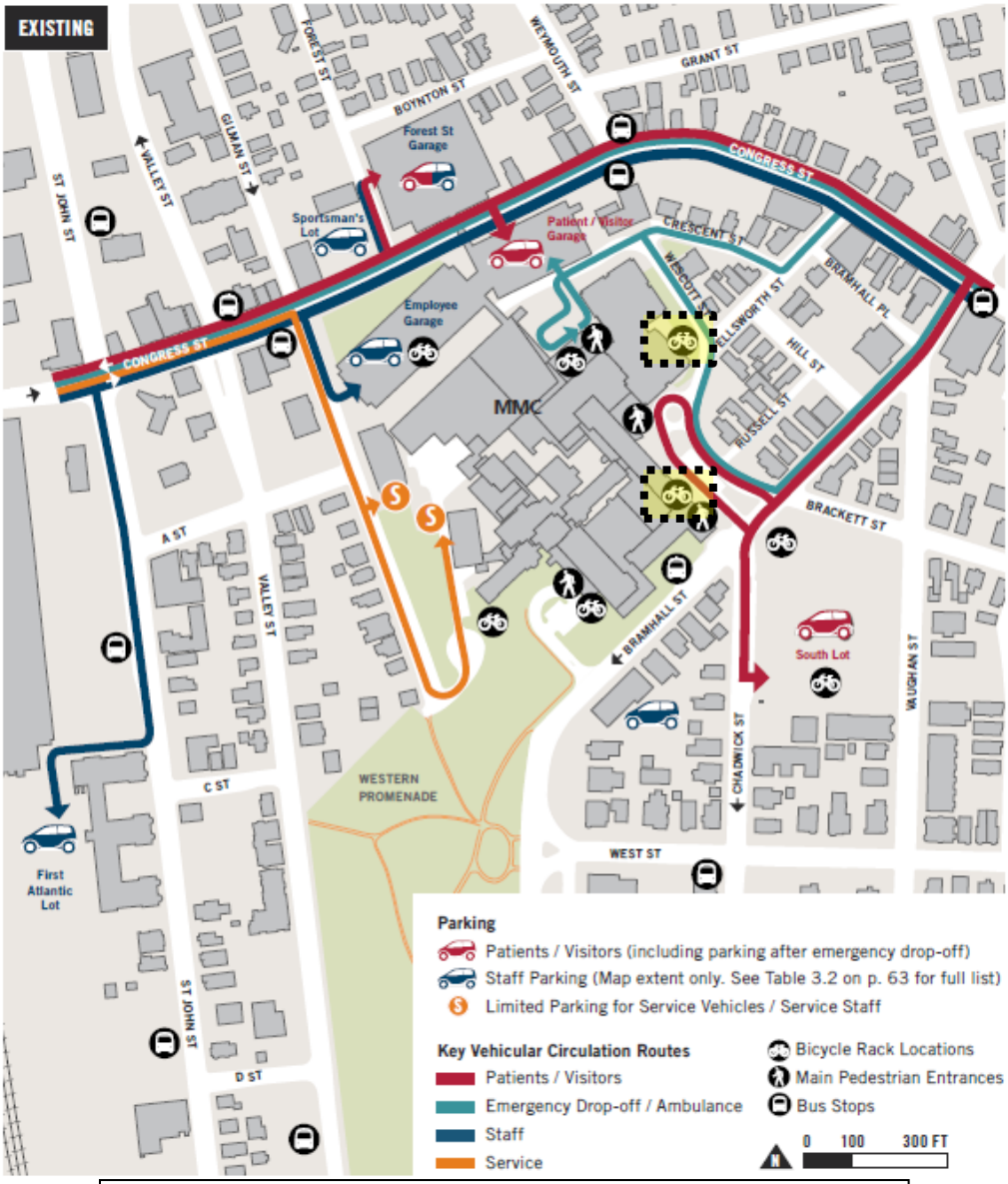
MMC meets the bike parking location requirement of the City of Portland's Technical Manual 1.15.3.

Technical Manual 1.15.3 sub-bullet number 2 states:

> Where there is more than one structure on a site, or where a structure has more than one main entrance, the parking shall be distributed to adequately serve all structures or main entrances.

Figure 1 demonstrates that bike parking is "distributed to adequately serve all structure of main entrances."

Figure 1 – MMC Bramhall Campus Bike Parking Locations



Source: MMC Institutional Development Plan, Approved by City of Portland Planning Board on 9/26/2017

The two bike parking racks highlighted in Figure 1 nearest to the entrance of the East Tower meet the requirements of the City of Portland's Technical Manual 1.15.

Technical Manual 1.15 states:

> Refer to Division 20 of the City Land Use Code (Sections 14-332.1) for zoning ordinance requirements concerning the number of bicycle parking spaces required.
>
> Bicycle parking shall:

Director of Planning

Cc: Mark Harris, Senior Vice President of Planning, MaineHealth
Will Conway, Sebago Technics

ADVERTISEMENT



MARCH 5, 2018

FOCUS: HEALTH CARE

Maine Med's $512M expansion driven by evolving standards of medical care



PHOTO / TIM GREENWAY

Left to right: Dr. Joel Botler, chief medical officer and interim president of **Maine Medical Partners**; **Kathleen Cyr**, nurse manager for the Mother-Baby Care Unit; and **Jeff Sanders**, executive vice president and COO of **Maine Medical Center**, in a single-occupancy room in the Mother-Baby Care Unit at Maine Medical Center in Portland.



ENLARGE IMAGE

PHOTO / TIM GREENWAY

Dr. Joel Botler, left, senior vice president of medical affairs, chief medical officer and interim president of **Maine Medical Partners**, and **Jeff Sanders**, executive vice president and COO of **Maine Medical Center**, at the Emergency Department at Maine Med.

Planning Board hearings

Maine Medical Center anticipates appearing before the Portland

BY LAURIE SCHREIBER

At Maine Medical Center, older patient rooms in the Richards Building, built in 1968, are cramped.

Most are doubles, two beds separated by privacy curtains. There's just enough room to navigate between beds, tray tables, a couple of visitor chairs, a mobile charting machine and the various devices any patient might need, like IV stands, walkers and commodes.

Conversely, rooms in the East Tower, completed in 2008, are private. With just one bed, there's plenty of space to accommodate the flow of medical providers and equipment, visitor seating and storage. Comfort and flow are only part of the picture. Private rooms are considered essential to maintain patient confidentiality, mitigate the risk of infection, optimize bed availability, and address other challenges such as separating patients with behavioral issues and gender-matching.



BROWSE PREVIOUS EDITIONS

March 5, 2018 Subr

TODAY'S HEADLINES

Portland No. 2 on list of top U.S. secondary housing markets

CMP, Emera on alert as Nor'easter bears down with high winds

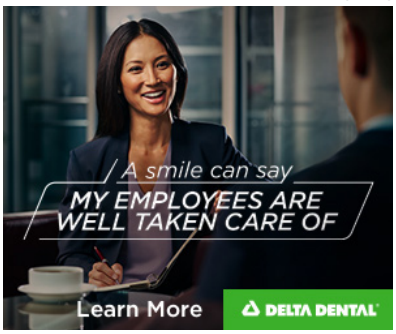
Lobster landings drop 16% in 2017, value drops almost $100M

Maine DOT throws down challenge to would-be sign composers

Investors bet big on Bayside neighborhood

VIEW ALL

ADVERTISEMENTS



Planning Board as follows, with neighborhood meetings along the way:

Phase 1: Workshop has been held; hearing in March

Phase 2: Workshops in March and April; hearing in May

Phase 3: Workshops in June and July; hearing in August

Maine Medical Center contractors on tap so far

Construction Manager: Turner Construction, New York City

Architectural Firm: Perkin + Will, Boston

- Cives Steel Co., Augusta
- Otis Elevator Co., Westbrook (Maine division)
- UniStress Corp., Pittsfield, Mass.

As it grows, Maine Med is recruiting

Maine Medical Center's plan to modernize by 2026 is expected to account for 300 to 400 new jobs, in areas like nursing and environmental services. While Maine and the nation are challenged by provider shortages, recruitment is generally not an issue at Maine Med, due to its renown and location in an attractive city, says COO Jeff Sanders.

"We're a magnet organization, so we're fortunate to do fairly well," he says.

Does Maine Med's success take away from other hospitals trying to recruit? No, says Maine Hospital Association President Steven Michaud.

"People do ask that," Michaud says. "I would argue it's the opposite. They're at the top of that food chain and do very well in that regard. But they've also been a wonderful partner in getting physicians to rural Maine hospitals through rotations. I'm sure they take some talent from inside Maine, but they also recruit a lot from outside, so they increase that general pool. That means there's more in Maine for everyone."

Maine Med, which plans to invest $512 million in coming years, is planning an extensive modernization project that will convert more of the hospital to private rooms — about 80% private rooms, compared with 49% today. The project will also build new procedural rooms and more parking.

"Our goals for some time have been to find the most cost-effective way to move away from semi-private to private rooms and to supply the surgical suites we need to provide," says Jeff Sanders, chief operating officer and executive vice president.

Updating aging infrastructure

On this 12.52-acre campus, it's the latest and most extensive construction project since Maine Med opened in 1874. Private rooms are just one new feature planned as part of Maine Med's investment.

Overall, the expansion will add 327,000 square feet to the existing 1.15 million square feet. Along with that, it will add 300 to 400 new employees, adding to a current workforce of approximately 8,000.

Driven by a combination of aging infrastructure and evolving standards of medical care, the investment will address a chronic shortage of beds, modernize treatment facilities, improve patient experience and better accommodate today's larger and highly sophisticated technology, including surgical robots.

The $512 million expansion will be funded by retained earnings, bonds and philanthropy.

A three-phase expansion

Maine Med's expansion will be done in three phases, pending approvals from the Portland Planning Board:

Phase 1: expected to start this May and last 20 months, will include construction of a 60,000-square-foot, two-story addition atop the East Tower on Crescent Street. It will have a helipad on the roof. Three floors will be added atop the visitor garage on Congress Street, adding 225 parking spaces; that project is expected to take six months. Maine Med's central utility plant, on Gilman Street, will be upgraded with a 2,400-ton chiller and two cooling towers.

Phase 2:will include a 10-story, freestanding garage at 222 St. John St. to accommodate 2,400 spaces for employee parking.

Phase 3:will include demolition of the existing 1,200-space employee garage, on Congress Street. In its place will be the main portion of the overall project — a 270,000-square-foot, seven-story building. Five stories will be used for clinical use. The other two stories will house private inpatient beds, 19 procedure rooms,





MOST READ MOST EMAILED

Colby's first Waterville downtown development piece is in place

Szanton Co. breaks ground on Lewiston's Hartley Block project

Maine company unveils $250M plan to create land-based salmon farm in Bucksport

Maine DOT throws down challenge to would-be sign composers

Business owners, residential customers raising questions over CMP bills

TWITTER FACEBOOK

Tweets about "@Mainebiz"

RENDERING / COURTESY MAINE MEDICAL CENTER

Maine Medical Center will invest $512 million to modernize Maine's largest hospital.



RENDERING / COURTESY OF MAINE MEDICAL CENTER

Maine Medical Center's $512 million project includes a new building on Congress Street.

expanded outpatient services and a new entrance that will change the campus's orientation to Congress Street (from the current side-street orientation). Completion is expected by the end of 2022.

- About $50 million will be invested in outpatient facilities through the system's Maine Medical Partners multi-specialty practice organization. Those plans are still in the works.

An ever-growing hospital

Maine Med, which is on Portland's West End, is the state's largest medical center and the state's only teaching hospital. Maine Medical includes the Maine Medical Center Research Institute and Maine Medical Partners, which provides care through a network of more than 40 locations in greater Portland.

Maine Med has never stopped growing.

In 1985, it opened the six-story L.L. Bean Building, followed two years later by the Dana Center. In 2008, it opened the 190,000-square-foot East Tower, followed a year later by a 512-car visitor garage. In 2015, it added operating rooms and related care beds on a portion of the L.L. Bean Building.

Big wards are long gone

All together, 128 new, single-bed patient rooms will be contained in the expanded East Tower and the Congress Street structure. The hospital's overall bed count will remain at 637, its licensed maximum.

"We might increase our number of licensed beds over time, but we didn't want to start with that," says COO Sanders. "We wanted to start with how we operationally use the beds we're licensed for today."

At a time when patient volume and the acuity of patient illnesses are rising, due to factors like Maine's aging population, private rooms will relieve compression of inpatient services into semi-private rooms, a challenge exacerbated by the need to close up to 60 beds per day due to patient condition, like a communicable infection or construction or staffing.

Hospitals in general are moving toward private rooms, says Maine Hospital Association President Steven Michaud. That's due primarily to concerns around the risk of infection and around maintaining patient confidentiality.

"Those are two major areas that, 40 years ago, were not receiving the attention they probably deserved then," Michaud says. "Multiple patients in a room fly in the face of both those considerations."

Like Maine Med, he says, other hospitals mitigate the risks of infection by not filling beds in a room occupied by a patient with a communicable infection.

"They will put that patient in a room that was meant of two people, so they just lost a bed," he says. "But they're doing all they can to make sure the patient is safe. That's a big priority, and it has huge impact on infrastructure. The days when you could have two or three or even more patients in a room or on a ward — those days are long gone."

Higher volume, higher acuity

Larger, private rooms are needed for patient comfort and confidentiality, improved safety to mitigate risks of infection and behavioral issues and optimum provider flow, says Dr. Joel Botler, Maine Med's chief medical officer.

These factors are significant considering that today's patients arrive at the hospital sicker than they once did, says Botler. Many patients may suffer from two or more chronic diseases or conditions.

"It used to be you'd be admitted, say, with pneumonia," Botler says. "Now you have pneumonia and maybe diabetes and underlying heart failure. And the state of Maine has a very high aging population. Patients who are older come in with more problems. The final factor is that more-specialized care can only be done by certain hospitals."

There are other considerations.

"Someone can go to one of Maine's rural hospitals and receive care for a primary problem. But if they require dialysis and the hospital doesn't do dialysis, they have to be transferred here," Botler continues. "In addition, people have special needs from surgery that can only be done by a place like Maine Medical Center. All of these things lead to a lot of patients who are particularly ill when they come here."

The Congress Street tower will contain 19 modern procedure rooms, for surgery and diagnostic imaging laboratories. Most of the current procedure rooms are more than 30 years old and are about two-thirds the size of the planned rooms. Larger rooms for surgeries and other complex procedures are needed to accommodate rapidly evolving technology. Supportive infrastructure such as prep and recovery bays, family waiting rooms and sterilization facilities are not properly suited to meet patient needs in the future.

"We've added more equipment in health care and we've added more people as the procedures become more specialized," says COO Sanders. "We have more imaging equipment involved in care today than we did 20 years ago. As incisions have become smaller, the equipment has become bigger. We have robots now that assist in surgery. We didn't have those 10 or 15 years ago. Those are not small. We're doing things today to keep people alive that we weren't doing here 10 years ago. We need to provide space for that."

Print Email Order a PDF

RELATED CONTENT

Analysis details costs of implementing voter-approved Medicaid expansion

Retirement communities focus on amenities as older Mainers look to 'age well'

Recruitment of emergency medical workers proves challenging — particularly in rural Maine

Health care may be growing, but that doesn't mean it faces no challenges

LePage, filing as individual, joins lawsuit to kill ACA

BACK TO TOP | POST A COMMENT



BROWSE BY

REGION
Central
Down East
Midcoast
Northern
Southern
Western

CITY
Augusta
Bangor
Lewiston/Auburn
Portland

INDUSTRY
Agriculture
Architecture & Design
Banking & Finance
Biotechnology
Communications
Real Estate & Construction
Creative economy
Economic Development
Education and Training
Energy & Utilities
Fisheries & Marine
Forest Products
Health Care
Human resources
Insurance
Legal
Manufacturing
Marketing & Media
Nonprofits
Retail & Food service
Small Business
Technology
Tourism & Recreation
Transportation
Trade

ABOUT US
Mission
Contact us
New England Business Media
Careers
Refund and privacy policy

ADVERTISING
Ad tech specs
Ad planning calendar
Audience data
Contacts
Request info

EVENTS
Momentum Convention
Business leader of the year
Women to watch
The Next List
On the Road with Mainebiz

DATA CENTER
Download our top lists

OTHER NEW ENGLAND BUSINESS MEDIA SITES
Hartfordbusiness.com
Wbjournal.com
Custom Publishing

FOLLOW US
RSS feeds
Facebook
LinkedIn
Twitter

SUPPLEMENTS & DIRECTORIES
Book of Lists
Fact Book
The Giving Guide
Making It In Maine

Copyright 2017 New England Business Media

Maine Medical Center
MaineHealth

Congress Street Closure & Detour

PATIENT CENTERED · RESPECT · INTEGRITY · EXCELLENCE · OWNERSHIP · INNOVATION

Contents

- Congress St Closure: When?, Where?, How Long?, Why?
- Intent of Congress St Detour
- Description of Detour
- Alternative Detour Routes Explored
- Emergency Access



Congress Street Closure

- What:
  - On Congress St between Forest St and Weymouth St immediately adjacent to MMC's Visitor Garage
- When:
  - May and June 2018
- How Long:
  - 8 weeks (includes several contingency days)



Visitor Garage Construction Option Comparison*

Legend			
Not Possible	Temporary Interruption	Possible

Workable Solution

	Option 1 Cast in Place	Option 2 South Side Approach	Option 3 North Side Approach, One Lane	Option 4 North Side Approach, Two Lane	Option 5 Place Crane in vacant site of former Employee Garage
Structural capacity of existing structure					
Structural capacity of retaining wall	N/A				
Ability to deliver material	N/A				
Space to assemble / dismantle crane	N/A				
ED Access	N/A				N/A
Space to operate crane	N/A				N/A
Site Safety	N/A				N/A
Capacity of soil , site grading	N/A				N/A

*Any red bullet eliminates the option

Act with kindness and compassion. Be an active listener. Be a role model. Set high standards. Take responsibility. Embrace change.

Turner

Intent

- Minimize the impact of the Congress St closure
- Provide a safe and reliable system for commuters and local traffic
- Reduce the volume of traffic that approaches the closure location to avoid concentrating traffic at the closure
- Ongoing monitoring of traffic to identify opportunities to improve real-time

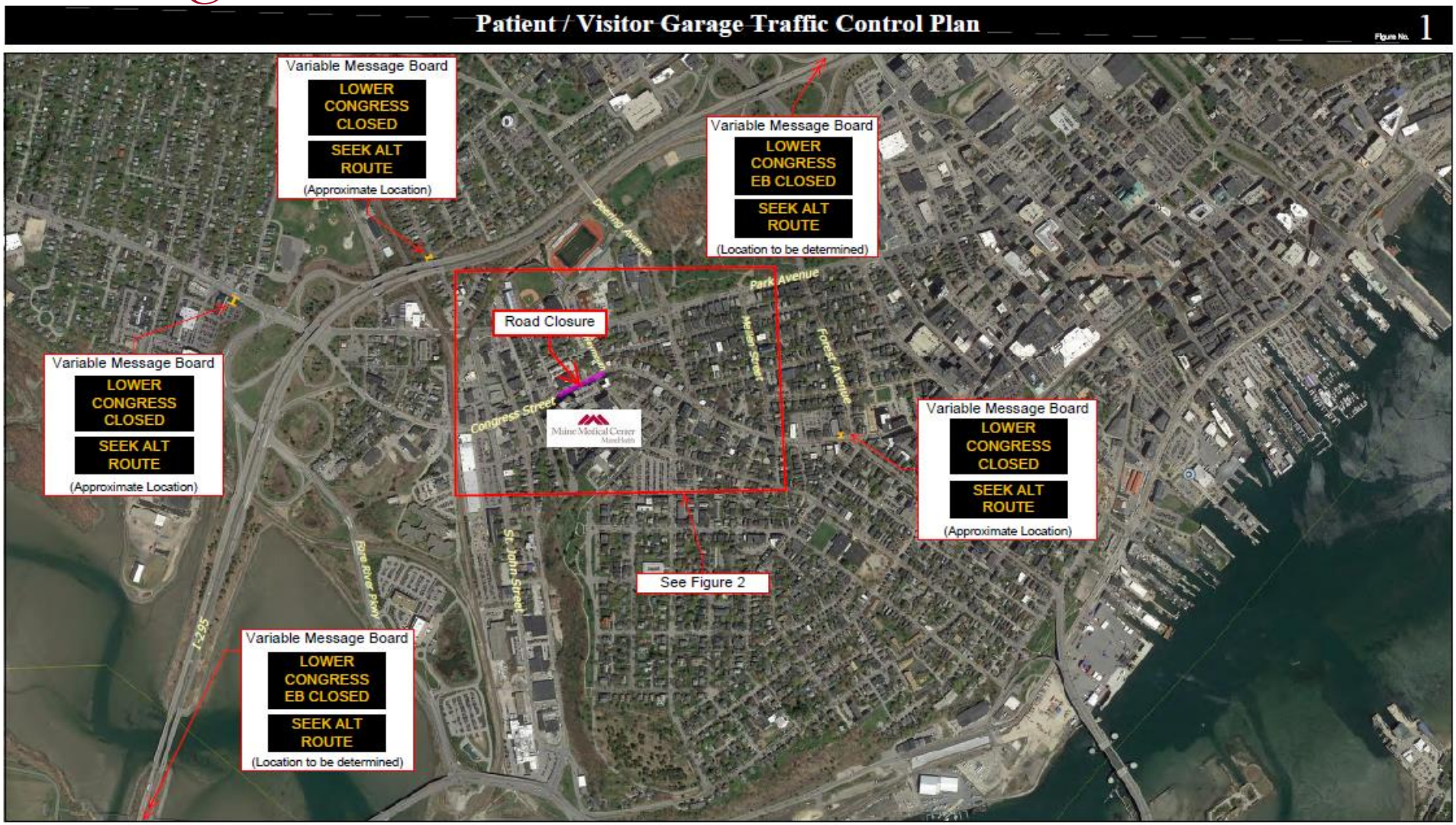


Congress St Detour
Best Option

- Dilute traffic adjacent to Congress St closure with variable message signage
- Inbound:
  - Congress St > St John St > Park Ave > Weymouth St > Congress St
  - Local Traffic Only:
    - » Congress St > Forest St > Boynton St > Weymouth St > Congress St
    - » No parking on Boynton St temporarily to allow for emergency vehicle access
- Outbound:
  - Congress St > Weymouth St > Park Ave
  - Temporary signal on Weymouth St / Park Ave
- Flaggers and Police where appropriate

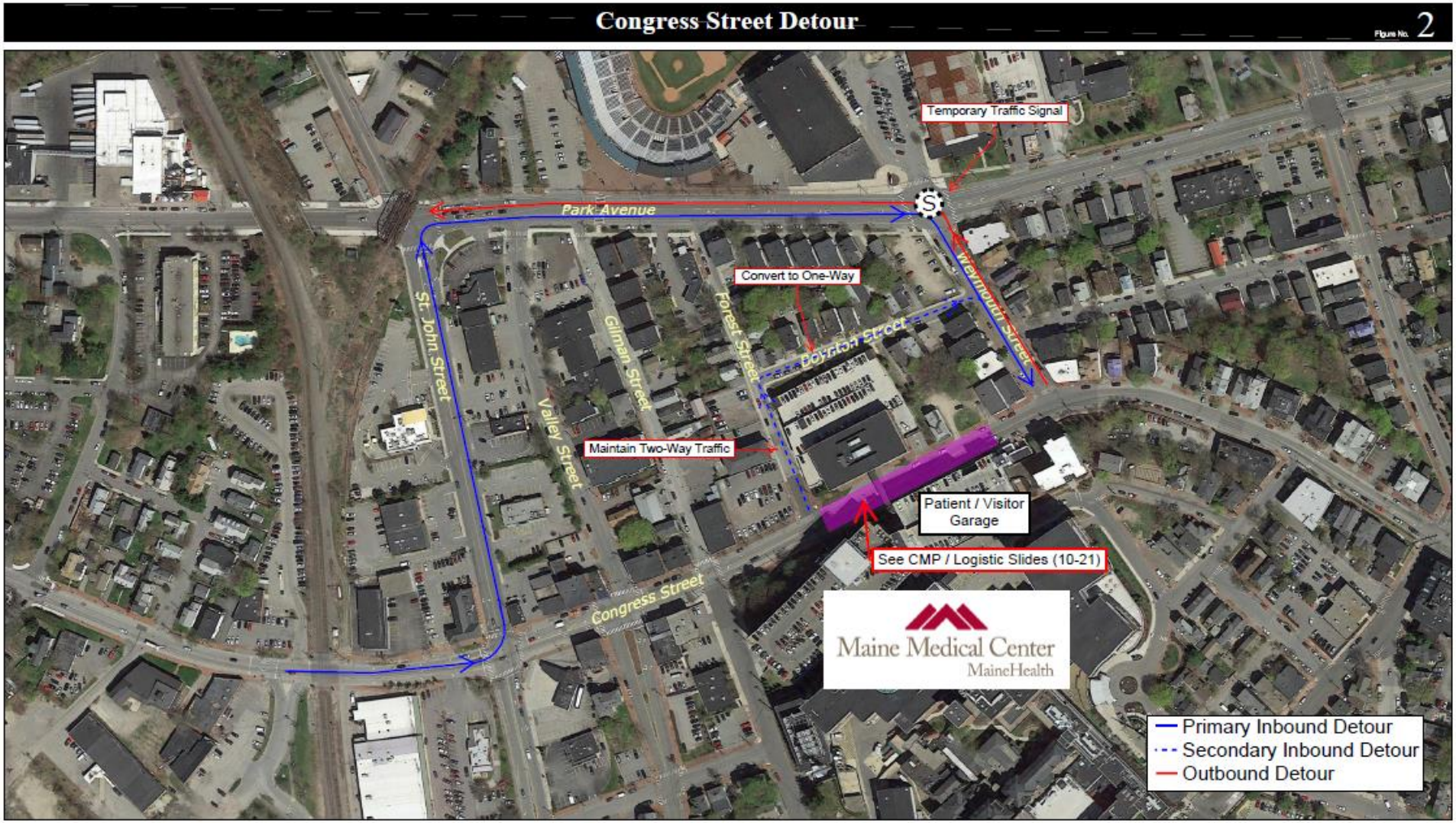


Congress St Detour



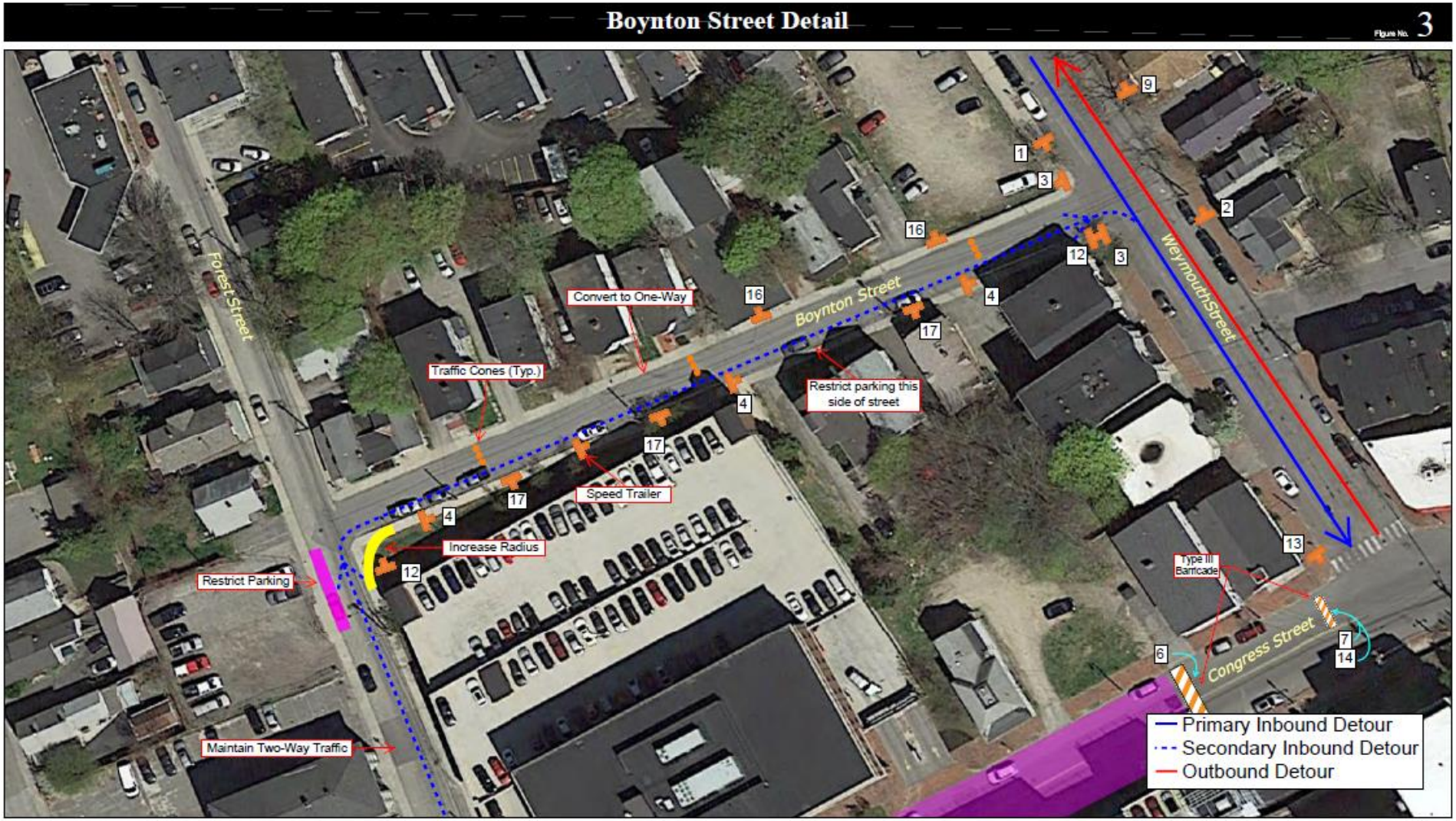
Maine Medical Center Expansion
PORTLAND, MAINE

Congress St Detour (cont.)



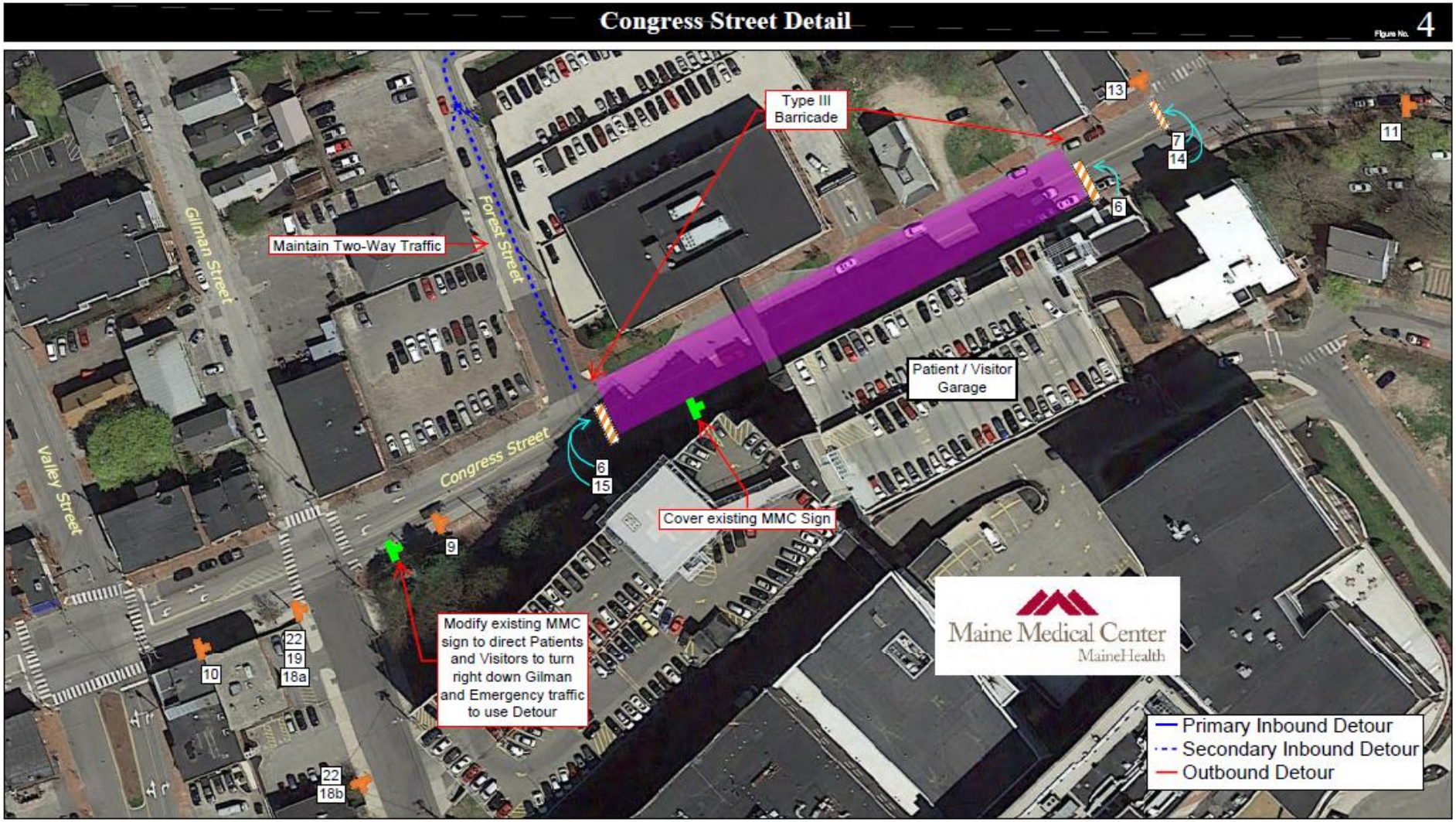
Maine Medical Center Expansion
PORTLAND, MAINE

Congress St Detour – Boynton St



Maine Medical Center Expansion
PORTLAND, MAINE

Congress St Detour – Congress St



Maine Medical Center Expansion
PORTLAND, MAINE

In-bound: Congress St & St John St



Congress St Detour
Inbound Alternatives Explored

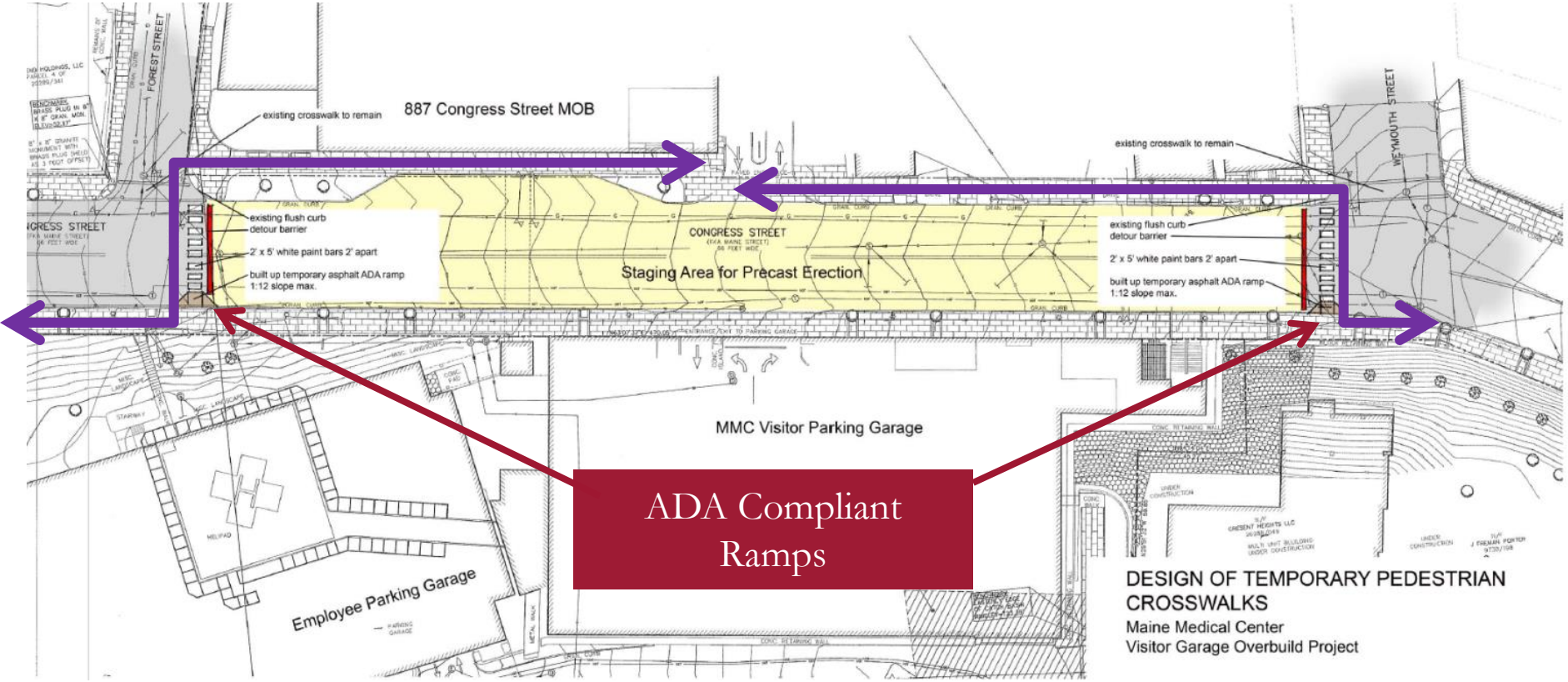
Legend			
POOR	OK	GOOD	

	St John St to Park	Valley St to Park	Gilman St to Park	Forest St to Park	Forest St to Boynton	Park to State St
Impact to Neighborhood	0	0	20	14	13	0
Impact to Businesses						
Street Size						
Traffic Flow						
Emergency Vehicle Access						
Interface with traffic light at St John & Park	NA				NA	NA
Familiarity for Public						

Act with kindness and compassion. Be an active listener. Be a role model. Set high standards. Take responsibility. Embrace change.

Turner

Pedestrian Access



Act with kindness and compassion.

Be an active listener.

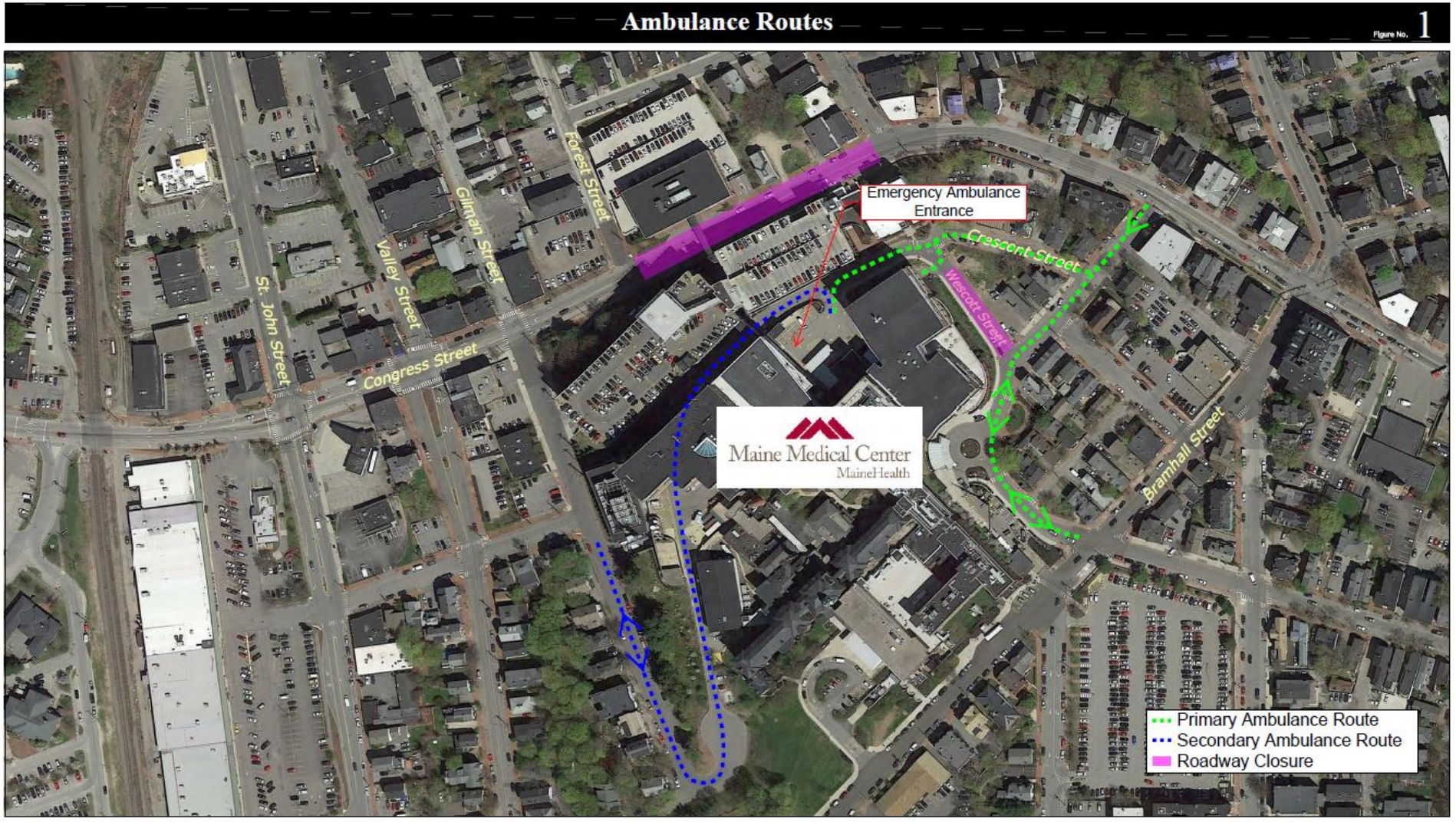
Be a role model.

Set high standards.

Take responsibility.

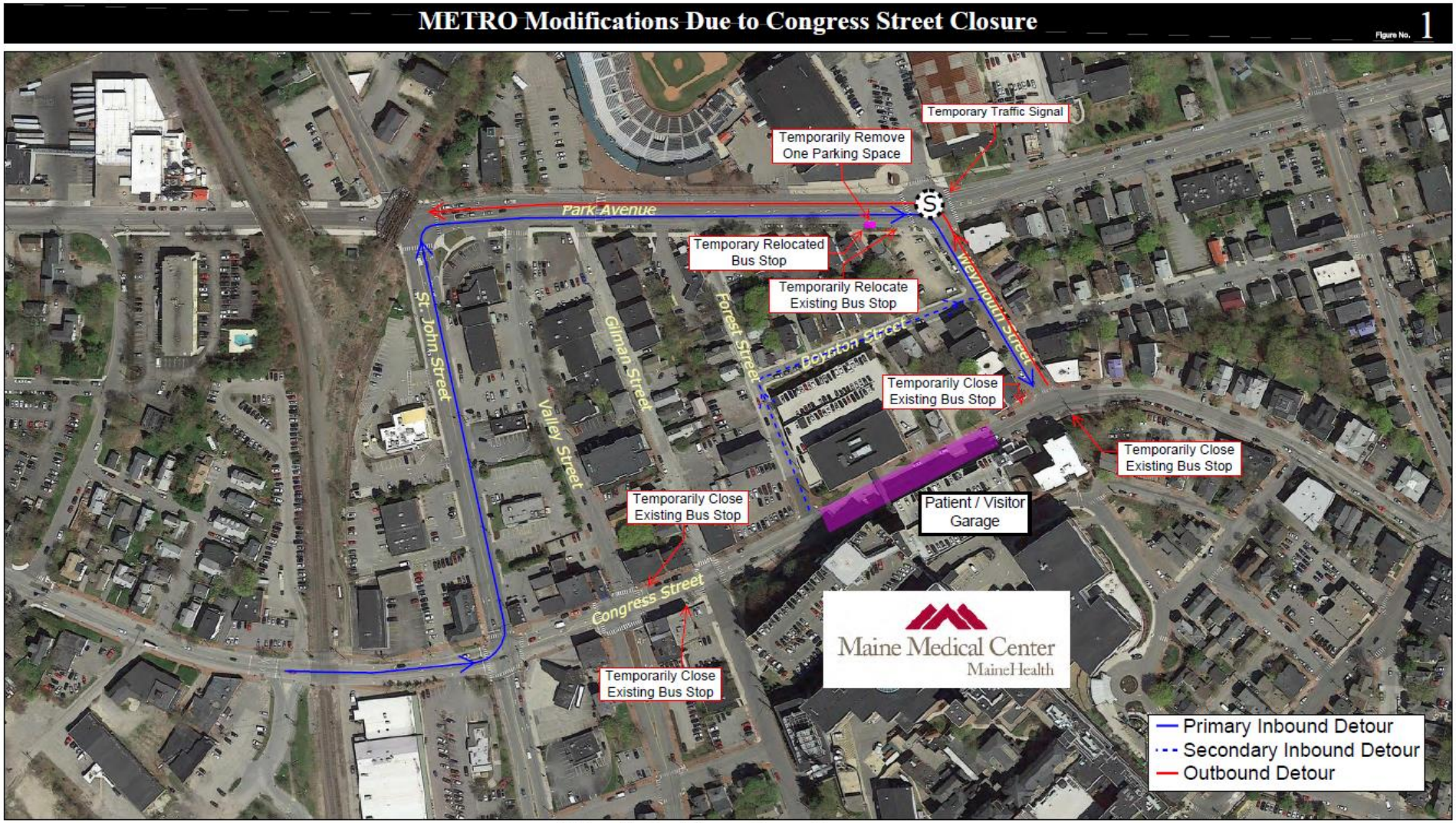
Embrace change.

Emergency Access



Maine Medical Center Expansion
PORTLAND, MAINE

METRO Access



Maine Medical Center Expansion
PORTLAND, MAINE

Sea Dogs Game Days



- Gates open at 4:30PM; Rush at 5:15PM
- Communication to ticket holders
- Coordinate with City Staff that supports Sea Dogs parking
- Parking in Fitzpatrick Lot and MMC's Forest St garage
- Police controlled pedestrian crossing
- Added signalized pedestrian crossing
- Add message to variable message boards
- Additional flaggers as needed

Sea Dogs Mother's Day 5k – Sunday, May 13, 2018



- Registration begins at 7:00AM
- Race expected to end at 11:00AM
- 10 police officers 7:00AM – 11:00AM
- 80 volunteers

- Close Park Ave between St John and Deering Ave to start the race
- Close Brighton Ave between Stevens Ave and Park Ave during the middle and end of the race.

Sea Dogs Mother's Day 5k Detour Impact

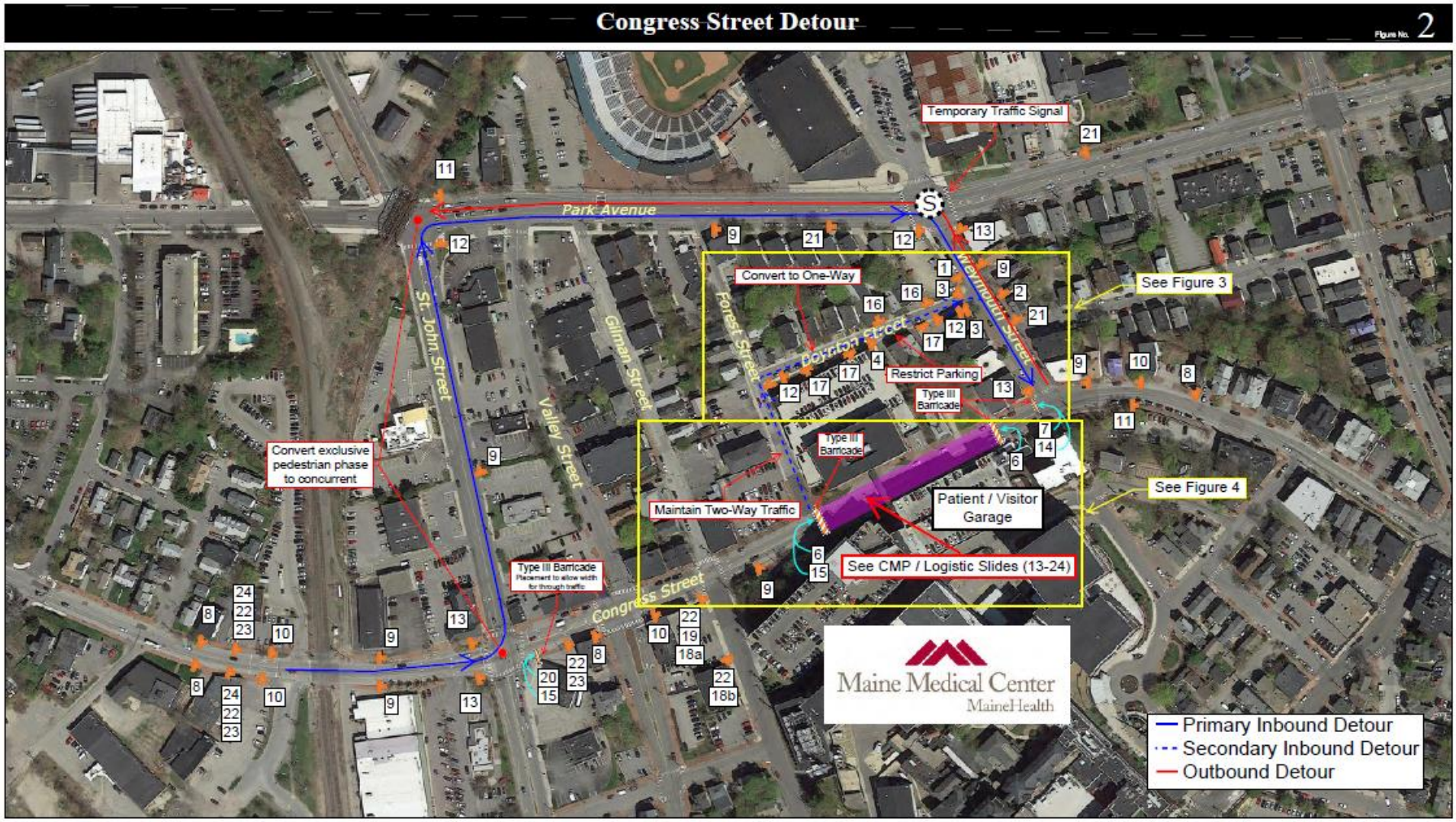


- Close Park Ave between St John and Deering Ave to start the race
  - Detour traffic to Brighton Ave from 7:00 AM until Brighton Closure
- Close Brighton Ave between Stevens Ave and Park Ave during the middle and end of the race.
  - Detour traffic to Commercial St until race end (approx. 11:00 AM)

APPENDIX


Be a role model.
Take responsibility.
Set high
Embrace change.
Be an active listener.
standards.
Act with kindness and compassion.

Detour Signage Detail



Maine Medical Center Expansion
PORTLAND, MAINE

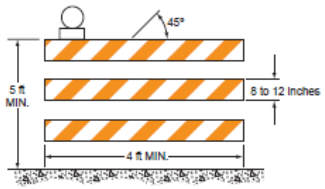
Detour Signage Detail (cont.)

General Notes and Sign Specifications

Figure No. 6

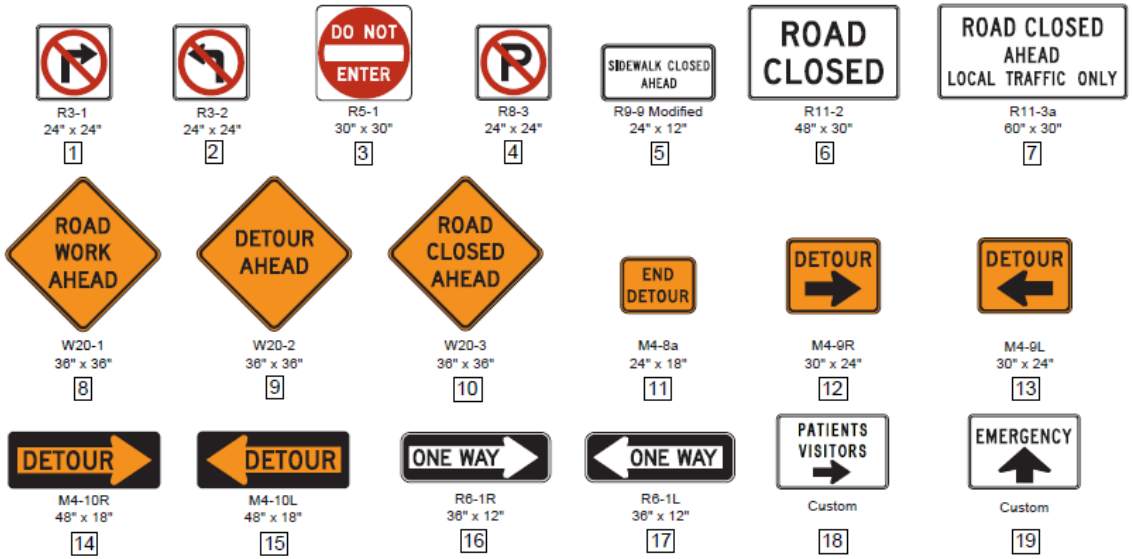
GENERAL NOTES:

1. ALL TRAFFIC CONTROL SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREET AND HIGHWAYS (MUTCD), USDOT, FHWA, LATEST EDITION, AND CITY STANDARDS.
2. SIGN LOCATIONS SHOWN ARE APPROXIMATE. ACTUAL LOCATIONS SHALL BE DETERMINED IN THE FIELD AND APPROVED BY THE CITY.
3. OTHER SIGNS MAY BE NEEDED AS DIRECTED BY THE
4. CITY. ALL CONTROL DEVICES SHALL BE PLACED IN HIGHLY VISIBLE LOCATIONS.
5. ALL CONSTRUCTION RELATED TRAFFIC CONTROL SIGNS NOT IN EFFECT SHALL BE COVERED OR TURNED FROM TRAFFIC VIEW UNTIL THEY ARE MADE ACTIVE. SIGNS SHALL BE COVERED OR REMOVED WHEN THE WORK IS NOT ACTIVE.
6. ANY EXISTING SIGNS OR PAVEMENT MARKINGS DAMAGED DURING CONTRUCTION SHALL BE RESTORED TO THEIR ORIGINAL CONDITIONS OR REPLACED AS NEEDED.
7. ANY CONFLICTING SIGNS OR PAVEMENT MARKINGS SHALL BE COVERED OR REMOVED AS NEEDED.
8. CHANNELIZING DEVICES SHALL BE PLACED PER MUTCD.
9. POST-MOUNTED SIGNS SHALL BE A MINIMUM HEIGHT OF 7 FEET (TO THE BOTTOM OF THE SIGN) AND MUST BE CRASHWORTHY.



TYPE 3 BARRICADE

SIGN SPECIFICATIONS:



R3-1	R3-2	R5-1	R8-3	R9-9 Modified	R11-2	R11-3a
24" x 24"	24" x 24"	30" x 30"	24" x 24"	24" x 12"	48" x 30"	60" x 30"
1	2	3	4	5	6	7

W20-1	W20-2	W20-3	M4-8a	M4-9R	M4-9L
36" x 36"	36" x 36"	36" x 36"	24" x 18"	30" x 24"	30" x 24"
8	9	10	11	12	13

M4-10R	M4-10L	R6-1R	R6-1L	Custom	Custom
48" x 18"	48" x 18"	36" x 12"	36" x 12"		
14	15	16	17	18	19


W3-3
36" x 36"
21



R11-3a
60" x 30"
20


D9-2
24" x 24"
22

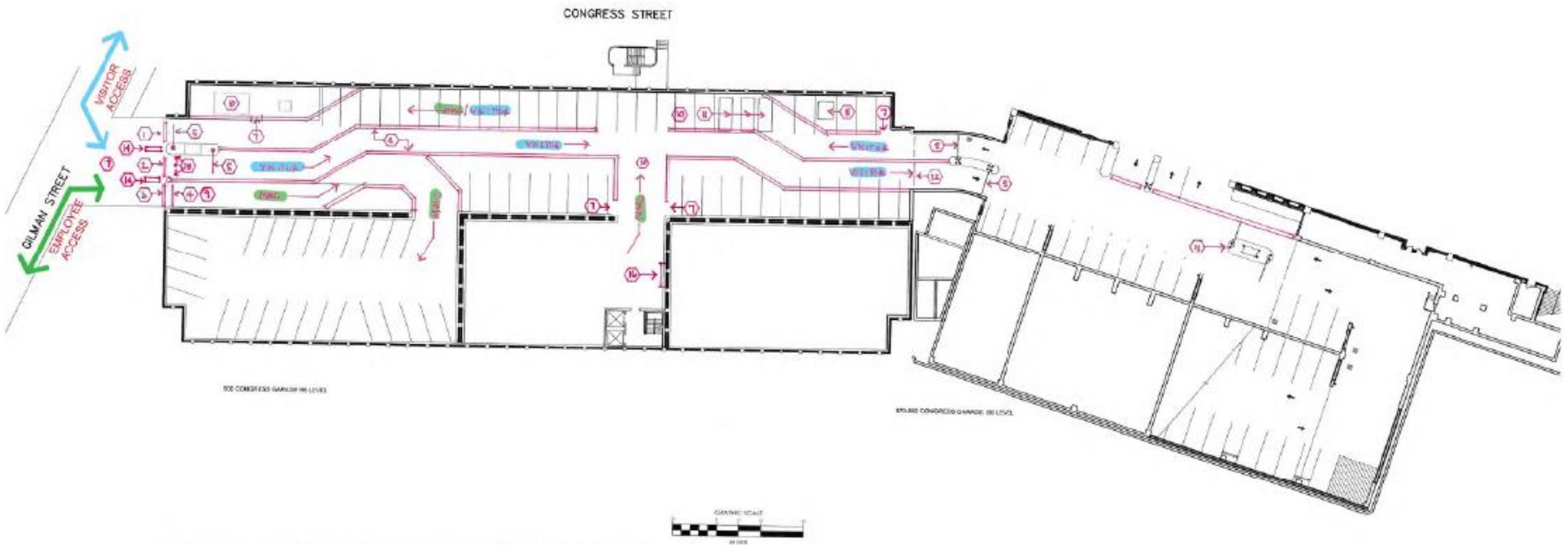

M6-3
21" x 15"
23

TEMPORARY SIGNALIZATION: SIGNAL SHALL BE ON FLASH FOR A MINIMUM OF ONE WEEK PRIOR TO BEING PUT INTO RED-YELLOW-GREEN OPERATION. THE SIGNAL SHALL BE PUT INTO RED-YELLOW-GREEN OPERATION PRIOR TO 6 AM ON A MONDAY MORNING AND SIGNAL CONTRACTOR SHALL REMAIN ON-SITE UNTIL A MINIMUM OF 9 AM TO MAKE ADJUSTMENTS TO SIGNALS / TIMING PER THE DIRECTION OF THE CITY TRAFFIC ENGINEER OR REPRESENTATIVE. THE CONTRACTOR SHALL ALSO BE AVAILABLE FROM 11 AM TO 1 PM AND AGAIN FROM 3 PM TO 6 PM ON THE SAME DAY TO MAKE ADJUSTMENTS AS DIRECTED BY THE CITY ENGINEER OR THEIR REPRESENTATIVE. TWO WEEKS AFTER INITIAL RED-YELLOW-GREEN INITIALIZATION, THE CONTRACTOR SHALL BE AVAILABLE AT THOSE SAME TIMES FOR FURTHER ADJUSTMENTS AS DIRECTED BY THE CITY TRAFFIC ENGINEER OR THEIR REPRESENTATIVE.

NOTE: SIZES OF SIGNS AND LETTERING ON ALL SIGNS SHALL BE VERIFIED THAT THEY MEET MUTCD REQUIREMENTS PRIOR TO ORDERING AND INSTALLATION.

Maine Medical Center Expansion
PORTLAND, MAINE

Access to the Visitor Garage During Construction



Master Facility Plan Phase 2: Site Planning and Construction Communication Plan: Public/Media

Goal

- Demonstrate to the public and media that the time, inconvenience and impacts caused by construction of the MMC expansion will be worth it because of the value delivered by the upgraded facility and enhanced care services.

Objectives

- Minimize disruption from planning and construction for general public
- Communicate information regarding construction
- Communicate information regarding parking changes
- Communicate information regarding traffic changes

Strategies

- Coordinate with City of Portland to amplify awareness of impacts and communications
- Utilize traditional and social media
- Highlight community, economic and clinical benefits of MMC in the past, present and future

Messages

- Maine Medical Center's modernization and expansion project is centered on providing excellent patient care
- Information will be shared in a timely basis and feedback will be collected and incorporated when the project can be improved
- MMC is committed to mitigating and minimizing impacts caused by the construction of its project

Key Audiences/Stakeholders

- Public / Media

Communication Channels

- Social Media (MMC and Portland sites)
- Earned Media – Print and broadcast

Milestone events:

- Site Plan 1 Approval
- Congress & Wescott Closures and visitor garage access
- May 7 Construction Start / Groundbreaking
- Site Plan 2 Approval

Questions/Needs

- **Who will speak with media about the logistics of the construction impact?**
- **How to balance Congress Closure with Wescott closure for various audiences**

Event/Date	Item #	Product	Copy Due / Run	Audience	Accountability	Approvals	Notes/Status
Site Plan 1 Approval	1						East Tower Overbuild Prep
	1a	Media Info Packet / thumb drive	March 27	Media Covering Hearing	Caroline, Matt		Includes bulleted fact sheet, Congress Street map, East Tower area map
	1b	Press Release (posted to the website and distributed to media)	March 28 (Morning after Planning Board Vote)	Statewide Media			*Include Congress Detour Map, East Tower area map*
	1c	Media Availability (as needed)	March 28 – 11-1 p.m.	Local media doing Folos			Spokesman on Congress Street, with blow-up poster board of new street scape; discussing detour and future
Congress & Wescott Closures and visitor garage access	2						Communicate throughout April
	2a	Facebook Detour posts; Info on Visitor Garage	Reminders posted each to run week-long; week of April 9, 16, 23, 30				*Include posts on Twitter and Instagram; On-site signage posted just prior to closure coordinated with project team*
	2b	Earned news media and 'earned' news media social posts covering Congress & Wescott Detours,	Start talking week of April 23 for				Targets include PPH, BDN, Forecaster, Sun Journal, (1 story, 3

Event/Date	Item #	Product	Copy Due / Run Date	Audience	Accountability	Approvals	Notes/ Status
		and visitor access	Placement Week of Apr 30				outlets?) MPBN, Ch. 6, 8, 13
	2d	Press Release on Closure	Run week of April 30				Distro to Non-Portland sources: Times Record, Journal Tribune, community weeklies
	2e	Update for Portland Convention & Visitors Bureau, Sea Dogs & other helpful community entities	" "				Visual item they can run April-July
	2f	Boosted Facebook post	" "				Week of April 30; Focus on Congress Closure uses image to spread far, align with the City to support
	2g	City 'alert' to parking ban list (16,000)	" "				Need to discuss with the City
	2h	Joint City / MMC Press Conference?	" "				Need to discuss with the City.
Ground Breaking Ceremony	3						
	3a	Ceremony participants / attendees to involve internal, trustees, city officials, neighborhood reps			Sue D., Matt W.		Philanthropy has lead; Comms coordinating with for separate communications and media plan
Site Plan 2 Approval	4						**June?**
	4a	All-employee email					
	4b	Press Release					

Note: Other Construction updates will be communicated as needed throughout the period, using appropriate vehicles such as social and earned media.

Creative

- Use Slugger in FB Message or other capacity? Video?
- Use humor for Social Messaging to extend sharing and reach; “The Road to Recovery Starts Here,” “A Turn for the Better,” “(Eye Chart) – If You Can Read This, You Can Follow Our Detour”
- Name the Crane
- Get BBCH Kids involved

Maine Medical Center
MaineHealth

March 7, 2018

Maine Medical Center
22 Bramhall St.
Portland, ME 04102

Address line 1
Address line 2

Dear Property Owner,

The first phase of construction of the Maine Medical Center campus replacement and modernization project will begin in the coming months. This significant investment in our community and in the future of healthcare will benefit us all, modernizing our facilities to enable the quality of care we offer.

This project can only be successful with the full engagement of our immediate community members. To date, our regular meetings with our local Neighborhood Associations have helped us build awareness and address concerns.

To that end, we would like to invite you to an informational session specifically designed for nearby neighbors on Park Avenue and Weymouth, Boynton, Forest, Brackett, Grant and Bramhall streets.

We will present a number of updates that will be of particular interest to these neighbors, including:

- Information on the temporary closure of Congress Street
- Information on the detours for the Congress Street temporary closure
- Information on the temporary one-way designation of Boynton Street
- Information about the first phase of construction, focusing on additions to the East Tower and Visitor Parking Garage
- Information on the temporary two-way designation of Crescent Street

Time and Date: 5 to 6 p.m. Tuesday, March 20
Location: MMC East Tower, Classroom 2
Parking: MMC visitor parking (free) located at Bramhall & Chadwick streets in the South Visitor Parking Lot

In the meantime, we urge you to visit www.MMC.org/Modernization for project information and to sign up for email and/or text alerts when new project updates are posted. If you have any questions, please contact us at MMCProjectContact@mmc.org.

Respectfully,

Jeffrey D. Sanders
Executive Vice President & Chief Operating Officer
Maine Medical Center

MAINE MEDICAL CENTER

Construction Projects at the East Tower, Visitor Garage, Central Utility Plant

Construction Management Plan

December 15, 2017

[Updated for 1/23/18 Planning Board Meeting]
(Updated for 2/27/18 Planning Board Meeting)
(Updated for 3/27/18 Planning Board Hearing)

Prepared for: Portland Department of Planning & Urban Development Department

Project Proponent: Colliers International

Construction Manager: Turner Construction

TABLE OF CONTENTS

CONSTRUCTION MANAGEMENT PLAN

1.0 CONSTRUCTION MANAGEMENT PLAN....4
2.0 CONSTRUCTION SCHEDULE & WORK HOURS....4
2.1 Work Hours....4
2.2 Construction Timeline....4
2.2.1 Spring 2018 to Fall 2019....4
2.3 Construction Updates Reporting....5
2.4 Construction Logistics....5
2.5 Perimeter Protection / Public Safety....6
2.6 Worker Parking & Traffic Impacts....6
2.7 Truck Routes and Volumes – Refer to Site Logistics Plans....7
3.0 Air Quality & Noise....9
3.1 Dust Control....9
3.2 Noise....10
3.3 Air Monitoring....11
4.0 Communication Strategies....11
4.1 Contacts, Distribution Lists....11
5.0 Vibration Monitoring – Not Applicable....12

MAINE MEDICAL CENTER

Construction Projects at the East Tower, Visitor Garage, Central Utility Plant

Construction Management

Plan 12.15.17 (Updated 02.07.18) (Updated 03.09.18)

Purpose Statement

The purpose of this document is to provide the details of the first phase of construction for MMC's Master Facility phase IIB. This document outlines Turner Construction's plan for controlling impacts from noise, vibrations, ground movement, truck traffic, and other construction related factors to the surrounding neighborhoods and buildings.

Maintaining normal campus operations and Public Safety are high priorities during the construction phase. This plan will be presented to the appropriate City and Neighborhood representatives. The City of Portland Planning Board will approve the final plan. It has been the goal of these programs to define the construction plan before construction begins. Turner's experience on projects with similar logistic constraints has proven that pre-planning and constant communication are necessary for a smooth efficiently run, incident free project.

It is Turner Construction's full intent to follow the guidelines set by the contract documents.

Turner Construction and its subcontractors shall schedule and conduct operations in a manner that will control the disturbance to the public in areas adjacent to the work and to occupants of buildings in the vicinity.

1.0 CONSTRUCTION MANAGEMENT PLAN

This Construction Management Plan (CMP), submitted to the Portland Department of Planning & Urban Development for approval by the City of Portland Planning Board prior to the start of construction, includes specific mitigation measures and staging plans to minimize impacts to surrounding residences and businesses. The Construction Manager and its trade contractors will be bound by the CMP.

Turner Construction Contacts:

Project Superintendent: Scott Griffin
Email: SGriffin@tcco.com / Cell - 203-943-0950

Project Manager: Adam Parys
Email: AParys@tcco.com / Cell – 617-201-0710

Project Engineer : Rick Martineau
Email: RMartineau@tcco.com / Cell – 617-438-1263

Project Superintendent: Chris Rodenhizer
Email: CRodenhizer@tcco.com / Cell – 617-312-9039

Project Director: Gregg Scholler
Email: GScholler@tcco.com / Cell – 203-219-4022

2.0 CONSTRUCTION SCHEDULE & WORK HOURS

Construction work hours will be in accordance with Section 17-18 and Section 25-129.

2.1 Work Hours

- The construction period for the project is expected to be approximately 19 months in duration.
- It is anticipated that the project is estimated to start on or about Spring 2018 and last through Fall 2019.
- Work hours will be 7AM to 7 PM Monday thru Friday.
- Workers will gather at their workplace from 6 AM to 7AM.
- Saturday work will be required on a periodic basis with hours from 7 AM to 6 PM.

2.2 Construction Timeline

2.2.1 Spring 2018 to Fall 2019

East Tower – Wescott Street

A new 60,000 SF addition is being added to the top of the East Tower. The addition consists of two new floors, level 6 and 7. On the roof is a helipad system capable of landing two helicopters. The exterior wall at Level 5 is being replaced in conjunction with a new exterior wall for Level 6 and 7. This project is expected to start in April 2018 and complete by October 2019. (19 Months)

Visitor Garage- Congress Street

Three new floors of parking are being added to the Visitor Garage. These floors will be Level 8, 9 and 10. The added floors are precast and are being added to a garage which has been designed for this expansion. The added parking capacity is 220 cars. This project is expected to start in May 2018 and complete in November 2018. (6 Months)

Central Utility Plant – Gilman Street

The Central Utility Plant is increasing cooling capacity by adding one 2,400 ton chiller and two cooling towers. This project is expected to start in November 2018 and complete in March 2019. (5 months)

2.3 Construction Updates Reporting

The following shall be reported to Maine Medical as a part of the CMP.

- Monthly "look ahead" schedules and narrative for upcoming construction activities.
- Schedule of over-size deliveries to the site that will impact roadways
- Schedule of deliveries that will be outside the City of Portland's allowable work hours.
- Proposed schedule for utility connection or work in public roadways or sidewalks as a part of Turner work.
- Proposed off-hours or Saturday work.
- Construction activities that may impact the neighborhood in an adverse way, including noise, vibration, dust, on-street parking or work outside construction limits or times. Also, proposed options to mitigate these impacts.
- An estimate of the number of vehicles that will require off-site parking.

2.4 Construction Logistics

The proposed Logistics Plans included in the CMP are designed to isolate the construction while providing safe access for pedestrians, hospital operations, and automobiles during normal day-to-day activities and emergencies. Interaction with the public will occur mainly along Congress Street and Gilman Street. The logistics plan define the timeline of construction activities and the location of cranes, gates, access for each Phase.
Each site will be secured by an 8-foot high fence with privacy screening in accordance with the Logistics Plan.

Logistics plans on the construction sequencing for East Tower Overbuild are Slides 2 to 12.

Logistics plans on the construction sequencing for Visitor Garage Overbuild are Slides 13 to 26.

Logistics plans on the construction sequencing for Central Utility Plant cooling upgrade Slides 27 to 29.

2.5 Perimeter Protection / Public Safety

- Turner Construction will work to ensure the sidewalk protection minimizes impact to pedestrian and vehicular flow.
- The specific configuration of sidewalk protection and pedestrian access around the site will vary depending on the phase of the work being performed.
- In general, secured fencing will be used to isolate construction areas from pedestrian traffic.
- Flagmen or Police Details will be provided at all active gates when there are deliveries.
- Construction procedures will be designed to meet all OSHA safety standards for specific site construction activities.
- Subcontractors will implement and manage their own Health and Safety Program for the project.
- All Subcontractors are required to wear appropriate personal protective equipment.
- Snow removal and ice treatment will be provided on the surrounding area within the construction fence.
- Sidewalks will be cleaned of trash and debris as needed.
- If existing street lights need to be removed for the duration of the project,
- Concrete washout will be in concrete washout bags, collected and placed in a dumpster. Concrete washout area to be located within the site fence. **(Refer to logistics slide 9)**
- Turner Construction will provide sufficient temporary site lighting to ensure the safety of all pedestrians accessing the sidewalks around the site, including lighting at all covered pedestrian walkways, until permanent street lights are installed Light levels will be tested prior to temporary removal of site lighting.

2.6 Worker Parking & Traffic Impacts

- Turner Construction and its subcontractors shall encourage the use of public transportation by their workers.
- Jobsite personnel will be required to park at an offsite parking area to be determined and will be shuttled to the construction site.
    - Jobsite personnel will be required to park at MMC's Scarborough Campus
    - Jobsite personnel will be shuttled to the construction site
    - Subcontractors who violate this requirement will be fined $500 per offense
- Worker parking shall not be allowed on site except for company vehicles required to perform the work.

- Turner will qualify subcontractors' with a legitimate reason to park onsite and manage that parking within the construction fence and not impact parking in the surrounding area.
- No personal vehicles will be allowed to park at the project construction site or in the adjacent residential streets.
- The following language will be included in the contracts with all subcontractors
    - *"Parking: There shall be absolutely no parking on the project site, in the Hospital Parking Garages and / or Hospital Surface Parking lots, and on street parking adjacent to the Hospital. This is including but not limited to employee vehicles, company vehicles, delivery trucks, trucks containing equipment such as welders, etc. Turner to provide remote parking location, and transportation to and from the jobsite. Any workers found in violation of this policy will be subject to permanent removal from the project and the subcontractor shall be assessed a $500 fine per incident."*

The number of workers required during the construction will vary by Construction Phase.

Construction Phase - April 2018 to September 2019

- Spring 2018- Fall 2018 – average workers – 40 to 50
- Fall 2018 – Spring 2019 – average workers – 70 - 90
- Spring 2019- Fall 2019 - average workers – 100

2.7 Truck Routes and Volumes – Refer to Site Logistics Plans

All street opening and occupancy in the public right of way will be in accordance with Chapter 25 of the City of Portland Land Use Code

- Truck traffic will vary throughout the construction period, depending on the activity.
- An offsite marshalling area will be utilized for large deliveries such as precast and structural steel.
- All trucks will be brought to the construction areas at MMC by experienced dedicated drivers from the marshalling lot.
- Radio and cell phones will be utilized to coordinate all trucking.
- Trucks routes must be submitted and approved by the City of Portland and the Owner before the start of construction.
- Truck idling will be held to a minimum on-site, to minimize the impact to adjacent properties..
- Turner Construction and its subcontractors shall ensure that haul routes, debris and soil removal, and staging areas are conducted in a manner that minimizes the impacts to the abutting communities,
- Wheel wash stations will be installed and maintained by Turner and its subcontractors as needed and maintained at construction site exit areas.
- Street sweeping / vacuuming of all impacted City streets and sidewalks shall be performed by Turner Construction and its subcontractors on an as-needed basis.

- Streets, sidewalks, bicycle ways or other means of travel may not be obstructed or closed without permission from the Owner and other authorities having jurisdiction. The Owner shall be notified one week in advance of any such obstructions or closures.

Construction - East Tower Overbuild – (Refer to Logistics Slides 2 thru 12)

All street opening and occupancy in the public right of way will be in accordance with Chapter 25 of the City of Portland Land Use Code

- All truck traffic will be directed to enter the site in accordance with truck route plans approved by the City of Portland and included in the Logistics plans. **(Refer to Logistics slides 8-12)**
- Turner will install way finding signage at strategic locations identifying no travel zones for construction vehicles.
- All subcontractors and vendors will be provided with pamphlets indicating the appropriate truck routes to access the site.
- Trucks will be brought within the fence line.
- The crane erection requires the closure of Ellsworth for a duration of one long day.
- **Ambulance right of way thru East Tower tunnel is identified on logistics slide 9.**
- Fire Safety requirements are addressed in Turner's Environmental and Health Safety Program for Maine Medical, pages 34 to 36**.**
- During crane erection a portion of Ellsworth Street and Wescott will be closed. **(Refer to logistics slide 8)**

Construction Visitor Garage Overbuild – (Refer to Logistics Slides 13-26)

All street opening and occupancy in the public right of way will be in accordance with Chapter 25 of the City of Portland Land Use Code

- All truck traffic will be directed to enter the site utilizing Congress Street. The Congress Street road closure is from Monday May 7, 2018 to Thursday June 28, 2018.
- During the erection of the precast pieces, overtime will be used. The work week will consist of 10 hour days –Monday thru Thursday, Friday will be an eight hour day and the plan is to work 8 hours on Saturday for the first two Saturdays. In the event that time is lost during the week due to wind and rain, the contractor will continue to work the remaining Saturdays.
- All detours and paths of travel shown on the Traffic Management Plans will be followed.
- All road signage identified on the Maintenance of Traffic Plans will be installed and maintained by Turner during the Congress Street shutdown and detour.
- Temporary repair patching of Congress Street will completed before Congress Street is reopened. If permanent patching or repairs are required they will be coordinated and completed in accordance with City of Portland timeline requirements.
- There are three places that Weymouth Street resurfacing will occur prior to the Congress Street closure. After the closure is complete, Weymouth Street will be inspected for damage.

- During an eight week period – May 7, 2018 to June 28, 2018 - Congress Street will need to be closed at the location of the Maine Medical Center Visitor Garage. Detailed logistics plans are included to identify the street closure requirements.(refer to logistics slides 18-26)
- This street closing will be in accordance with the City of Portland and Maintenance of Traffic requirements determined during the Site Plan Review process.
- The exterior façade treatment is expected to be coordinated and installed during the construction phase of the new Clinical Tower.
- All subcontractors and vendors will be provided with instructions prior to their project start indicating the appropriate truck routes to access the site.

Construction - Central Utility Plant – (Refer to Logistics Slides 27-29)

All street opening and occupancy in the public right of way will be in accordance with Chapter 25 of the City of Portland Land Use Code

- All truck traffic will be directed to the Central Utility Plant utilizing a truck path from Congress Street to Gilman Street, and a departing path from A Street. **(refer to logistics slides 28-29)**
- During a two week period when the chillers and cooling towers are installed, trucks and a crane will be set up on Gilman Street. This is expected to occur in Fall/Winter 2018.Police detail will be fulltime during this period. Gilman Street will remain open.
- Lane closing will be coordinated with the City of Portland.
- All subcontractors and vendors will be provided with instructions prior to their project start indicating the appropriate truck routes to access the site.

3.0 Air Quality & Noise

3.1 Dust Control

To reduce emission of dust and minimize impacts on the local environment, the construction contractor will adhere to a number of strictly enforced mitigation measures. These include:

- Wetting agents will be used regularly to control and suppress dust that may come from the construction materials.
- All trucks used for transportation of construction debris will be fully covered with tarps intended to keep material in the truck.
- Construction practices will be monitored to ensure that unnecessary transfers and mechanical disturbances of loose materials are minimized and to ensure that any emissions of dust are negligible.
- Street and sidewalks will be cleaned to minimize dust accumulations as needed.
- Stock piles of soils will be covered with tarps and/or poly when they are not being utilized for current site activities.

3.2 Noise

- The project will require the use of equipment that can be heard from off-site locations. This project will strive to mitigate construction noise impacts, to the extent possible.
- Increased community sound levels are an unavoidable consequence of construction activities.
- Construction will occur during the daytime hours as defined by the City of Portland Code of Ordinances (7:00 a.m. to 6:00 p.m. Monday through Friday).
- In some instances, a second shift, off hour, holiday and weekends may be required.
- When these events arise, all required permits will be obtained and notification will be posted in accordance with section 2.3
- Work shall be performed so as to prevent nuisance noise conditions that are preventable (e.g., unmaintained equipment, brake squeal, etc.).
- Turner Construction and all subcontractors shall use all reasonable efforts to implement noise reduction methods listed below to minimize construction noise emission levels. Noise reduction methods shall include, but not be limited to:

Use of:

- Tie to local power grid to reduce the use of on-site generators.
- Noise-deadening / isolating surrounds around exceptionally noisy work equipment or operations
- The maintenance of the access roadways to minimize the "bouncing" of construction vehicles within the construction site.
- Enforcing the site logistics plan, so as to maximize to every extent possible the forward movement of construction vehicles. This will, in turn, minimize the sound of back-up alarms.

Attaching:

- Intake / exhaust mufflers, shields or shrouds
- Noise-deadening material to equipment and fencing

Maintaining:

- Equipment mufflers and lubrication
- Pre-cast decking and plates to avoid rattling
- Smooth surfaces on construction sites and public ways to prevent unnecessary noise from surface irregularities.

Minimizing

- Noise from the use of backup alarms, using measures that meet OSHA regulations. The construction logistics has been designed such that the backing-up of equipment and trucks is limited.
- Use of self-adjusting ambient-sensitive backup alarms.
- Manually adjustable alarms on low setting

- Scheduling of activities so that alarm noise is minimized

3.3 Air Monitoring

- Turner Construction and its subcontractor's shall employ dust, odor, and gas control measures to minimize the creation of airborne dusts, odors, and gases during the entire construction process. At a minimum, standard dust control techniques shall be employed where heavy equipment will be traveling, standing, or loading, such as watering down the site or utilizing dust control measures. All measures shall be taken in accordance with Turner's approved Health & Safety plan.
- Turner Construction and its subcontractors shall perform dustless street sweeping / vacuuming for all construction activities including demolition, excavation, slurry / soil mixing operations on an as needed basis.
- An air monitoring plan shall be developed by the Owner based on site contaminants of concern, particulate quantities / densities, and risk-based evaluations. The plan will be developed for off-site impacts. Turner Construction and its subcontractors will be responsible for on-site health and safety issues.
- The Owner will engage a qualified consultant to monitor for dust along the perimeter of the construction site. Results of this monitoring that indicate exceedances of air quality criteria will be immediately brought to the attention of Turner Construction. Turner and its subcontractors shall immediately address the site condition, including terminating construction activities to remedy the site conditions to the satisfaction of the Owner.
- Ductwork snorkels will be installed as required on building air intakes surrounding the job-site to minimize the amount of dust and construction vehicle gases being taken in through the air handling systems. The maintenance of the filters is by the individual building managers.

4.0 Communication Strategies

4.1 Communication Plan

Turner will work with MMC's communications team to deliver a communications plan that encompasses:

- Plans for traffic management during Portland Seadogs games
- Plans for METRO bus stops and routes
- Implementation plans for all aspects of the detours outlined in the Maintenance of Traffic plan completed by Gorrill Palmer
- An emergency contacts list for the City of Portland including specifically Portland Police and Fire Departments.

4.2 Contacts, Distribution Lists

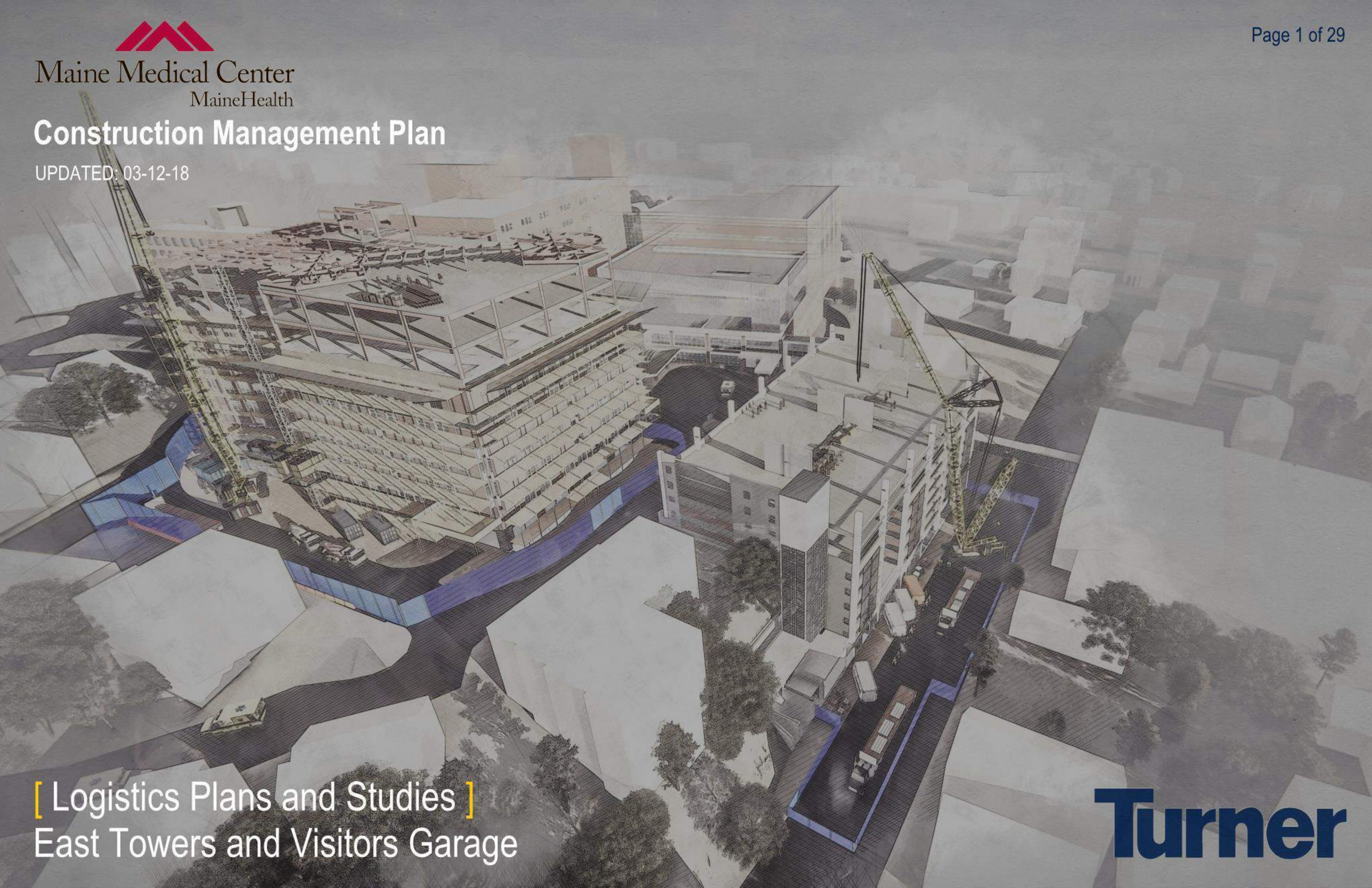
- Turner Construction shall develop a project contact list (e-mail addresses, office and cell phone numbers), to be posted by MMC on the project web site and supplied to Maine Medical Center (MMC) for 24/7 contacts.
- Turner Construction will request similar contact lists from the neighborhood associations. (e-mail addresses, and phone numbers) of key contacts for the specific project.
- Turner Construction will set-up a project bulletin board for each Phase. These boards will be used as communication tools to the surrounding community. There will be a project website thru MMC, developed that also will communicate construction related activities to the community.
- Any last minute changes to the project schedule that may impact the neighborhood or Maine Medical Center (MMC) community will be communicated per section 2.3.
- Turner Construction will participate in the neighborhood council meetings as needed to discuss progress and issues.
- Turner shall maintain a log of all construction-related concerns, via the MMC website.
- MMC shall communicate final resolution of all complaints and concerns to the neighborhood, Maine Medical Center (MMC) community, and when appropriate, to the City of Portland.

5.0 Vibration Monitoring – Not Applicable

Maine Medical Center
MaineHealth

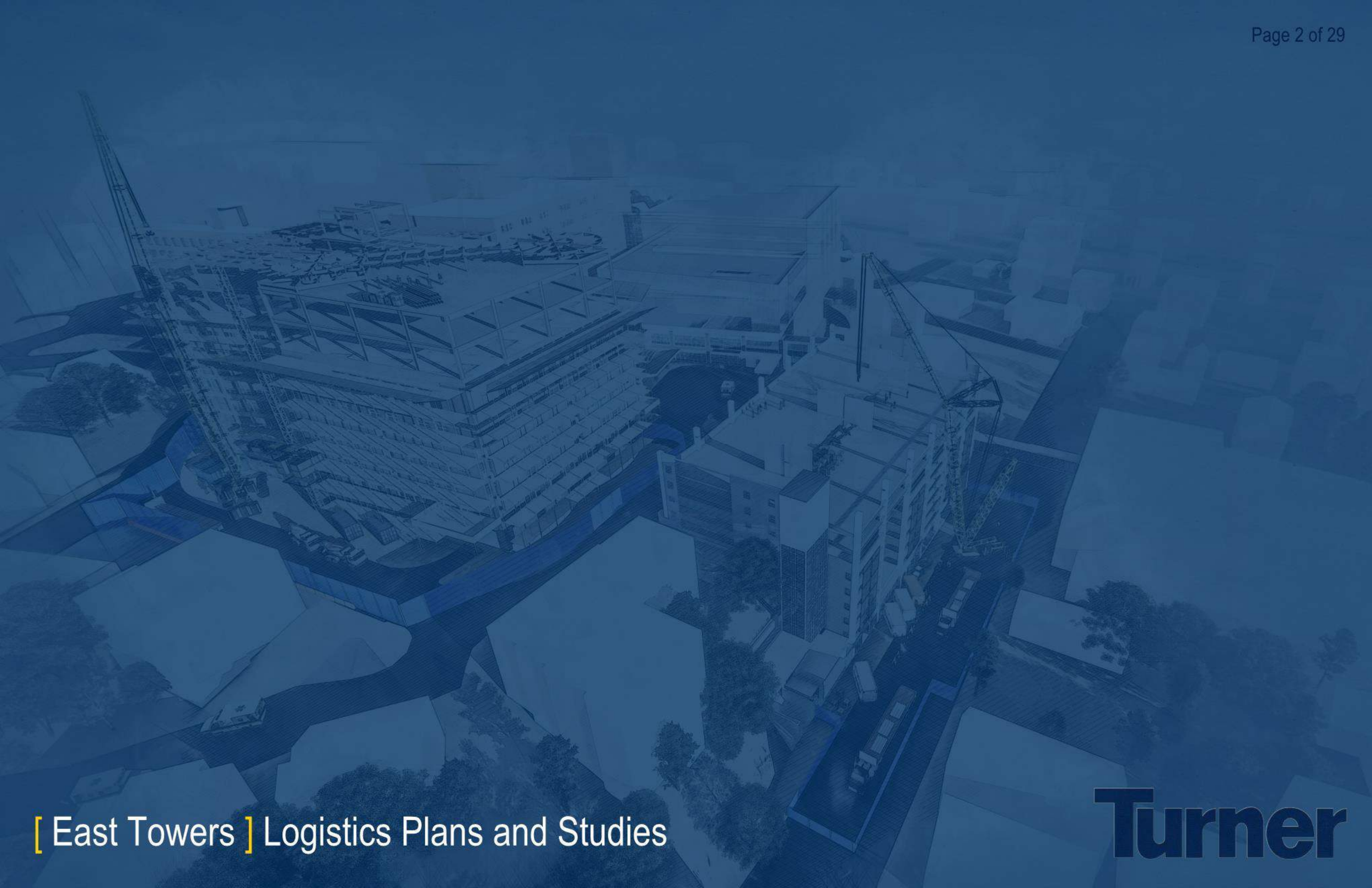
Construction Management Plan

UPDATED: 03-12-18



[Logistics Plans and Studies]
East Towers and Visitors Garage

Turner

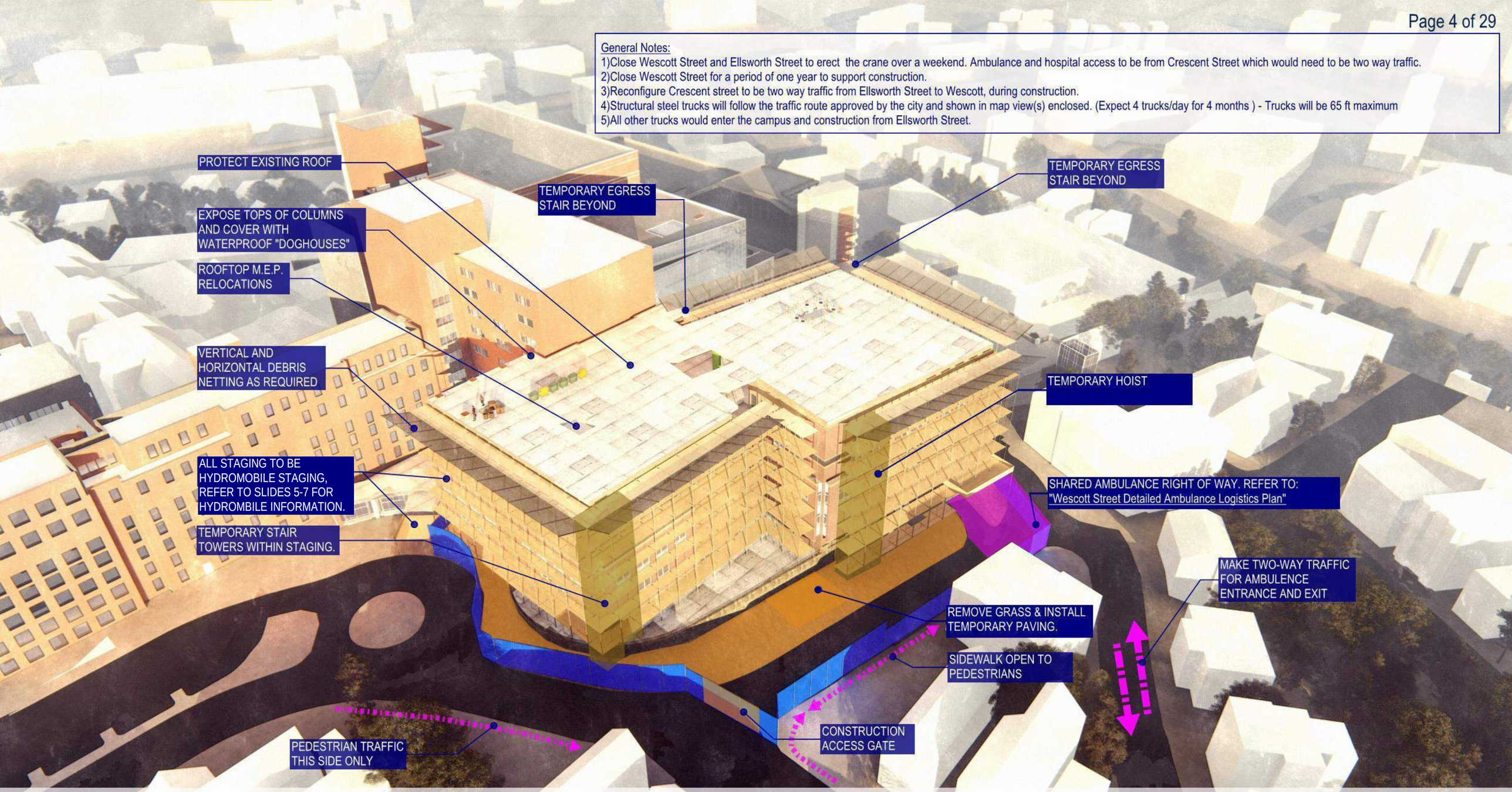


[East Towers] Logistics Plans and Studies

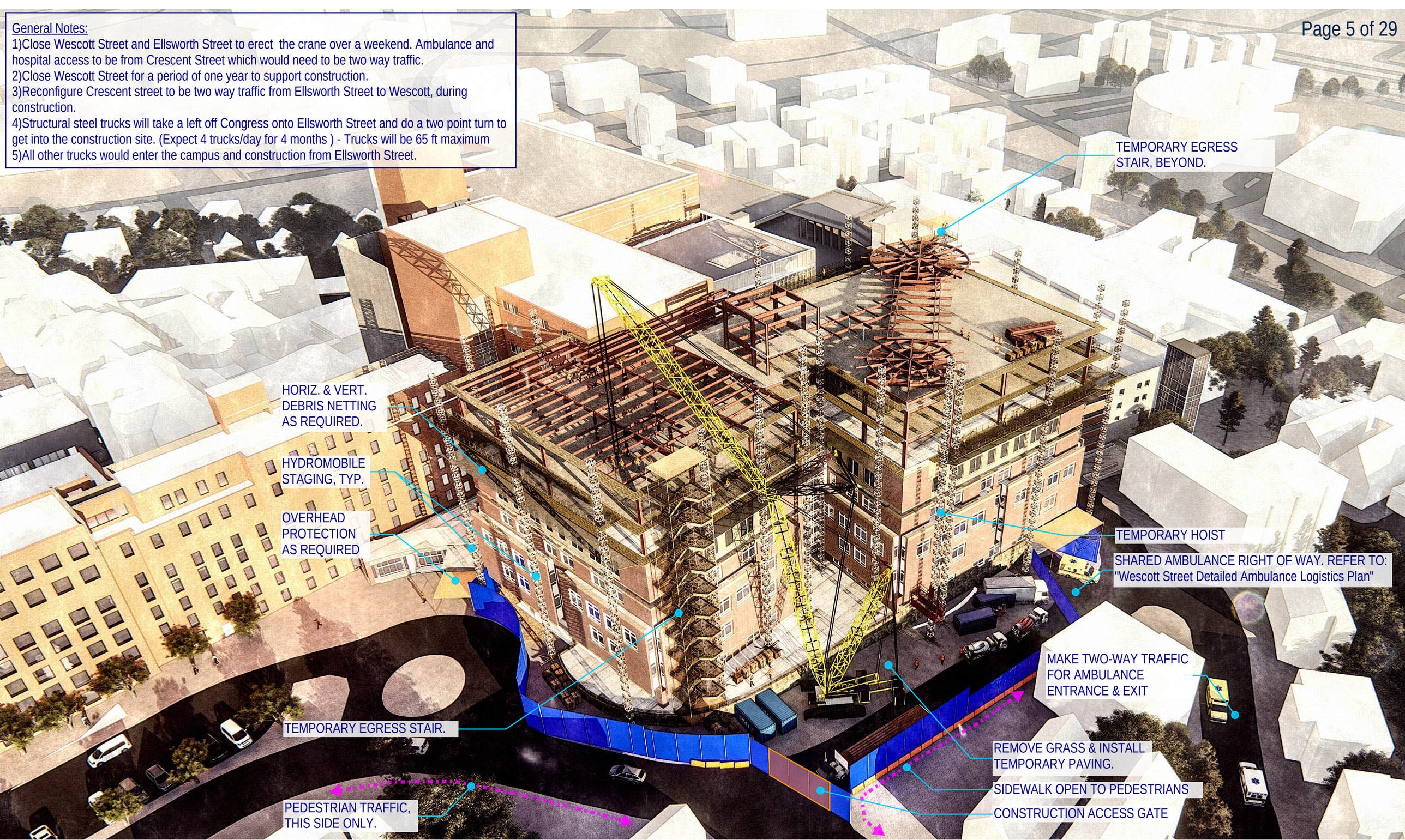
Turner



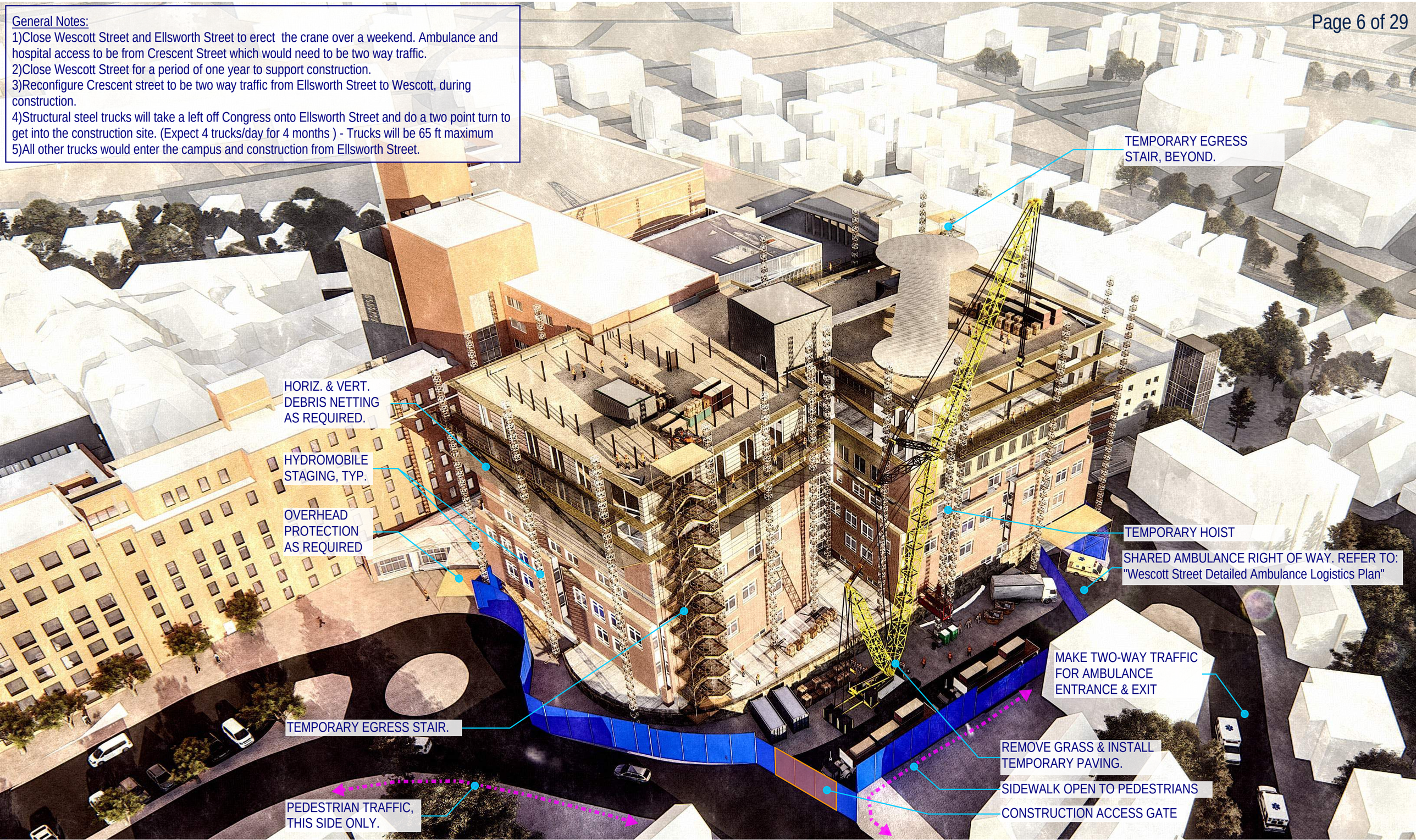
General Notes:
1)Close Wescott Street and Ellsworth Street to erect the crane over a weekend. Ambulance and hospital access to be from Crescent Street which would need to be two way traffic.
2)Close Wescott Street for a period of one year to support construction.
3)Reconfigure Crescent street to be two way traffic from Ellsworth Street to Wescott, during construction.
4)Structural steel trucks will follow the traffic route approved by the city and shown in map view(s) enclosed. (Expect 4 trucks/day for 4 months) - Trucks will be 65 ft maximum
5)All other trucks would enter the campus and construction from Ellsworth Street.



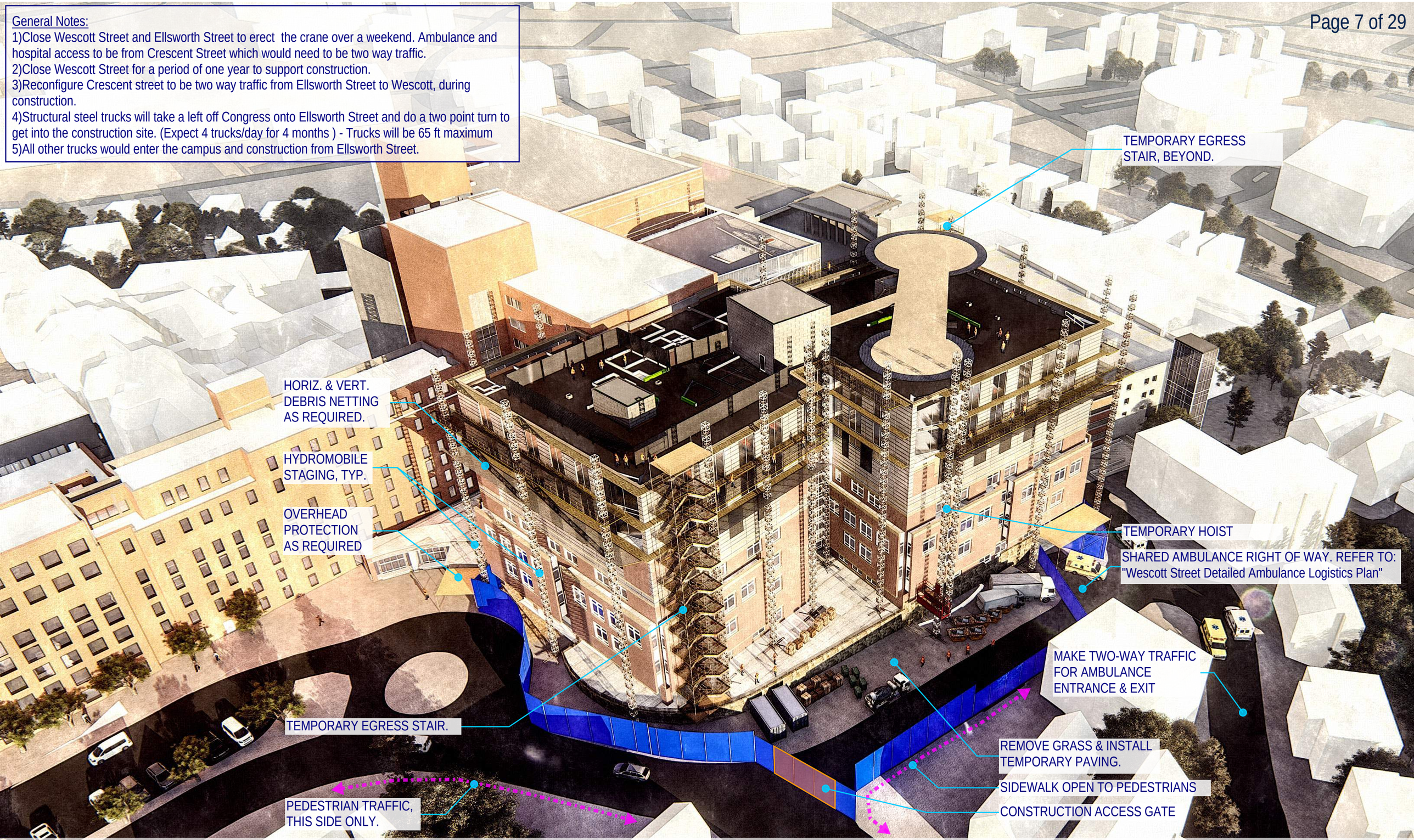
General Notes:
1)Close Wescott Street and Ellsworth Street to erect the crane over a weekend. Ambulance and hospital access to be from Crescent Street which would need to be two way traffic.
2)Close Wescott Street for a period of one year to support construction.
3)Reconfigure Crescent street to be two way traffic from Ellsworth Street to Wescott, during construction.
4)Structural steel trucks will take a left off Congress onto Ellsworth Street and do a two point turn to get into the construction site. (Expect 4 trucks/day for 4 months) - Trucks will be 65 ft maximum
5)All other trucks would enter the campus and construction from Ellsworth Street.

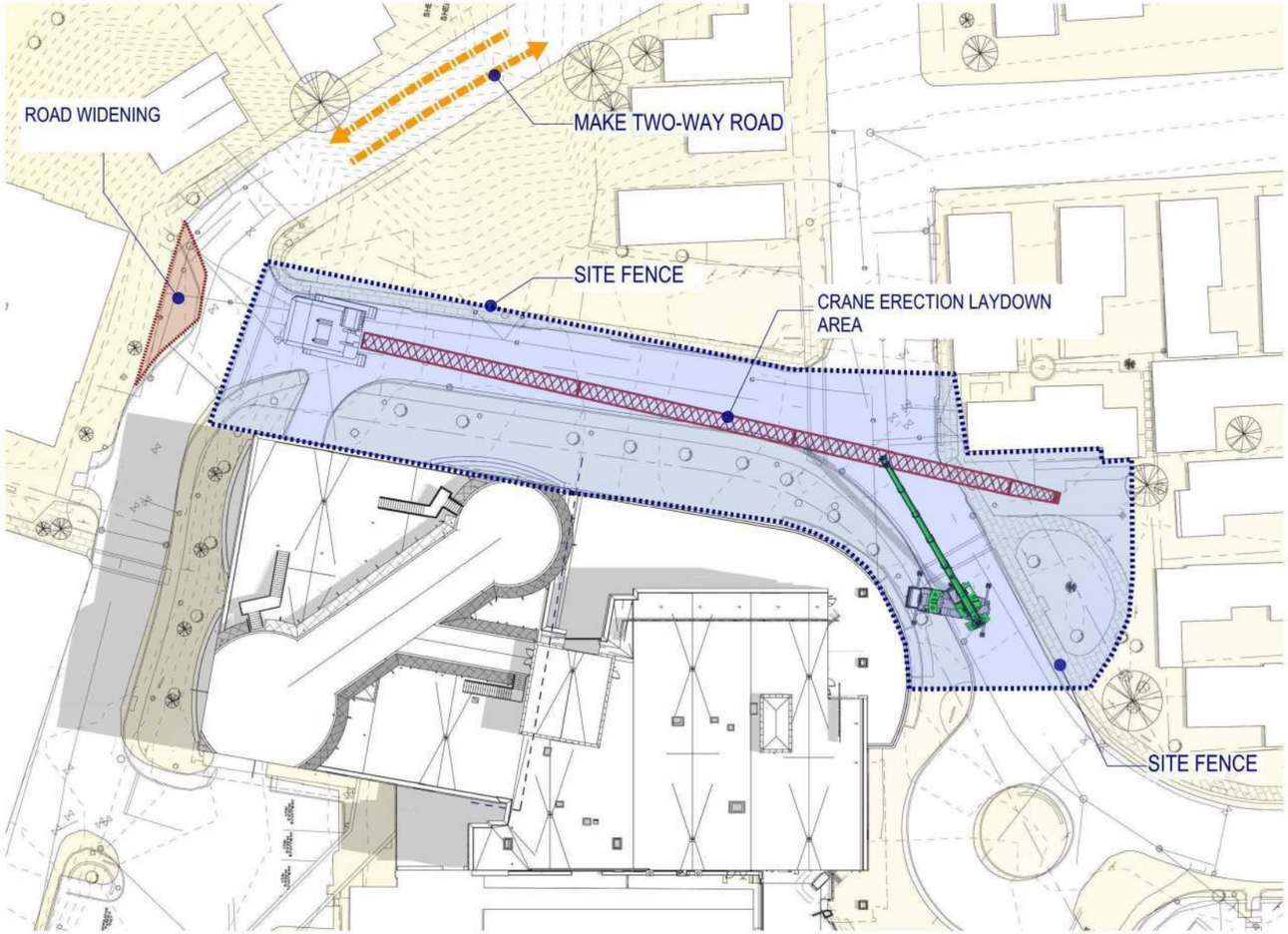


General Notes:
1)Close Wescott Street and Ellsworth Street to erect the crane over a weekend. Ambulance and hospital access to be from Crescent Street which would need to be two way traffic.
2)Close Wescott Street for a period of one year to support construction.
3)Reconfigure Crescent street to be two way traffic from Ellsworth Street to Wescott, during construction.
4)Structural steel trucks will take a left off Congress onto Ellsworth Street and do a two point turn to get into the construction site. (Expect 4 trucks/day for 4 months) - Trucks will be 65 ft maximum
5)All other trucks would enter the campus and construction from Ellsworth Street.

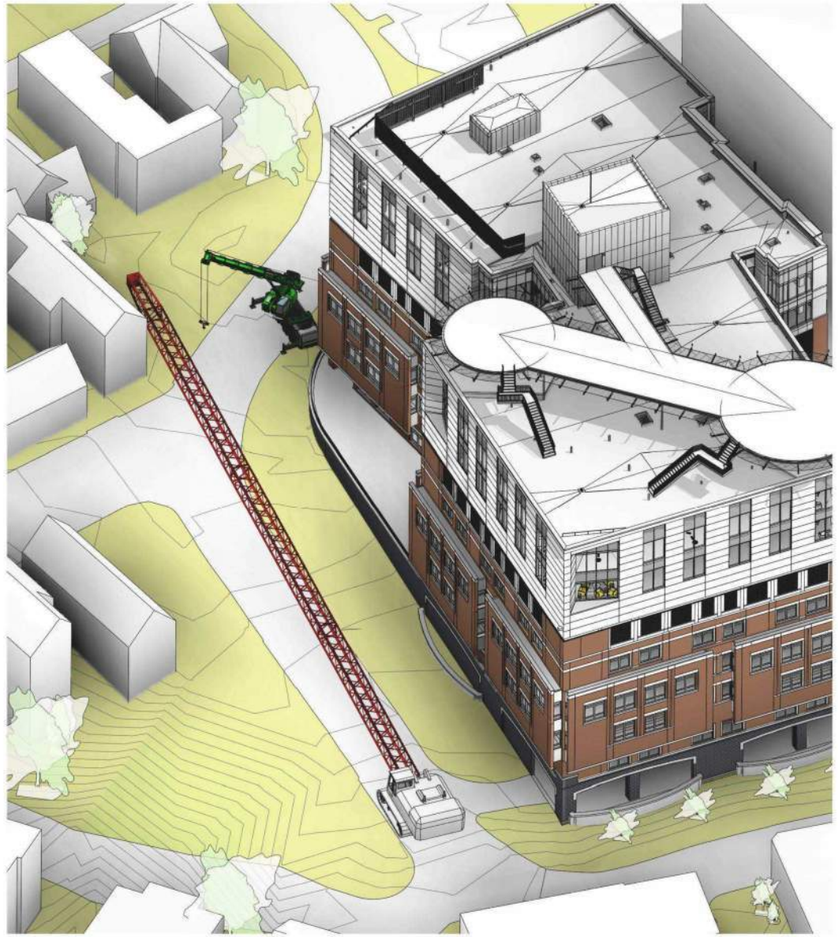


General Notes:
1)Close Wescott Street and Ellsworth Street to erect the crane over a weekend. Ambulance and hospital access to be from Crescent Street which would need to be two way traffic.
2)Close Wescott Street for a period of one year to support construction.
3)Reconfigure Crescent street to be two way traffic from Ellsworth Street to Wescott, during construction.
4)Structural steel trucks will take a left off Congress onto Ellsworth Street and do a two point turn to get into the construction site. (Expect 4 trucks/day for 4 months) - Trucks will be 65 ft maximum
5)All other trucks would enter the campus and construction from Ellsworth Street.



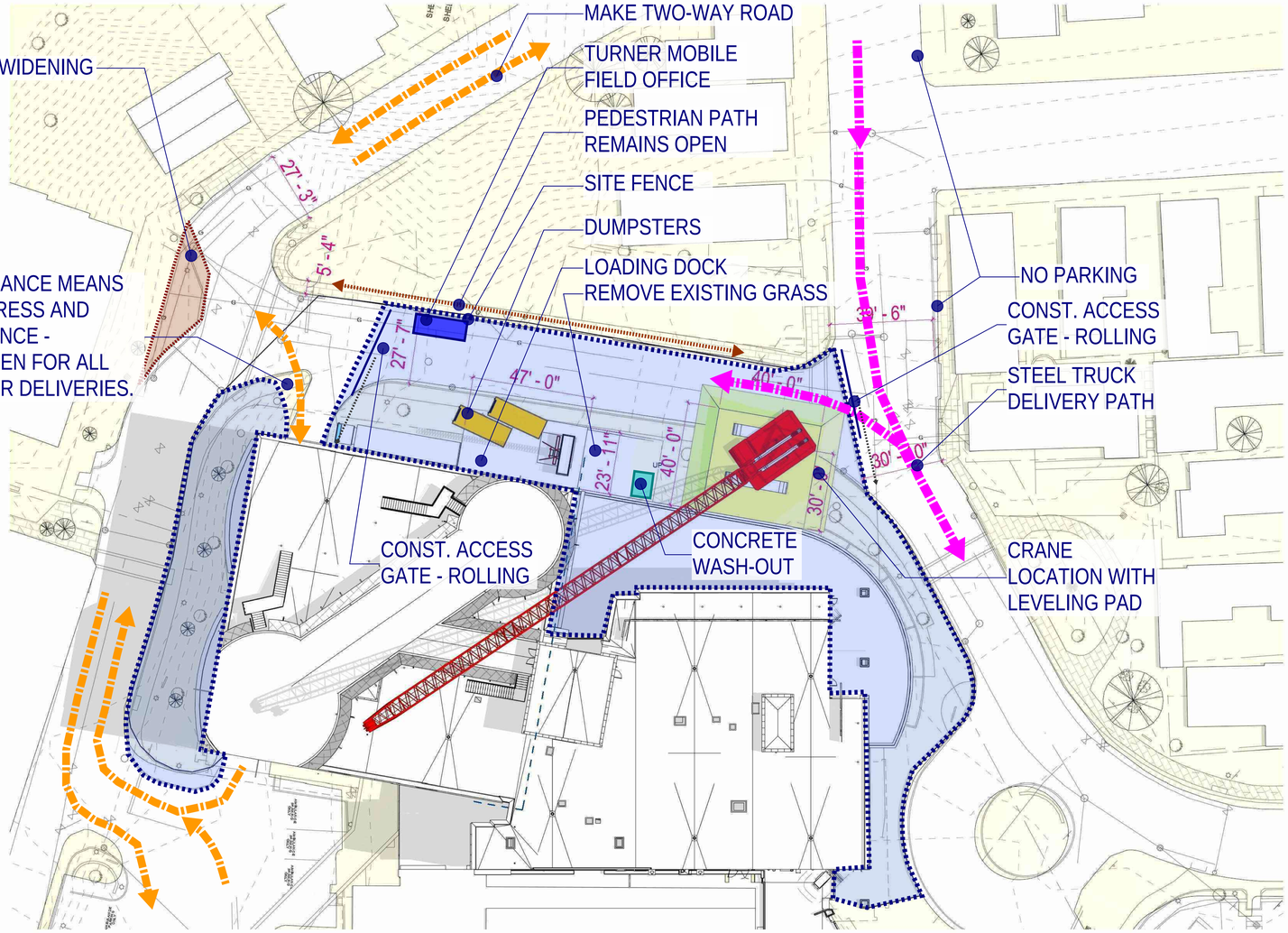


1 EAST TOWERS - CRANE LOGISTICS
3/64" = 1'-0"



2 EAST TOWERS - CRANE LOGISTICS

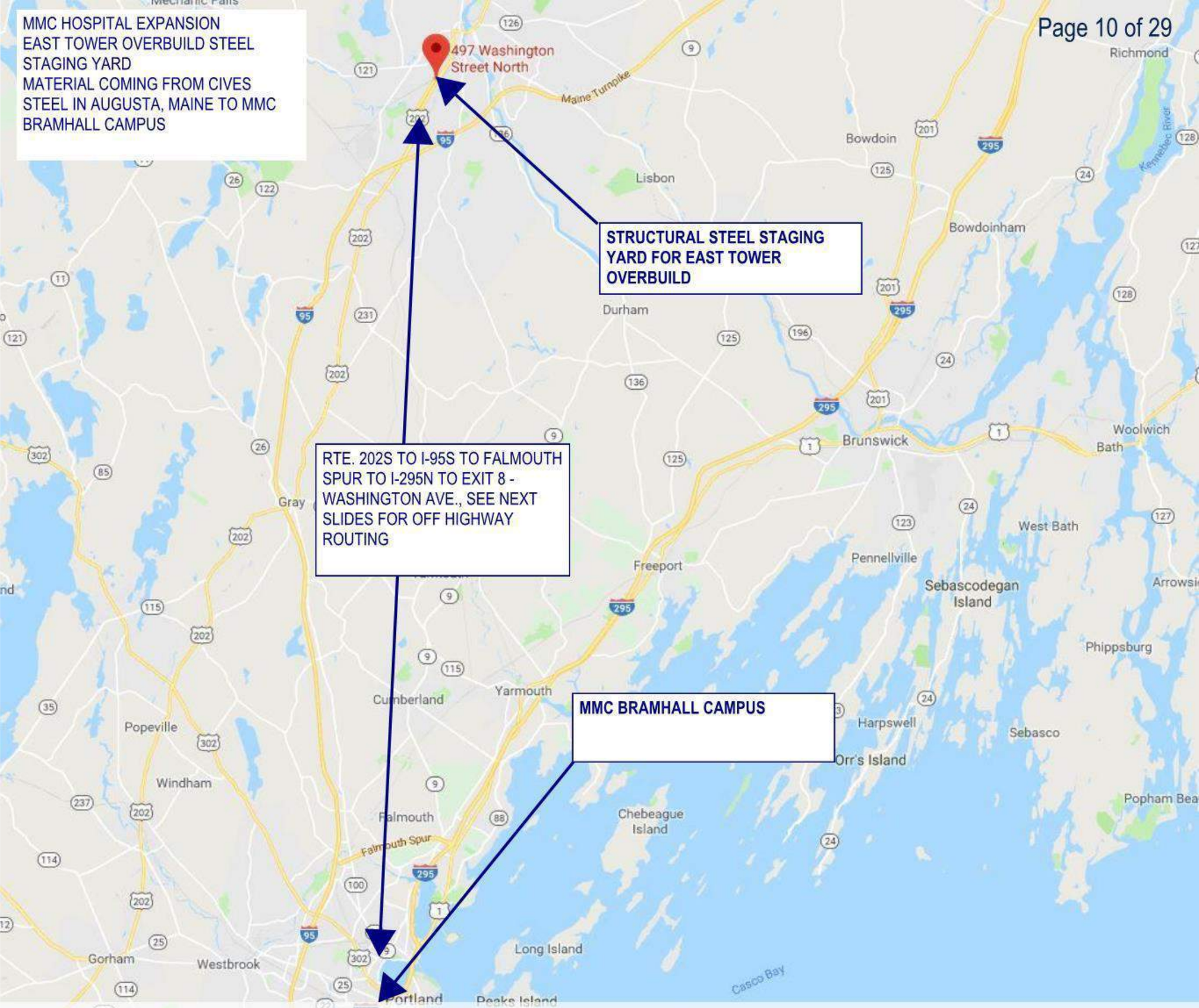
General Notes:
1)Close Wescott Street and Ellsworth Street to erect the crane over a weekend. Ambulance and hospital access to be from Crescent Street which would need to be two way traffic.
2)Close Wescott Street for a period of one year to support construction.
3)Reconfigure Crescent street to be two way traffic from Ellsworth Street to Wescott, during construction.
4)Structural steel trucks will follow the traffic route approved by the city and shown in map view(s) enclosed. (Expect 4 trucks/day for 4 months) - Trucks will be 65 ft maximum
5)All other trucks would enter the campus and construction from Ellsworth Street.



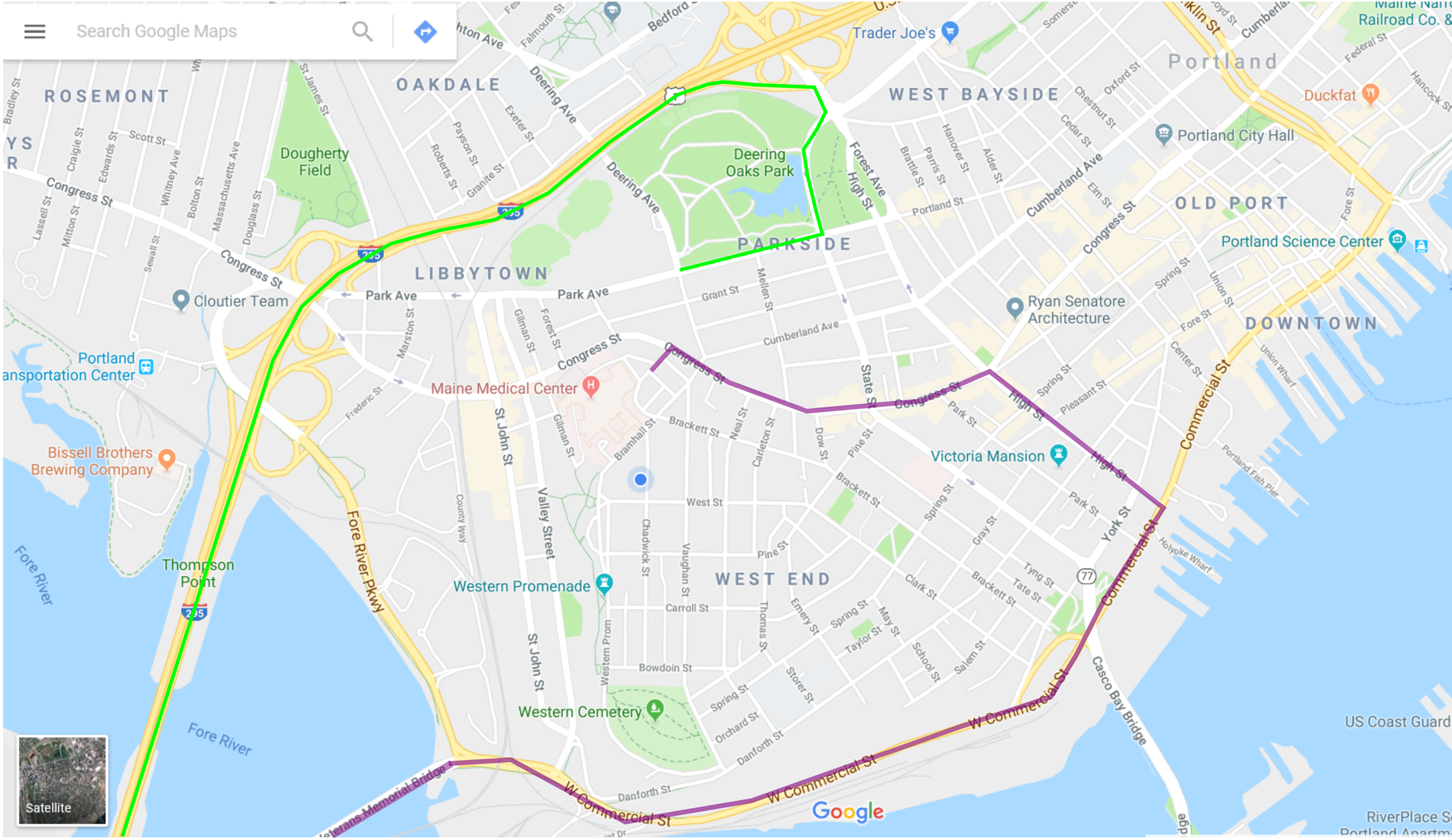
1 EAST TOWERS - CRANE LOGISTICS
3/64" = 1'-0"

General Notes:
1)Close Wescott Street and Ellsworth Street to erect the crane over a weekend. Ambulance and hospital access to be from Crescent Street which would need to be two way traffic.
2)Close Wescott Street for a period of one year to support construction.
3)Reconfigure Crescent street to be two way traffic from Ellsworth Street to Wescott, during construction.
4)Structural steel trucks will follow the traffic route approved by the city and shown in map view(s) enclosed. (Expect 4 trucks/day for 4 months) - Trucks will be 65 ft maximum
5)All other trucks would enter the campus and construction from Ellsworth Street.

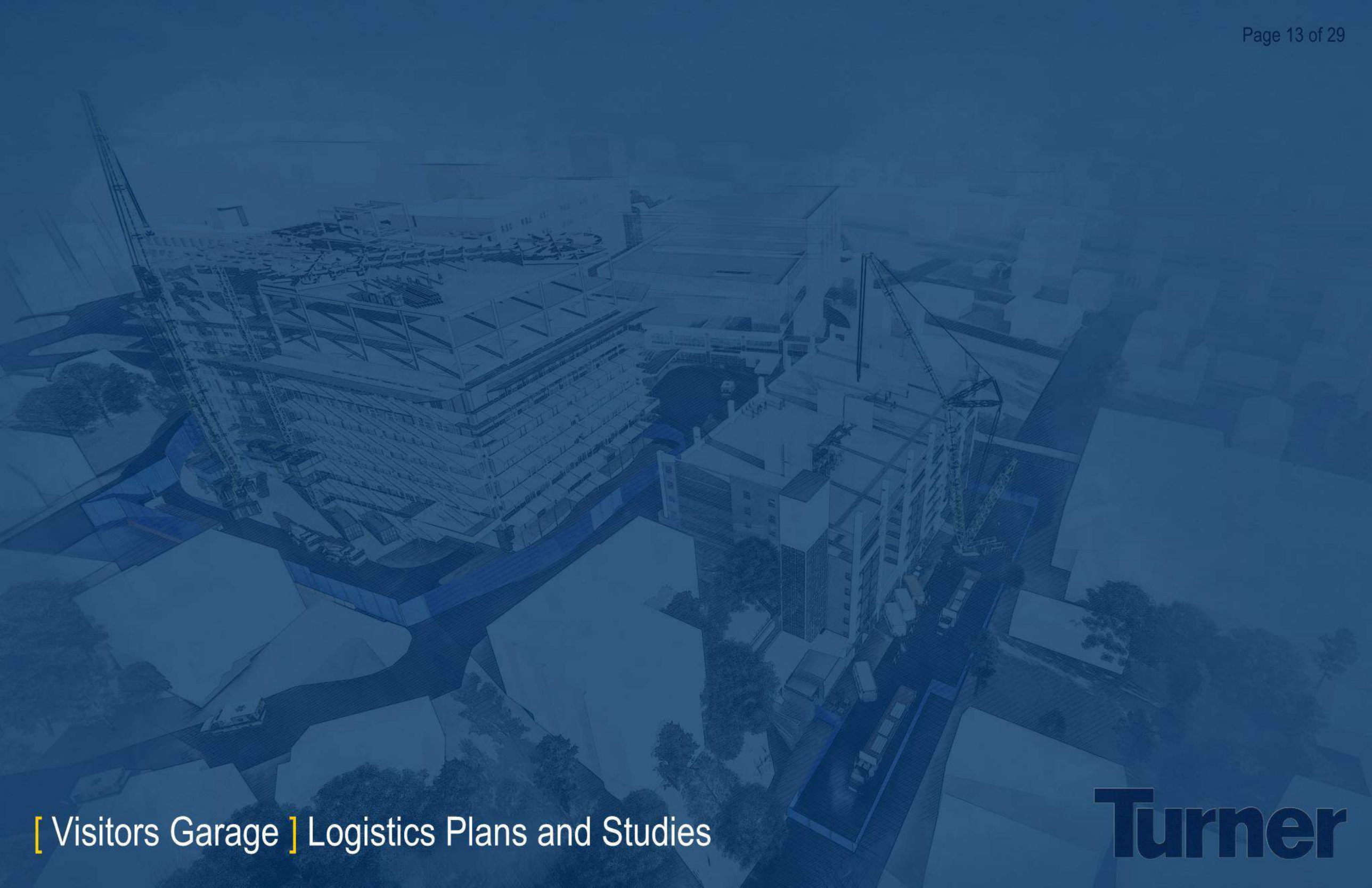
MMC HOSPITAL EXPANSION
EAST TOWER OVERBUILD STEEL
STAGING YARD
MATERIAL COMING FROM CIVES
STEEL IN AUGUSTA, MAINE TO MMC
BRAMHALL CAMPUS



Maine Medical Center, Portland Maine
Additions and Renovations [Steel Truck Delivery and Egress Paths]



STEEL DELIVERY ROUTE



[Visitors Garage] Logistics Plans and Studies

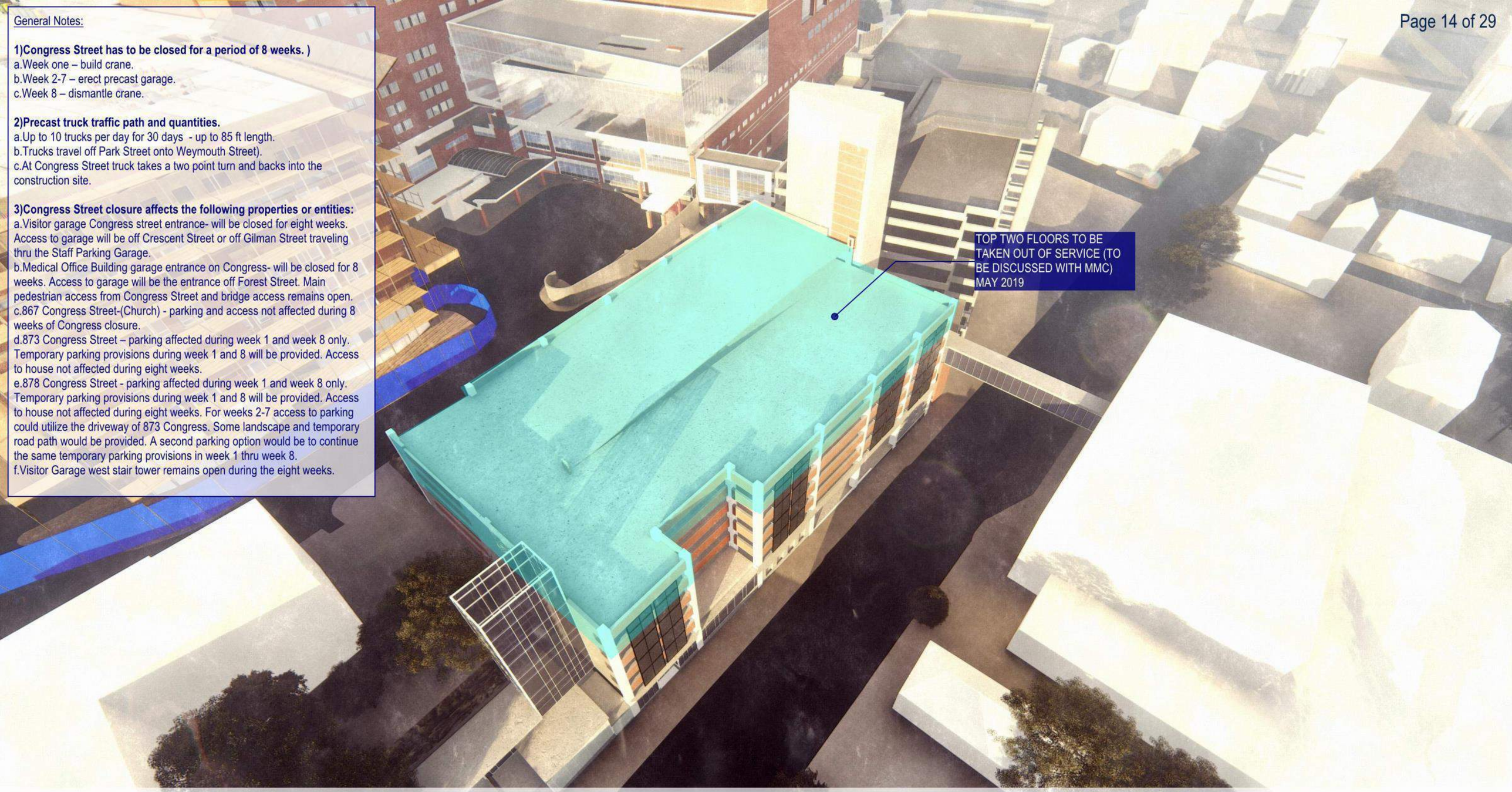
Turner

General Notes:

1)Congress Street has to be closed for a period of 8 weeks.)
a.Week one – build crane.
b.Week 2-7 – erect precast garage.
c.Week 8 – dismantle crane.

2)Precast truck traffic path and quantities.
a.Up to 10 trucks per day for 30 days - up to 85 ft length.
b.Trucks travel off Park Street onto Weymouth Street).
c.At Congress Street truck takes a two point turn and backs into the construction site.

3)Congress Street closure affects the following properties or entities:
a.Visitor garage Congress street entrance- will be closed for eight weeks. Access to garage will be off Crescent Street or off Gilman Street traveling thru the Staff Parking Garage.
b.Medical Office Building garage entrance on Congress- will be closed for 8 weeks. Access to garage will be the entrance off Forest Street. Main pedestrian access from Congress Street and bridge access remains open.
c.867 Congress Street-(Church) - parking and access not affected during 8 weeks of Congress closure.
d.873 Congress Street – parking affected during week 1 and week 8 only. Temporary parking provisions during week 1 and 8 will be provided. Access to house not affected during eight weeks.
e.878 Congress Street - parking affected during week 1 and week 8 only. Temporary parking provisions during week 1 and 8 will be provided. Access to house not affected during eight weeks. For weeks 2-7 access to parking could utilize the driveway of 873 Congress. Some landscape and temporary road path would be provided. A second parking option would be to continue the same temporary parking provisions in week 1 thru week 8.
f.Visitor Garage west stair tower remains open during the eight weeks.

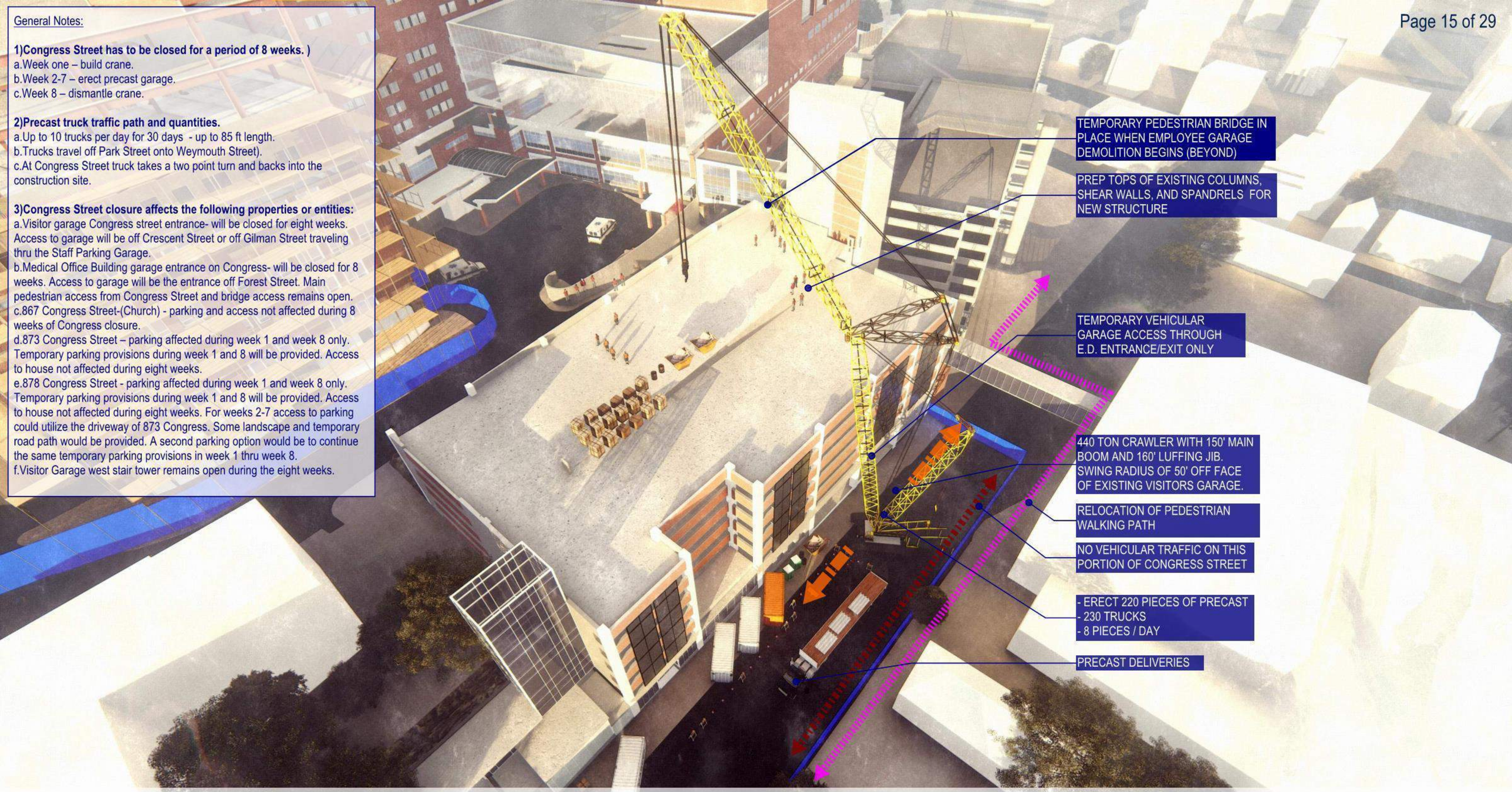


General Notes:

1)Congress Street has to be closed for a period of 8 weeks.)
a.Week one – build crane.
b.Week 2-7 – erect precast garage.
c.Week 8 – dismantle crane.

2)Precast truck traffic path and quantities.
a.Up to 10 trucks per day for 30 days - up to 85 ft length.
b.Trucks travel off Park Street onto Weymouth Street).
c.At Congress Street truck takes a two point turn and backs into the construction site.

3)Congress Street closure affects the following properties or entities:
a.Visitor garage Congress street entrance- will be closed for eight weeks. Access to garage will be off Crescent Street or off Gilman Street traveling thru the Staff Parking Garage.
b.Medical Office Building garage entrance on Congress- will be closed for 8 weeks. Access to garage will be the entrance off Forest Street. Main pedestrian access from Congress Street and bridge access remains open.
c.867 Congress Street-(Church) - parking and access not affected during 8 weeks of Congress closure.
d.873 Congress Street – parking affected during week 1 and week 8 only. Temporary parking provisions during week 1 and 8 will be provided. Access to house not affected during eight weeks.
e.878 Congress Street - parking affected during week 1 and week 8 only. Temporary parking provisions during week 1 and 8 will be provided. Access to house not affected during eight weeks. For weeks 2-7 access to parking could utilize the driveway of 873 Congress. Some landscape and temporary road path would be provided. A second parking option would be to continue the same temporary parking provisions in week 1 thru week 8.
f.Visitor Garage west stair tower remains open during the eight weeks.

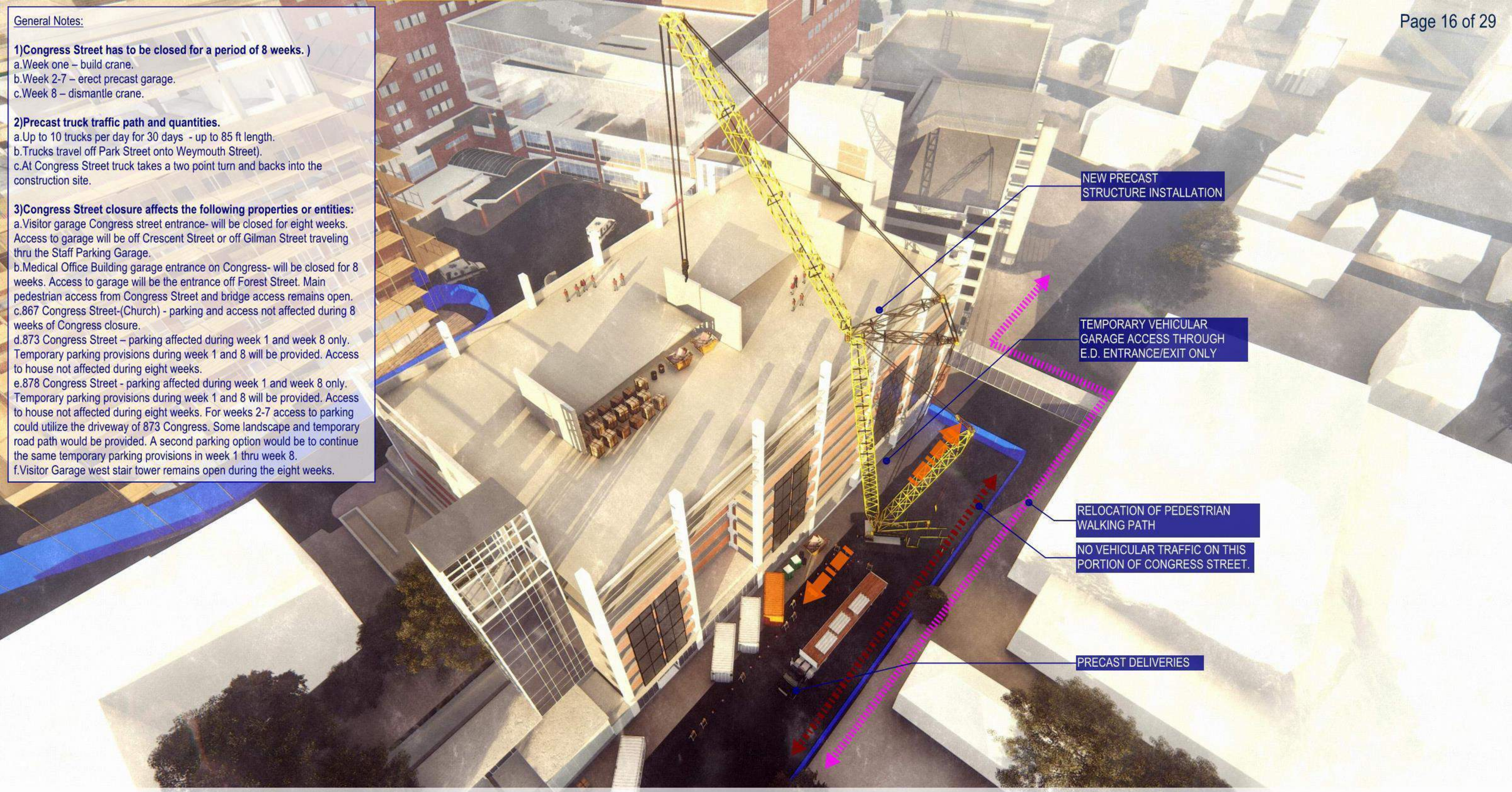


General Notes:

1)Congress Street has to be closed for a period of 8 weeks.)
a.Week one – build crane.
b.Week 2-7 – erect precast garage.
c.Week 8 – dismantle crane.

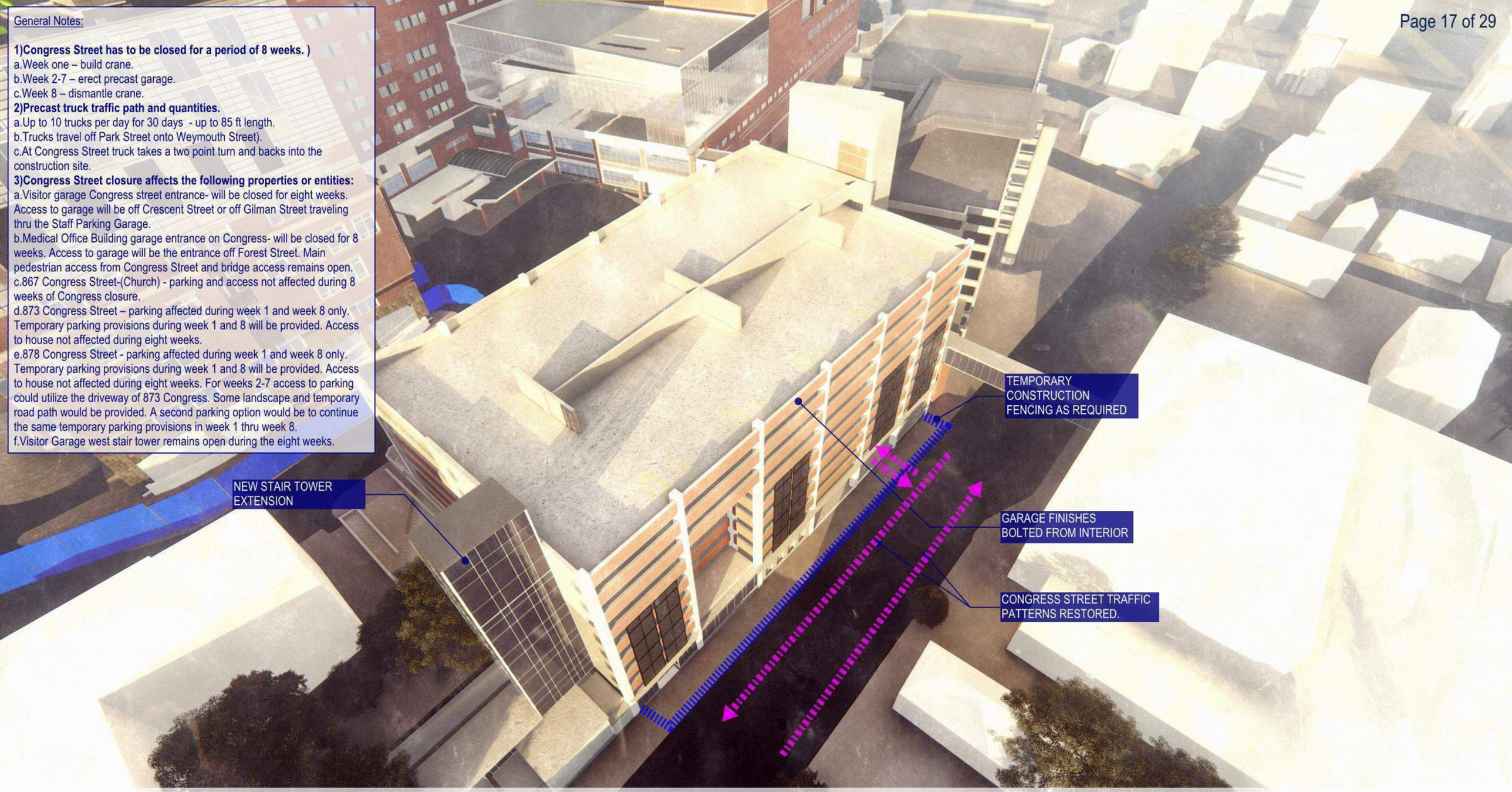
2)Precast truck traffic path and quantities.
a.Up to 10 trucks per day for 30 days - up to 85 ft length.
b.Trucks travel off Park Street onto Weymouth Street).
c.At Congress Street truck takes a two point turn and backs into the construction site.

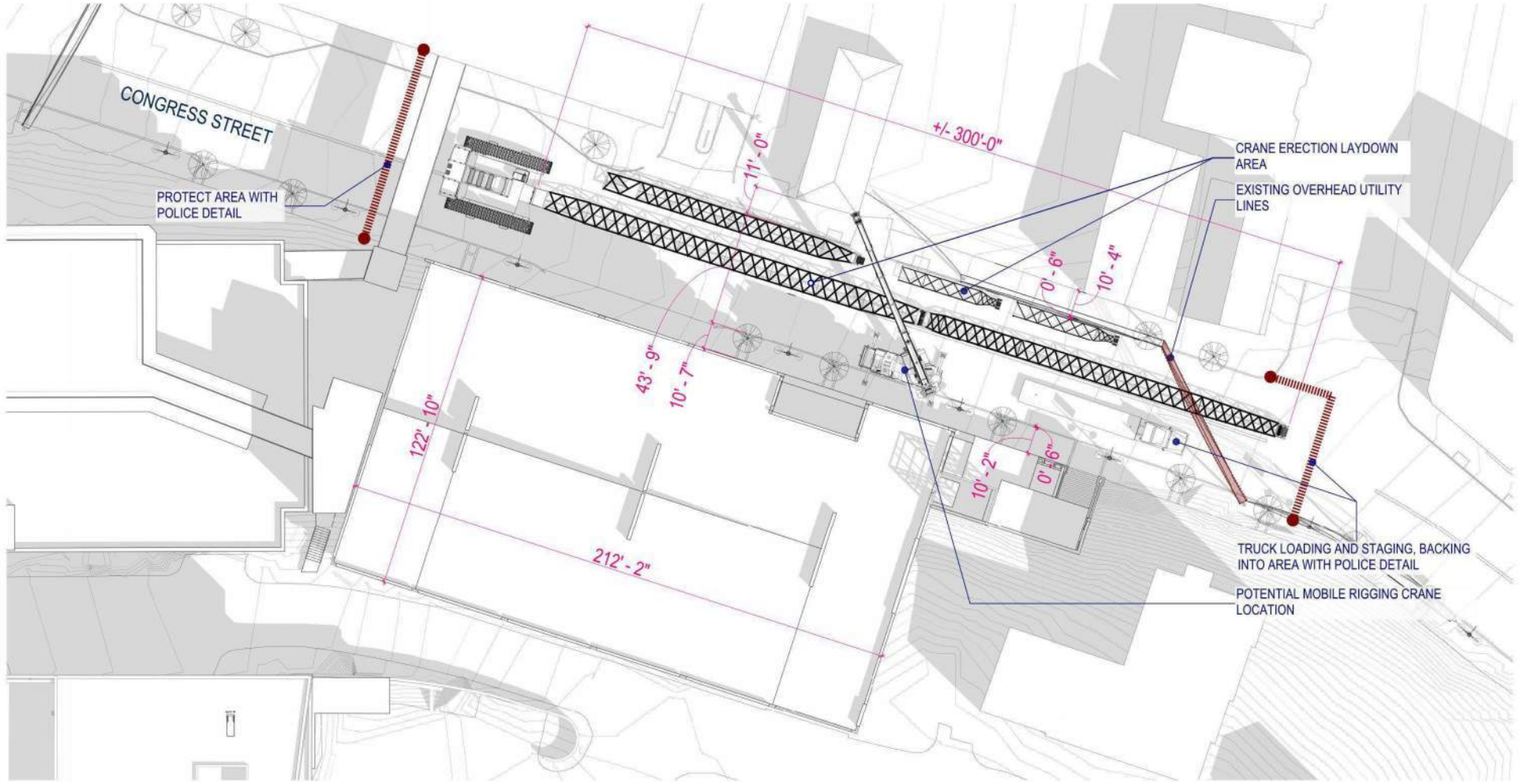
3)Congress Street closure affects the following properties or entities:
a.Visitor garage Congress street entrance- will be closed for eight weeks. Access to garage will be off Crescent Street or off Gilman Street traveling thru the Staff Parking Garage.
b.Medical Office Building garage entrance on Congress- will be closed for 8 weeks. Access to garage will be the entrance off Forest Street. Main pedestrian access from Congress Street and bridge access remains open.
c.867 Congress Street-(Church) - parking and access not affected during 8 weeks of Congress closure.
d.873 Congress Street – parking affected during week 1 and week 8 only. Temporary parking provisions during week 1 and 8 will be provided. Access to house not affected during eight weeks.
e.878 Congress Street - parking affected during week 1 and week 8 only. Temporary parking provisions during week 1 and 8 will be provided. Access to house not affected during eight weeks. For weeks 2-7 access to parking could utilize the driveway of 873 Congress. Some landscape and temporary road path would be provided. A second parking option would be to continue the same temporary parking provisions in week 1 thru week 8.
f.Visitor Garage west stair tower remains open during the eight weeks.



General Notes:

1)Congress Street has to be closed for a period of 8 weeks.)
a.Week one – build crane.
b.Week 2-7 – erect precast garage.
c.Week 8 – dismantle crane.
2)Precast truck traffic path and quantities.
a.Up to 10 trucks per day for 30 days - up to 85 ft length.
b.Trucks travel off Park Street onto Weymouth Street).
c.At Congress Street truck takes a two point turn and backs into the construction site.
3)Congress Street closure affects the following properties or entities:
a.Visitor garage Congress street entrance- will be closed for eight weeks. Access to garage will be off Crescent Street or off Gilman Street traveling thru the Staff Parking Garage.
b.Medical Office Building garage entrance on Congress- will be closed for 8 weeks. Access to garage will be the entrance off Forest Street. Main pedestrian access from Congress Street and bridge access remains open.
c.867 Congress Street-(Church) - parking and access not affected during 8 weeks of Congress closure.
d.873 Congress Street – parking affected during week 1 and week 8 only. Temporary parking provisions during week 1 and 8 will be provided. Access to house not affected during eight weeks.
e.878 Congress Street - parking affected during week 1 and week 8 only. Temporary parking provisions during week 1 and 8 will be provided. Access to house not affected during eight weeks. For weeks 2-7 access to parking could utilize the driveway of 873 Congress. Some landscape and temporary road path would be provided. A second parking option would be to continue the same temporary parking provisions in week 1 thru week 8.
f.Visitor Garage west stair tower remains open during the eight weeks.

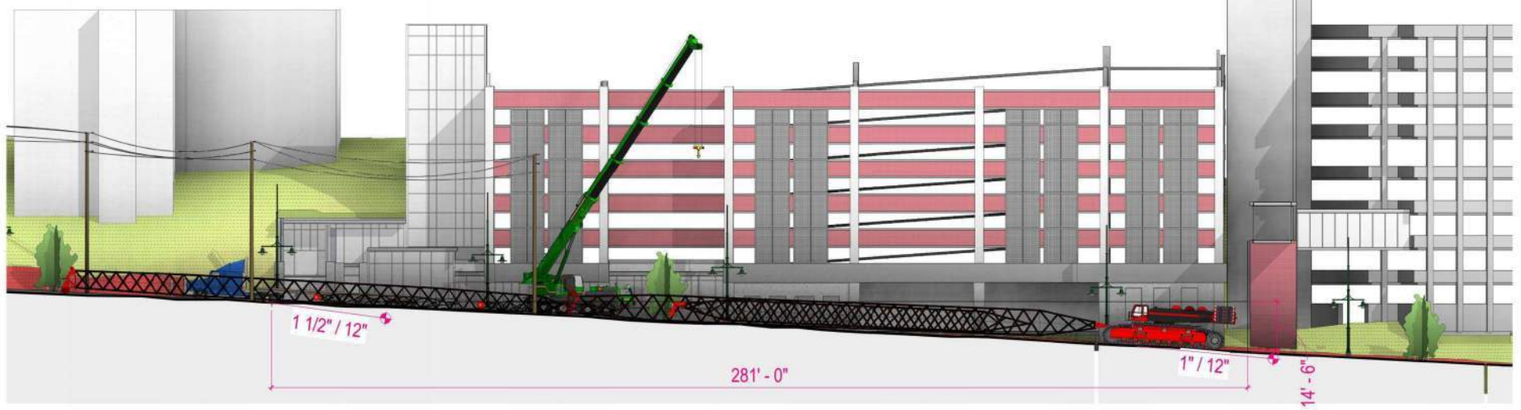




1 CONGRESS STREET - CRANE PICK PLAN
3/64" = 1'-0"

General Notes:

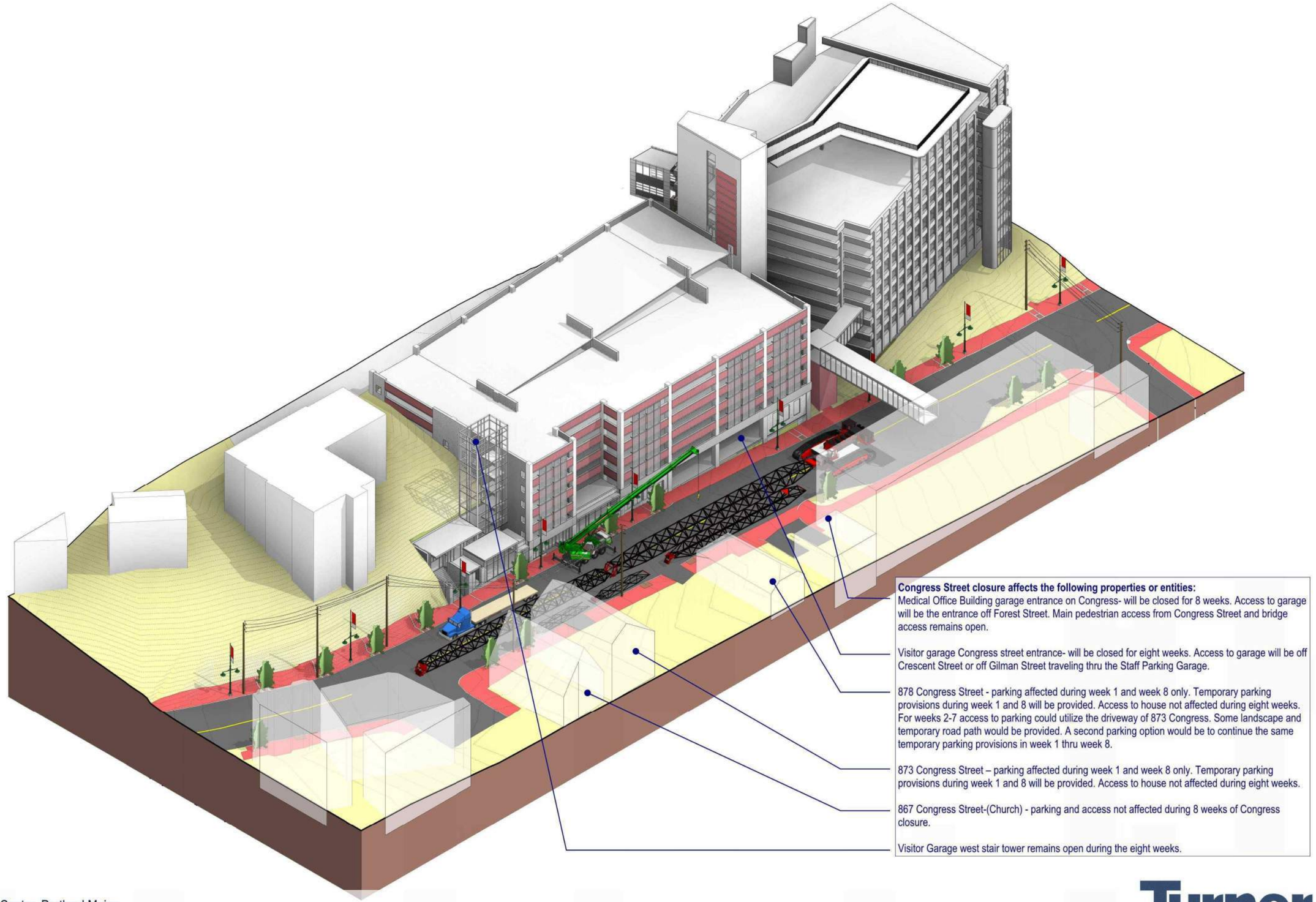
1)Congress Street has to be closed for a period of 8 weeks.)
a.Week one – build crane.
b.Week 2-7 – erect precast garage.
c.Week 8 – dismantle crane.
2)Precast truck traffic path and quantities.
a.Up to 10 trucks per day for 30 days - up to 85 ft length.
b.Trucks travel off Park Street onto Weymouth Street).
c.At Congress Street truck takes a two point turn and backs into the construction site.



2 CONGRESS STREET - SITE SECTION
1/16" = 1'-0"



3 CONGRESS STREET - AXON VIEW



Congress Street closure affects the following properties or entities:

Medical Office Building garage entrance on Congress- will be closed for 8 weeks. Access to garage will be the entrance off Forest Street. Main pedestrian access from Congress Street and bridge access remains open.

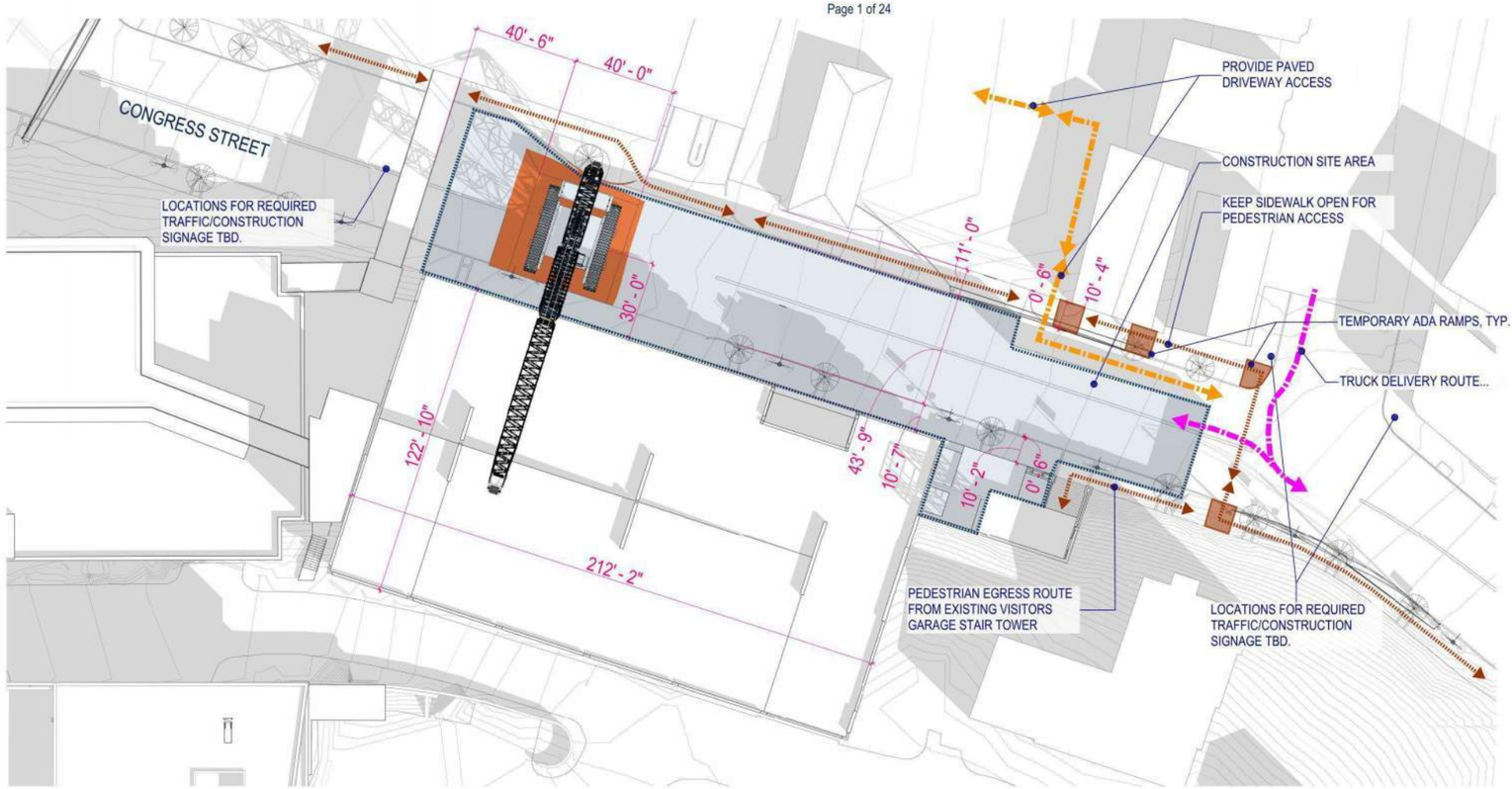
Visitor garage Congress street entrance- will be closed for eight weeks. Access to garage will be off Crescent Street or off Gilman Street traveling thru the Staff Parking Garage.

878 Congress Street - parking affected during week 1 and week 8 only. Temporary parking provisions during week 1 and 8 will be provided. Access to house not affected during eight weeks. For weeks 2-7 access to parking could utilize the driveway of 873 Congress. Some landscape and temporary road path would be provided. A second parking option would be to continue the same temporary parking provisions in week 1 thru week 8.

873 Congress Street – parking affected during week 1 and week 8 only. Temporary parking provisions during week 1 and 8 will be provided. Access to house not affected during eight weeks.

867 Congress Street-(Church) - parking and access not affected during 8 weeks of Congress closure.

Visitor Garage west stair tower remains open during the eight weeks.



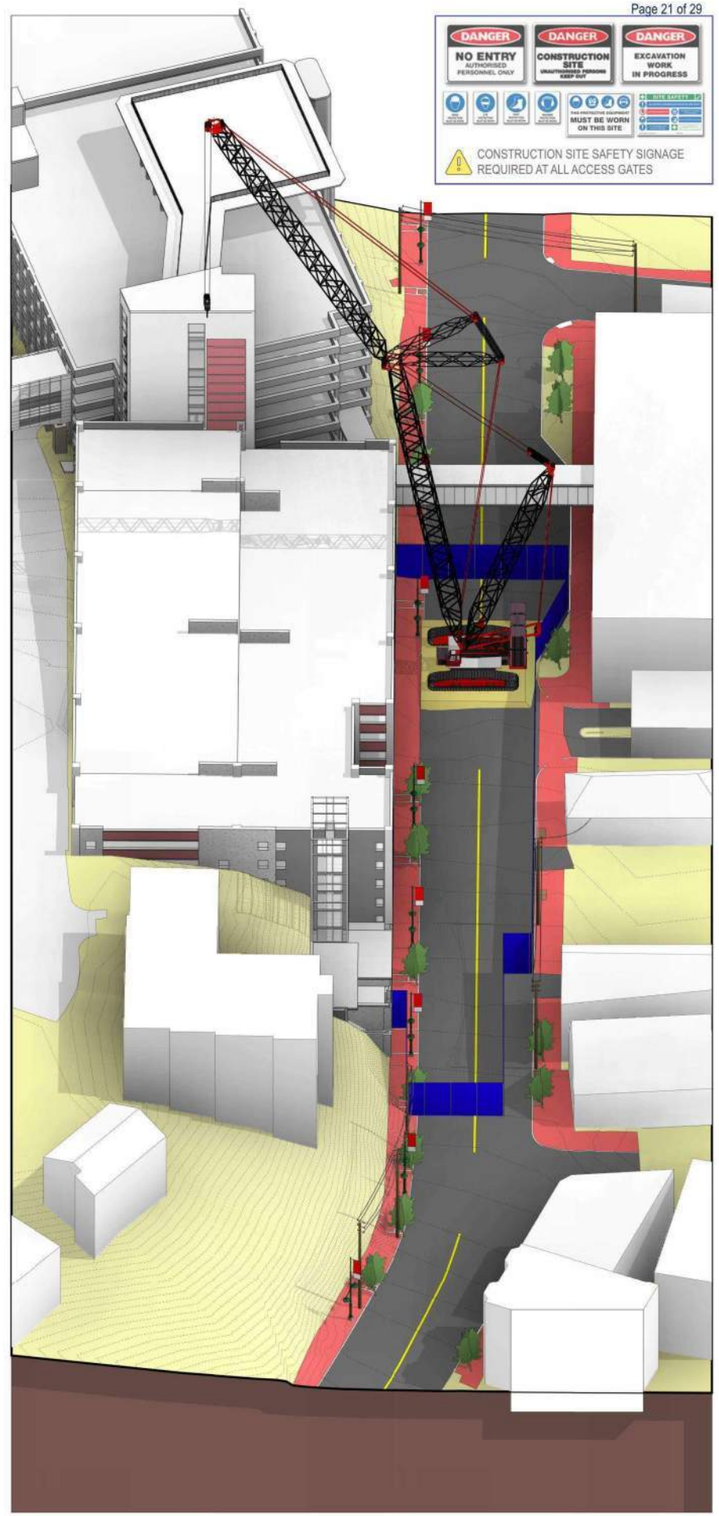
1 CONGRESS STREET - CRANE PICK PLAN
3/64" = 1'-0"

General Notes:

1)Congress Street has to be closed for a period of 8 weeks.)
a.Week one – build crane.
b.Week 2-7 – erect precast garage.
c.Week 8 – dismantle crane.
2)Precast truck traffic path and quantities.
a.Up to 10 trucks per day for 30 days - up to 85 ft length.
b.Trucks travel off Park Street onto Weymouth Street).
c.At Congress Street truck takes a two point turn and backs into the construction site.



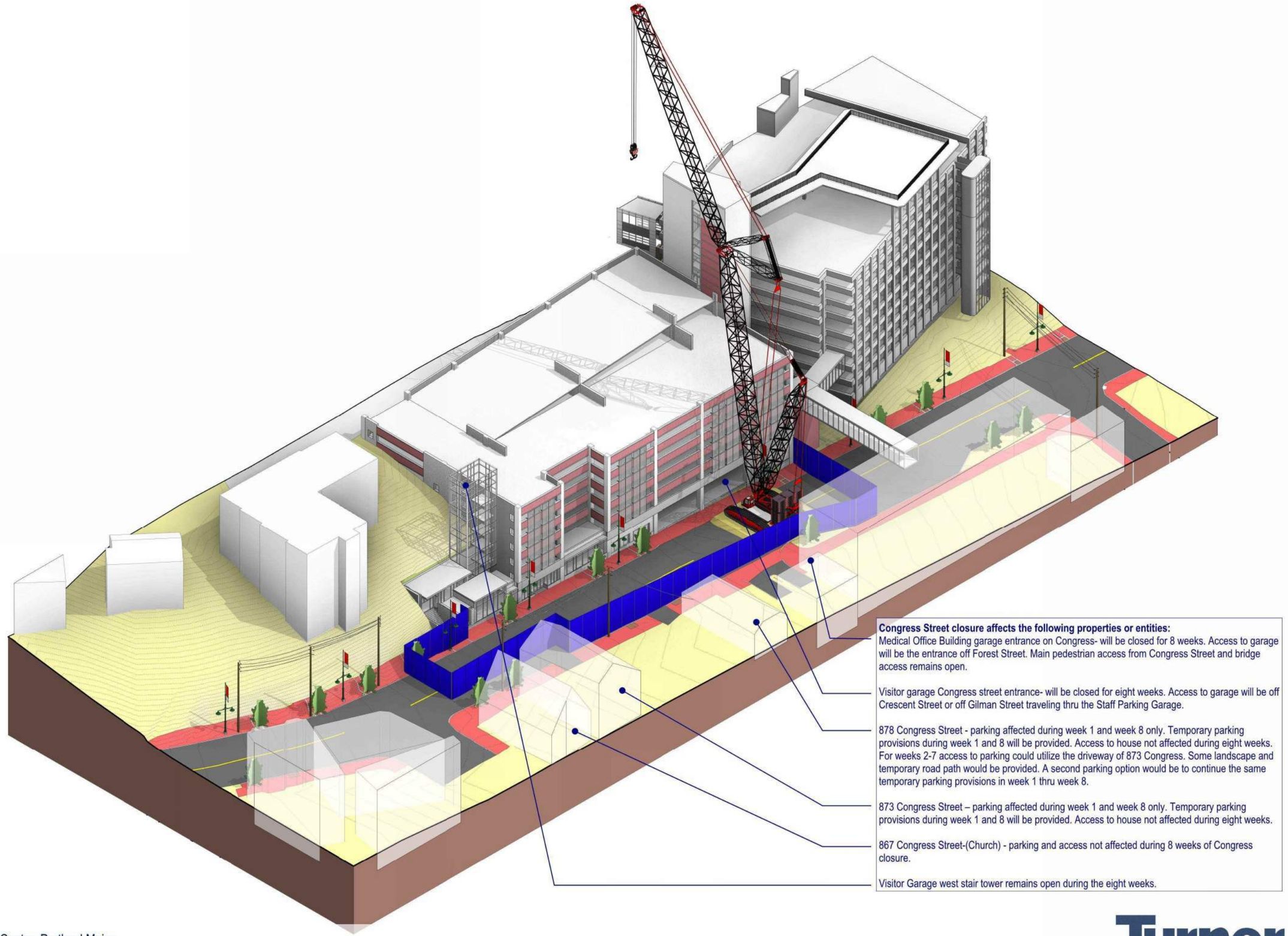
2 CONGRESS STREET - SITE SECTION
1/16" = 1'-0"



3 CONGRESS STREET - AXON VIEW

Maine Medical Center, Portland Maine
Additions and Renovations [Congress Street Crane Location 1]

Turner



Congress Street closure affects the following properties or entities:

Medical Office Building garage entrance on Congress- will be closed for 8 weeks. Access to garage will be the entrance off Forest Street. Main pedestrian access from Congress Street and bridge access remains open.

Visitor garage Congress street entrance- will be closed for eight weeks. Access to garage will be off Crescent Street or off Gilman Street traveling thru the Staff Parking Garage.

878 Congress Street - parking affected during week 1 and week 8 only. Temporary parking provisions during week 1 and 8 will be provided. Access to house not affected during eight weeks. For weeks 2-7 access to parking could utilize the driveway of 873 Congress. Some landscape and temporary road path would be provided. A second parking option would be to continue the same temporary parking provisions in week 1 thru week 8.

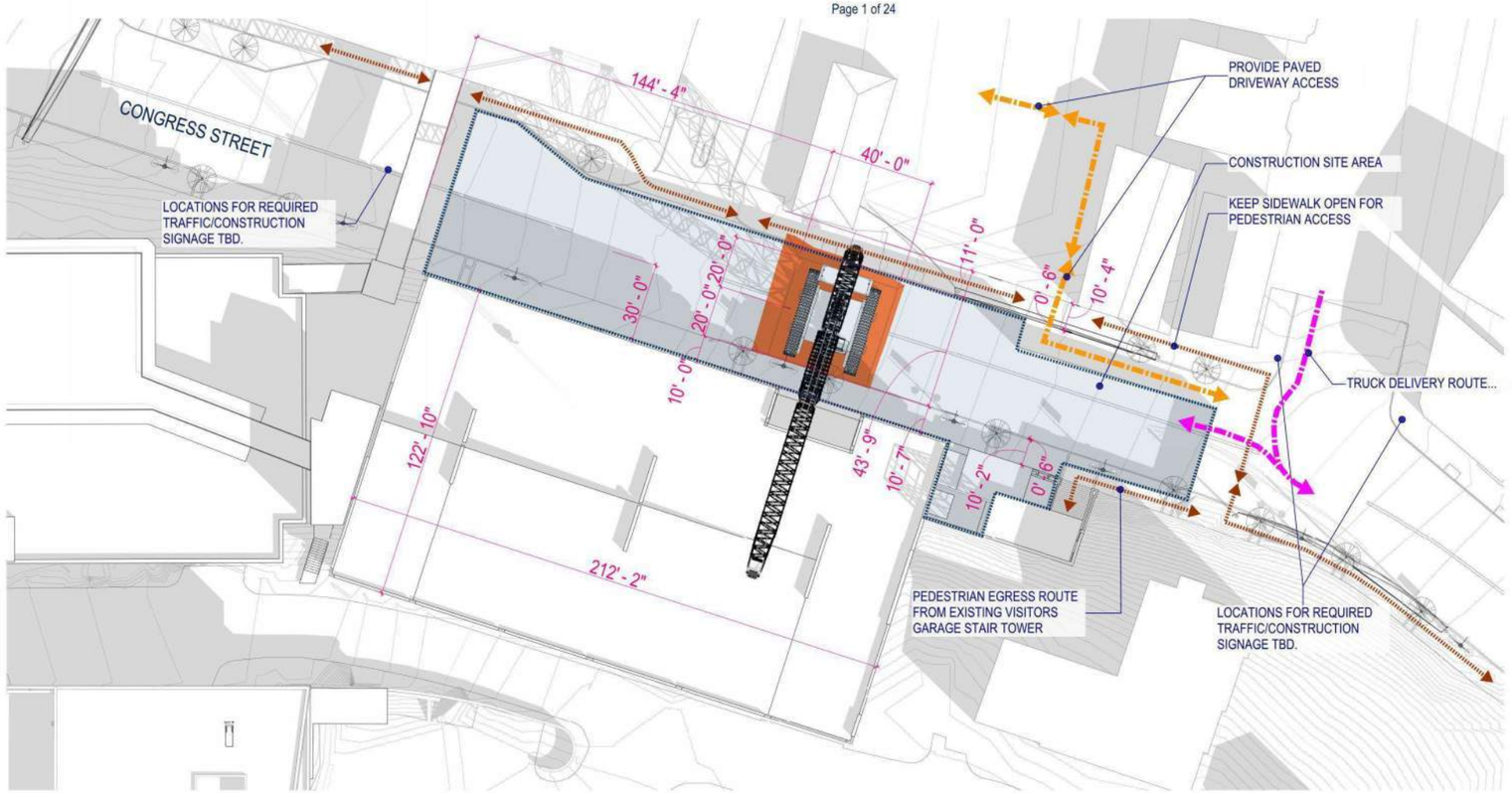
873 Congress Street – parking affected during week 1 and week 8 only. Temporary parking provisions during week 1 and 8 will be provided. Access to house not affected during eight weeks.

867 Congress Street-(Church) - parking and access not affected during 8 weeks of Congress closure.

Visitor Garage west stair tower remains open during the eight weeks.

Maine Medical Center, Portland Maine
Additions and Renovations [Congress Street Crane Location 1]

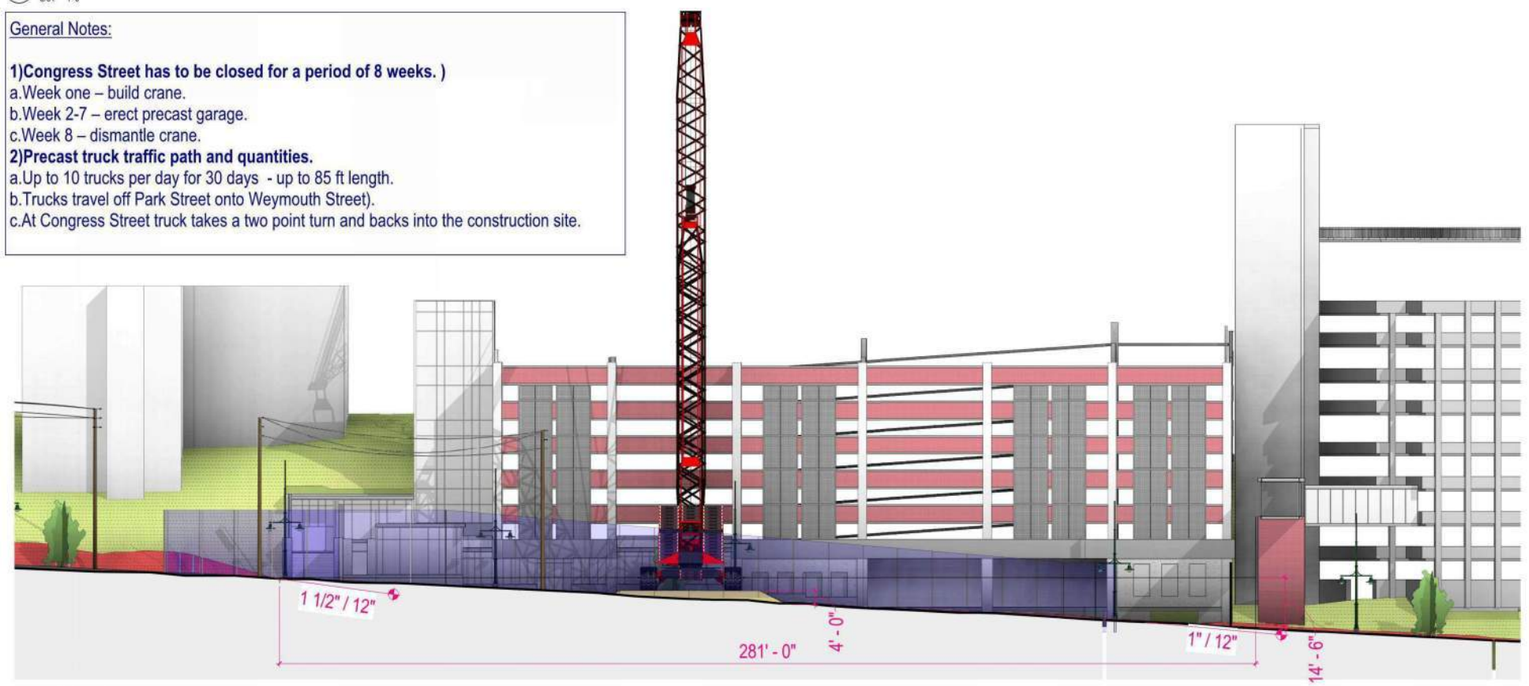
Turner



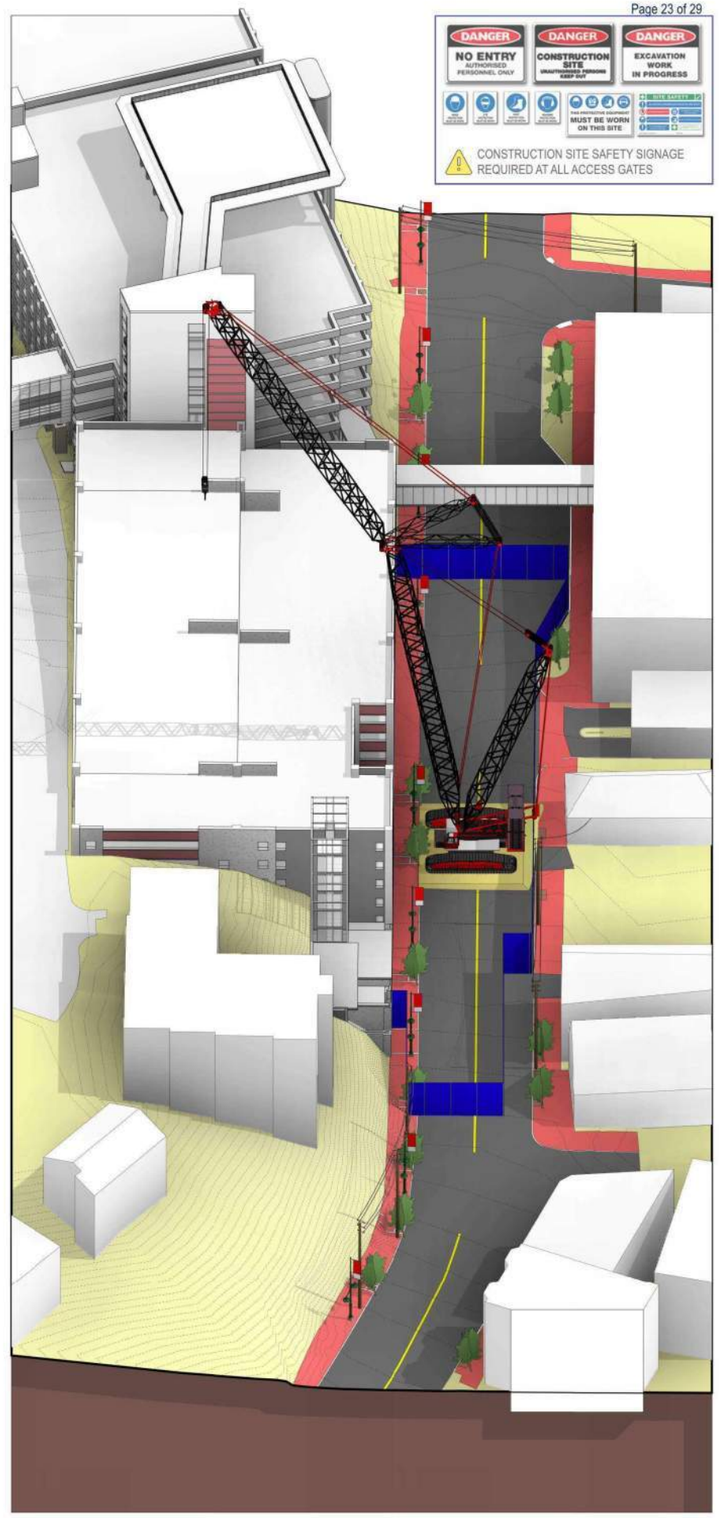
1 CONGRESS STREET - CRANE PICK PLAN
3/64" = 1'-0"

General Notes:

1)Congress Street has to be closed for a period of 8 weeks.)
a.Week one – build crane.
b.Week 2-7 – erect precast garage.
c.Week 8 – dismantle crane.
2)Precast truck traffic path and quantities.
a.Up to 10 trucks per day for 30 days - up to 85 ft length.
b.Trucks travel off Park Street onto Weymouth Street).
c.At Congress Street truck takes a two point turn and backs into the construction site.



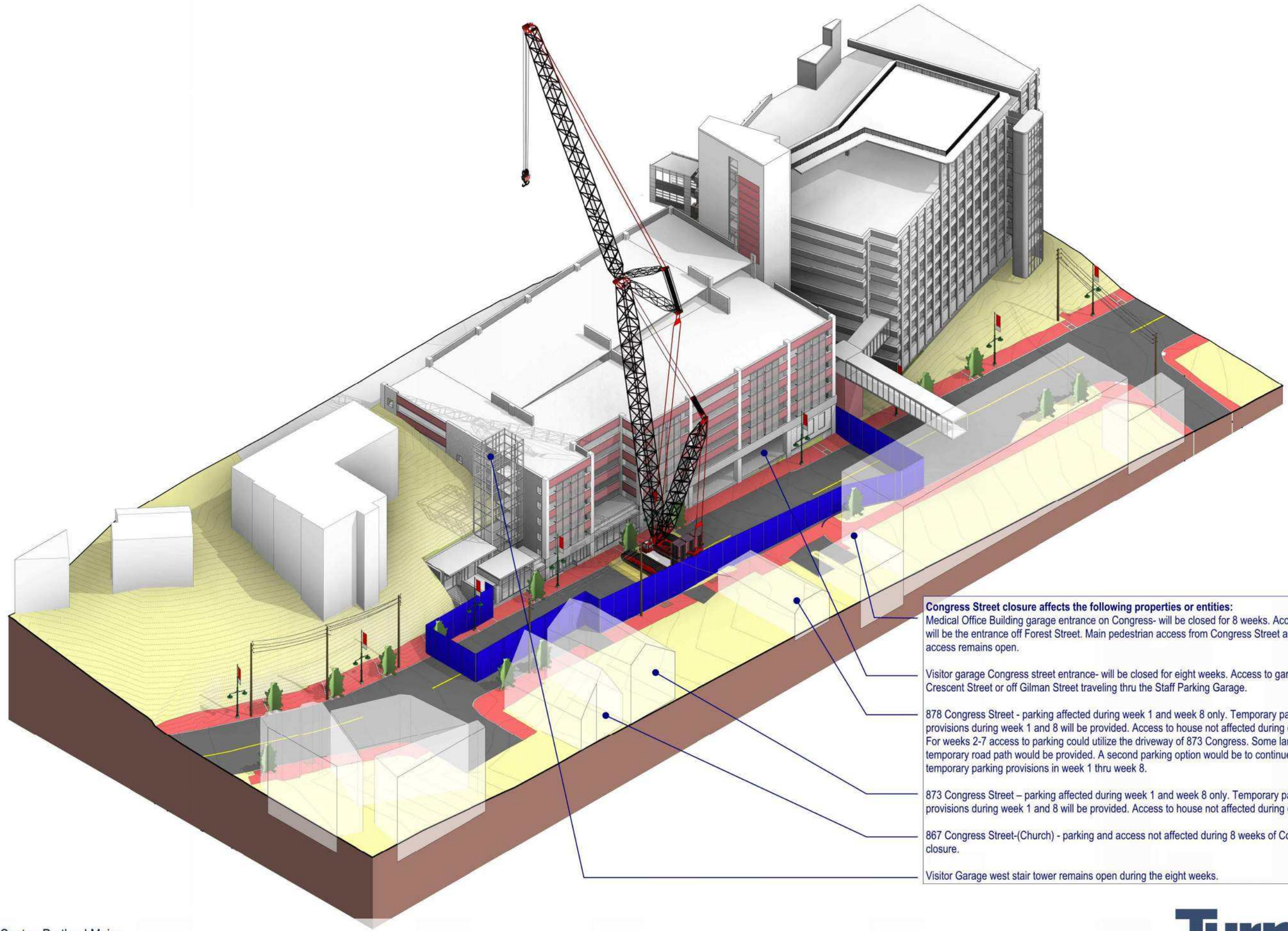
2 CONGRESS STREET - SITE SECTION
1/16" = 1'-0"



3 CONGRESS STREET - AXON VIEW

Maine Medical Center, Portland Maine
Additions and Renovations [Congress Street Crane Location 2]

Turner



Congress Street closure affects the following properties or entities:

Medical Office Building garage entrance on Congress- will be closed for 8 weeks. Access to garage will be the entrance off Forest Street. Main pedestrian access from Congress Street and bridge access remains open.

Visitor garage Congress street entrance- will be closed for eight weeks. Access to garage will be off Crescent Street or off Gilman Street traveling thru the Staff Parking Garage.

878 Congress Street - parking affected during week 1 and week 8 only. Temporary parking provisions during week 1 and 8 will be provided. Access to house not affected during eight weeks. For weeks 2-7 access to parking could utilize the driveway of 873 Congress. Some landscape and temporary road path would be provided. A second parking option would be to continue the same temporary parking provisions in week 1 thru week 8.

873 Congress Street – parking affected during week 1 and week 8 only. Temporary parking provisions during week 1 and 8 will be provided. Access to house not affected during eight weeks.

867 Congress Street-(Church) - parking and access not affected during 8 weeks of Congress closure.

Visitor Garage west stair tower remains open during the eight weeks.



887 Delivery / Drop off area

Do Not Block Loading Area Signage

NO VEHICULAR TRAFFIC ON THIS PORTION OF CONGRESS STREET FOR 8 WEEKS.

RELOCATION OF PEDESTRIAN WALKING PATH

440 TON CRAWLER WITH 150' MAIN BOOM AND 160' LUFFING JIB. SWING RADIUS OF 50' OFF FACE OF EXISTING VISITORS GARAGE.

EXISTING OVERHEAD POWER LOCATION

CRAWLER CRANE LOCATION 1

CRAWLER CRANE LOCATION 2

30'-0"

30'-0"

TEMPORARY VEHICULAR GARAGE ACCESS THROUGH E.D. ENTRANCE/EXIT ONLY

887 Drop Off

Truck and Delivery turn around

Truck Turn Around Signage

160'-0"

160'-1"

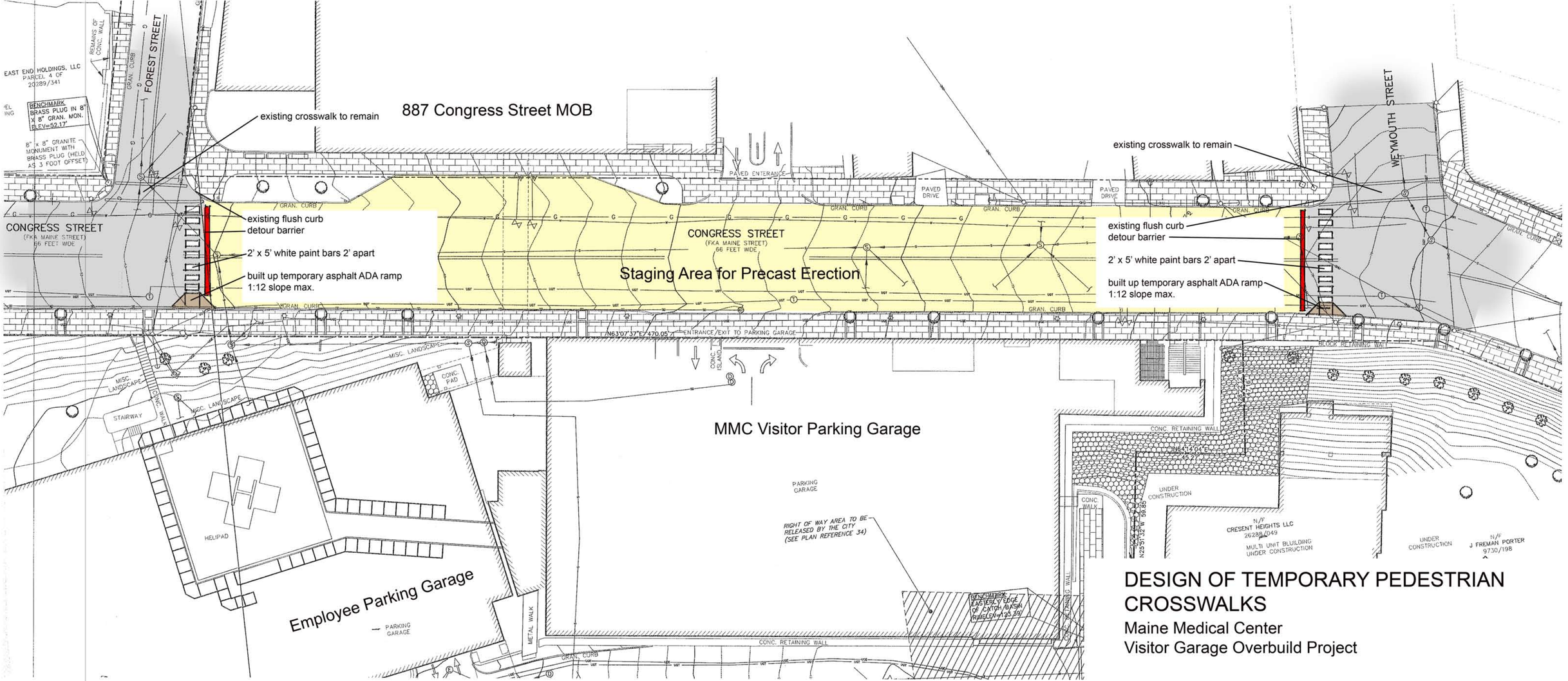
159'-10"

160'-0"

121'-0

210'-2"

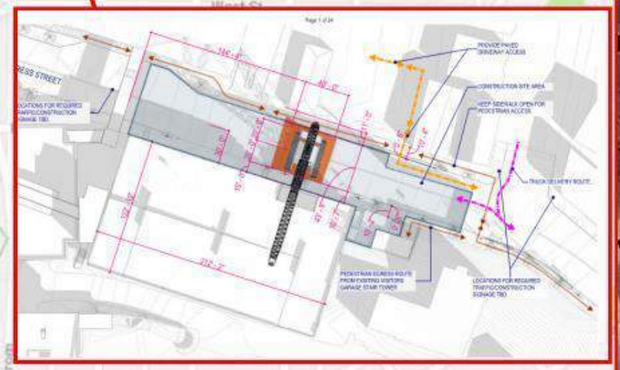
REFER TO "CONGRESS STREET CRANE LOCATION" DRAWINGS FOR MORE INFORMATION AND DETAILS.



DESIGN OF TEMPORARY PEDESTRIAN CROSSWALKS

Maine Medical Center
Visitor Garage Overbuild Project

MMC VISITOR GARAGE EXPANSION
PRECAST CONCRETE TRUCKS
INBOUND ROUTE TO CONGRESS STREET SITE
PORTLAND YACHT STAGING YARD TO W. COMMERCIAL STREET TO VALLEY STREET TO PARK ST TO WEYMOUTH ST TO CONGRESS ST SITE

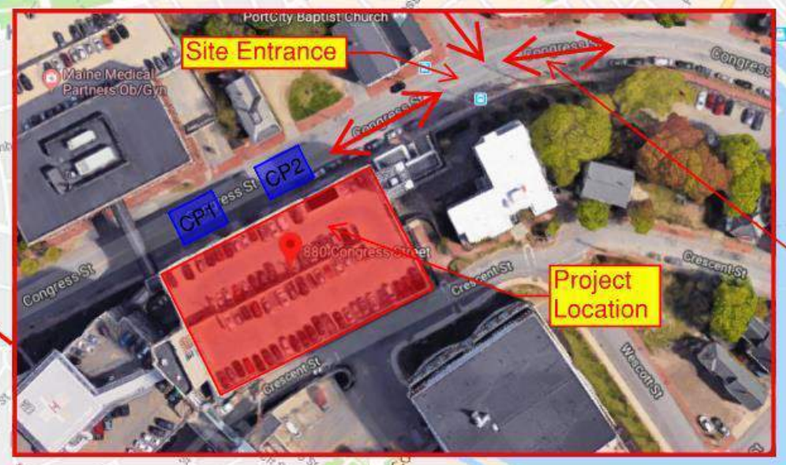




Maine Medical Center, Portland Maine
Additions and Renovations [Precast Delivery and Egress Paths] - Option 1

Google Maps 100 W Commercial St

Maine Medical Center PG Expansion #51264
Trucking Route - Precast Concrete Deliveries
3-6-18



Police Detail req'd at the end of Weymouth St. to allow trucks to turn left onto Congress St and the back to the crane



From Staging Yard (100 W Commercial St): RED arrows
left onto W Commercial St
right onto Fore River Pkwy
continue onto Congress St
left onto St John St
right onto Park Ave
right onto Weymouth St
turn left onto Congress St and then back into project site limits (need Police Detail)

Direct to crane: BLUE arrows
from I-295 N
take exit 5 to Congress St
follow same directions as noted above

Oversize load travel restrictions on I-95: No travel 7am to 9am and 3pm to 5pm

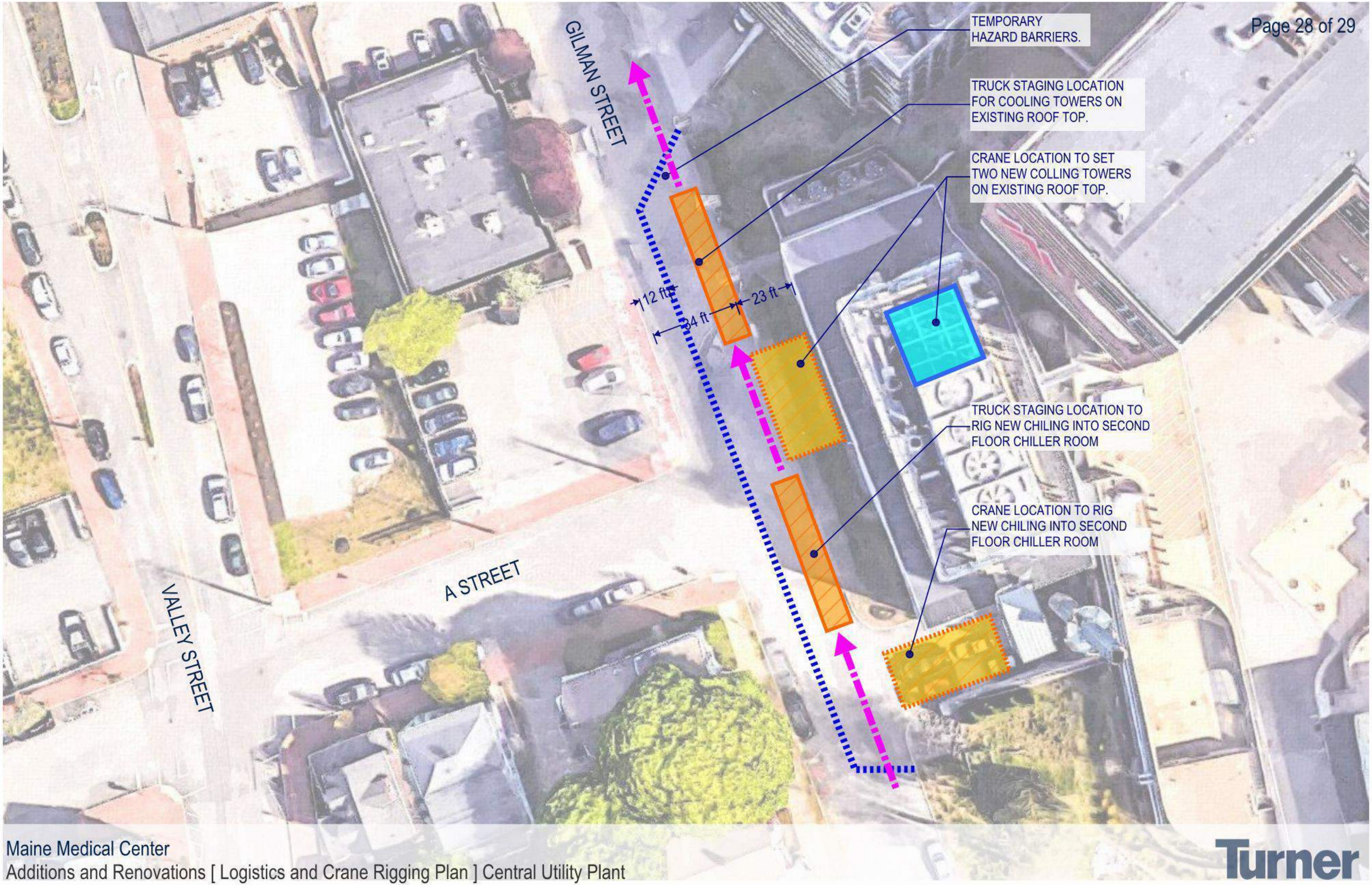
Staging for 15-20 loads to be at staging yard.

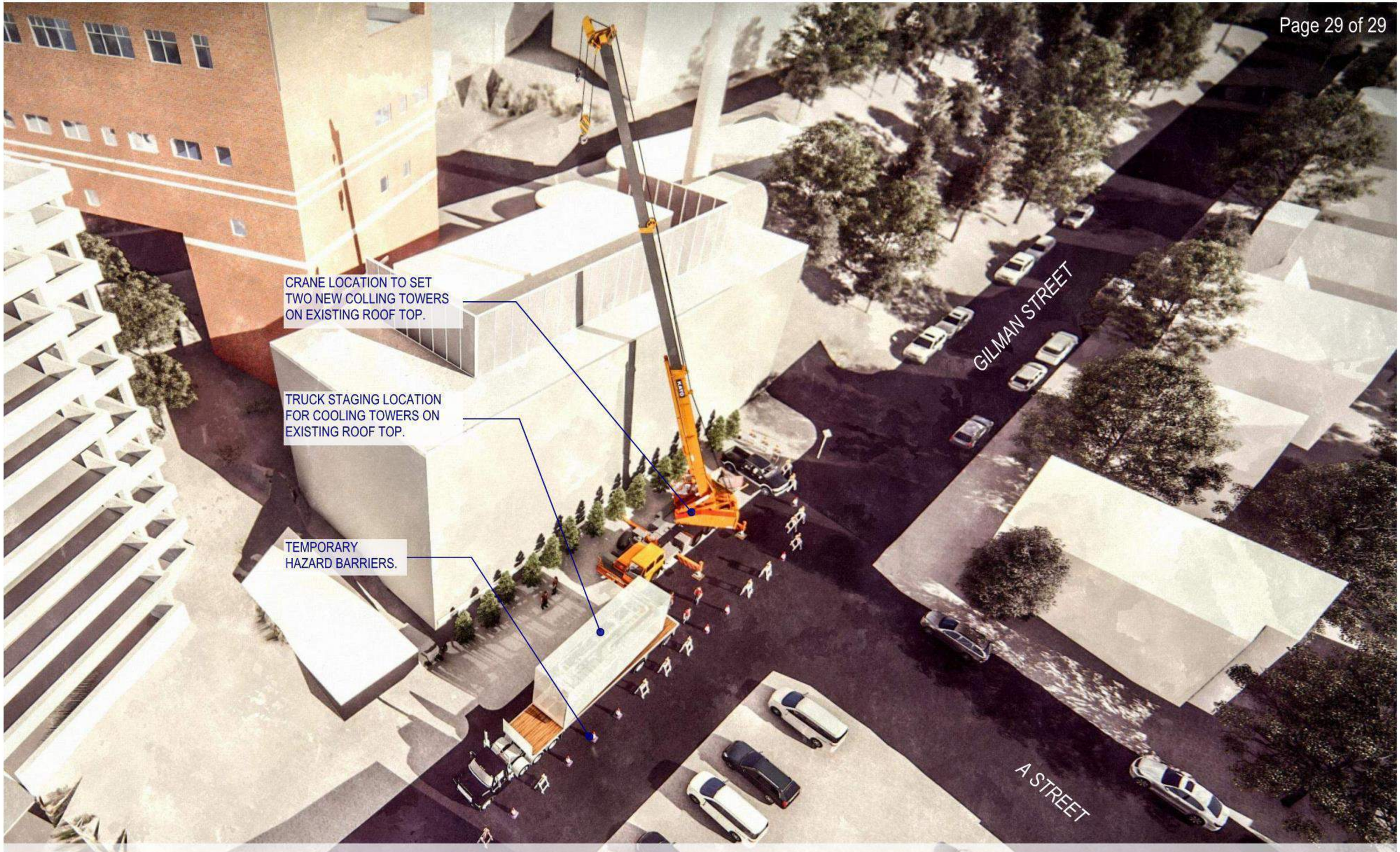
Map data ©2018 Google 1000 ft



[Central Utility Plant] Logistics Plans and Studies

Turner


GILMAN STREET
A STREET
VALLEY STREET
TEMPORARY HAZARD BARRIERS.
TRUCK STAGING LOCATION FOR COOLING TOWERS ON EXISTING ROOF TOP.
CRANE LOCATION TO SET TWO NEW COLLING TOWERS ON EXISTING ROOF TOP.
12 ft
34 ft
23 ft
TRUCK STAGING LOCATION TO RIG NEW CHILING INTO SECOND FLOOR CHILLER ROOM
CRANE LOCATION TO RIG NEW CHILING INTO SECOND FLOOR CHILLER ROOM



Maine Medical Center

Additions and Renovations [Logistics and Crane Rigging Plan - Typical Both Locations] Central Utility Plant

Turner

GORRILL PALMER

707 Sable Oaks Drive, Suite 30
South Portland, Maine 04106
207.772.2515

Evaluation of Congress Street Detour
Maine Medical Center (MMC) – Bramhall Campus
Portland, Maine

March 20, 2018

Proposed Detour:

The MMC Team met with City staff (including Fire and Police representatives) several times over the past few weeks to discuss various detour options for the closure of Congress Street between Forest Street and Weymouth Street. Based on those discussions, there was general consensus that the best approach was to combine different aspects of the alternatives into one alternative to create a multi-layered approach.

The proposed traffic control plan (TCP) is intended to operate as a three layered approach. The purpose of the multi-layer approach is to gradually decrease the volume of traffic that approaches the closure location, such that traffic is less concentrated at one specific location, minimize the impact of the closure and provide a safe and reliable system for commuters and local traffic. A more detailed description of the three layers is as follows, with plans of the TCP attached:

Layer 1 (Figure 1 of attached plans)

The first, or outer most, layer involves the use of four Variable Message Boards (VMB). The current detour plan identifies the use of three mobile units on the downtown streets and the use of two mobile units on I-295 (one northbound and one southbound). The locations are as follows:

- St. John Street southbound prior to the intersection with Park Avenue
- Outer Congress Street inbound prior to Fore River Parkway
- Upper Congress Street outbound prior to Mellen Street
- I-295 northbound direction preferably south of ramps that would allow for traffic to seek an alternate route, and I-295 southbound direction preferably north of ramps that would allow for traffic to seek an alternate route. MaineDOT has given permission for the placement of these VMB subject to approval of the exact locations which are to be determined. Final locations will be proximate to I-295 off-ramps in order to remain relevant to commuters and will not impact views of existing highway signage.

The VMBs will flash "Lower Congress Closed" "Seek Alt Route". The VMBs are specifically located such that it provides notice to drivers as they enter the downtown such that they have alternate routes to take to avoid the Lower Congress Street closure.

Prior to closure – We recommend that the VMBs be placed and utilized a week in advance of the actual closure to inform drivers of the upcoming closure.

Additional Mitigation beyond that shown on the plans: None anticipated

Layer 2 (Figure 2 of attached plans)

For drivers on Congress Street that are approaching the general area, a primary detour will be established. Inbound traffic on Congress Street will be directed to use St. John Street to Park Avenue to Weymouth Street and back up to Congress Street. A Type III barricade will be placed on Congress Street to discourage through traffic, but will provide enough roadway width such that through traffic will still be allowed to reach local destinations such as the Gilman garage, MOB garage, and local businesses. The Type III barricade on Congress St will also have a "Local Businesses Open" sign indicating continued access to all points on Congress St between St John St and the closure.

For outbound Congress Street traffic, the primary detour will direct traffic onto Weymouth Street to Park Avenue to the intersection with St. John Street. The end detour will be at the intersection with St. John Street because based on our evaluation of the roadway network and traffic patterns, it does not appear to make sense to detour all the traffic back to the Congress Street / St. John Street intersection since the only options at the intersection would be to go back inbound where they just came from or to continue on St John Street, and the outbound volume onto St. John Street has been identified as minimal.

Additional Mitigation beyond that shown on the plans:

- Retiming of the traffic signals. Any exclusive pedestrian timing of the signals involved will be changed to concurrent pedestrian timing to maximize capacity while still providing accommodations for pedestrians. Signage will be erected at the pedestrian push buttons that informs the pedestrian that the phasing has been changed.

St John St was selected to be the primary inbound detour route because it had the least impact to the surrounding neighborhoods, provides the most capacity to accommodate the increase in traffic, accommodates emergency vehicles the best and provides the safest route.

Alternate Detours Considered: In evaluating the inbound detour from Congress onto St. John Street to Park Avenue, other options were considered. Those options are identified as follows:

- Valley to Park: This option did offer some benefits such as minimal impacts to neighborhood parking, the street width was adequate and emergency vehicle access appeared acceptable. However, this option was not pursued for several reasons. The first is the close proximity of the intersection with Park Ave to the signalized intersection. This close proximity with an increase in traffic volume introduces a concern with vehicle / pedestrian / bicycle safety. A second challenge is that this section of Valley Street is not familiar to most drivers, which could confuse drivers as to where they are being detoured. A third challenge is the proximity of the unsignalized intersection on Congress Street and the close proximity to the signalized intersection with St. John Street. The Congress Street traffic volume outbound will be reduced as a result of the closure; however, given the volume of traffic anticipated to be detoured, back up of the left turns from Congress onto Valley would interfere with the signalized intersection at Congress St and St John St.

- Gilman to Park: This option was not selected for several reasons. First, Gilman is currently one-way from Park Ave toward Congress Street, which would need to be reversed, causing significant confusion to those who currently use the road. Second, this option had more impacts to neighborhood parking. Approximately 20 spaces would have to be temporarily closed. Third, the street width is narrower and would be more challenging for emergency vehicles – primarily fire

trucks. Fourth, similar to Valley, it is relatively unknown to those who are not local. Lastly, it is too close to the signalized intersection with Park / St. John Street.

- Forest to Park: This option was not selected for several reasons. First, this option does not appear to be realistic in expecting that drivers would by-pass Boynton to continue to Park Avenue then back up Weymouth. Second, this option impacted neighborhood parking – approximately 15 spaces. Lastly, Forest St has a narrow street width and would be challenging for emergency vehicles.

- Park to State Street: This option does have benefits; however, there are some significant challenges to this option. The first significant impact would be to local businesses. There are numerous businesses located between the closure and State Street. By detouring traffic away from that half a mile section of Congress Street, it would decrease potential customers and may make it more difficult for customers to find their destination. Second, State Street is one-way. By using this as the primary detour, a separate detour would be required for out bound traffic, leading to potentially more confusion for drivers. The goal of a detour is to keep it relatively isolated and as small as possible to reduce the impacts to neighborhoods and businesses and limit the length of time a driver is actually detoured. Third, State St is a mostly residential street. Residents of State St have recently experienced a significant disruption due to the City of Portland's State Street project. Including State St in the detour would further disrupt its residents. This option does not accomplish the goals of the detour.

Layer 3 (Figure 2 & 3 of attached plans)

For what is expected to be minimal inbound traffic that manages to reach the actual Congress Street closure, rather than try to turn them around, the third layer provides a route. This route would direct traffic onto Forest Street to Boynton Street to Weymouth Street. The current plan is to convert Boynton to one-way inbound which will minimize the potential of outbound traffic trying to use this route. Instead, all outbound traffic will be required to use the primary route described in Layer 2 that directs them to Park Ave.

To allow emergency vehicles adequate width to maneuver, we recommend that on-street parking be temporarily closed while the Congress Street closure is in effect (approximately 8 weeks). This would eliminate approximately four on-street parking spaces on Forest Street and 14 on-street parking spaces on Boynton Street. To also accommodate emergency vehicles, MMC is proposing to increase the south east radius of the Forest Street / Boynton Street intersection to accommodate a firetruck size vehicle. This will include modifications to the sidewalk, as well as construction of a new ADA ramp on that corner. MMC is working with the residents along Boynton Street to provide alternative parking arrangements such as within the MOB parking garage. Letters that MMC has sent to these neighbors has been submitted to the City of Portland.

Additional Mitigation beyond that shown on the plans: None anticipated

Capacity Analysis:

To further evaluate the options, key intersections were evaluated using Synchro/SimTraffic computer analysis software. Level of service rankings are similar to the academic ranking system, where an 'A' is good with little control delay and an 'F' represents poor traffic conditions. If levels of service fall below a 'D', an evaluation should be made to determine if mitigation should be implemented. The following

tables summarize the relationship between level of service and control delay per vehicle for unsignalized and signalized intersections:

Level of Service Criteria for Unsignalized Intersections

Level of Service	Control Delay per Vehicle (sec)
A	Less than 10.0
B	10.1 to 15.0
C	15.1 to 25.0
D	25.1 to 35.0
E	35.1 to 50.0
F	Greater than 50.0

Level of Service Criteria for Signalized Intersections

Level of Service	Control Delay per Vehicle (sec)
A	Less than 10.0
B	10.1 to 20.0
C	20.1 to 35.0
D	35.1 to 55.0
E	55.1 to 80.0
F	Greater than 80.0

The results are based on the average of five SimTraffic runs. It should be noted that detours are typically for those drivers that do not know the area and need guidance due to the street closure. Those drivers that know the area will seek their own routes other than the detour. For the purpose of this evaluation, we assumed that all drivers would use the detours, and therefore this evaluation is conservative and actual levels of service may be better than summarized.

The following summarizes the capacity analysis results.

The key intersections for this detour option have been identified as the following:

- Park Avenue / Weymouth Street
- St. John Street / Park Avenue
- Congress Street / St. John Street

The following table summarizes the forecast operation of the key intersections for existing conditions and with the detour in place. Detailed results are attached.

Level of Service Summary

Approach*	Existing Conditions		With Detour	
	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
Park / Weymouth (Existing = U, Detour = S)				
Park EB	A	A	B	D
Park WB	A	A	B	B
Weymouth NB	C	E	C	D
Parking Lot SB	B	B	A	B
Overall	**N/A**	**N/A**	**B**	**C**

St. John / Park (S)				
Park WB	C	B	C	C
St. John NB	B	D	B	C
St. John SB	B	C	C	C
Overall	**B**	**C**	**C**	**C**
Congress / St. John (S)				
Congress EB	C	C	B	C
Congress WB	B	B	B	B
St. John NB	C	C	C	C
St. John SB	C	C	C	C
Overall	**C**	**C**	**C**	**C**

*(U) = Unsignalized, (S) = Signalized

As shown in the table, the intersections of St. John Street with Park Avenue and Congress Street with St. John Street are forecast to operate at similar levels of service to the existing conditions if the detour is implemented. Additionally, the three key intersections are forecast to operate at acceptable levels of service if the detour is implemented. It should be noted that at the intersection of Park Avenue with Weymouth Street, the eastbound and westbound approaches are forecast to operate at lower levels of service with the detour in place than with the existing conditions. This is due to the temporary signalization of the intersection while the detour is operational, which increases the delay of the traffic that is free-flowing in the existing condition. Although the levels of service on Park Avenue are forecast to be lower than the existing conditions, the levels of service on the Weymouth Street approach and the Parking Lot approach are forecast to be maintained or improve from the existing conditions.

Visitor / Patient Garage

Since the Congress Street access to the Visitor / Patient garage will be unavailable during the Congress Street closure, MMC is proposing a plan (attached Figure 7) to provide access to the Visitor / Patient garage through the Gilman Street access to the employee garage. The two garages are already connected on the base level. The attached plans show the layout that includes an entrance lane for employees and a separate entrance for visitors / patients. Both entrances will be well signed as to communicate who uses which lane. To avoid any crossing of entrance traffic, employees would be required to access the garage from the direction of A Street, while visitors / patients would be expected to access the garage via Congress Street. Signage will be erected within the detour to guide visitors / patients to the garage (see attached Figures 2 & 4). To get employees in the habit of entering from the A Street direction, the new set up would be implemented a minimum of one week prior to the actual closure of the Congress Street access.

Once in the garage, employees would continue into the employee section of the garage and visitors / patients would continue to the other garage. Exiting traffic from both garages would merge into one exit lane. A flagger(s) would be stationed within the merge area during busy times to ensure proper guidance. MMC is committed to safety so if additional flaggers or additional time periods are required they will be supplied as needed.

METRO Impacts:

The MMC Team met with METRO twice to provide advance notice of the closure of a short section of Congress Street and to show them what the closure would include. Based on these discussions with METRO, they will close the following four bus stops for the duration of the Congress Street closure:

- Eastbound:
  - Congress / Gilman
  - Congress / Weymouth
- Westbound:
  - Congress / Weymouth
  - Congress / Valley

In addition, METRO is considering relocating the eastbound stop at Park / Weymouth approximately 50 feet to the west on Park Avenue to avoid impacts to the temporary signal. MMC will make the necessary improvements to ensure the temporary stop meets ADA requirements, including providing paved access from the curb to the sidewalk. Relocating the bus stop will require the removal of one on-street parking space on Park Avenue. The potential METRO modifications are shown on the attached Figure 5. METRO will make a final decision and MMC will assist as appropriate.

The temporary changes will be communicated to the public by MMC and METRO prior to implementation via social media and press releases.

Sea Dogs Impact:

MMC met with the Sea Dogs general manager to discuss management of traffic during afternoon games and on Sunday May 13th for the Mother's Day 5K race. A proposed plan to manage traffic during game days and on May 13th has been submitted to City staff for review.

Construction Related Deliveries, Delivery Routes, and Parking Restrictions:

Turner Construction will be the responsible party for the actual construction and will be providing number, type (size), and routes for deliveries in the construction management plan also submitted to the City of Portland. It should be noted, that additional on-street parking restrictions may be identified when delivery routes are reviewed in the field to ensure proper turning of larger delivery vehicles can be accommodated.

Parking for construction workers will be provided off-site at satellite parking areas, such as the MMC Scarborough Campus, and workers will be shuttled to the work site. Any non-essential vehicles not critical to the work site will be restricted from the site. Any parking by workers in the immediate area reported to MMC or Turner Construction will be taken seriously and addressed by Turner Construction.

Patient / Visitor Garage Traffic Control Plan

Figure No. 1



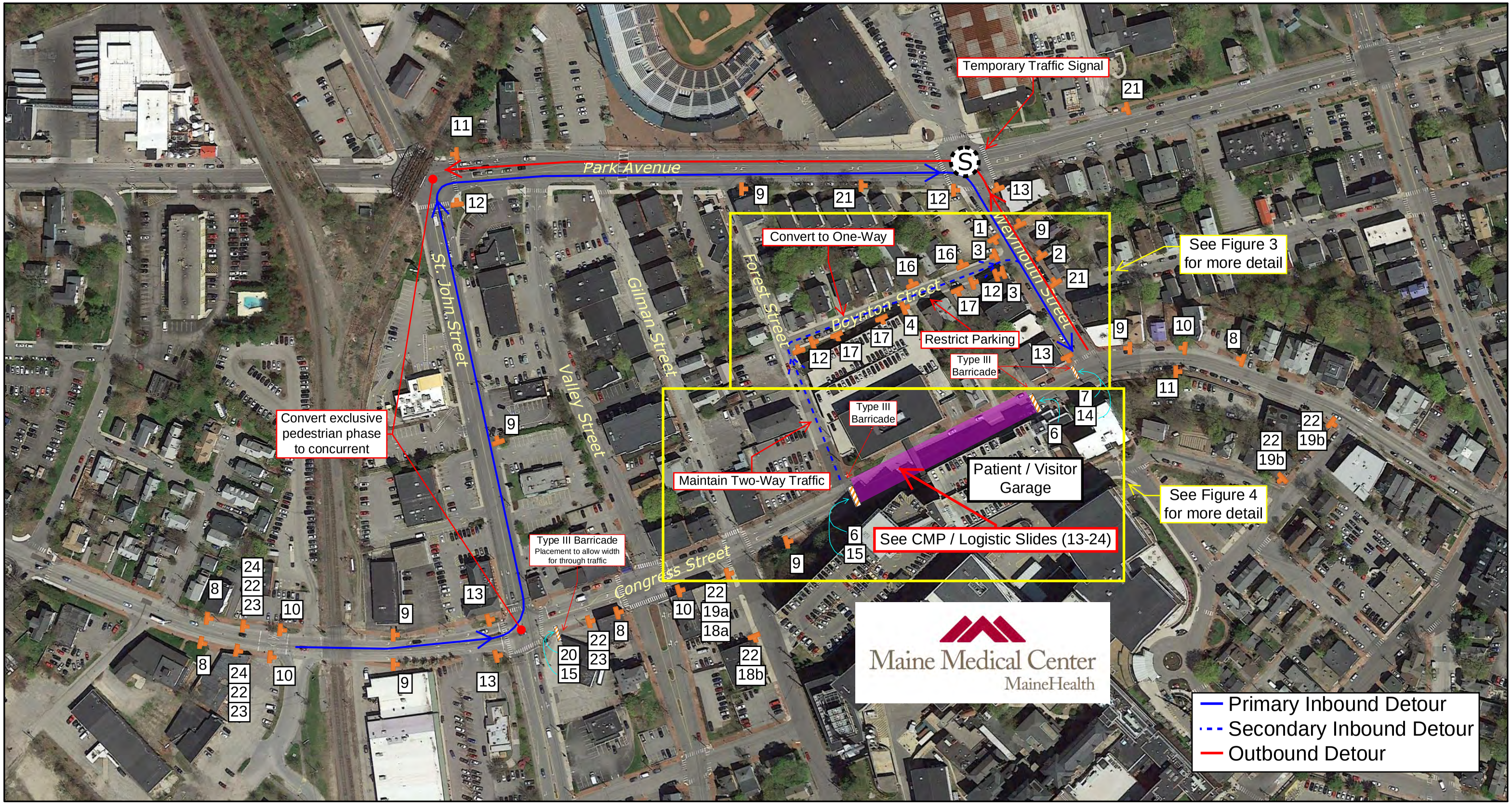
Maine Medical Center Expansion
PORTLAND, MAINE

Design: ET
Draft:
Checked: RED
Scale: NONE
Date: MAR 2018
File Name: 2866-01-TRAFF.dwg

GORRILL PALMER
Relationships. Responsiveness. Results.
www.gorrillpalmer.com
207.772.2515

Congress Street Detour

Figure No. 2



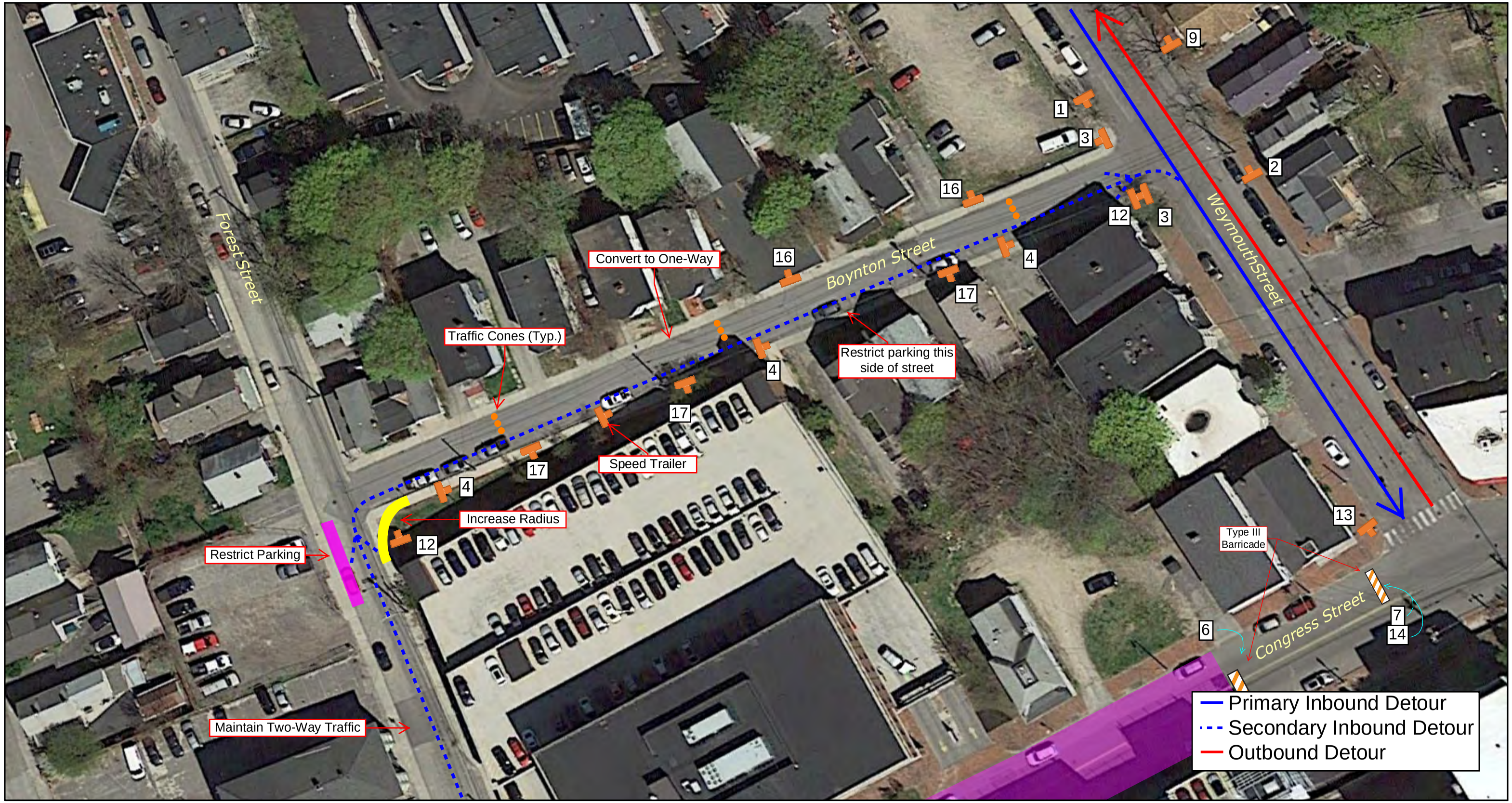
Maine Medical Center Expansion
PORTLAND, MAINE

Design: ET
Draft:
Checked: RED
Scale: NONE
Date: MAR 2018
File Name: 2866-01-TRAFF.dwg

GORRILL PALMER
Relationships. Responsiveness. Results.
www.gorrillpalmer.com
207.772.2515

Boynton Street Detail

Figure No. 3



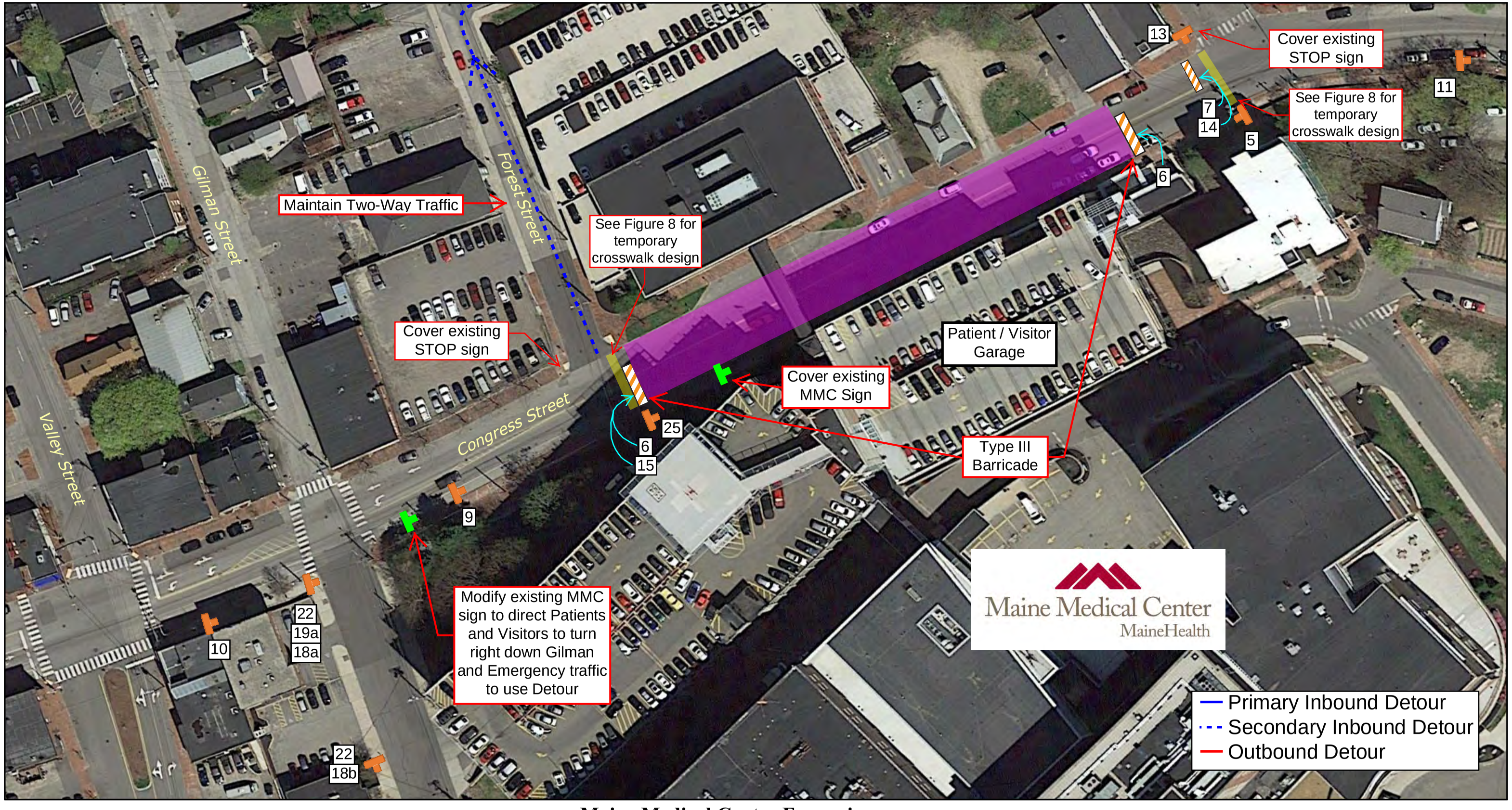
Maine Medical Center Expansion
PORTLAND, MAINE

Design: ET
Draft:
Checked: RED
Scale: NONE
Date: MAR 2018
File Name: 2866-01-TRAFF.dwg

GORRILL PALMER
Relationships. Responsiveness. Results.
www.gorrillpalmer.com
207.772.2515

Congress Street Detail

Figure No. 4



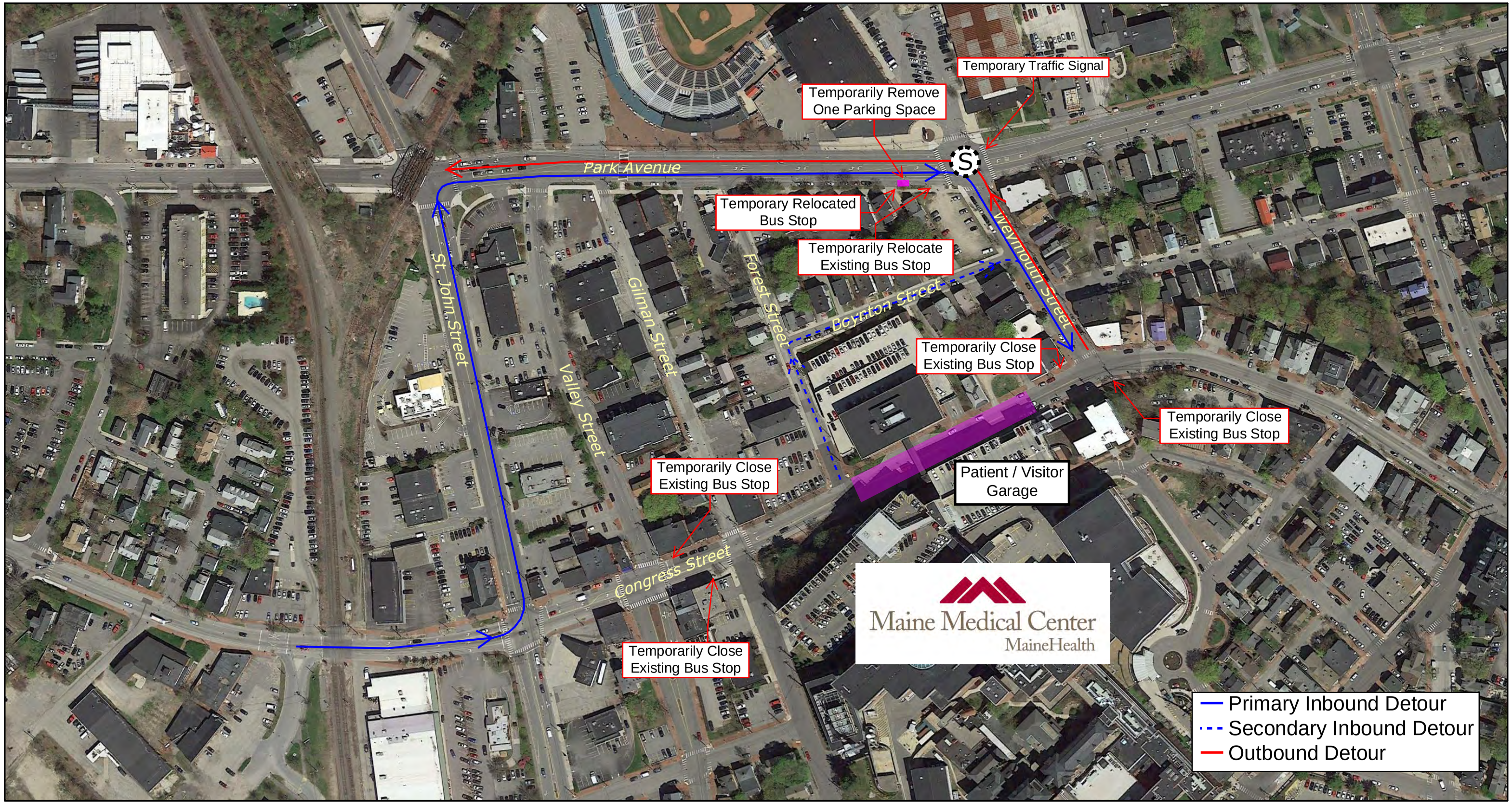
Maine Medical Center Expansion
PORTLAND, MAINE

Design: ET
Draft:
Checked: RED
Scale: NONE
Date: MAR 2018
File Name: 2866-01-TRAFF.dwg

GORRILL PALMER
Relationships. Responsiveness. Results.
www.gorrillpalmer.com
207.772.2515

METRO Modifications Due to Congress Street Closure

Figure No. 5



Maine Medical Center Expansion
PORTLAND, MAINE

Design: ET
Draft:
Checked: RED
Scale: NONE
Date: MAR 2018
File Name: 2866-01-TRAFF.dwg

GORRILL PALMER
Relationships. Responsiveness. Results.
www.gorrillpalmer.com
207.772.2515

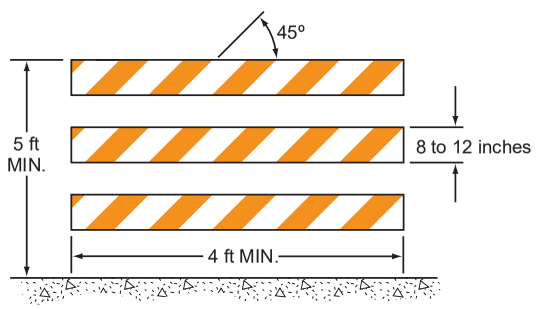
General Notes and Sign Specifications

Figure No. 6

GENERAL NOTES:

1. ALL TRAFFIC CONTROL SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREET AND HIGHWAYS (MUTCD), USDOT, FHWA, LATEST EDITION, AND CITY STANDARDS.
2. SIGN LOCATIONS SHOWN ARE APPROXIMATE. ACTUAL LOCATIONS SHALL BE DETERMINED IN THE FIELD AND APPROVED BY THE CITY.
3. OTHER SIGNS MAY BE NEEDED AS DIRECTED BY THE
4. CITY. ALL CONTROL DEVICES SHALL BE PLACED IN HIGHLY VISIBLE LOCATIONS.
5. ALL CONSTRUCTION RELATED TRAFFIC CONTROL SIGNS NOT IN EFFECT SHALL BE COVERED OR TURNED FROM TRAFFIC VIEW UNTIL THEY ARE MADE ACTIVE. SIGNS SHALL BE COVERED OR REMOVED WHEN THE WORK IS NOT ACTIVE.
6. ANY EXISTING SIGNS OR PAVEMENT MARKINGS DAMAGED DURING CONTRUCTION SHALL BE RESTORED TO THEIR ORIGINAL CONDITIONS OR REPLACED AS NEEDED.
7. ANY CONFLICTING SIGNS OR PAVEMENT MARKINGS SHALL BE COVERED OR REMOVED AS NEEDED.
8. CHANNELIZING DEVICES SHALL BE PLACED PER MUTCD.
9. POST-MOUNTED SIGNS SHALL BE A MINIMUM HEIGHT OF 7 FEET (TO THE BOTTOM OF THE SIGN) AND MUST BE CRASHWORTHY.

NOTE: SIZES OF SIGNS AND LETTERING ON ALL SIGNS SHALL BE VERIFIED THAT THEY MEET MUTCD REQUIREMENTS PRIOR TO ORDERING AND INSTALLATION.



TYPE 3 BARRICADE

SIGN SPECIFICATIONS:


R3-1
24" x 24"
1


R3-2
24" x 24"
2



R5-1
30" x 30"
3



R8-3 / R7-201aP
24" x 24" / 12" x 6"
4



R9-11
24" x 18"
5



R11-2
60" x 30"
6



R11-3a
60" x 30"
7



W20-1
36" x 36"
8



W20-2
36" x 36"
9



W20-3
36" x 36"
10



M4-8a
24" x 18"
11



M4-9R
30" x 24"
12



M4-9L
30" x 24"
13



M4-10R
48" x 18"
14



M4-10L
48" x 18"
15



R6-1R
36" x 12"
16



R6-1L
36" x 12"
17



Custom
18a



Custom
18b



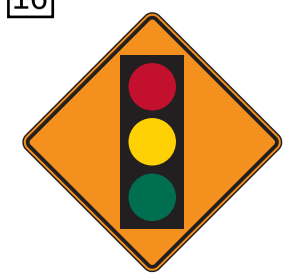
Custom
19a



Custom
19b



R11-3a
60" x 30"
20


W3-3
36" x 36"
21


D9-2
24" x 24"
22


M6-3
21" x 15"
23



M4-8a Modified
24" x 18"
24



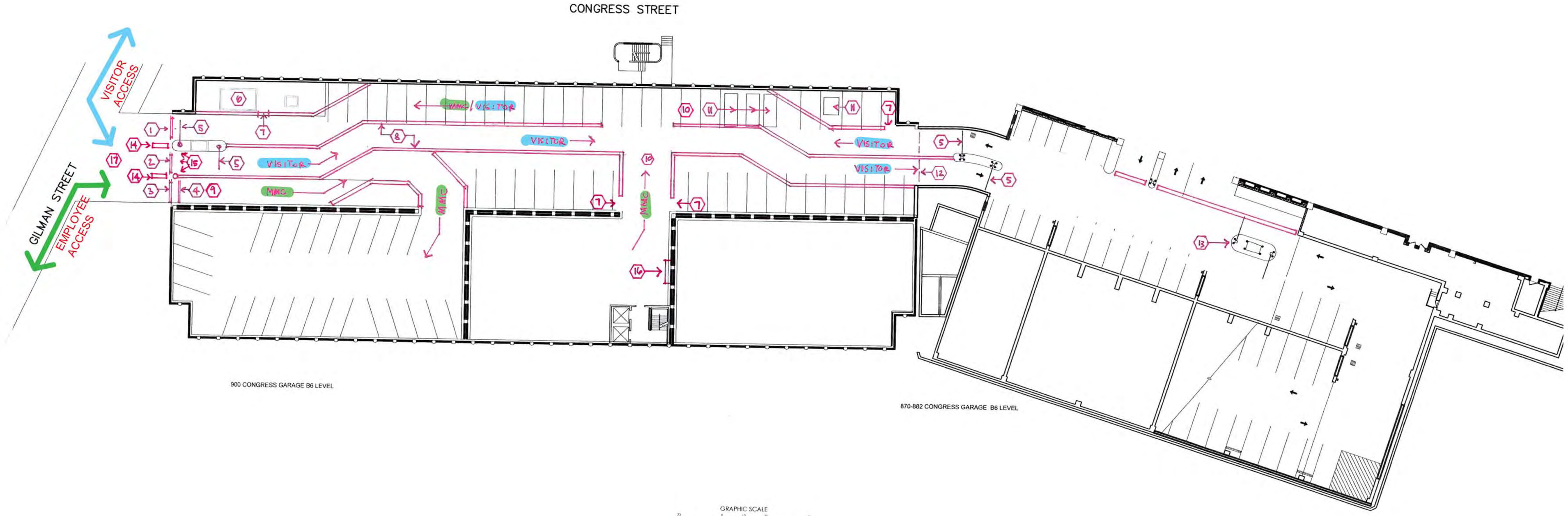
R9-11a
24" x 12"
25

TEMPORARY SIGNALIZATION: SIGNAL SHALL BE ON FLASH FOR A MINIMUM OF ONE WEEK PRIOR TO BEING PUT INTO RED-YELLOW-GREEN OPERATION. THE SIGNAL SHALL BE PUT INTO RED-YELLOW-GREEN OPERATION PRIOR TO 6 AM ON A MONDAY MORNING AND SIGNAL CONTRACTOR SHALL REMAIN ON-SITE UNTIL A MINIMUM OF 9 AM TO MAKE ADJUSTMENTS TO SIGNALS / TIMING PER THE DIRECTION OF THE CITY TRAFFIC ENGINEER OR REPRESENTATIVE. THE CONTRACTOR SHALL ALSO BE AVAILABLE FROM 11 AM TO 1 PM AND AGAIN FROM 3 PM TO 6 PM ON THE SAME DAY TO MAKE ADJUSTMENTS AS DIRECTED BY THE CITY ENGINEER OR THEIR REPRESENTATIVE. TWO WEEKS AFTER INITIAL RED-YELLOW-GREEN INITIALIZATION, THE CONTRACTOR SHALL BE AVAILABLE AT THOSE SAME TIMES FOR FURTHER ADJUSTMENTS AS DIRECTED BY THE CITY TRAFFIC ENGINEER OR THEIR REPRESENTATIVE.

Maine Medical Center Expansion
PORTLAND, MAINE

Design: ET Scale: NONE
Draft: Date: MAR 2018
Checked: RED File Name: 2866-01-TRAFF.dwg

GORRILL PALMER
Relationships. Responsiveness. Results.
www.gorrillpalmer.com
207.772.2515

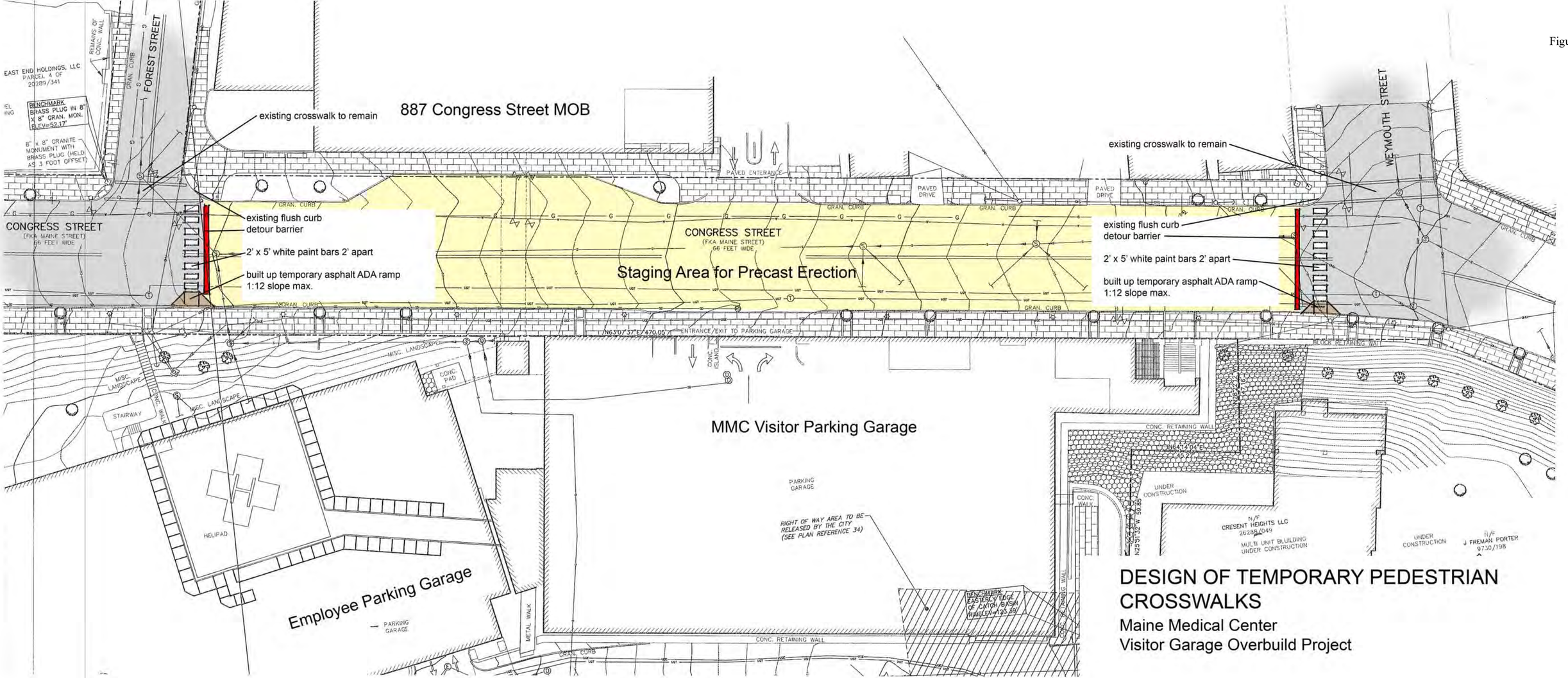


Maine Medical Center - Garage Access During Congress Street Closure

LEGEND :

1 - "Exit Only" Sign Facing Gilman Street
2 - " Visitor Entry Only " Sign Facing Gilman Street
3 - "Employee Entry Only " Sign Facing Gilman Street
4 - Add horizontal pvc pipe over employee entry lane
5 - Gate arms to remain in upright position
6 - Temporary office to remain
7- 5 Foot opening in barrier for pedestrian access
8 - Jersey Barriers, typical
9 - Temporary gate arm to conttrol employee access lane
10- Stop sign and staff person at this location during peak times
11 - Remove storage containers
12- Remove chain link fence gates
13 - Visitor access booth to remain as currently functioning
14 - One jersey barrier section on driveway apron
15 - Activate traffic signal lights
16 - Stop Ahead sign
17 - Staff person at Gilman Street Entrance at peak times

Figure No. 8

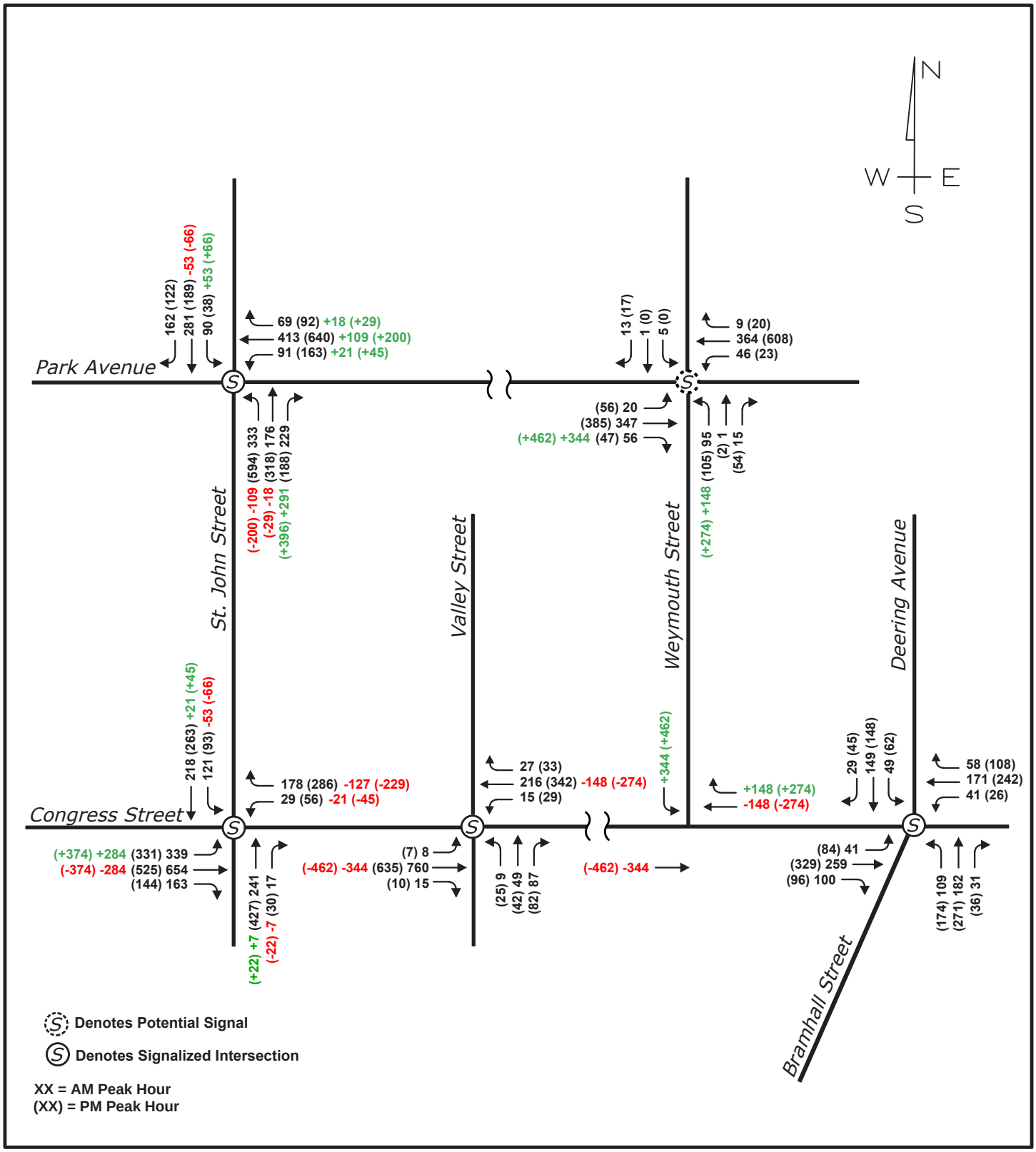


DESIGN OF TEMPORARY PEDESTRIAN CROSSWALKS

Maine Medical Center
Visitor Garage Overbuild Project

DETOUR VOLUMES

Figure No. 9



MAINE MEDICAL CENTER EXPANSION
PORTLAND, MAINE

Design: ET
Draft:
Checked: RED
Scale: NONE
Date: FEB 2018
File Name: 2866.01-TRAFF.dwg

GORRILL PALMER
Relationships. Responsiveness. Results.
www.gorrillpalmer.com
207.772.2515

Congress St Closure Implementation Schedule
Monday, March 12, 2018

Task Name	Start	Finish
Congress St Detour Implementation Schedule	**Mon 4/2/18**	**Thu 6/28/18**
Communication Team	**Mon 4/9/18**	**Fri 5/4/18**
Facebook Posts	Mon 4/9/18	Fri 5/4/18
Other Social Media Posts: "Earned Media"	Mon 4/23/18	Fri 5/4/18
Press Release on Closure	Mon 4/30/18	Fri 5/4/18
Community Update	Mon 4/30/18	Fri 5/4/18
Boosted Facebook Post	Mon 4/30/18	Fri 5/4/18
City 'Alert' to Parking Ban List	Mon 4/30/18	Fri 5/4/18
Joint City / MMC Press Conference	Mon 4/30/18	Fri 5/4/18
Construction Team	**Mon 4/2/18**	**Thu 6/28/18**
Weymouth St Road Patching	Mon 4/2/18	Fri 5/4/18
Install Temporary Bus Stop on Park Ave	Mon 4/2/18	Fri 5/4/18
Sign Location Spray Painted	Mon 4/23/18	Mon 4/23/18
Temporary Signal In Place	Mon 4/30/18	Mon 4/30/18
Temporary Signage In Place	Mon 4/30/18	Mon 4/30/18
Variable Message Boards In Place	Mon 4/30/18	Mon 4/30/18
Congress St Closed	Mon 5/7/18	Thu 6/28/18

DRAFT

Maine Medical Center
MaineHealth

March 21, 2018

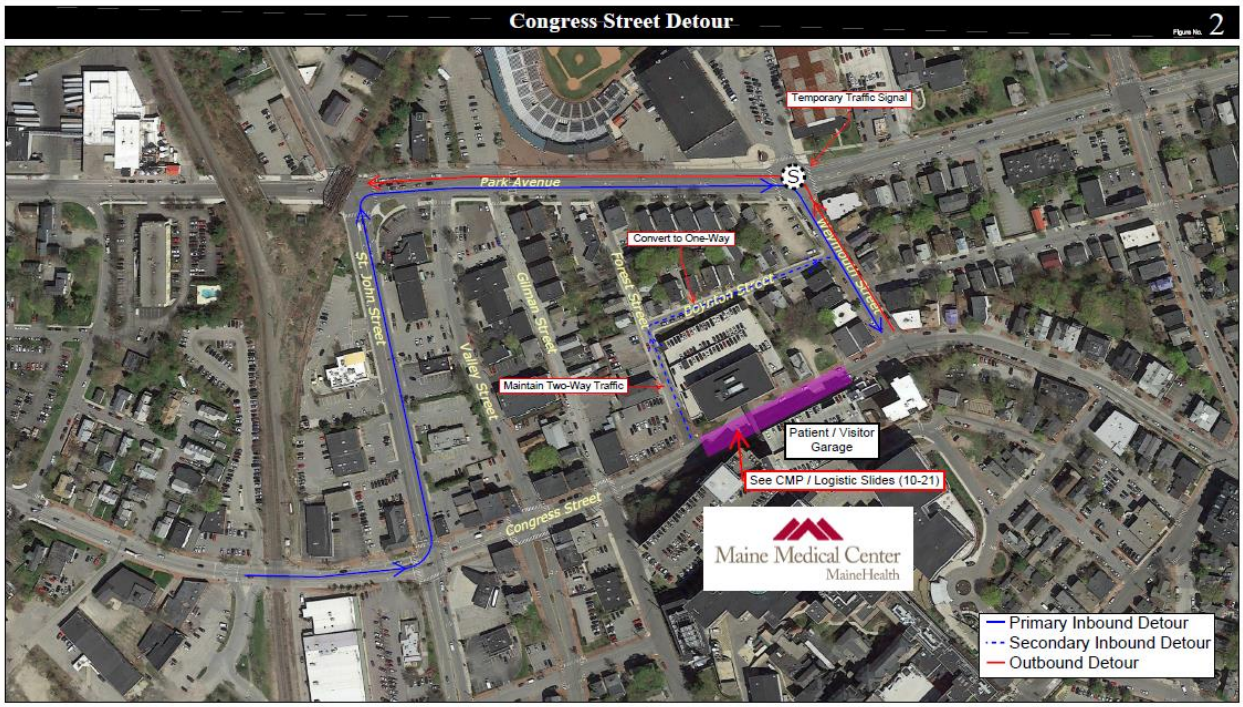
Jean Fraser, City Planner
City of Portland
Planning Department
389 Congress Street
Portland, ME, 04101

RE: Weymouth St Proposal

Dear Ms. Fraser,

The purpose of this memo is to propose a set of impact mitigation steps caused by the temporary closure of Congress St. – part of the first Site Plan Application which includes the East Tower and Visitor Garage overbuilds. The detour route illustrated in Figure 1 utilizes Weymouth St for two-way traffic for a period of eight weeks in May and June of 2018. This detour route is the result of several working sessions between MMC and their consultants including Randy Dunton of Gorrill Palmer and several departments of the City of Portland and their consultants including Tom Errico of TY Lin.

Figure 1 – Congress St Detour Route

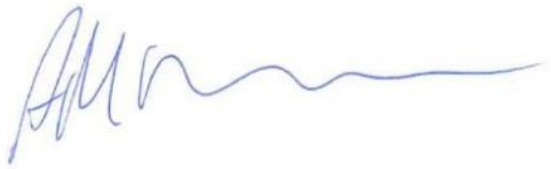


Maine Medical Center Expansion
PORTLAND, MAINE

Turner Construction consulted with Shaw Brothers Construction Inc., a local construction company that works closely with the City of Portland on several roadway repair projects, to determine the best course of action before the detour begins to ensure safe and reliable transportation during the 8 week period and to mitigate impacts of the detour once Congress St is re-opened. Shaw Brothers' recommendations are outlined in the attached letter.

Turner Construction is updating the Construction Management Plan to reflect these recommendations and requests approval from the City of Portland of this proposal.

Thank you,



Alexander M. Green
Director of Planning

Cc: Mark Harris, Senior Vice President of Planning, MaineHealth
Will Conway, Sebago Technics

SHAW BROTHERS CONSTRUCTION, INC.
P.O. Box 69 • 341 Mosher Rd. • Gorham, Me 04038
Tel: (207) 839-2552 • Fax: (207)839-6239
Website: www.shawbrothers.com

March 21, 2018

Turner Construction Company
Two Seaport Lane
2nd Floor
Boston, MA 02210

Attn: Gregg Scholler, V.P.

Re: Weymouth Street

Mr. Scholler:

It is our understanding that Turner Construction will be closing Congress Street and detouring traffic onto Weymouth Street for a period of approximately 8 weeks. In addition to the detour traffic you will be routing construction traffic, including precast concrete delivery trailers, onto Weymouth Street during this period. With this understanding Shaw Brothers Construction has reviewed the condition of Weymouth Street from Park Avenue to Congress Street and we offer the following:

1. 2 large areas of deteriorated pavement (approx. 1,000 sf) should be removed and replaced with 4" of 19.0mm HMA.
2. 1 large area (approx 400 sf) at the Congress Street end should be shimmed with 9.5mm HMA.
3. Small potholes at various locations on the street should be filled in with 9.5mm HMA.
4. At the end of the detour period Weymouth Street should be reviewed for additional deterioration caused by the additional traffic loads. At this point in time we feel that a 2" mill and fill may be necessary.
5. During the shutdown period Shaw Brothers Construction would be available within 12 hours to patch/repair any areas that become deteriorated to the point that it is unsafe for the traveling public.

We trust that this provides you with the information that you require. If we can be of further assistance or if you have any additional questions, please free to contact us at your convenience.

Regards,
Shaw Brothers Construction
Robert Brady

Robert Brady, Estimator

Maine Medical Center
MaineHealth

March 7, 2018

Maine Medical Center
22 Bramhall St.
Portland, ME 04102

Address line 1
Address line 2

Dear Property Owner,

The first phase of construction of the Maine Medical Center campus replacement and modernization project will begin in the coming months. This significant investment in our community and in the future of healthcare will benefit us all, modernizing our facilities to enable the quality of care we offer.

This project can only be successful with the full engagement of our immediate community members. To date, our regular meetings with our local Neighborhood Associations have helped us build awareness and address concerns.

To that end, we would like to invite you to an informational session specifically designed for nearby neighbors on Park Avenue and Weymouth, Boynton, Forest, Brackett, Grant and Bramhall streets.

We will present a number of updates that will be of particular interest to these neighbors, including:

- Information on the temporary closure of Congress Street
- Information on the detours for the Congress Street temporary closure
- Information on the temporary one-way designation of Boynton Street
- Information about the first phase of construction, focusing on additions to the East Tower and Visitor Parking Garage
- Information on the temporary two-way designation of Crescent Street

Time and Date: 5 to 6 p.m. Tuesday, March 20
Location: MMC East Tower, Classroom 2
Parking: MMC visitor parking (free) located at Bramhall & Chadwick streets in the South Visitor Parking Lot

In the meantime, we urge you to visit www.MMC.org/Modernization for project information and to sign up for email and/or text alerts when new project updates are posted. If you have any questions, please contact us at MMCProjectContact@mmc.org.

Respectfully,

Jeffrey D. Sanders
Executive Vice President & Chief Operating Officer
Maine Medical Center

Maine Medical Center
MaineHealth

Congress Street Closure & Detour

PATIENT CENTERED · RESPECT · INTEGRITY · EXCELLENCE · OWNERSHIP · INNOVATION

Contents

- Congress St Closure: When?, Where?, How Long?, Why?
- Intent of Congress St Detour
- Description of Detour
- Alternative Detour Routes Explored
- Emergency Access



Congress Street Closure

- What:
  - On Congress St between Forest St and Weymouth St immediately adjacent to MMC's Visitor Garage
- When:
  - May and June 2018
- How Long:
  - 8 weeks (includes several contingency days)



Visitor Garage Construction Option Comparison*

Legend			
Not Possible	Temporary Interruption	Possible

Workable Solution

	Option 1 Cast in Place	Option 2 South Side Approach	Option 3 North Side Approach, One Lane	Option 4 North Side Approach, Two Lane	Option 5 Place Crane in vacant site of former Employee Garage
Structural capacity of existing structure					
Structural capacity of retaining wall	N/A				
Ability to deliver material	N/A				
Space to assemble / dismantle crane	N/A				
ED Access	N/A				N/A
Space to operate crane	N/A				N/A
Site Safety	N/A				N/A
Capacity of soil , site grading	N/A				N/A

*Any red bullet eliminates the option

Act with kindness and compassion. Be an active listener. Be a role model. Set high standards. Take responsibility. Embrace change.

Turner

Intent

- Minimize the impact of the Congress St closure
- Provide a safe and reliable system for commuters and local traffic
- Reduce the volume of traffic that approaches the closure location to avoid concentrating traffic at the closure
- Ongoing monitoring of traffic to identify opportunities to improve real-time

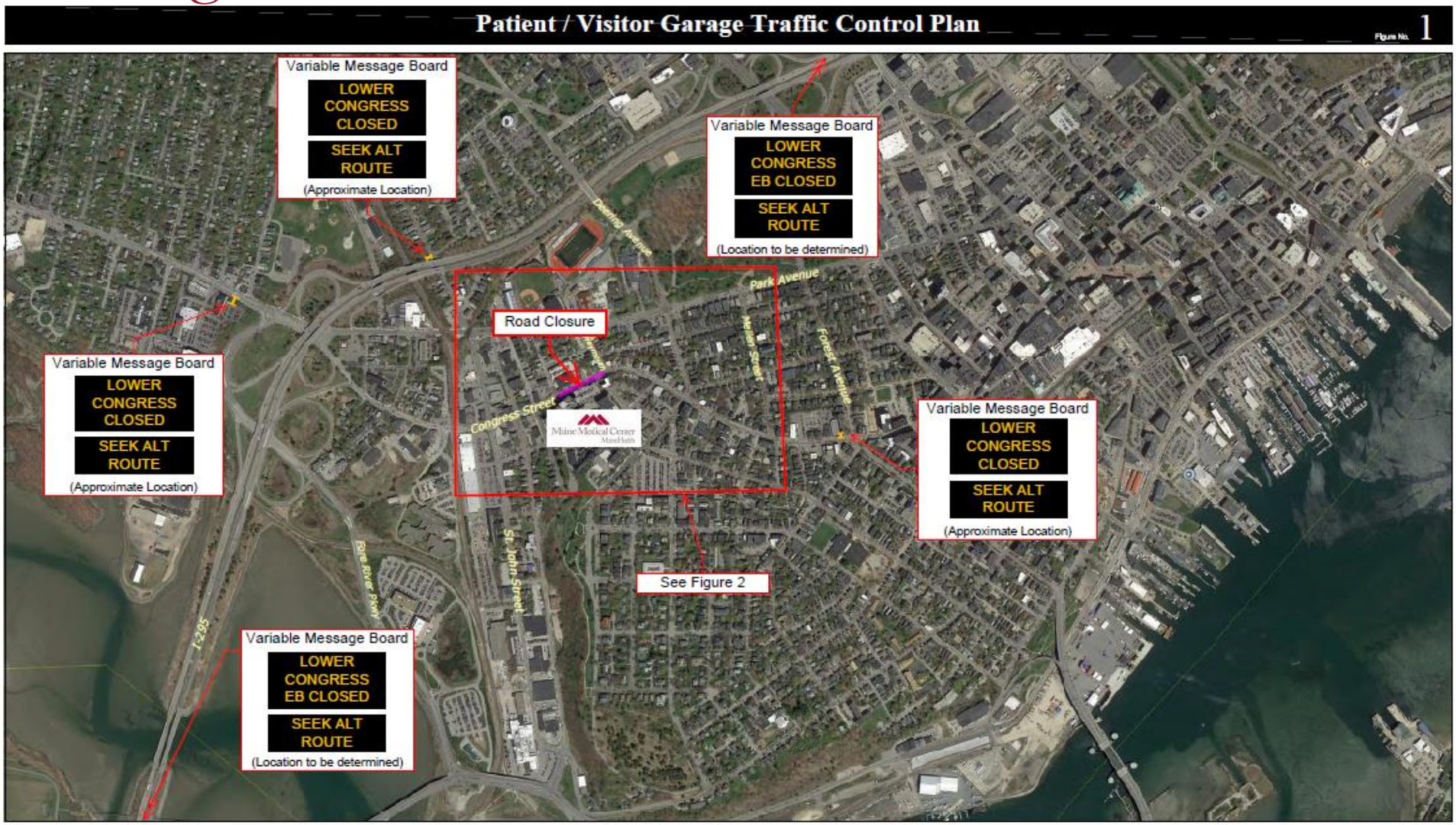


Congress St Detour
Best Option

- Dilute traffic adjacent to Congress St closure with variable message signage
- Inbound:
  - Congress St > St John St > Park Ave > Weymouth St > Congress St
  - Local Traffic Only:
    - » Congress St > Forest St > Boynton St > Weymouth St > Congress St
    - » No parking on Boynton St temporarily to allow for emergency vehicle access
- Outbound:
  - Congress St > Weymouth St > Park Ave
  - Temporary signal on Weymouth St / Park Ave
- Flaggers and Police where appropriate

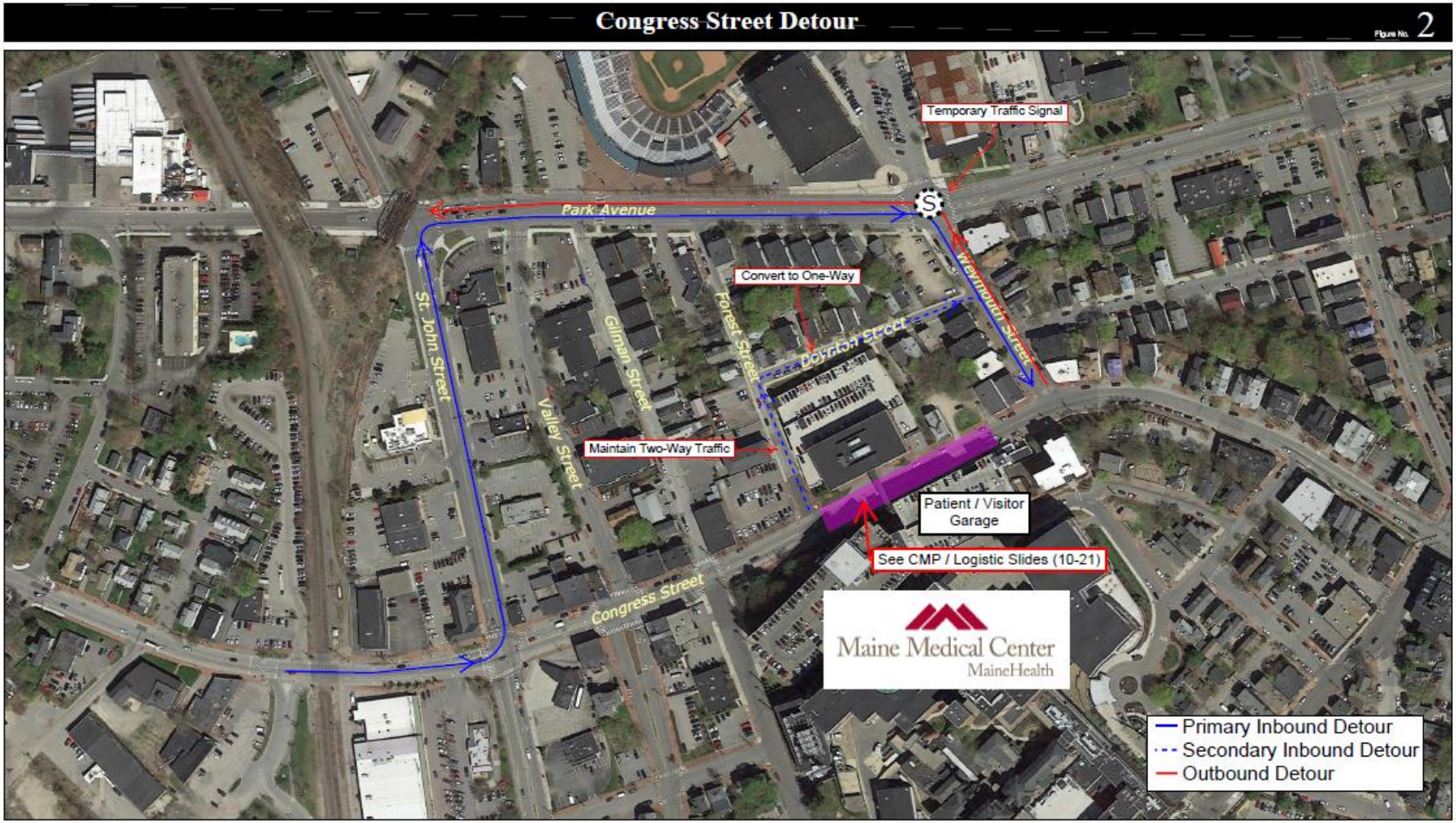


Congress St Detour



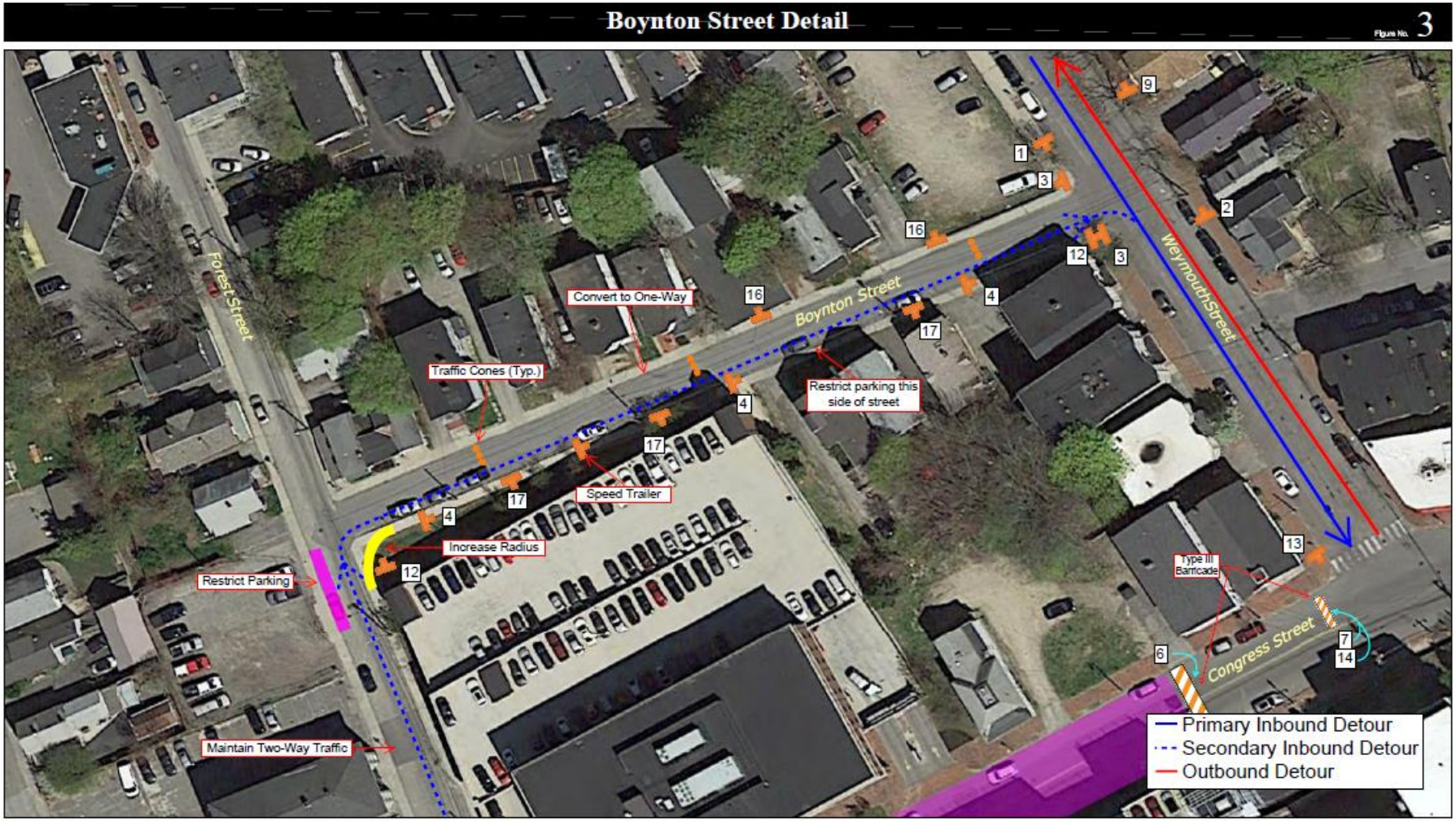
Maine Medical Center Expansion
PORTLAND, MAINE

Congress St Detour (cont.)



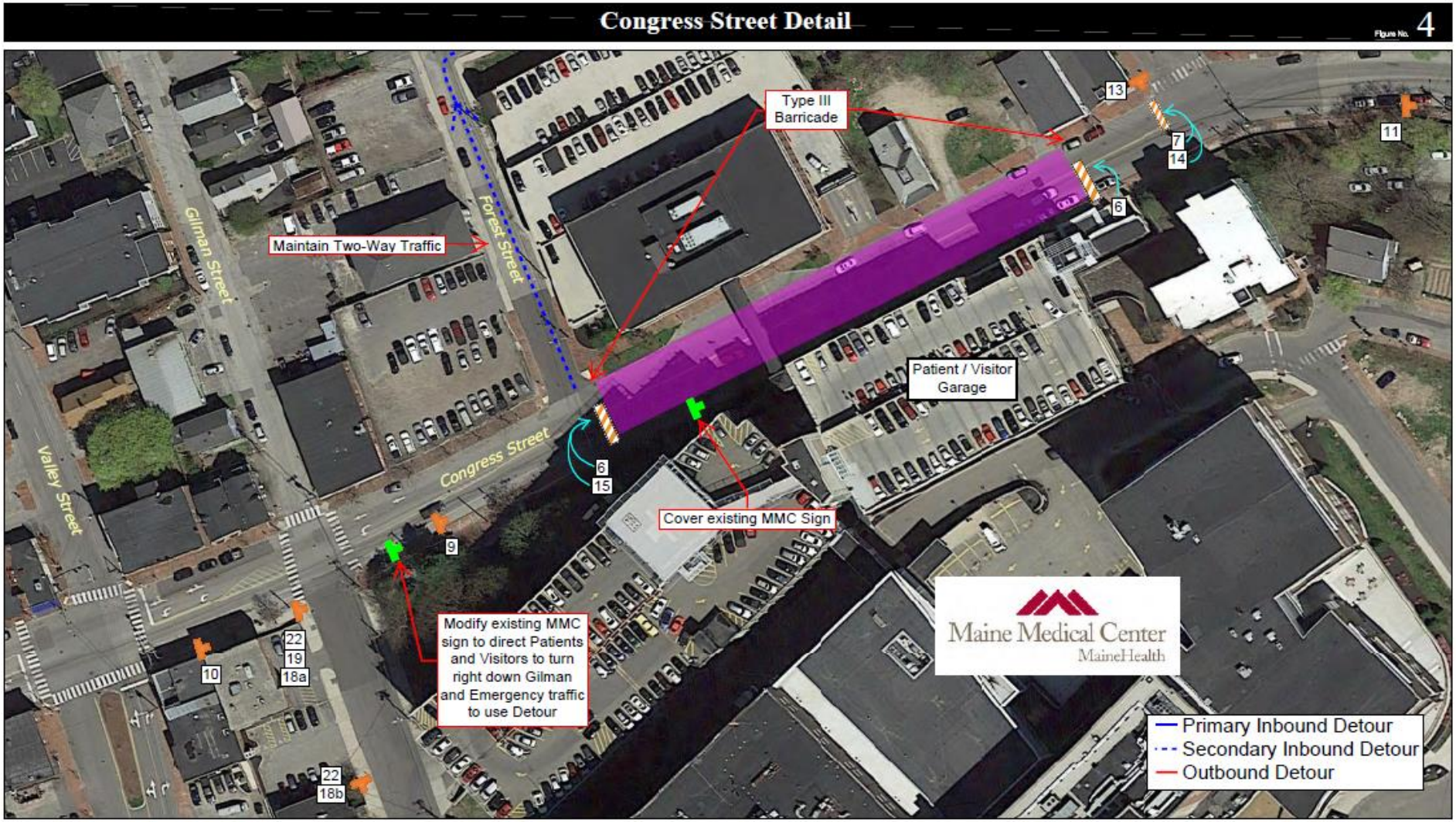
Maine Medical Center Expansion
PORTLAND, MAINE

Congress St Detour – Boynton St



Maine Medical Center Expansion
PORTLAND, MAINE

Congress St Detour – Congress St



Maine Medical Center Expansion
PORTLAND, MAINE

In-bound: Congress St & St John St



Congress St Detour
Inbound Alternatives Explored

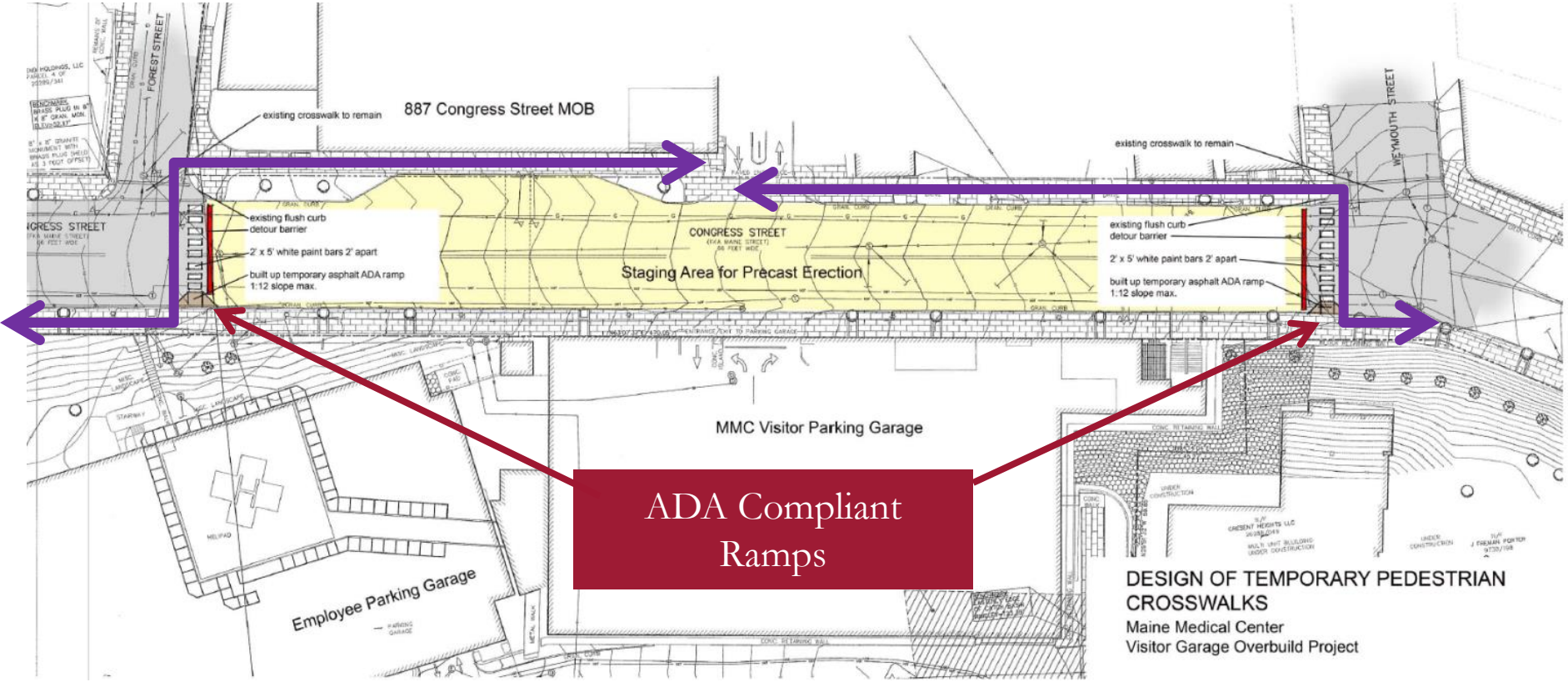
Legend			
POOR	OK	GOOD	

	St John St to Park	Valley St to Park	Gilman St to Park	Forest St to Park	Forest St to Boynton	Park to State St
Impact to Neighborhood	0	0	20	14	13	0
Impact to Businesses						
Street Size						
Traffic Flow						
Emergency Vehicle Access						
Interface with traffic light at St John & Park	NA				NA	NA
Familiarity for Public						

Act with kindness and compassion. Be an active listener. Be a role model. Set high standards. Take responsibility. Embrace change.

Turner

Pedestrian Access



Act with kindness and compassion.

Be an active listener.

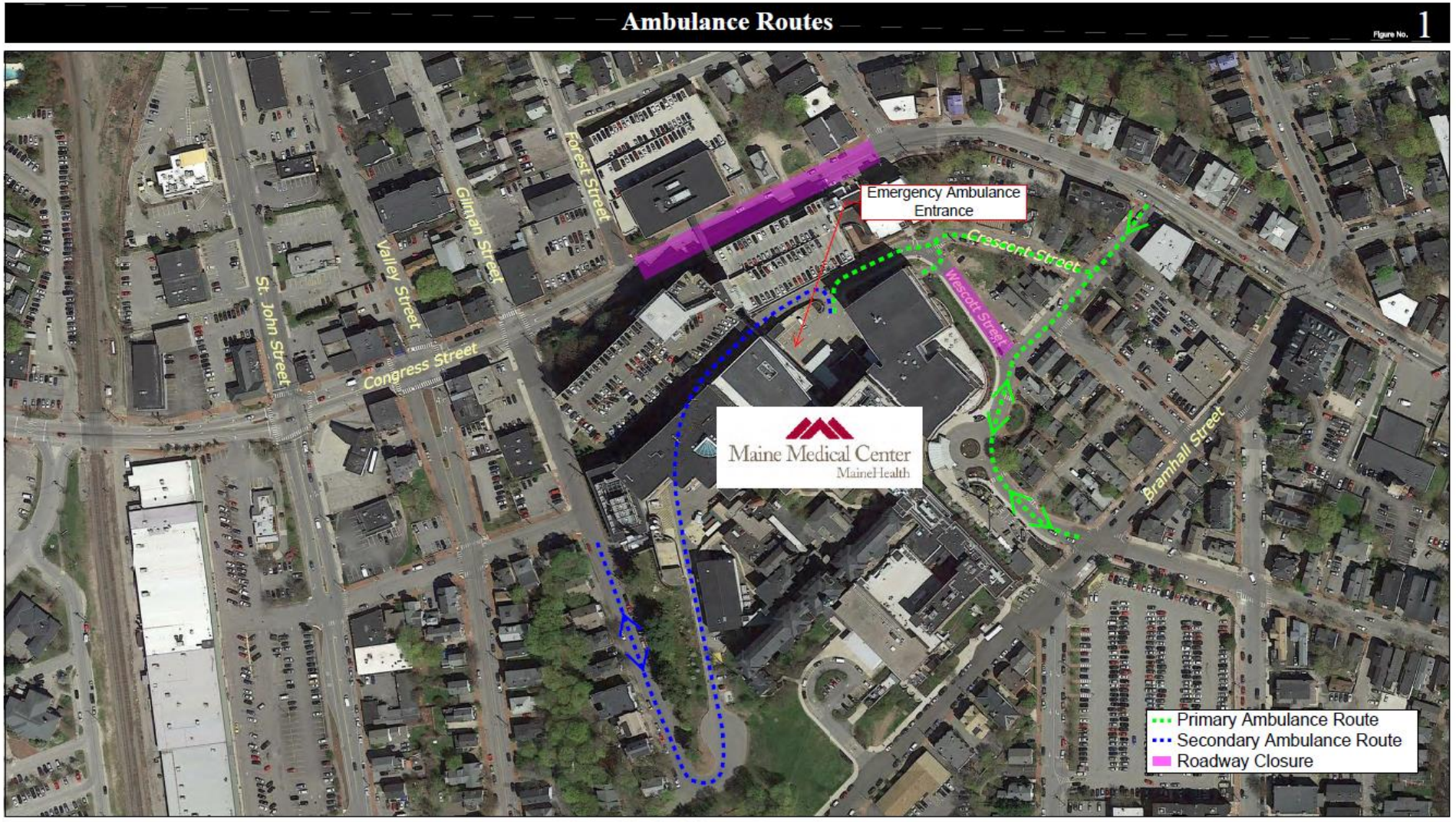
Be a role model.

Set high standards.

Take responsibility.

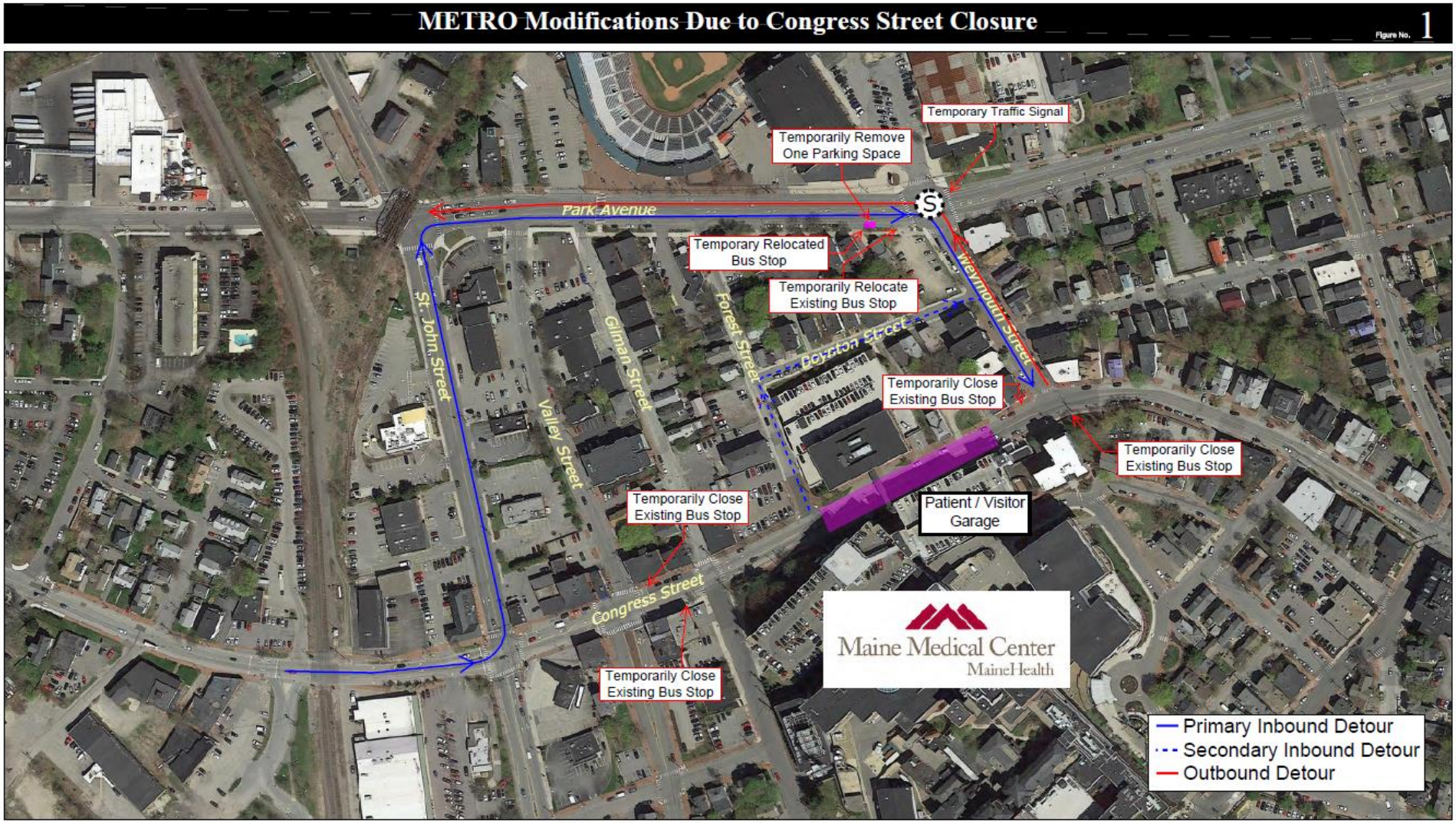
Embrace change.

Emergency Access



Maine Medical Center Expansion
PORTLAND, MAINE

METRO Access



Maine Medical Center Expansion
PORTLAND, MAINE

Sea Dogs Game Days



- Gates open at 4:30PM; Rush at 5:15PM
- Communication to ticket holders
- Coordinate with City Staff that supports Sea Dogs parking
- Parking in Fitzpatrick Lot and MMC's Forest St garage
- Police controlled pedestrian crossing
- Added signalized pedestrian crossing
- Add message to variable message boards
- Additional flaggers as needed

Sea Dogs Mother's Day 5k – Sunday, May 13, 2018



- Registration begins at 7:00AM
- Race expected to end at 11:00AM
- 10 police officers 7:00AM – 11:00AM
- 80 volunteers

- Close Park Ave between St John and Deering Ave to start the race
- Close Brighton Ave between Stevens Ave and Park Ave during the middle and end of the race.

Sea Dogs Mother's Day 5k Detour Impact

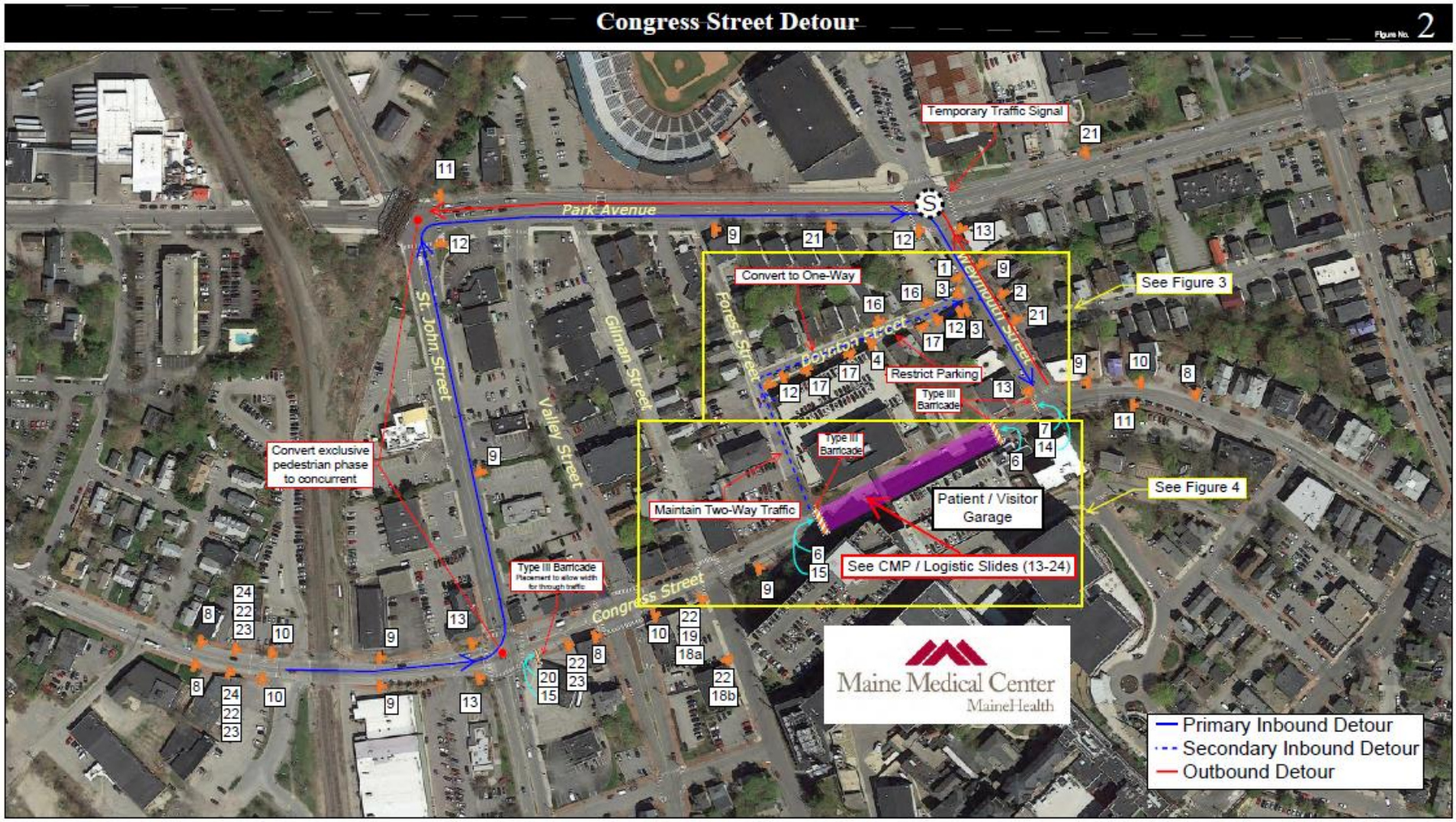


- Close Park Ave between St John and Deering Ave to start the race
  - Detour traffic to Brighton Ave from 7:00 AM until Brighton Closure
- Close Brighton Ave between Stevens Ave and Park Ave during the middle and end of the race.
  - Detour traffic to Commercial St until race end (approx. 11:00 AM)

APPENDIX


Be a role model.
Take responsibility.
Set high
Embrace change.
Be an active listener.
standards.
Act with kindness and compassion.

Detour Signage Detail



Maine Medical Center Expansion
PORTLAND, MAINE

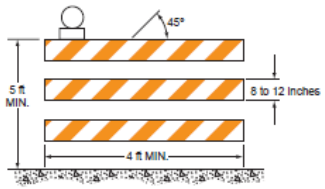
Detour Signage Detail (cont.)

General Notes and Sign Specifications

Figure No. 6

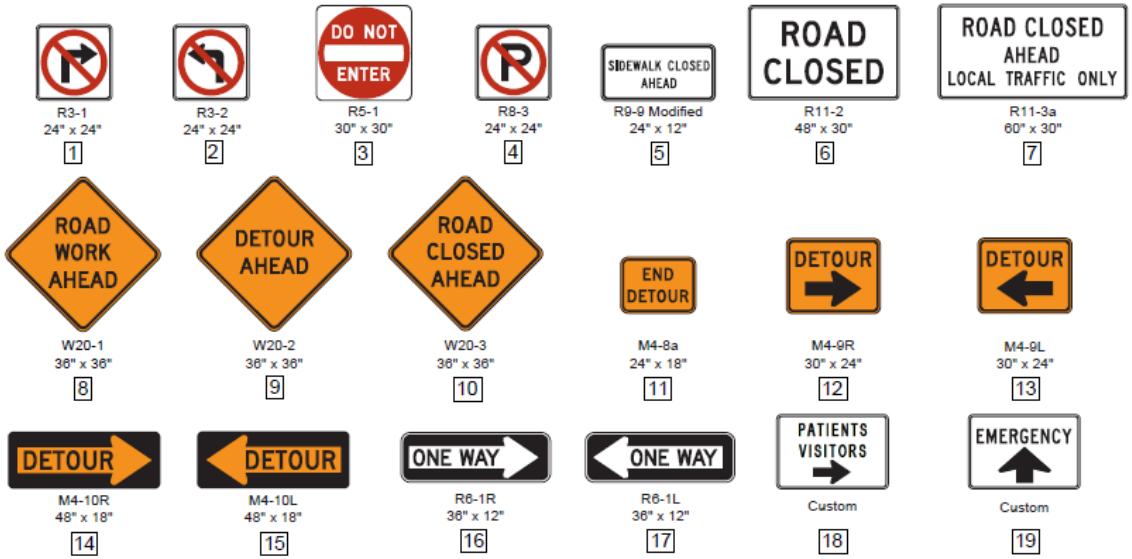
GENERAL NOTES:

1. ALL TRAFFIC CONTROL SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREET AND HIGHWAYS (MUTCD), USDOT, FHWA, LATEST EDITION, AND CITY STANDARDS.
2. SIGN LOCATIONS SHOWN ARE APPROXIMATE. ACTUAL LOCATIONS SHALL BE DETERMINED IN THE FIELD AND APPROVED BY THE CITY.
3. OTHER SIGNS MAY BE NEEDED AS DIRECTED BY THE
4. CITY. ALL CONTROL DEVICES SHALL BE PLACED IN HIGHLY VISIBLE LOCATIONS.
5. ALL CONSTRUCTION RELATED TRAFFIC CONTROL SIGNS NOT IN EFFECT SHALL BE COVERED OR TURNED FROM TRAFFIC VIEW UNTIL THEY ARE MADE ACTIVE. SIGNS SHALL BE COVERED OR REMOVED WHEN THE WORK IS NOT ACTIVE.
6. ANY EXISTING SIGNS OR PAVEMENT MARKINGS DAMAGED DURING CONTRUCTION SHALL BE RESTORED TO THEIR ORIGINAL CONDITIONS OR REPLACED AS NEEDED.
7. ANY CONFLICTING SIGNS OR PAVEMENT MARKINGS SHALL BE COVERED OR REMOVED AS NEEDED.
8. CHANNELIZING DEVICES SHALL BE PLACED PER MUTCD.
9. POST-MOUNTED SIGNS SHALL BE A MINIMUM HEIGHT OF 7 FEET (TO THE BOTTOM OF THE SIGN) AND MUST BE CRASHWORTHY.



TYPE 3 BARRICADE

SIGN SPECIFICATIONS:



R3-1	R3-2	R5-1	R8-3	R9-9 Modified	R11-2	R11-3a
24" x 24"	24" x 24"	30" x 30"	24" x 24"	24" x 12"	48" x 30"	60" x 30"
1	2	3	4	5	6	7

W20-1	W20-2	W20-3	M4-8a	M4-9R	M4-9L
36" x 36"	36" x 36"	36" x 36"	24" x 18"	30" x 24"	30" x 24"
8	9	10	11	12	13

M4-10R	M4-10L	R6-1R	R6-1L	Custom	Custom
48" x 18"	48" x 18"	36" x 12"	36" x 12"		
14	15	16	17	18	19


W3-3
36" x 36"
21



R11-3a
60" x 30"
20


D9-2
24" x 24"
22

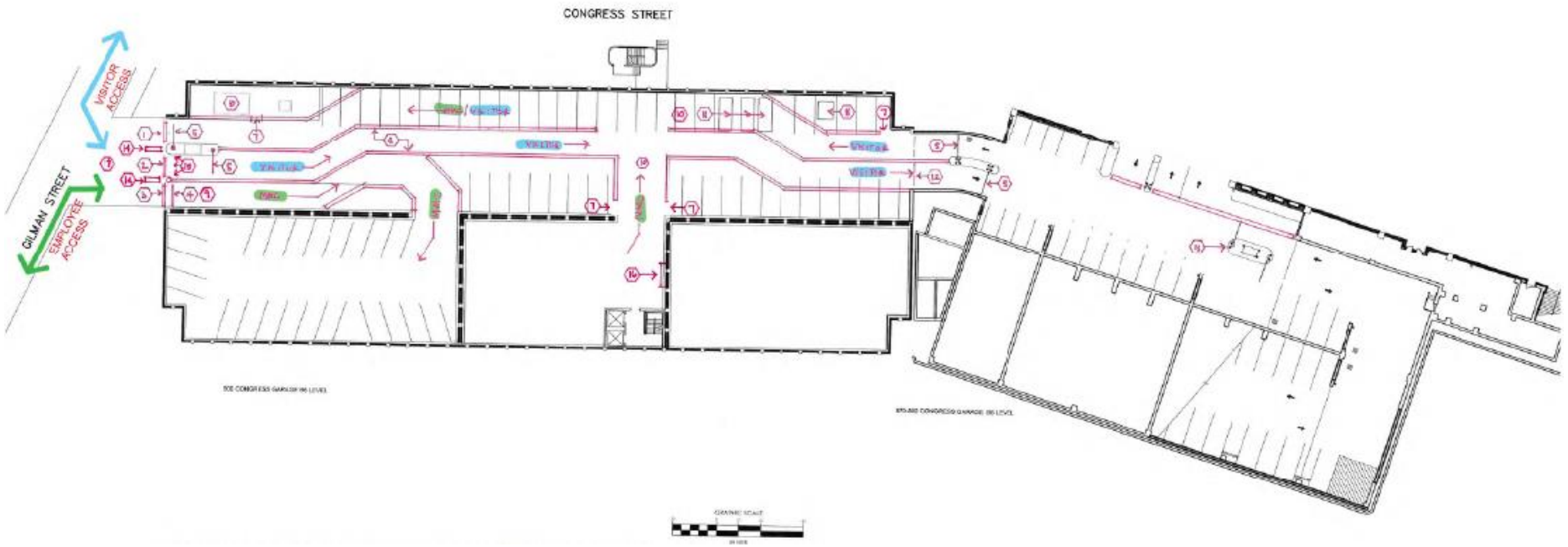

M6-3
21" x 15"
23

TEMPORARY SIGNALIZATION: SIGNAL SHALL BE ON FLASH FOR A MINIMUM OF ONE WEEK PRIOR TO BEING PUT INTO RED-YELLOW-GREEN OPERATION. THE SIGNAL SHALL BE PUT INTO RED-YELLOW-GREEN OPERATION PRIOR TO 6 AM ON A MONDAY MORNING AND SIGNAL CONTRACTOR SHALL REMAIN ON-SITE UNTIL A MINIMUM OF 9 AM TO MAKE ADJUSTMENTS TO SIGNALS / TIMING PER THE DIRECTION OF THE CITY TRAFFIC ENGINEER OR REPRESENTATIVE. THE CONTRACTOR SHALL ALSO BE AVAILABLE FROM 11 AM TO 1 PM AND AGAIN FROM 3 PM TO 6 PM ON THE SAME DAY TO MAKE ADJUSTMENTS AS DIRECTED BY THE CITY ENGINEER OR THEIR REPRESENTATIVE. TWO WEEKS AFTER INITIAL RED-YELLOW-GREEN INITIALIZATION, THE CONTRACTOR SHALL BE AVAILABLE AT THOSE SAME TIMES FOR FURTHER ADJUSTMENTS AS DIRECTED BY THE CITY TRAFFIC ENGINEER OR THEIR REPRESENTATIVE.

NOTE: SIZES OF SIGNS AND LETTERING ON ALL SIGNS SHALL BE VERIFIED THAT THEY MEET MUTCD REQUIREMENTS PRIOR TO ORDERING AND INSTALLATION.

Maine Medical Center Expansion
PORTLAND, MAINE

Access to the Visitor Garage During Construction



Master Facility Plan Phase 2: Site Planning and Construction Communication Plan: Public/Media

Goal

- Demonstrate to the public and media that the time, inconvenience and impacts caused by construction of the MMC expansion will be worth it because of the value delivered by the upgraded facility and enhanced care services.

Objectives

- Minimize disruption from planning and construction for general public
- Communicate information regarding construction
- Communicate information regarding parking changes
- Communicate information regarding traffic changes

Strategies

- Coordinate with City of Portland to amplify awareness of impacts and communications
- Utilize traditional and social media
- Highlight community, economic and clinical benefits of MMC in the past, present and future

Messages

- Maine Medical Center's modernization and expansion project is centered on providing excellent patient care
- Information will be shared in a timely basis and feedback will be collected and incorporated when the project can be improved
- MMC is committed to mitigating and minimizing impacts caused by the construction of its project

Key Audiences/Stakeholders

- Public / Media

Communication Channels

- Social Media (MMC and Portland sites)
- Earned Media – Print and broadcast

Milestone events:

- Site Plan 1 Approval
- Congress & Wescott Closures and visitor garage access
- May 7 Construction Start / Groundbreaking
- Site Plan 2 Approval

Questions/Needs

- **Who will speak with media about the logistics of the construction impact?**
- **How to balance Congress Closure with Wescott closure for various audiences**

Event/Date	Item #	Product	Copy Due / Run	Audience	Accountability	Approvals	Notes/Status
Site Plan 1 Approval	1						East Tower Overbuild Prep
	1a	Media Info Packet / thumb drive	March 27	Media Covering Hearing	Caroline, Matt		Includes bulleted fact sheet, Congress Street map, East Tower area map
	1b	Press Release (posted to the website and distributed to media)	March 28 (Morning after Planning Board Vote)	Statewide Media			*Include Congress Detour Map, East Tower area map*
	1c	Media Availability (as needed)	March 28 – 11-1 p.m.	Local media doing Folos			Spokesman on Congress Street, with blow-up poster board of new street scape; discussing detour and future
Congress & Wescott Closures and visitor garage access	2						Communicate throughout April
	2a	Facebook Detour posts; Info on Visitor Garage	Reminders posted each to run week-long; week of April 9, 16, 23, 30				*Include posts on Twitter and Instagram; On-site signage posted just prior to closure coordinated with project team*
	2b	Earned news media and 'earned' news media social posts covering Congress & Wescott Detours,	Start talking week of April 23 for				Targets include PPH, BDN, Forecaster, Sun Journal, (1 story, 3

Event/Date	Item #	Product	Copy Due / Run Date	Audience	Accountability	Approvals	Notes/ Status
		and visitor access	Placement Week of Apr 30				outlets?) MPBN, Ch. 6, 8, 13
	2d	Press Release on Closure	Run week of April 30				Distro to Non-Portland sources: Times Record, Journal Tribune, community weeklies
	2e	Update for Portland Convention & Visitors Bureau, Sea Dogs & other helpful community entities	" "				Visual item they can run April-July
	2f	Boosted Facebook post	" "				Week of April 30; Focus on Congress Closure uses image to spread far, align with the City to support
	2g	City 'alert' to parking ban list (16,000)	" "				Need to discuss with the City
	2h	Joint City / MMC Press Conference?	" "				Need to discuss with the City.
Ground Breaking Ceremony	3						
	3a	Ceremony participants / attendees to involve internal, trustees, city officials, neighborhood reps			Sue D., Matt W.		Philanthropy has lead; Comms coordinating with for separate communications and media plan
Site Plan 2 Approval	4						**June?**
	4a	All-employee email					
	4b	Press Release					

Note: Other Construction updates will be communicated as needed throughout the period, using appropriate vehicles such as social and earned media.

Creative

- Use Slugger in FB Message or other capacity? Video?
- Use humor for Social Messaging to extend sharing and reach; “The Road to Recovery Starts Here,” “A Turn for the Better,” “(Eye Chart) – If You Can Read This, You Can Follow Our Detour”
- Name the Crane
- Get BBCH Kids involved

Maine Medical Center
MaineHealth

March 7, 2018

Maine Medical Center
22 Bramhall St.
Portland, ME 04102

Address line 1
Address line 2

Dear Property Owner,

The first phase of construction of the Maine Medical Center campus replacement and modernization project will begin in the coming months. This significant investment in our community and in the future of healthcare will benefit us all, modernizing our facilities to enable the quality of care we offer.

This project can only be successful with the full engagement of our immediate community members. To date, our regular meetings with our local Neighborhood Associations have helped us build awareness and address concerns.

To that end, we would like to invite you to an informational session specifically designed for nearby neighbors on Park Avenue and Weymouth, Boynton, Forest, Brackett, Grant and Bramhall streets.

We will present a number of updates that will be of particular interest to these neighbors, including:

- Information on the temporary closure of Congress Street
- Information on the detours for the Congress Street temporary closure
- Information on the temporary one-way designation of Boynton Street
- Information about the first phase of construction, focusing on additions to the East Tower and Visitor Parking Garage
- Information on the temporary two-way designation of Crescent Street

Time and Date: 5 to 6 p.m. Tuesday, March 20
Location: MMC East Tower, Classroom 2
Parking: MMC visitor parking (free) located at Bramhall & Chadwick streets in the South Visitor Parking Lot

In the meantime, we urge you to visit www.MMC.org/Modernization for project information and to sign up for email and/or text alerts when new project updates are posted. If you have any questions, please contact us at MMCProjectContact@mmc.org.

Respectfully,

Jeffrey D. Sanders
Executive Vice President & Chief Operating Officer
Maine Medical Center

MAINE MEDICAL CENTER

Construction Projects at the East Tower, Visitor Garage, Central Utility Plant

Construction Management Plan

December 15, 2017

[Updated for 1/23/18 Planning Board Meeting]
(Updated for 2/27/18 Planning Board Meeting)
(Updated for 3/27/18 Planning Board Hearing)

Prepared for: Portland Department of Planning & Urban Development Department

Project Proponent: Colliers International

Construction Manager: Turner Construction

TABLE OF CONTENTS

CONSTRUCTION MANAGEMENT PLAN

1.0 CONSTRUCTION MANAGEMENT PLAN....4
2.0 CONSTRUCTION SCHEDULE & WORK HOURS....4
2.1 Work Hours....4
2.2 Construction Timeline....4
2.2.1 Spring 2018 to Fall 2019....4
2.3 Construction Updates Reporting....5
2.4 Construction Logistics....5
2.5 Perimeter Protection / Public Safety....6
2.6 Worker Parking & Traffic Impacts....6
2.7 Truck Routes and Volumes – Refer to Site Logistics Plans....7
3.0 Air Quality & Noise....9
3.1 Dust Control....9
3.2 Noise....10
3.3 Air Monitoring....11
4.0 Communication Strategies....11
4.1 Contacts, Distribution Lists....11
5.0 Vibration Monitoring – Not Applicable....12

MAINE MEDICAL CENTER

Construction Projects at the East Tower, Visitor Garage, Central Utility Plant

Construction Management

Plan 12.15.17 (Updated 02.07.18) (Updated 03.09.18)

Purpose Statement

The purpose of this document is to provide the details of the first phase of construction for MMC's Master Facility phase IIB. This document outlines Turner Construction's plan for controlling impacts from noise, vibrations, ground movement, truck traffic, and other construction related factors to the surrounding neighborhoods and buildings.

Maintaining normal campus operations and Public Safety are high priorities during the construction phase. This plan will be presented to the appropriate City and Neighborhood representatives. The City of Portland Planning Board will approve the final plan. It has been the goal of these programs to define the construction plan before construction begins. Turner's experience on projects with similar logistic constraints has proven that pre-planning and constant communication are necessary for a smooth efficiently run, incident free project.

It is Turner Construction's full intent to follow the guidelines set by the contract documents.

Turner Construction and its subcontractors shall schedule and conduct operations in a manner that will control the disturbance to the public in areas adjacent to the work and to occupants of buildings in the vicinity.

1.0 CONSTRUCTION MANAGEMENT PLAN

This Construction Management Plan (CMP), submitted to the Portland Department of Planning & Urban Development for approval by the City of Portland Planning Board prior to the start of construction, includes specific mitigation measures and staging plans to minimize impacts to surrounding residences and businesses. The Construction Manager and its trade contractors will be bound by the CMP.

Turner Construction Contacts:

Project Superintendent: Scott Griffin
Email: SGriffin@tcco.com / Cell - 203-943-0950

Project Manager: Adam Parys
Email: AParys@tcco.com / Cell – 617-201-0710

Project Engineer : Rick Martineau
Email: RMartineau@tcco.com / Cell – 617-438-1263

Project Superintendent: Chris Rodenhizer
Email: CRodenhizer@tcco.com / Cell – 617-312-9039

Project Director: Gregg Scholler
Email: GScholler@tcco.com / Cell – 203-219-4022

2.0 CONSTRUCTION SCHEDULE & WORK HOURS

Construction work hours will be in accordance with Section 17-18 and Section 25-129.

2.1 Work Hours

- The construction period for the project is expected to be approximately 19 months in duration.
- It is anticipated that the project is estimated to start on or about Spring 2018 and last through Fall 2019.
- Work hours will be 7AM to 7 PM Monday thru Friday.
- Workers will gather at their workplace from 6 AM to 7AM.
- Saturday work will be required on a periodic basis with hours from 7 AM to 6 PM.

2.2 Construction Timeline

2.2.1 Spring 2018 to Fall 2019

East Tower – Wescott Street

A new 60,000 SF addition is being added to the top of the East Tower. The addition consists of two new floors, level 6 and 7. On the roof is a helipad system capable of landing two helicopters. The exterior wall at Level 5 is being replaced in conjunction with a new exterior wall for Level 6 and 7. This project is expected to start in April 2018 and complete by October 2019. (19 Months)

Visitor Garage- Congress Street

Three new floors of parking are being added to the Visitor Garage. These floors will be Level 8, 9 and 10. The added floors are precast and are being added to a garage which has been designed for this expansion. The added parking capacity is 220 cars. This project is expected to start in May 2018 and complete in November 2018. (6 Months)

Central Utility Plant – Gilman Street

The Central Utility Plant is increasing cooling capacity by adding one 2,400 ton chiller and two cooling towers. This project is expected to start in November 2018 and complete in March 2019. (5 months)

2.3 Construction Updates Reporting

The following shall be reported to Maine Medical as a part of the CMP.

- Monthly "look ahead" schedules and narrative for upcoming construction activities.
- Schedule of over-size deliveries to the site that will impact roadways
- Schedule of deliveries that will be outside the City of Portland's allowable work hours.
- Proposed schedule for utility connection or work in public roadways or sidewalks as a part of Turner work.
- Proposed off-hours or Saturday work.
- Construction activities that may impact the neighborhood in an adverse way, including noise, vibration, dust, on-street parking or work outside construction limits or times. Also, proposed options to mitigate these impacts.
- An estimate of the number of vehicles that will require off-site parking.

2.4 Construction Logistics

The proposed Logistics Plans included in the CMP are designed to isolate the construction while providing safe access for pedestrians, hospital operations, and automobiles during normal day-to-day activities and emergencies. Interaction with the public will occur mainly along Congress Street and Gilman Street. The logistics plan define the timeline of construction activities and the location of cranes, gates, access for each Phase.
Each site will be secured by an 8-foot high fence with privacy screening in accordance with the Logistics Plan.

Logistics plans on the construction sequencing for East Tower Overbuild are Slides 2 to 12.

Logistics plans on the construction sequencing for Visitor Garage Overbuild are Slides 13 to 26.

Logistics plans on the construction sequencing for Central Utility Plant cooling upgrade Slides 27 to 29.

2.5 Perimeter Protection / Public Safety

- Turner Construction will work to ensure the sidewalk protection minimizes impact to pedestrian and vehicular flow.
- The specific configuration of sidewalk protection and pedestrian access around the site will vary depending on the phase of the work being performed.
- In general, secured fencing will be used to isolate construction areas from pedestrian traffic.
- Flagmen or Police Details will be provided at all active gates when there are deliveries.
- Construction procedures will be designed to meet all OSHA safety standards for specific site construction activities.
- Subcontractors will implement and manage their own Health and Safety Program for the project.
- All Subcontractors are required to wear appropriate personal protective equipment.
- Snow removal and ice treatment will be provided on the surrounding area within the construction fence.
- Sidewalks will be cleaned of trash and debris as needed.
- If existing street lights need to be removed for the duration of the project,
- Concrete washout will be in concrete washout bags, collected and placed in a dumpster. Concrete washout area to be located within the site fence. **(Refer to logistics slide 9)**
- Turner Construction will provide sufficient temporary site lighting to ensure the safety of all pedestrians accessing the sidewalks around the site, including lighting at all covered pedestrian walkways, until permanent street lights are installed Light levels will be tested prior to temporary removal of site lighting.

2.6 Worker Parking & Traffic Impacts

- Turner Construction and its subcontractors shall encourage the use of public transportation by their workers.
- Jobsite personnel will be required to park at an offsite parking area to be determined and will be shuttled to the construction site.
    - Jobsite personnel will be required to park at MMC's Scarborough Campus
    - Jobsite personnel will be shuttled to the construction site
    - Subcontractors who violate this requirement will be fined $500 per offense
- Worker parking shall not be allowed on site except for company vehicles required to perform the work.

- Turner will qualify subcontractors' with a legitimate reason to park onsite and manage that parking within the construction fence and not impact parking in the surrounding area.
- No personal vehicles will be allowed to park at the project construction site or in the adjacent residential streets.
- The following language will be included in the contracts with all subcontractors
    - *"Parking: There shall be absolutely no parking on the project site, in the Hospital Parking Garages and / or Hospital Surface Parking lots, and on street parking adjacent to the Hospital. This is including but not limited to employee vehicles, company vehicles, delivery trucks, trucks containing equipment such as welders, etc. Turner to provide remote parking location, and transportation to and from the jobsite. Any workers found in violation of this policy will be subject to permanent removal from the project and the subcontractor shall be assessed a $500 fine per incident."*

The number of workers required during the construction will vary by Construction Phase.

Construction Phase - April 2018 to September 2019

- Spring 2018- Fall 2018 – average workers – 40 to 50
- Fall 2018 – Spring 2019 – average workers – 70 - 90
- Spring 2019- Fall 2019 - average workers – 100

2.7 Truck Routes and Volumes – Refer to Site Logistics Plans

All street opening and occupancy in the public right of way will be in accordance with Chapter 25 of the City of Portland Land Use Code

- Truck traffic will vary throughout the construction period, depending on the activity.
- An offsite marshalling area will be utilized for large deliveries such as precast and structural steel.
- All trucks will be brought to the construction areas at MMC by experienced dedicated drivers from the marshalling lot.
- Radio and cell phones will be utilized to coordinate all trucking.
- Trucks routes must be submitted and approved by the City of Portland and the Owner before the start of construction.
- Truck idling will be held to a minimum on-site, to minimize the impact to adjacent properties..
- Turner Construction and its subcontractors shall ensure that haul routes, debris and soil removal, and staging areas are conducted in a manner that minimizes the impacts to the abutting communities,
- Wheel wash stations will be installed and maintained by Turner and its subcontractors as needed and maintained at construction site exit areas.
- Street sweeping / vacuuming of all impacted City streets and sidewalks shall be performed by Turner Construction and its subcontractors on an as-needed basis.

- Streets, sidewalks, bicycle ways or other means of travel may not be obstructed or closed without permission from the Owner and other authorities having jurisdiction. The Owner shall be notified one week in advance of any such obstructions or closures.

Construction - East Tower Overbuild – (Refer to Logistics Slides 2 thru 12)

All street opening and occupancy in the public right of way will be in accordance with Chapter 25 of the City of Portland Land Use Code

- All truck traffic will be directed to enter the site in accordance with truck route plans approved by the City of Portland and included in the Logistics plans. **(Refer to Logistics slides 8-12)**
- Turner will install way finding signage at strategic locations identifying no travel zones for construction vehicles.
- All subcontractors and vendors will be provided with pamphlets indicating the appropriate truck routes to access the site.
- Trucks will be brought within the fence line.
- The crane erection requires the closure of Ellsworth for a duration of one long day.
- **Ambulance right of way thru East Tower tunnel is identified on logistics slide 9.**
- Fire Safety requirements are addressed in Turner's Environmental and Health Safety Program for Maine Medical, pages 34 to 36**.**
- During crane erection a portion of Ellsworth Street and Wescott will be closed. **(Refer to logistics slide 8)**

Construction Visitor Garage Overbuild – (Refer to Logistics Slides 13-26)

All street opening and occupancy in the public right of way will be in accordance with Chapter 25 of the City of Portland Land Use Code

- All truck traffic will be directed to enter the site utilizing Congress Street. The Congress Street road closure is from Monday May 7, 2018 to Thursday June 28, 2018.
- During the erection of the precast pieces, overtime will be used. The work week will consist of 10 hour days –Monday thru Thursday, Friday will be an eight hour day and the plan is to work 8 hours on Saturday for the first two Saturdays. In the event that time is lost during the week due to wind and rain, the contractor will continue to work the remaining Saturdays.
- All detours and paths of travel shown on the Traffic Management Plans will be followed.
- All road signage identified on the Maintenance of Traffic Plans will be installed and maintained by Turner during the Congress Street shutdown and detour.
- Temporary repair patching of Congress Street will completed before Congress Street is reopened. If permanent patching or repairs are required they will be coordinated and completed in accordance with City of Portland timeline requirements.
- There are three places that Weymouth Street resurfacing will occur prior to the Congress Street closure. After the closure is complete, Weymouth Street will be inspected for damage.

- During an eight week period – May 7, 2018 to June 28, 2018 - Congress Street will need to be closed at the location of the Maine Medical Center Visitor Garage. Detailed logistics plans are included to identify the street closure requirements.(refer to logistics slides 18-26)
- This street closing will be in accordance with the City of Portland and Maintenance of Traffic requirements determined during the Site Plan Review process.
- The exterior façade treatment is expected to be coordinated and installed during the construction phase of the new Clinical Tower.
- All subcontractors and vendors will be provided with instructions prior to their project start indicating the appropriate truck routes to access the site.

Construction - Central Utility Plant – (Refer to Logistics Slides 27-29)

All street opening and occupancy in the public right of way will be in accordance with Chapter 25 of the City of Portland Land Use Code

- All truck traffic will be directed to the Central Utility Plant utilizing a truck path from Congress Street to Gilman Street, and a departing path from A Street. **(refer to logistics slides 28-29)**
- During a two week period when the chillers and cooling towers are installed, trucks and a crane will be set up on Gilman Street. This is expected to occur in Fall/Winter 2018.Police detail will be fulltime during this period. Gilman Street will remain open.
- Lane closing will be coordinated with the City of Portland.
- All subcontractors and vendors will be provided with instructions prior to their project start indicating the appropriate truck routes to access the site.

3.0 Air Quality & Noise

3.1 Dust Control

To reduce emission of dust and minimize impacts on the local environment, the construction contractor will adhere to a number of strictly enforced mitigation measures. These include:

- Wetting agents will be used regularly to control and suppress dust that may come from the construction materials.
- All trucks used for transportation of construction debris will be fully covered with tarps intended to keep material in the truck.
- Construction practices will be monitored to ensure that unnecessary transfers and mechanical disturbances of loose materials are minimized and to ensure that any emissions of dust are negligible.
- Street and sidewalks will be cleaned to minimize dust accumulations as needed.
- Stock piles of soils will be covered with tarps and/or poly when they are not being utilized for current site activities.

3.2 Noise

- The project will require the use of equipment that can be heard from off-site locations. This project will strive to mitigate construction noise impacts, to the extent possible.
- Increased community sound levels are an unavoidable consequence of construction activities.
- Construction will occur during the daytime hours as defined by the City of Portland Code of Ordinances (7:00 a.m. to 6:00 p.m. Monday through Friday).
- In some instances, a second shift, off hour, holiday and weekends may be required.
- When these events arise, all required permits will be obtained and notification will be posted in accordance with section 2.3
- Work shall be performed so as to prevent nuisance noise conditions that are preventable (e.g., unmaintained equipment, brake squeal, etc.).
- Turner Construction and all subcontractors shall use all reasonable efforts to implement noise reduction methods listed below to minimize construction noise emission levels. Noise reduction methods shall include, but not be limited to:

Use of:

- Tie to local power grid to reduce the use of on-site generators.
- Noise-deadening / isolating surrounds around exceptionally noisy work equipment or operations
- The maintenance of the access roadways to minimize the "bouncing" of construction vehicles within the construction site.
- Enforcing the site logistics plan, so as to maximize to every extent possible the forward movement of construction vehicles. This will, in turn, minimize the sound of back-up alarms.

Attaching:

- Intake / exhaust mufflers, shields or shrouds
- Noise-deadening material to equipment and fencing

Maintaining:

- Equipment mufflers and lubrication
- Pre-cast decking and plates to avoid rattling
- Smooth surfaces on construction sites and public ways to prevent unnecessary noise from surface irregularities.

Minimizing

- Noise from the use of backup alarms, using measures that meet OSHA regulations. The construction logistics has been designed such that the backing-up of equipment and trucks is limited.
- Use of self-adjusting ambient-sensitive backup alarms.
- Manually adjustable alarms on low setting

- Scheduling of activities so that alarm noise is minimized

3.3 Air Monitoring

- Turner Construction and its subcontractor's shall employ dust, odor, and gas control measures to minimize the creation of airborne dusts, odors, and gases during the entire construction process. At a minimum, standard dust control techniques shall be employed where heavy equipment will be traveling, standing, or loading, such as watering down the site or utilizing dust control measures. All measures shall be taken in accordance with Turner's approved Health & Safety plan.
- Turner Construction and its subcontractors shall perform dustless street sweeping / vacuuming for all construction activities including demolition, excavation, slurry / soil mixing operations on an as needed basis.
- An air monitoring plan shall be developed by the Owner based on site contaminants of concern, particulate quantities / densities, and risk-based evaluations. The plan will be developed for off-site impacts. Turner Construction and its subcontractors will be responsible for on-site health and safety issues.
- The Owner will engage a qualified consultant to monitor for dust along the perimeter of the construction site. Results of this monitoring that indicate exceedances of air quality criteria will be immediately brought to the attention of Turner Construction. Turner and its subcontractors shall immediately address the site condition, including terminating construction activities to remedy the site conditions to the satisfaction of the Owner.
- Ductwork snorkels will be installed as required on building air intakes surrounding the job-site to minimize the amount of dust and construction vehicle gases being taken in through the air handling systems. The maintenance of the filters is by the individual building managers.

4.0 Communication Strategies

4.1 Communication Plan

Turner will work with MMC's communications team to deliver a communications plan that encompasses:

- Plans for traffic management during Portland Seadogs games
- Plans for METRO bus stops and routes
- Implementation plans for all aspects of the detours outlined in the Maintenance of Traffic plan completed by Gorrill Palmer
- An emergency contacts list for the City of Portland including specifically Portland Police and Fire Departments.

4.2 Contacts, Distribution Lists

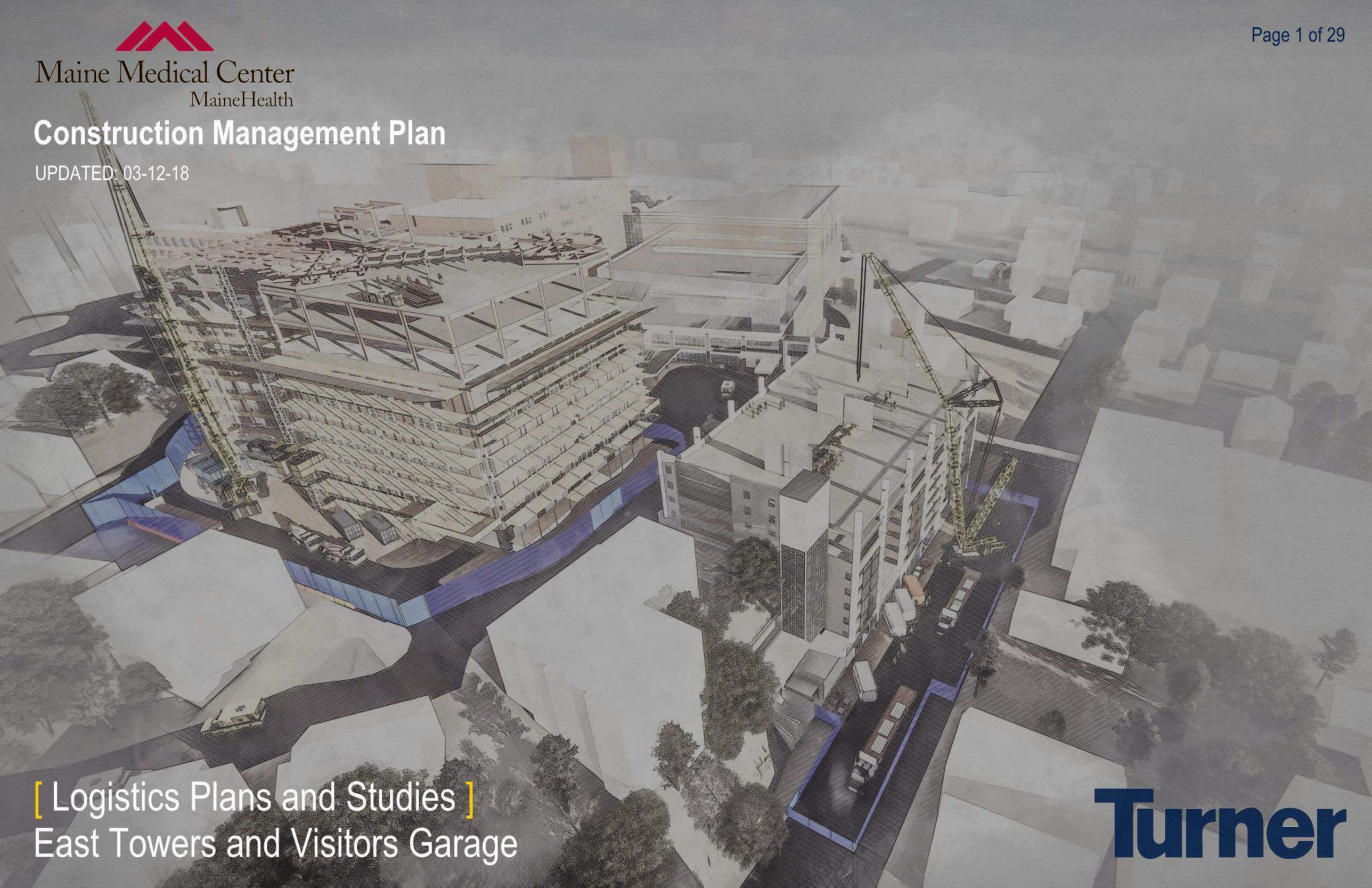
- Turner Construction shall develop a project contact list (e-mail addresses, office and cell phone numbers), to be posted by MMC on the project web site and supplied to Maine Medical Center (MMC) for 24/7 contacts.
- Turner Construction will request similar contact lists from the neighborhood associations. (e-mail addresses, and phone numbers) of key contacts for the specific project.
- Turner Construction will set-up a project bulletin board for each Phase. These boards will be used as communication tools to the surrounding community. There will be a project website thru MMC, developed that also will communicate construction related activities to the community.
- Any last minute changes to the project schedule that may impact the neighborhood or Maine Medical Center (MMC) community will be communicated per section 2.3.
- Turner Construction will participate in the neighborhood council meetings as needed to discuss progress and issues.
- Turner shall maintain a log of all construction-related concerns, via the MMC website.
- MMC shall communicate final resolution of all complaints and concerns to the neighborhood, Maine Medical Center (MMC) community, and when appropriate, to the City of Portland.

5.0 Vibration Monitoring – Not Applicable

Maine Medical Center
MaineHealth

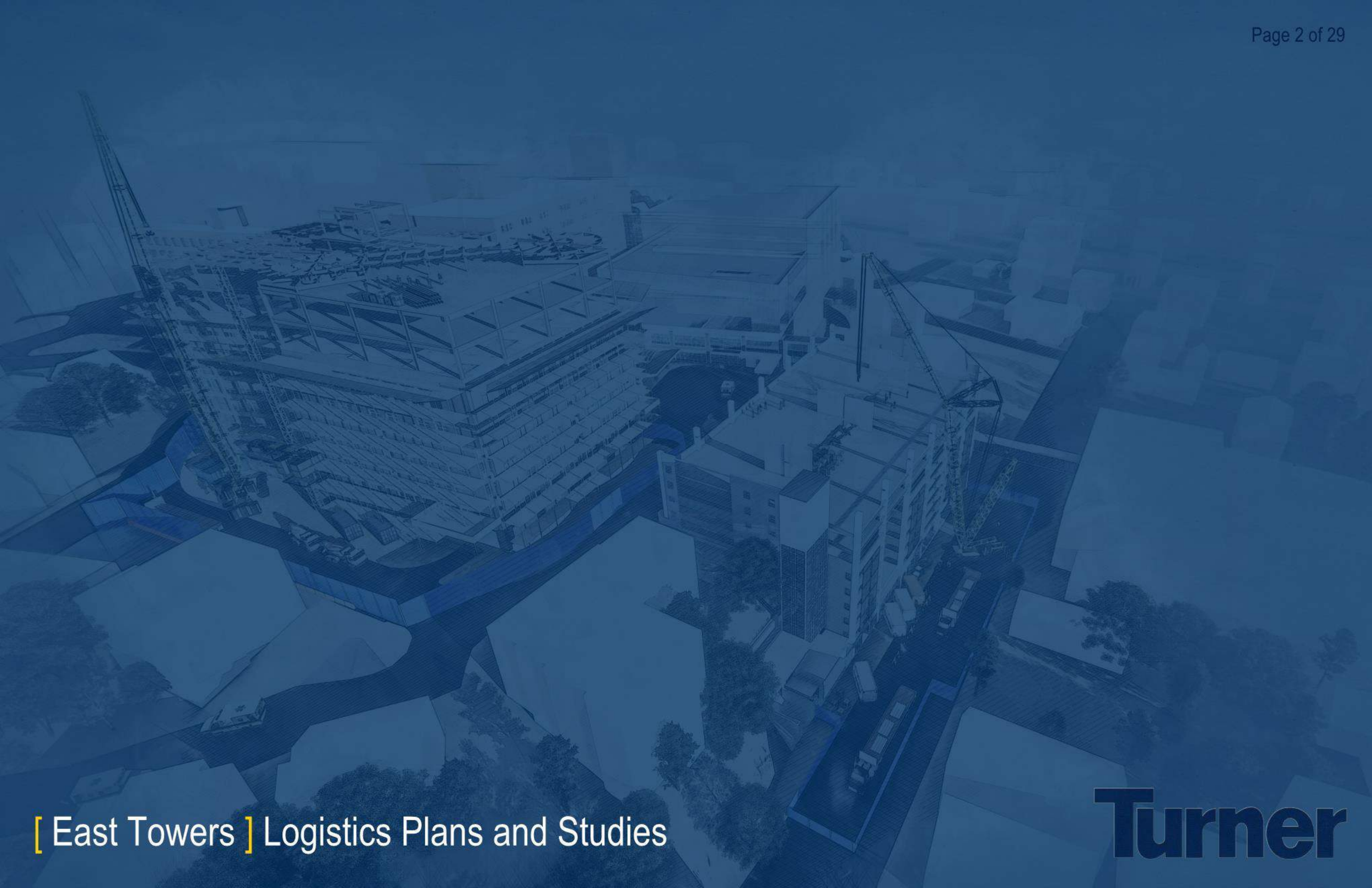
Construction Management Plan

UPDATED: 03-12-18



[Logistics Plans and Studies]
East Towers and Visitors Garage

Turner

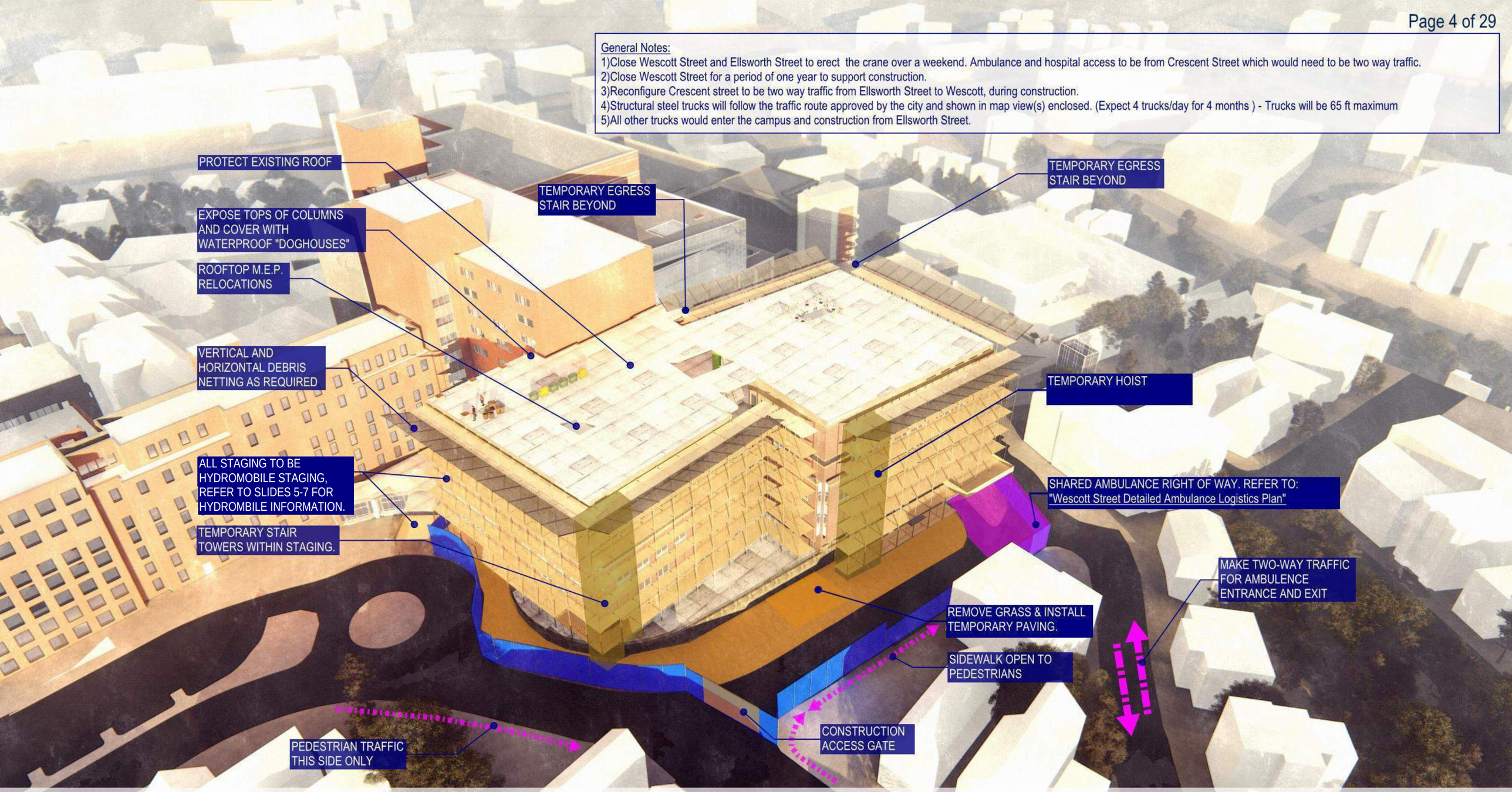


[East Towers] Logistics Plans and Studies

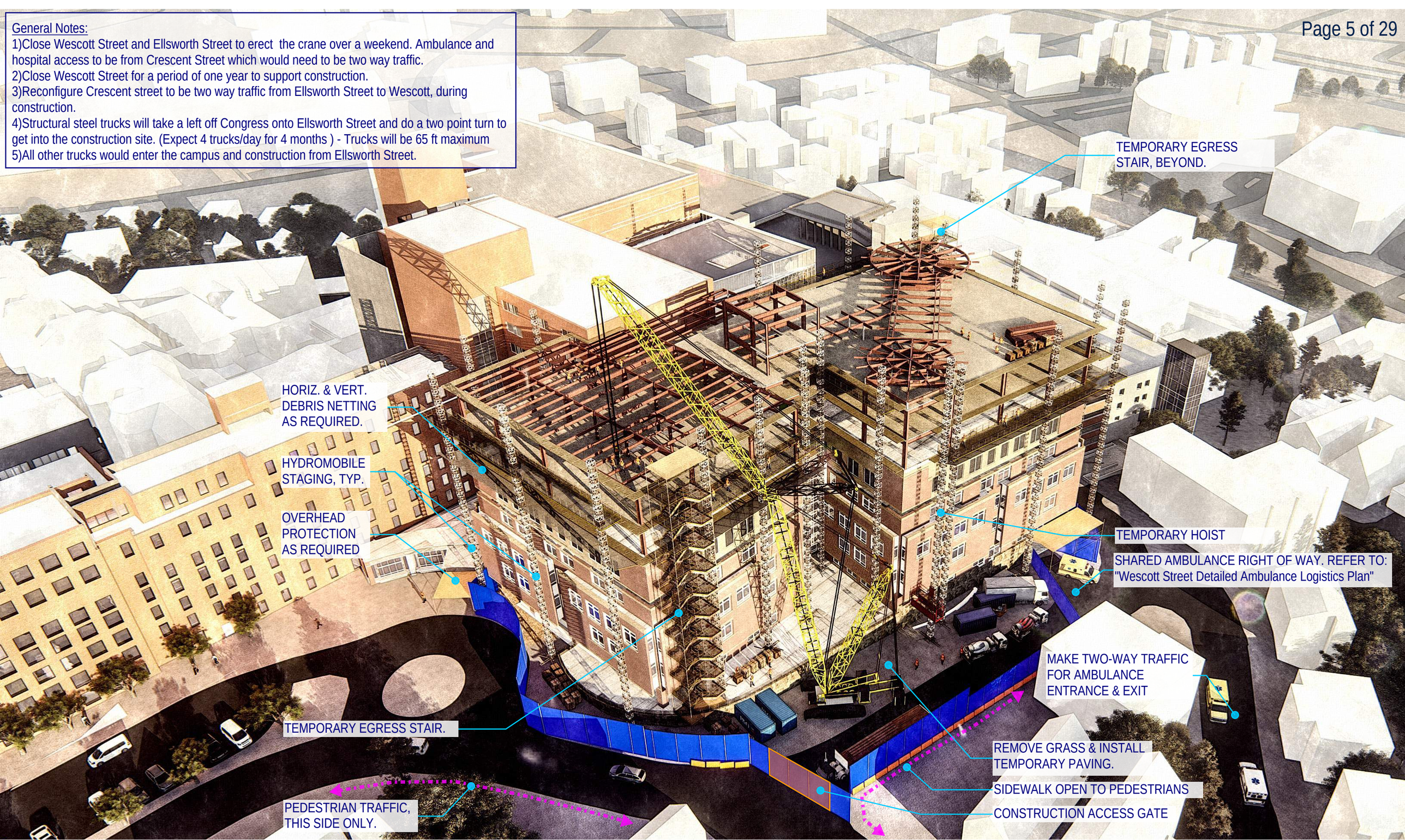
Turner



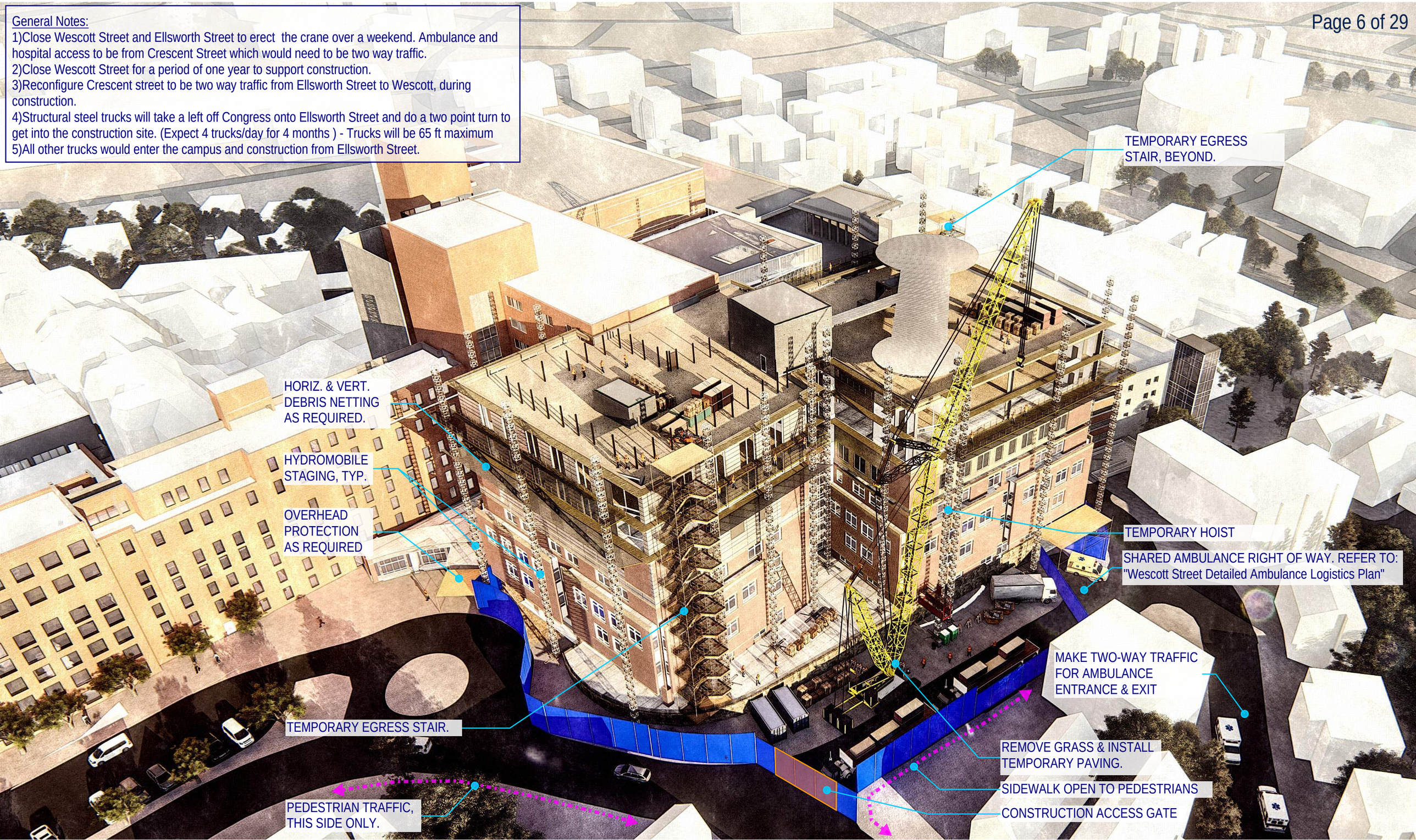
General Notes:
1)Close Wescott Street and Ellsworth Street to erect the crane over a weekend. Ambulance and hospital access to be from Crescent Street which would need to be two way traffic.
2)Close Wescott Street for a period of one year to support construction.
3)Reconfigure Crescent street to be two way traffic from Ellsworth Street to Wescott, during construction.
4)Structural steel trucks will follow the traffic route approved by the city and shown in map view(s) enclosed. (Expect 4 trucks/day for 4 months) - Trucks will be 65 ft maximum
5)All other trucks would enter the campus and construction from Ellsworth Street.



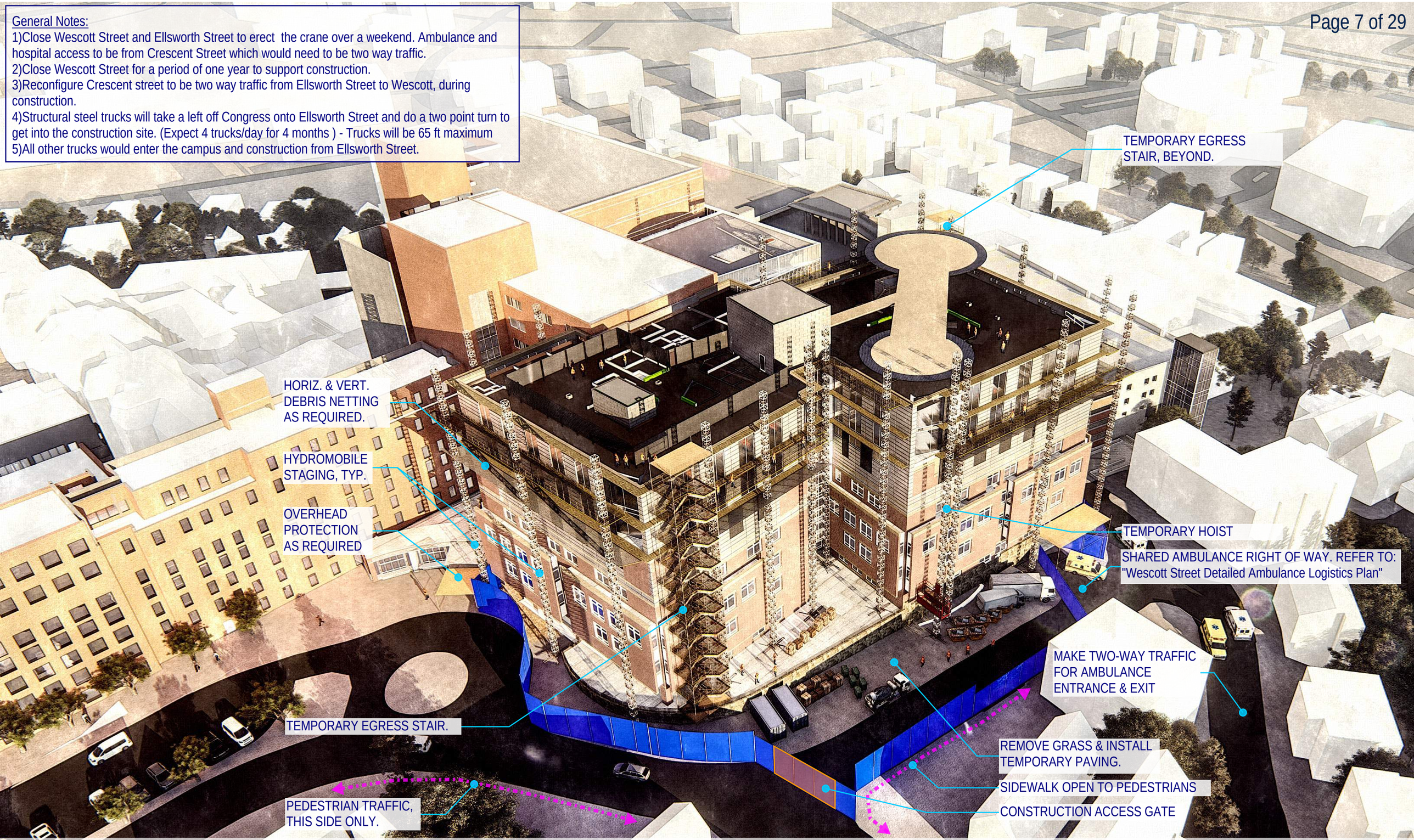
General Notes:
1)Close Wescott Street and Ellsworth Street to erect the crane over a weekend. Ambulance and hospital access to be from Crescent Street which would need to be two way traffic.
2)Close Wescott Street for a period of one year to support construction.
3)Reconfigure Crescent street to be two way traffic from Ellsworth Street to Wescott, during construction.
4)Structural steel trucks will take a left off Congress onto Ellsworth Street and do a two point turn to get into the construction site. (Expect 4 trucks/day for 4 months) - Trucks will be 65 ft maximum
5)All other trucks would enter the campus and construction from Ellsworth Street.

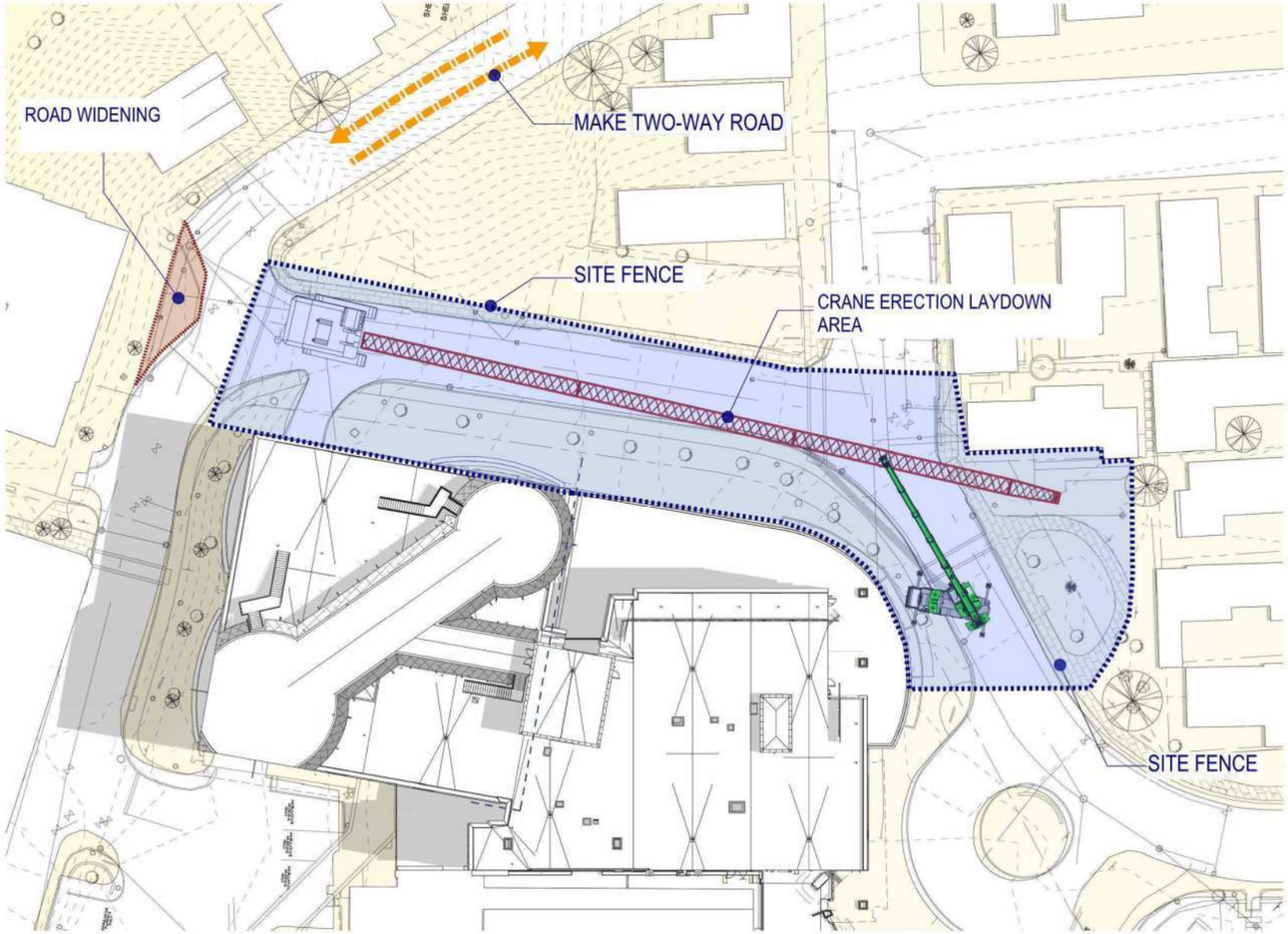


General Notes:
1)Close Wescott Street and Ellsworth Street to erect the crane over a weekend. Ambulance and hospital access to be from Crescent Street which would need to be two way traffic.
2)Close Wescott Street for a period of one year to support construction.
3)Reconfigure Crescent street to be two way traffic from Ellsworth Street to Wescott, during construction.
4)Structural steel trucks will take a left off Congress onto Ellsworth Street and do a two point turn to get into the construction site. (Expect 4 trucks/day for 4 months) - Trucks will be 65 ft maximum
5)All other trucks would enter the campus and construction from Ellsworth Street.

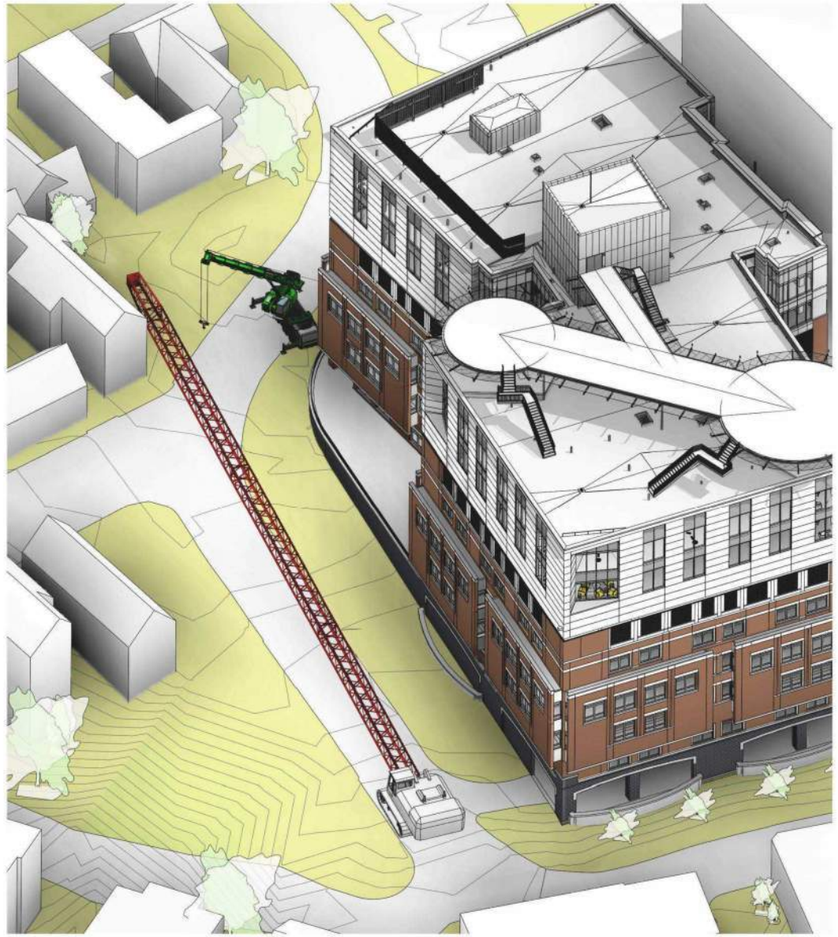


General Notes:
1)Close Wescott Street and Ellsworth Street to erect the crane over a weekend. Ambulance and hospital access to be from Crescent Street which would need to be two way traffic.
2)Close Wescott Street for a period of one year to support construction.
3)Reconfigure Crescent street to be two way traffic from Ellsworth Street to Wescott, during construction.
4)Structural steel trucks will take a left off Congress onto Ellsworth Street and do a two point turn to get into the construction site. (Expect 4 trucks/day for 4 months) - Trucks will be 65 ft maximum
5)All other trucks would enter the campus and construction from Ellsworth Street.



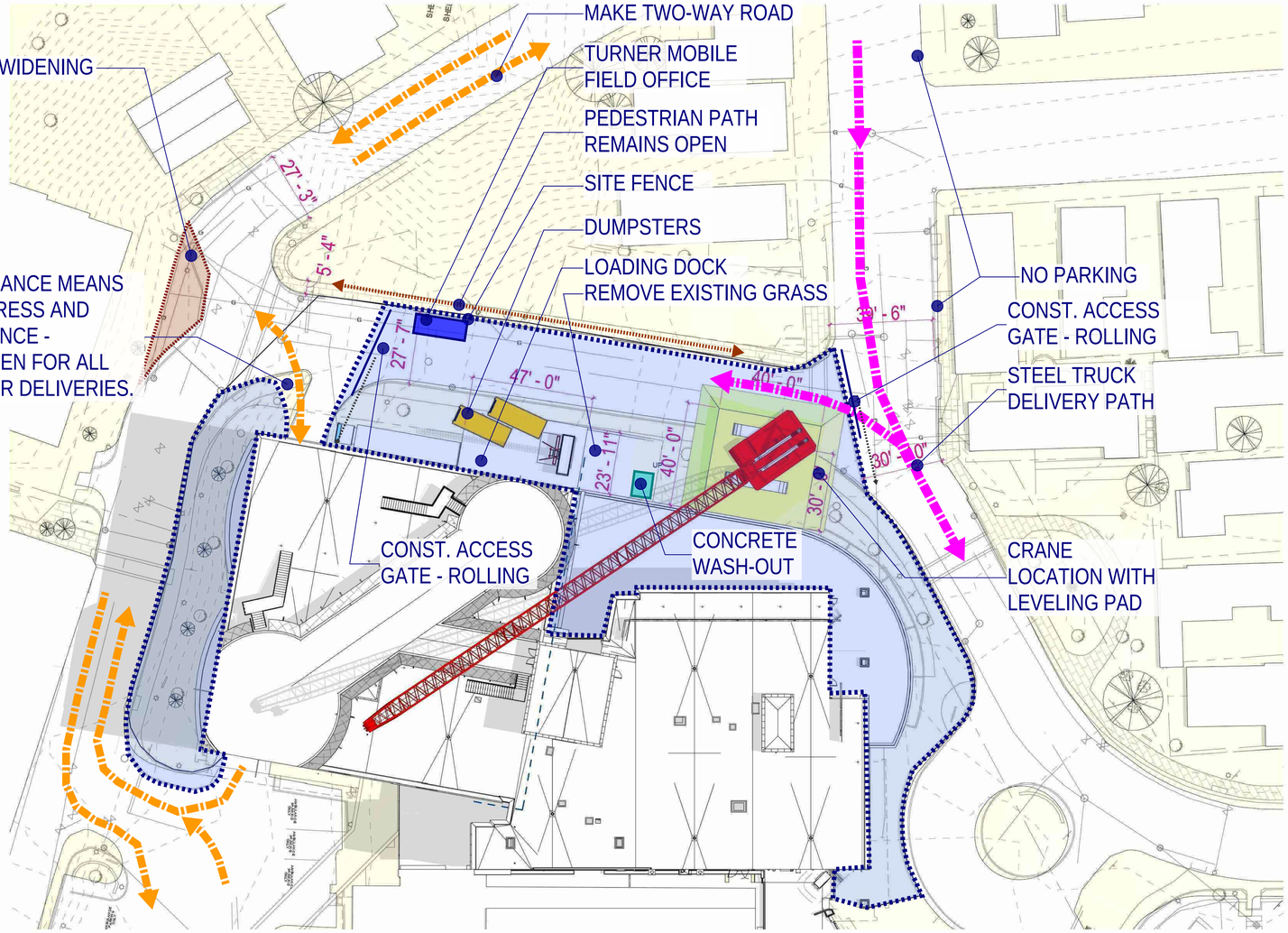


1 EAST TOWERS - CRANE LOGISTICS
3/64" = 1'-0"



2 EAST TOWERS - CRANE LOGISTICS

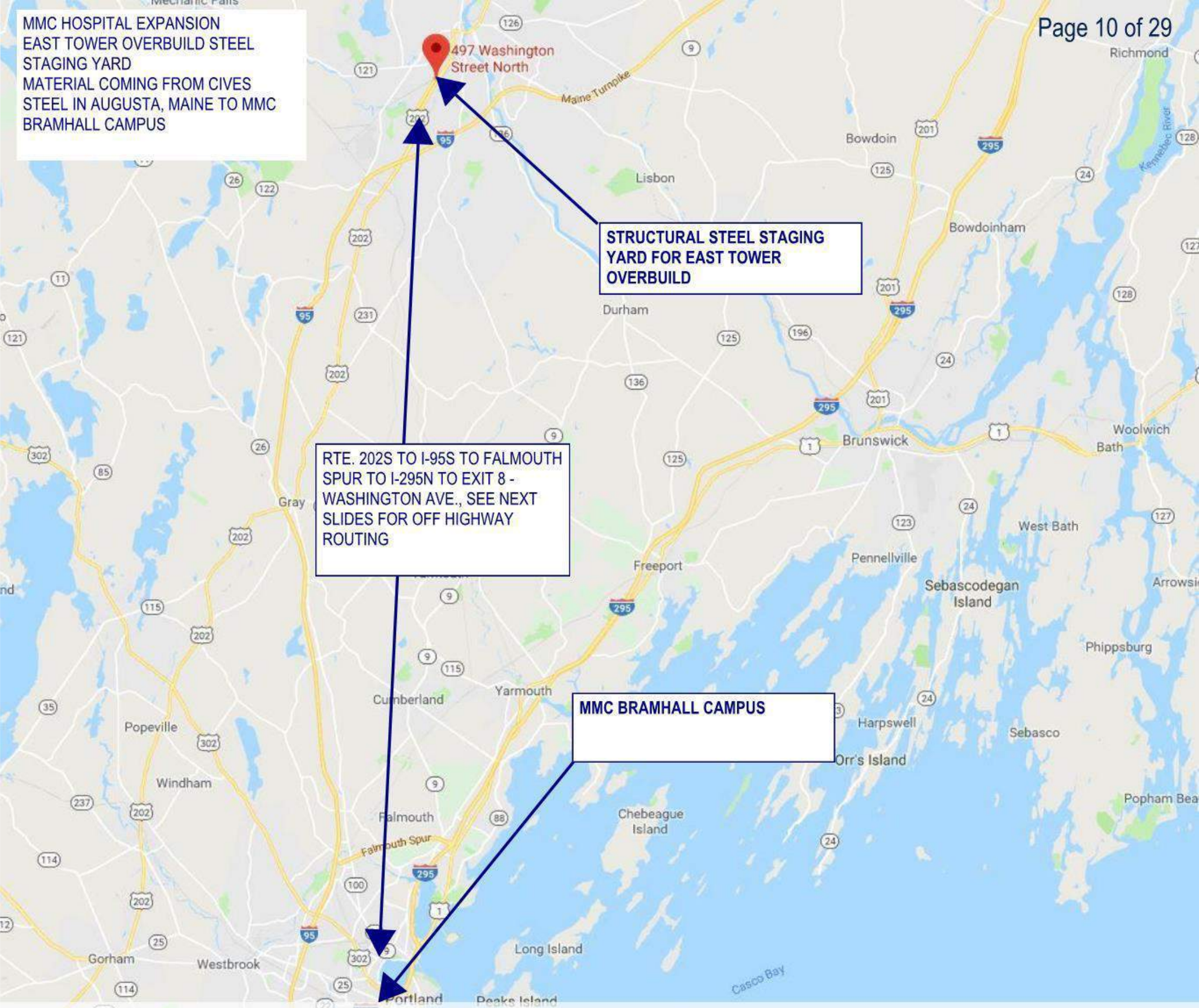
General Notes:
1)Close Wescott Street and Ellsworth Street to erect the crane over a weekend. Ambulance and hospital access to be from Crescent Street which would need to be two way traffic.
2)Close Wescott Street for a period of one year to support construction.
3)Reconfigure Crescent street to be two way traffic from Ellsworth Street to Wescott, during construction.
4)Structural steel trucks will follow the traffic route approved by the city and shown in map view(s) enclosed. (Expect 4 trucks/day for 4 months) - Trucks will be 65 ft maximum
5)All other trucks would enter the campus and construction from Ellsworth Street.



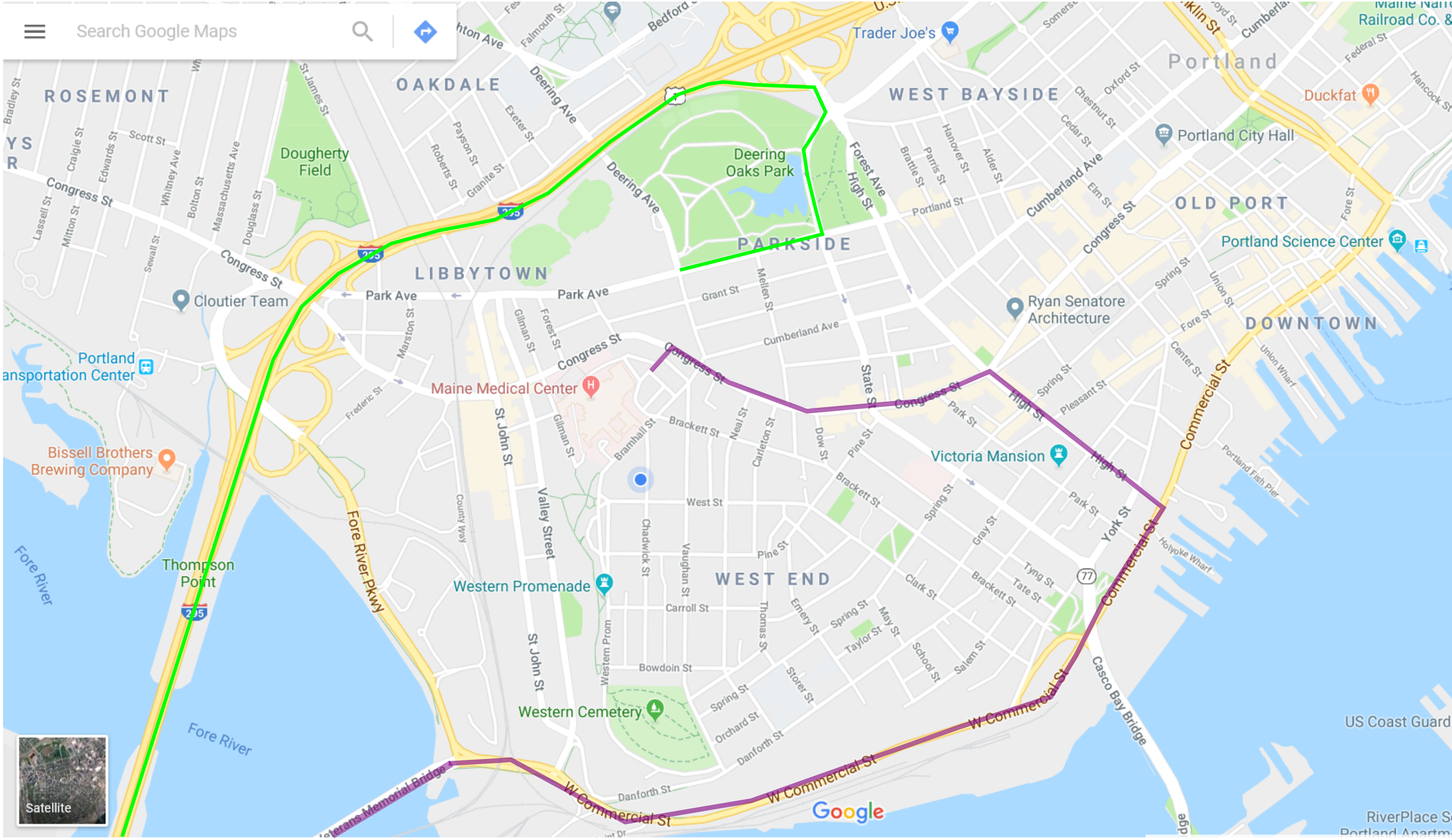
1 EAST TOWERS - CRANE LOGISTICS
3/64" = 1'-0"

General Notes:
1)Close Wescott Street and Ellsworth Street to erect the crane over a weekend. Ambulance and hospital access to be from Crescent Street which would need to be two way traffic.
2)Close Wescott Street for a period of one year to support construction.
3)Reconfigure Crescent street to be two way traffic from Ellsworth Street to Wescott, during construction.
4)Structural steel trucks will follow the traffic route approved by the city and shown in map view(s) enclosed. (Expect 4 trucks/day for 4 months) - Trucks will be 65 ft maximum
5)All other trucks would enter the campus and construction from Ellsworth Street.

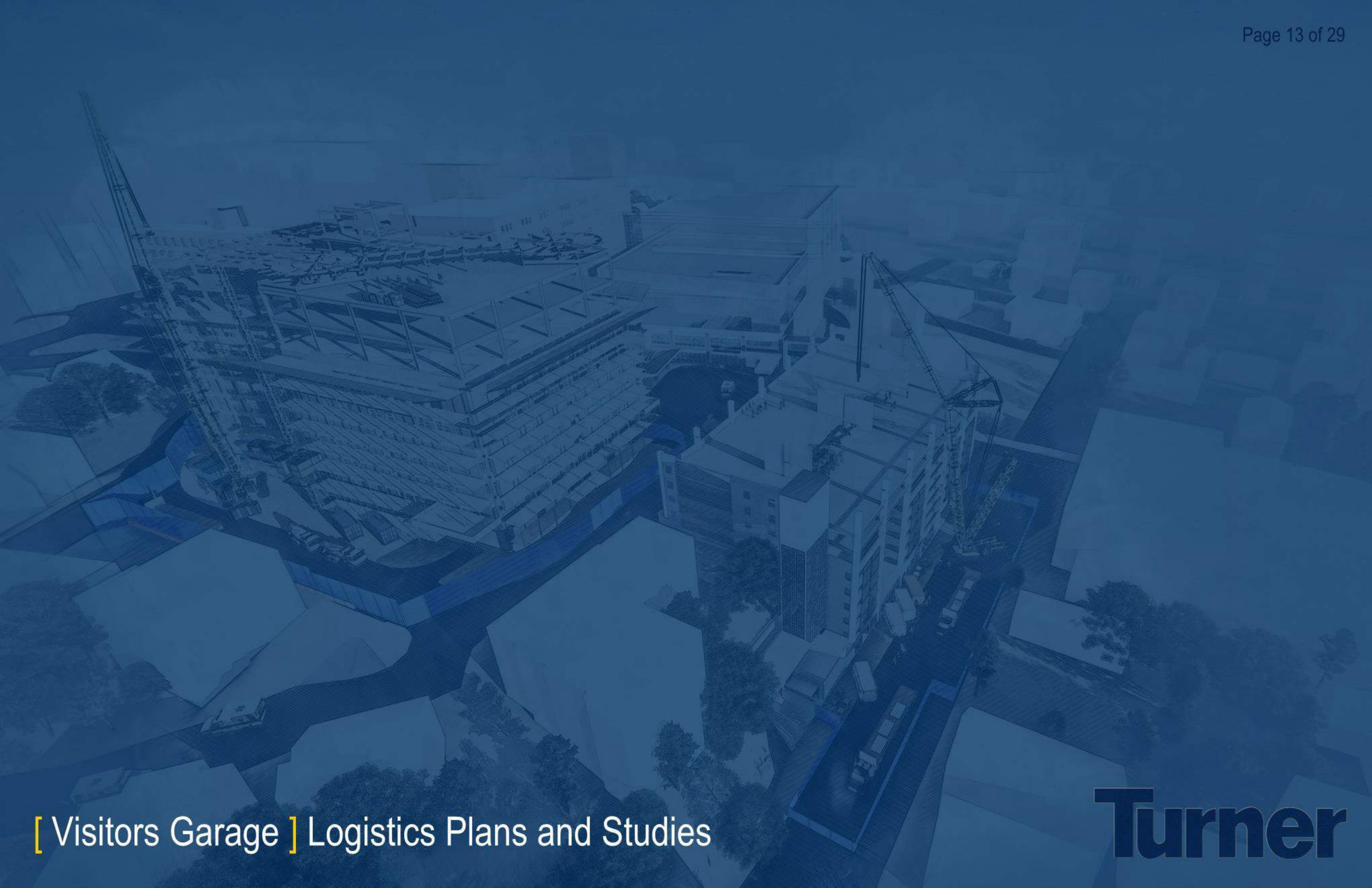
MMC HOSPITAL EXPANSION
EAST TOWER OVERBUILD STEEL
STAGING YARD
MATERIAL COMING FROM CIVES
STEEL IN AUGUSTA, MAINE TO MMC
BRAMHALL CAMPUS



Maine Medical Center, Portland Maine
Additions and Renovations [Steel Truck Delivery and Egress Paths]



STEEL DELIVERY ROUTE



[Visitors Garage] Logistics Plans and Studies

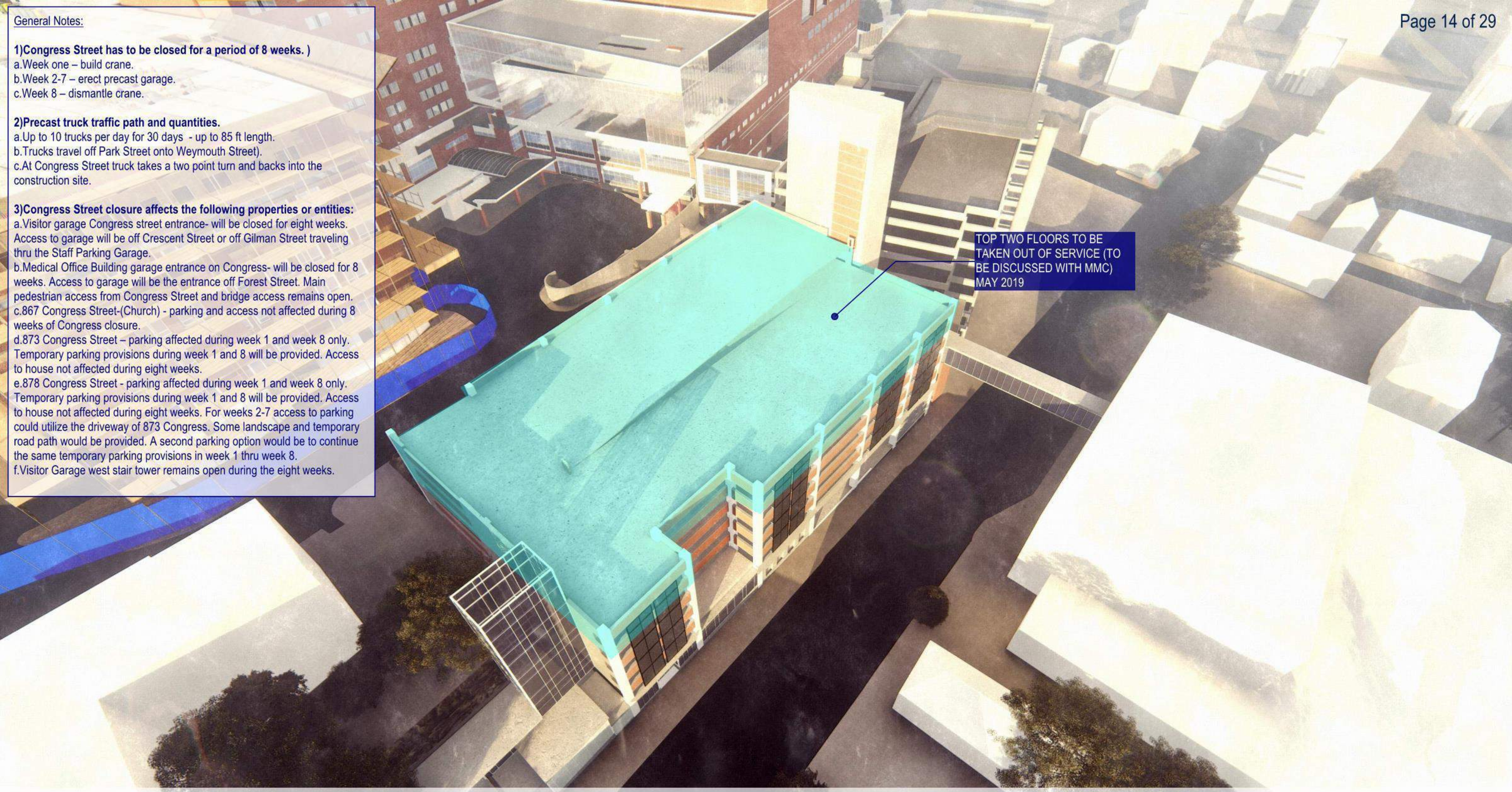
Turner

General Notes:

1)Congress Street has to be closed for a period of 8 weeks.)
a.Week one – build crane.
b.Week 2-7 – erect precast garage.
c.Week 8 – dismantle crane.

2)Precast truck traffic path and quantities.
a.Up to 10 trucks per day for 30 days - up to 85 ft length.
b.Trucks travel off Park Street onto Weymouth Street).
c.At Congress Street truck takes a two point turn and backs into the construction site.

3)Congress Street closure affects the following properties or entities:
a.Visitor garage Congress street entrance- will be closed for eight weeks. Access to garage will be off Crescent Street or off Gilman Street traveling thru the Staff Parking Garage.
b.Medical Office Building garage entrance on Congress- will be closed for 8 weeks. Access to garage will be the entrance off Forest Street. Main pedestrian access from Congress Street and bridge access remains open.
c.867 Congress Street-(Church) - parking and access not affected during 8 weeks of Congress closure.
d.873 Congress Street – parking affected during week 1 and week 8 only. Temporary parking provisions during week 1 and 8 will be provided. Access to house not affected during eight weeks.
e.878 Congress Street - parking affected during week 1 and week 8 only. Temporary parking provisions during week 1 and 8 will be provided. Access to house not affected during eight weeks. For weeks 2-7 access to parking could utilize the driveway of 873 Congress. Some landscape and temporary road path would be provided. A second parking option would be to continue the same temporary parking provisions in week 1 thru week 8.
f.Visitor Garage west stair tower remains open during the eight weeks.

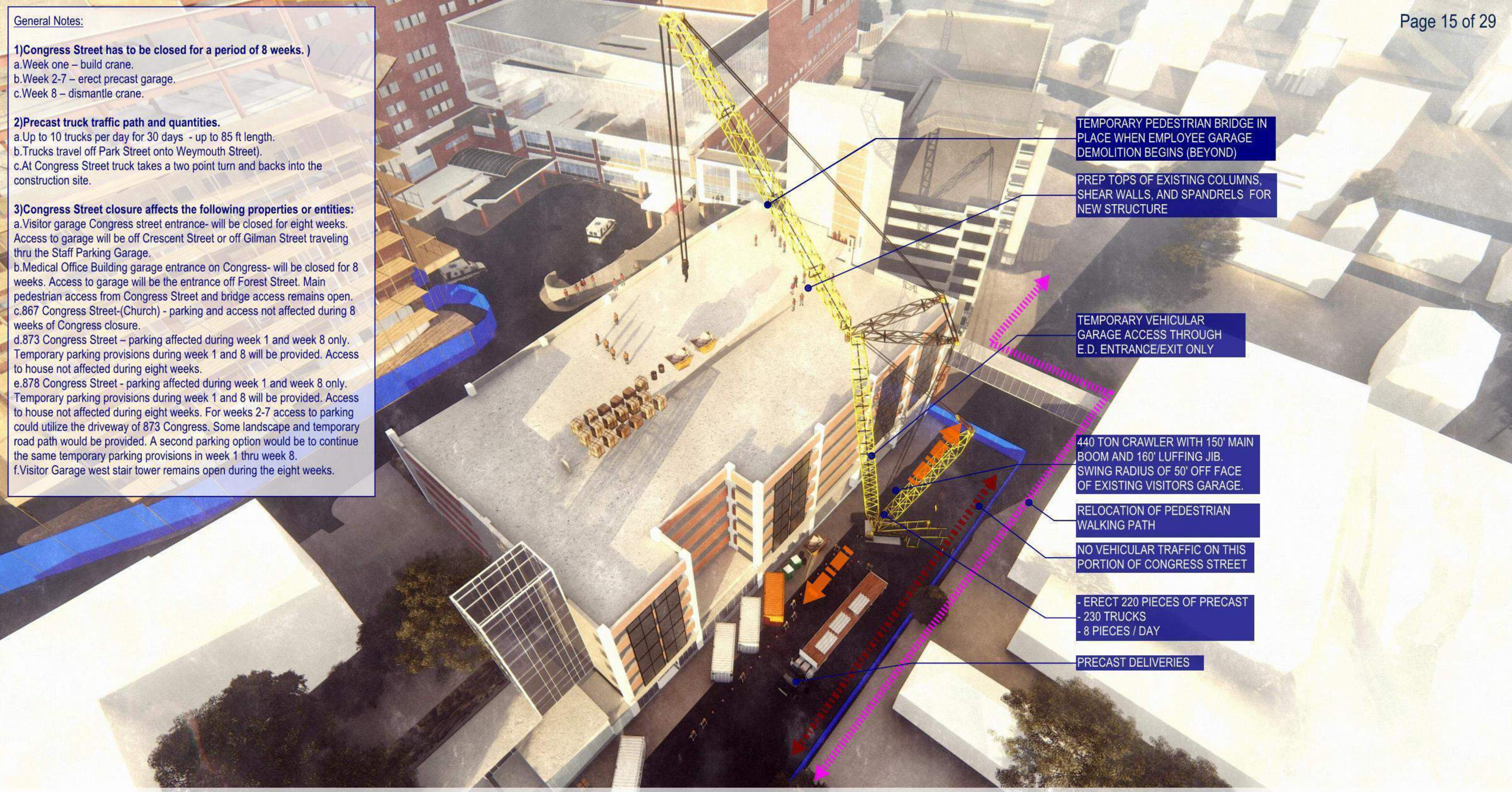


General Notes:

1)Congress Street has to be closed for a period of 8 weeks.)
a.Week one – build crane.
b.Week 2-7 – erect precast garage.
c.Week 8 – dismantle crane.

2)Precast truck traffic path and quantities.
a.Up to 10 trucks per day for 30 days - up to 85 ft length.
b.Trucks travel off Park Street onto Weymouth Street).
c.At Congress Street truck takes a two point turn and backs into the construction site.

3)Congress Street closure affects the following properties or entities:
a.Visitor garage Congress street entrance- will be closed for eight weeks. Access to garage will be off Crescent Street or off Gilman Street traveling thru the Staff Parking Garage.
b.Medical Office Building garage entrance on Congress- will be closed for 8 weeks. Access to garage will be the entrance off Forest Street. Main pedestrian access from Congress Street and bridge access remains open.
c.867 Congress Street-(Church) - parking and access not affected during 8 weeks of Congress closure.
d.873 Congress Street – parking affected during week 1 and week 8 only. Temporary parking provisions during week 1 and 8 will be provided. Access to house not affected during eight weeks.
e.878 Congress Street - parking affected during week 1 and week 8 only. Temporary parking provisions during week 1 and 8 will be provided. Access to house not affected during eight weeks. For weeks 2-7 access to parking could utilize the driveway of 873 Congress. Some landscape and temporary road path would be provided. A second parking option would be to continue the same temporary parking provisions in week 1 thru week 8.
f.Visitor Garage west stair tower remains open during the eight weeks.

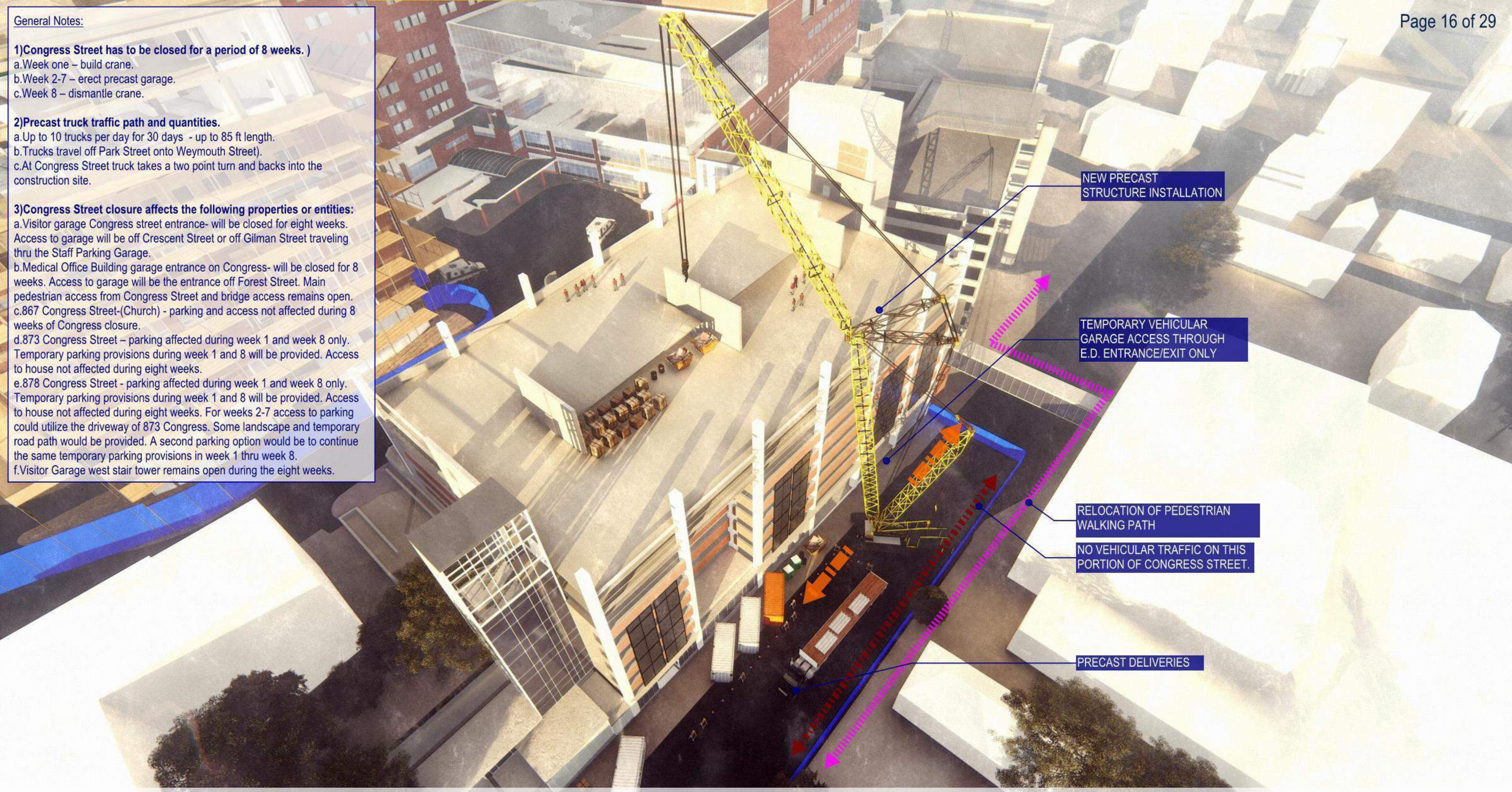


General Notes:

1)Congress Street has to be closed for a period of 8 weeks.)
a.Week one – build crane.
b.Week 2-7 – erect precast garage.
c.Week 8 – dismantle crane.

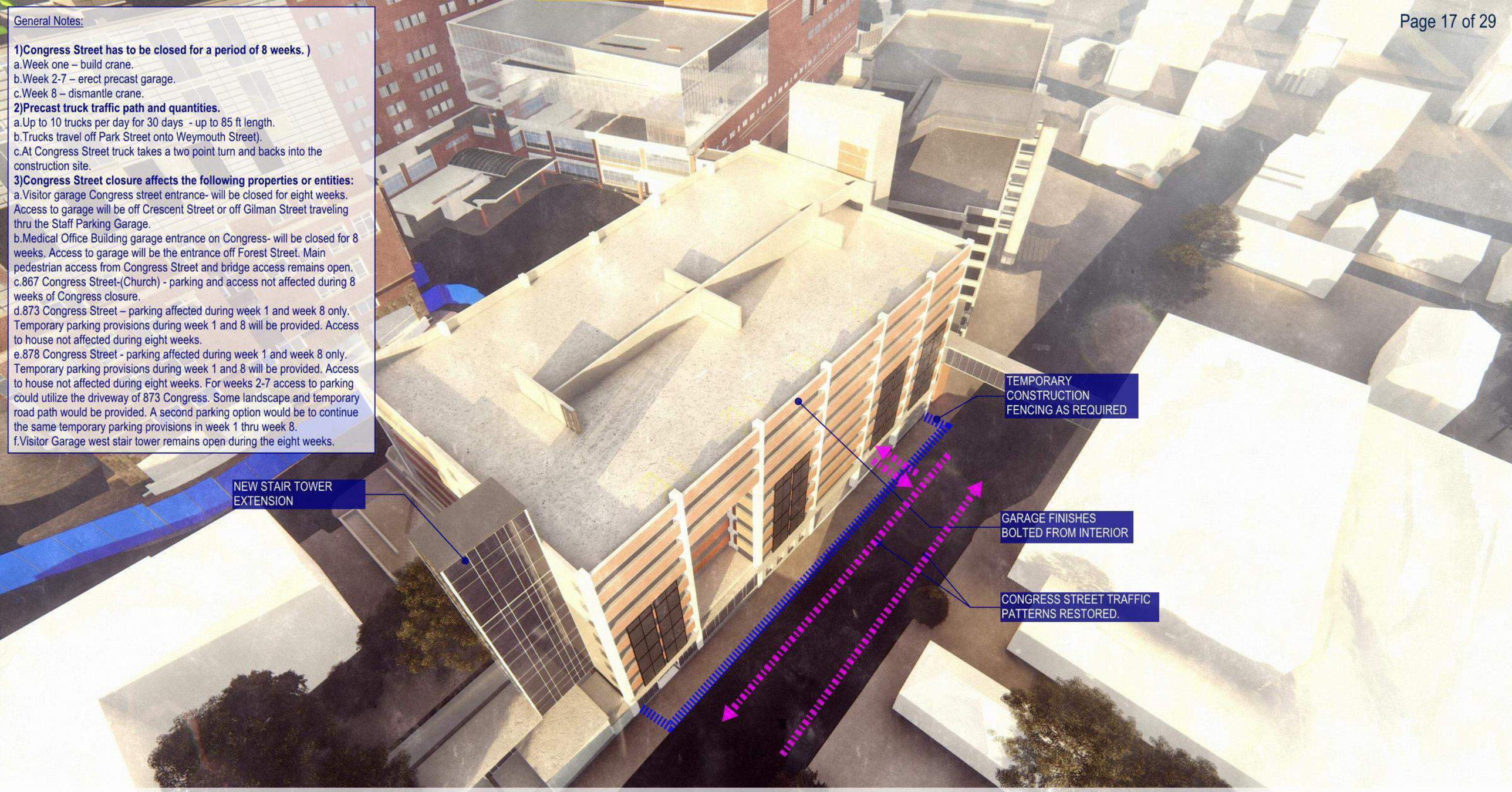
2)Precast truck traffic path and quantities.
a.Up to 10 trucks per day for 30 days - up to 85 ft length.
b.Trucks travel off Park Street onto Weymouth Street).
c.At Congress Street truck takes a two point turn and backs into the construction site.

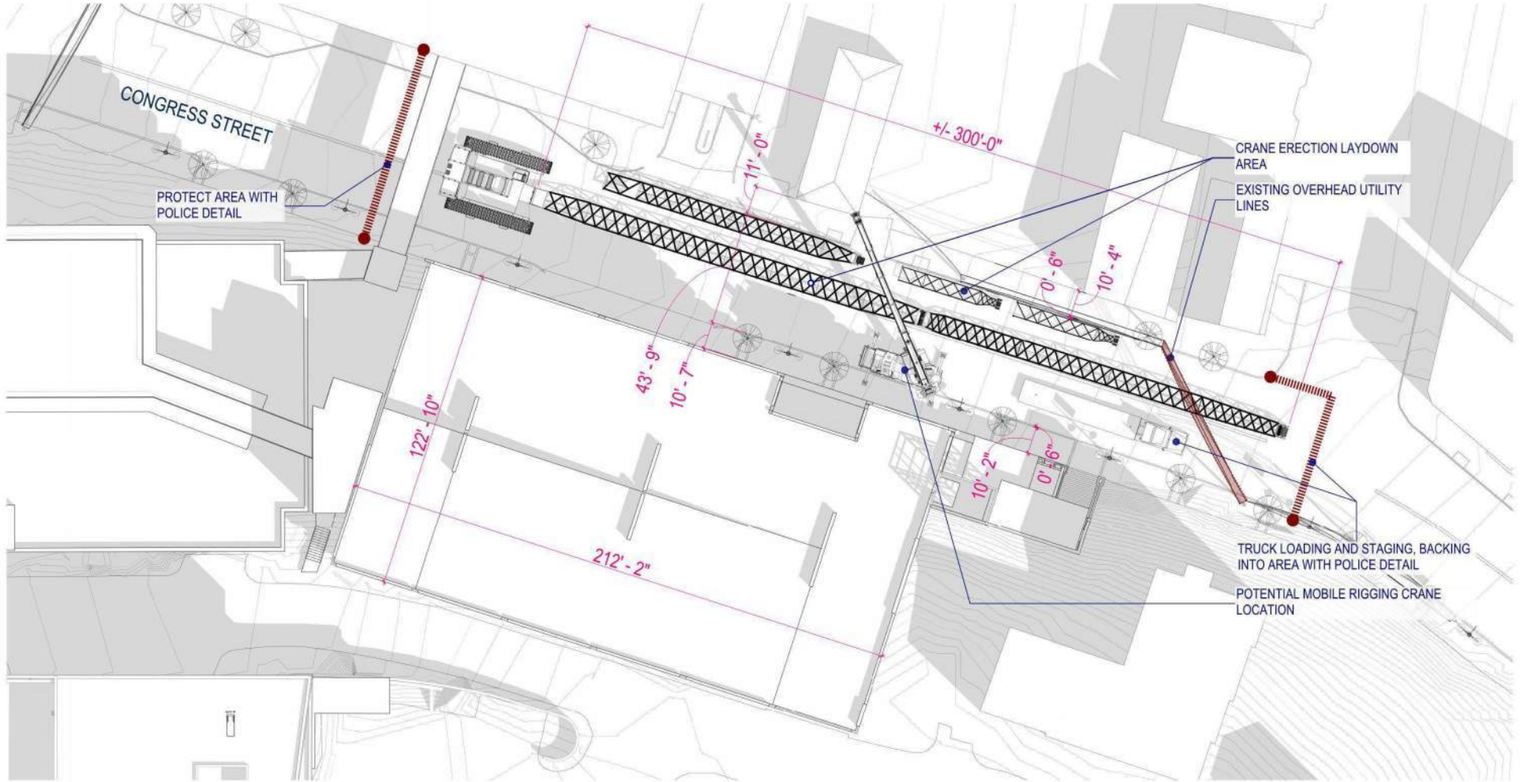
3)Congress Street closure affects the following properties or entities:
a.Visitor garage Congress street entrance- will be closed for eight weeks. Access to garage will be off Crescent Street or off Gilman Street traveling thru the Staff Parking Garage.
b.Medical Office Building garage entrance on Congress- will be closed for 8 weeks. Access to garage will be the entrance off Forest Street. Main pedestrian access from Congress Street and bridge access remains open.
c.867 Congress Street-(Church) - parking and access not affected during 8 weeks of Congress closure.
d.873 Congress Street – parking affected during week 1 and week 8 only. Temporary parking provisions during week 1 and 8 will be provided. Access to house not affected during eight weeks.
e.878 Congress Street - parking affected during week 1 and week 8 only. Temporary parking provisions during week 1 and 8 will be provided. Access to house not affected during eight weeks. For weeks 2-7 access to parking could utilize the driveway of 873 Congress. Some landscape and temporary road path would be provided. A second parking option would be to continue the same temporary parking provisions in week 1 thru week 8.
f.Visitor Garage west stair tower remains open during the eight weeks.



General Notes:

1)Congress Street has to be closed for a period of 8 weeks.)
a.Week one – build crane.
b.Week 2-7 – erect precast garage.
c.Week 8 – dismantle crane.
2)Precast truck traffic path and quantities.
a.Up to 10 trucks per day for 30 days - up to 85 ft length.
b.Trucks travel off Park Street onto Weymouth Street).
c.At Congress Street truck takes a two point turn and backs into the construction site.
3)Congress Street closure affects the following properties or entities:
a.Visitor garage Congress street entrance- will be closed for eight weeks. Access to garage will be off Crescent Street or off Gilman Street traveling thru the Staff Parking Garage.
b.Medical Office Building garage entrance on Congress- will be closed for 8 weeks. Access to garage will be the entrance off Forest Street. Main pedestrian access from Congress Street and bridge access remains open.
c.867 Congress Street-(Church) - parking and access not affected during 8 weeks of Congress closure.
d.873 Congress Street – parking affected during week 1 and week 8 only. Temporary parking provisions during week 1 and 8 will be provided. Access to house not affected during eight weeks.
e.878 Congress Street - parking affected during week 1 and week 8 only. Temporary parking provisions during week 1 and 8 will be provided. Access to house not affected during eight weeks. For weeks 2-7 access to parking could utilize the driveway of 873 Congress. Some landscape and temporary road path would be provided. A second parking option would be to continue the same temporary parking provisions in week 1 thru week 8.
f.Visitor Garage west stair tower remains open during the eight weeks.

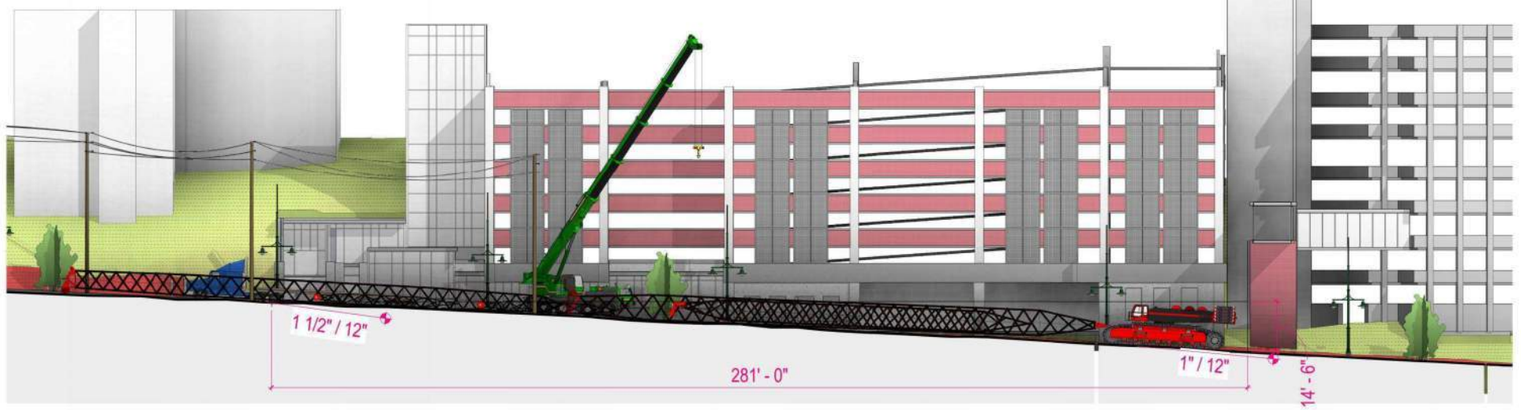




1 CONGRESS STREET - CRANE PICK PLAN
3/64" = 1'-0"

General Notes:

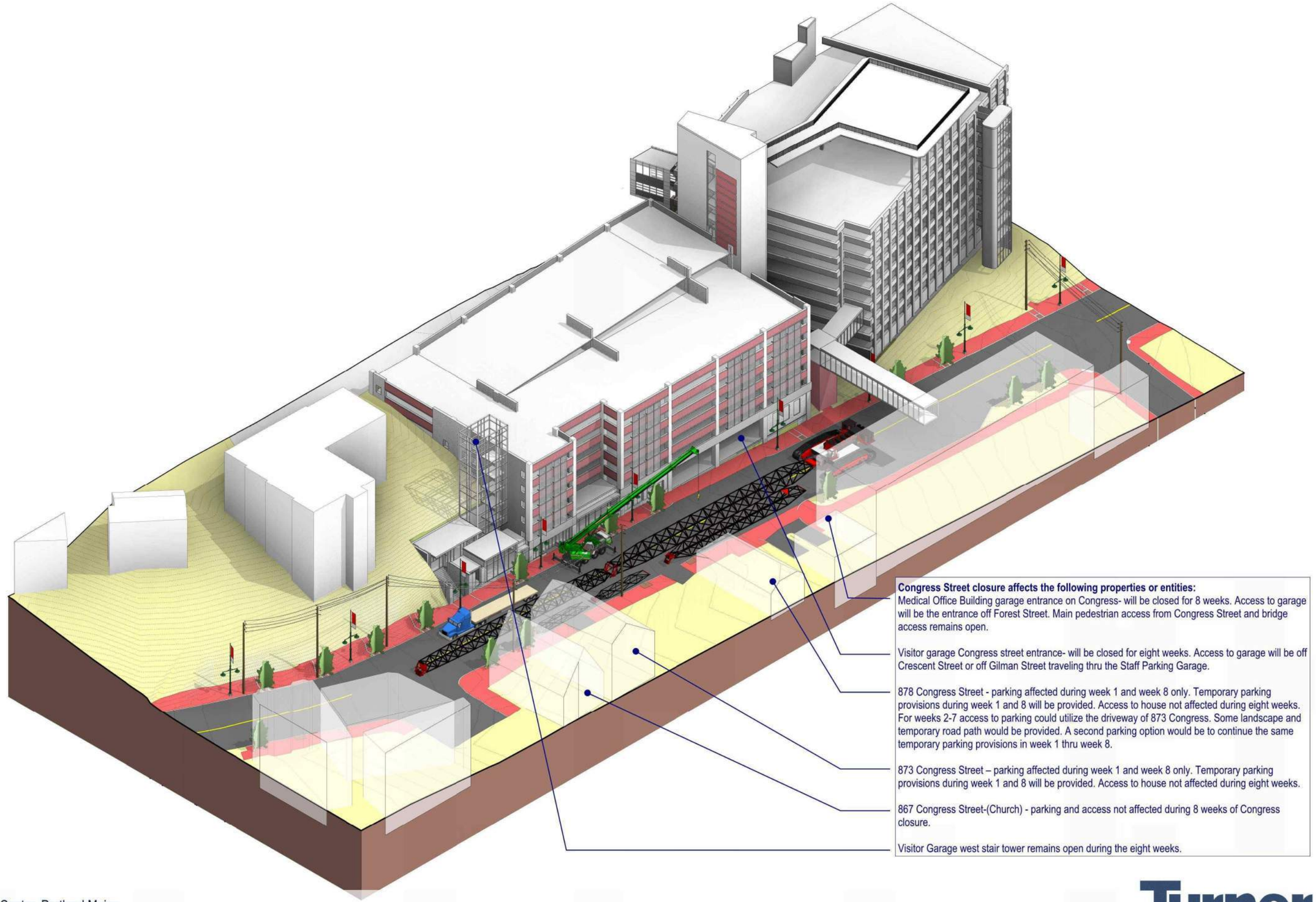
1)Congress Street has to be closed for a period of 8 weeks.)
a.Week one – build crane.
b.Week 2-7 – erect precast garage.
c.Week 8 – dismantle crane.
2)Precast truck traffic path and quantities.
a.Up to 10 trucks per day for 30 days - up to 85 ft length.
b.Trucks travel off Park Street onto Weymouth Street).
c.At Congress Street truck takes a two point turn and backs into the construction site.



2 CONGRESS STREET - SITE SECTION
1/16" = 1'-0"



3 CONGRESS STREET - AXON VIEW



Congress Street closure affects the following properties or entities:

Medical Office Building garage entrance on Congress- will be closed for 8 weeks. Access to garage will be the entrance off Forest Street. Main pedestrian access from Congress Street and bridge access remains open.

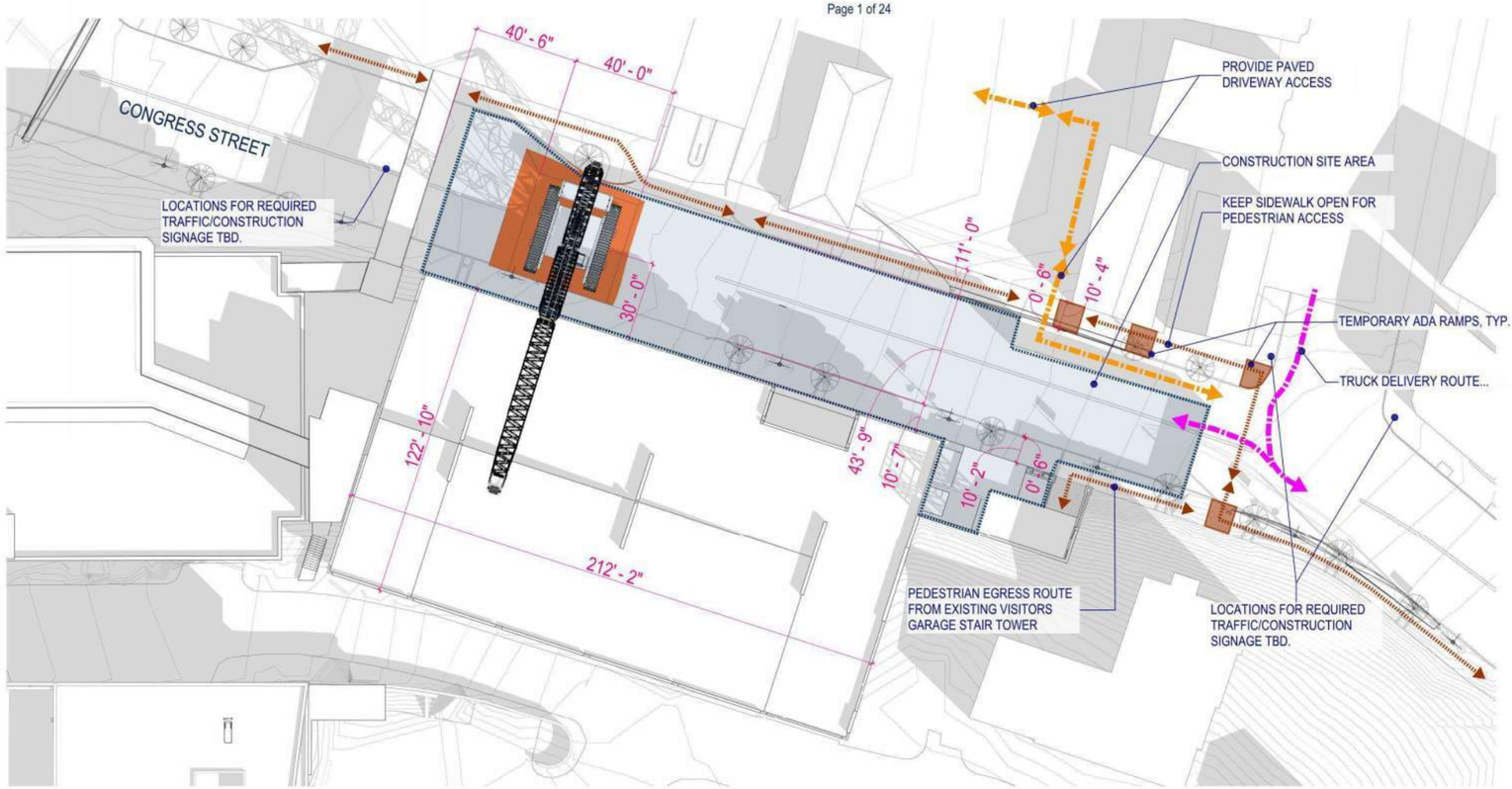
Visitor garage Congress street entrance- will be closed for eight weeks. Access to garage will be off Crescent Street or off Gilman Street traveling thru the Staff Parking Garage.

878 Congress Street - parking affected during week 1 and week 8 only. Temporary parking provisions during week 1 and 8 will be provided. Access to house not affected during eight weeks. For weeks 2-7 access to parking could utilize the driveway of 873 Congress. Some landscape and temporary road path would be provided. A second parking option would be to continue the same temporary parking provisions in week 1 thru week 8.

873 Congress Street – parking affected during week 1 and week 8 only. Temporary parking provisions during week 1 and 8 will be provided. Access to house not affected during eight weeks.

867 Congress Street-(Church) - parking and access not affected during 8 weeks of Congress closure.

Visitor Garage west stair tower remains open during the eight weeks.



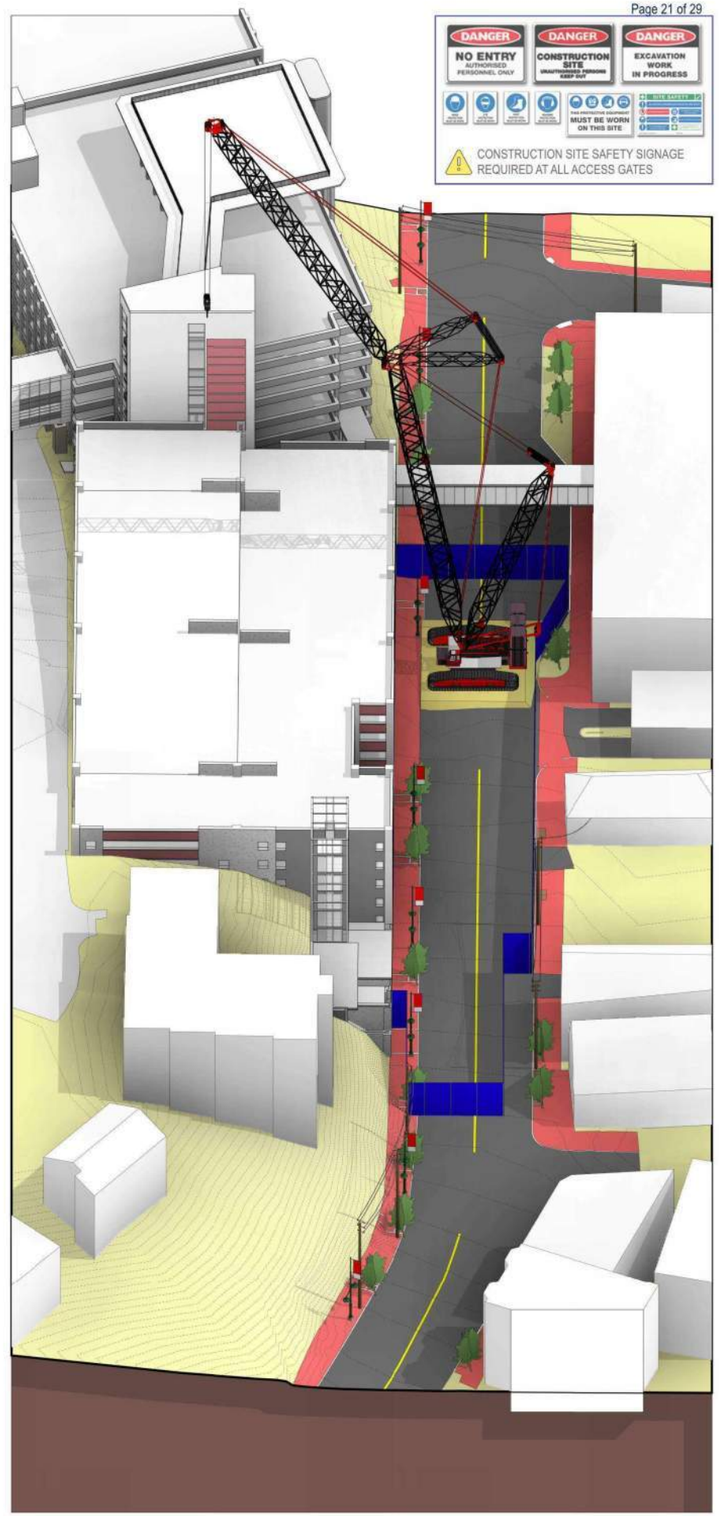
1 CONGRESS STREET - CRANE PICK PLAN
3/64" = 1'-0"

General Notes:

1)Congress Street has to be closed for a period of 8 weeks.)
a.Week one – build crane.
b.Week 2-7 – erect precast garage.
c.Week 8 – dismantle crane.
2)Precast truck traffic path and quantities.
a.Up to 10 trucks per day for 30 days - up to 85 ft length.
b.Trucks travel off Park Street onto Weymouth Street).
c.At Congress Street truck takes a two point turn and backs into the construction site.



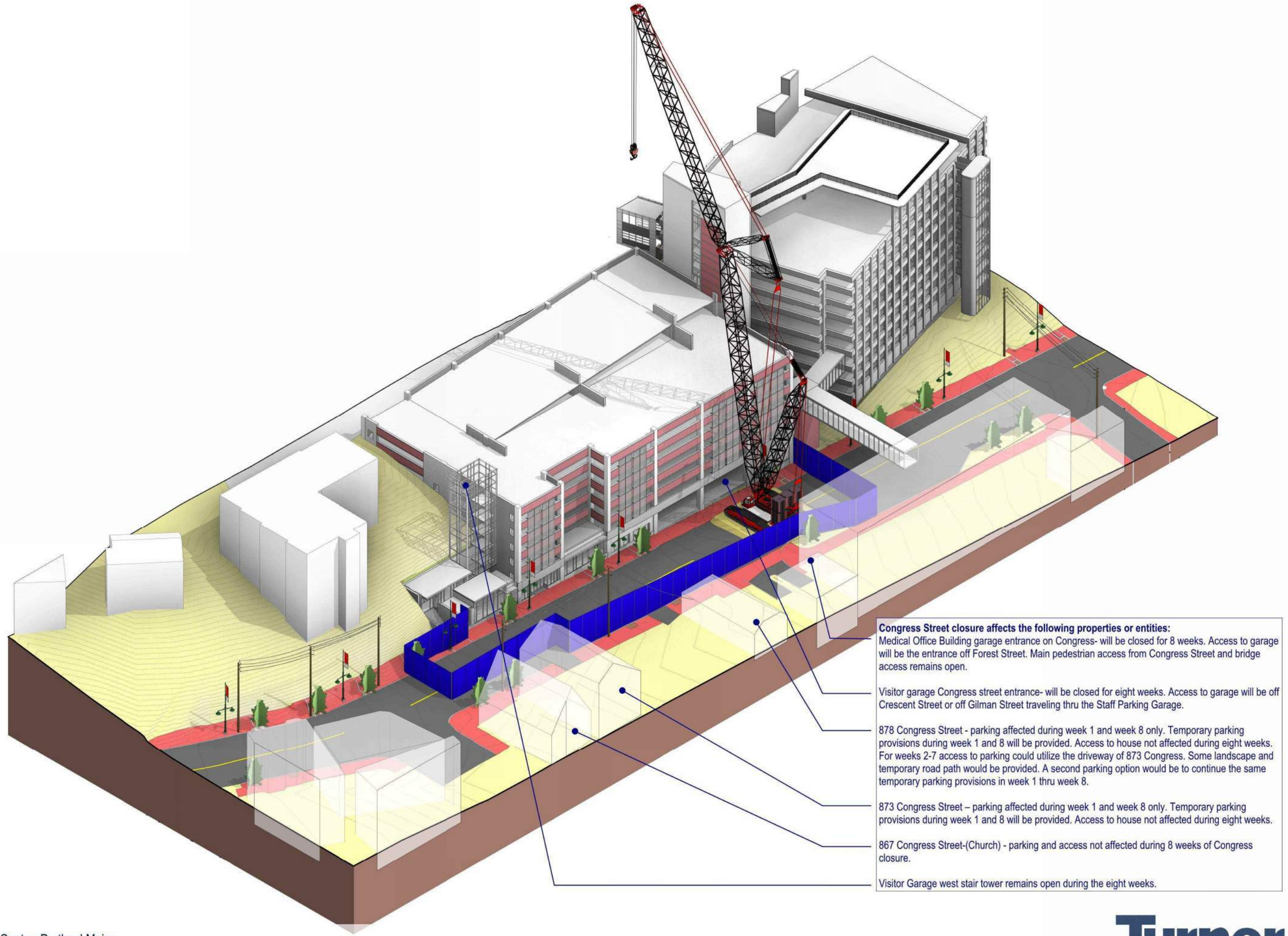
2 CONGRESS STREET - SITE SECTION
1/16" = 1'-0"



3 CONGRESS STREET - AXON VIEW

Maine Medical Center, Portland Maine
Additions and Renovations [Congress Street Crane Location 1]

Turner



Congress Street closure affects the following properties or entities:

Medical Office Building garage entrance on Congress- will be closed for 8 weeks. Access to garage will be the entrance off Forest Street. Main pedestrian access from Congress Street and bridge access remains open.

Visitor garage Congress street entrance- will be closed for eight weeks. Access to garage will be off Crescent Street or off Gilman Street traveling thru the Staff Parking Garage.

878 Congress Street - parking affected during week 1 and week 8 only. Temporary parking provisions during week 1 and 8 will be provided. Access to house not affected during eight weeks. For weeks 2-7 access to parking could utilize the driveway of 873 Congress. Some landscape and temporary road path would be provided. A second parking option would be to continue the same temporary parking provisions in week 1 thru week 8.

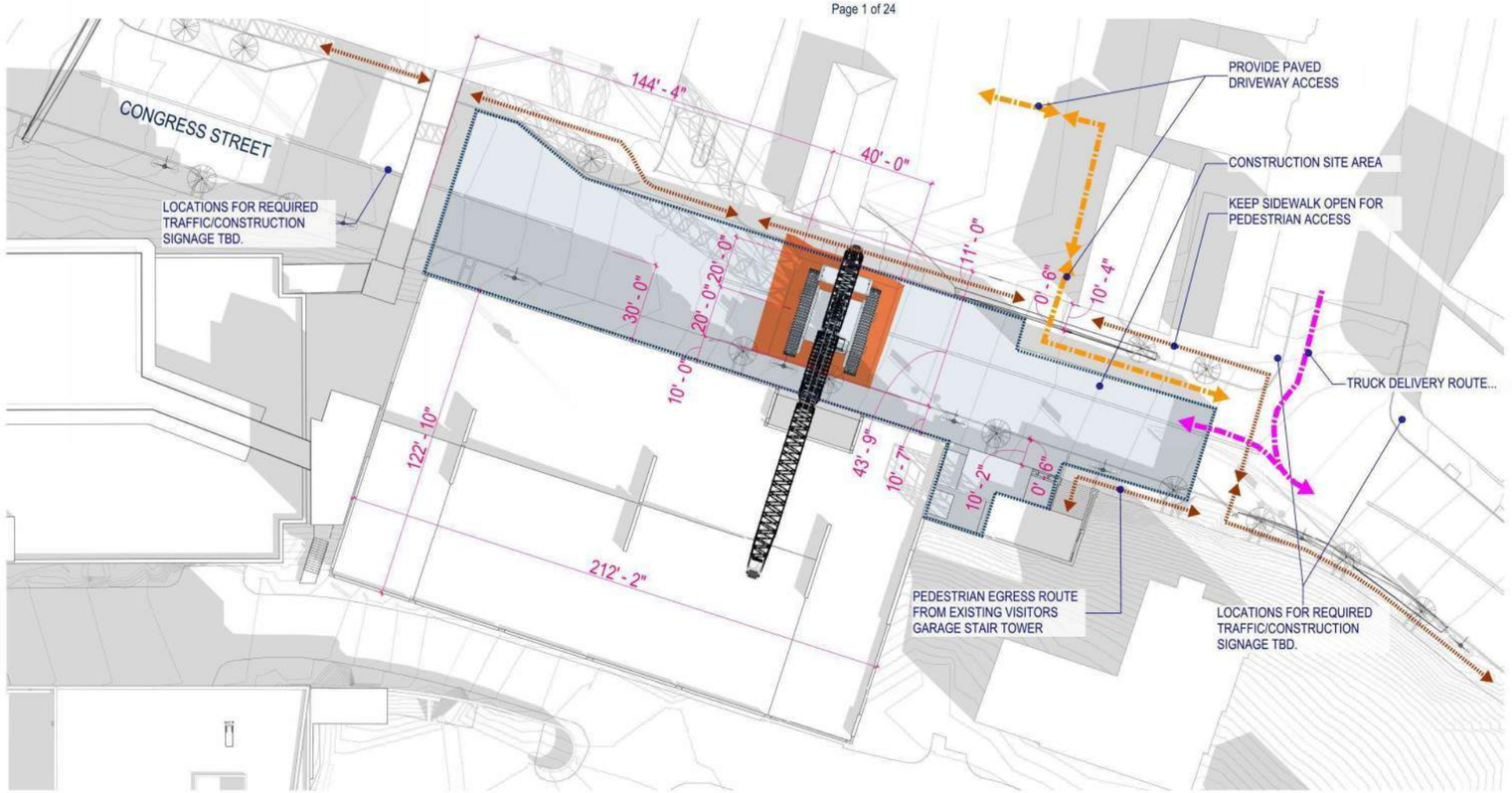
873 Congress Street – parking affected during week 1 and week 8 only. Temporary parking provisions during week 1 and 8 will be provided. Access to house not affected during eight weeks.

867 Congress Street-(Church) - parking and access not affected during 8 weeks of Congress closure.

Visitor Garage west stair tower remains open during the eight weeks.

Maine Medical Center, Portland Maine
Additions and Renovations [Congress Street Crane Location 1]

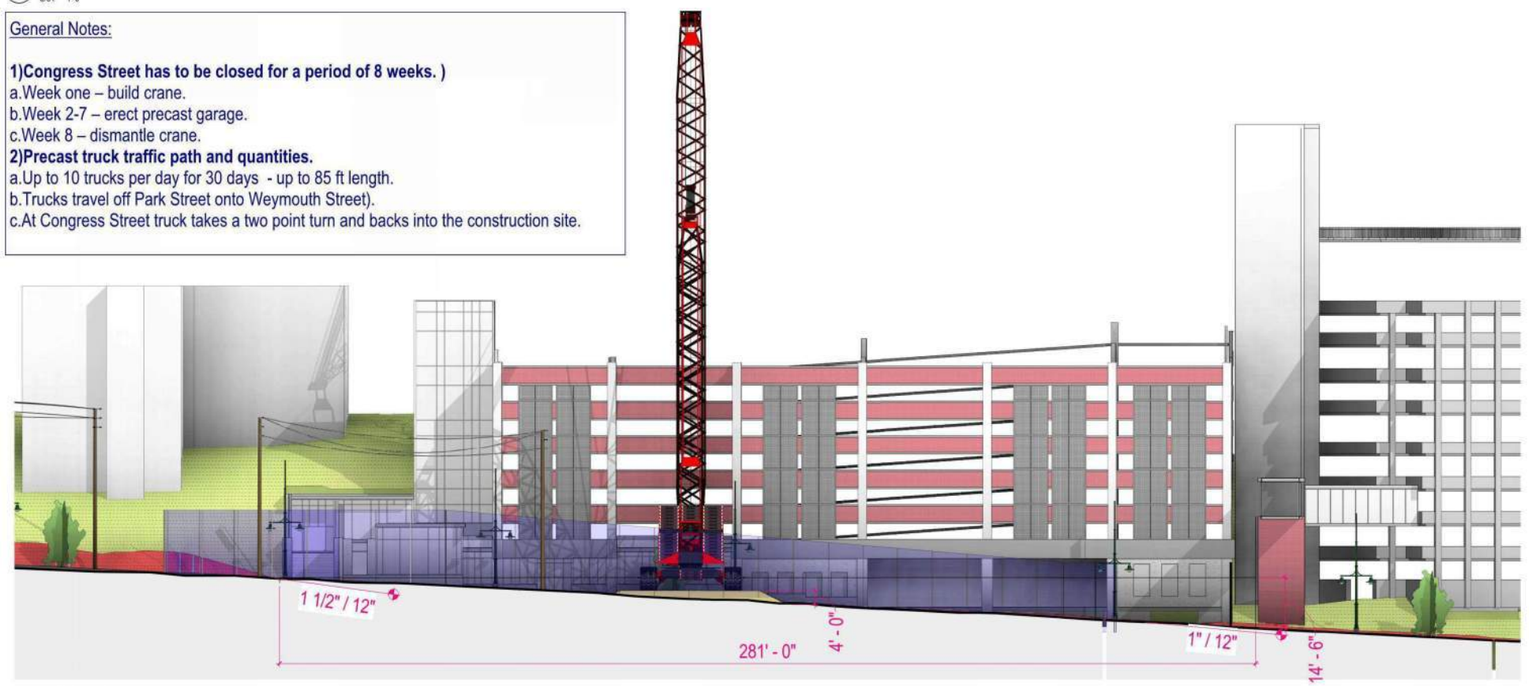
Turner



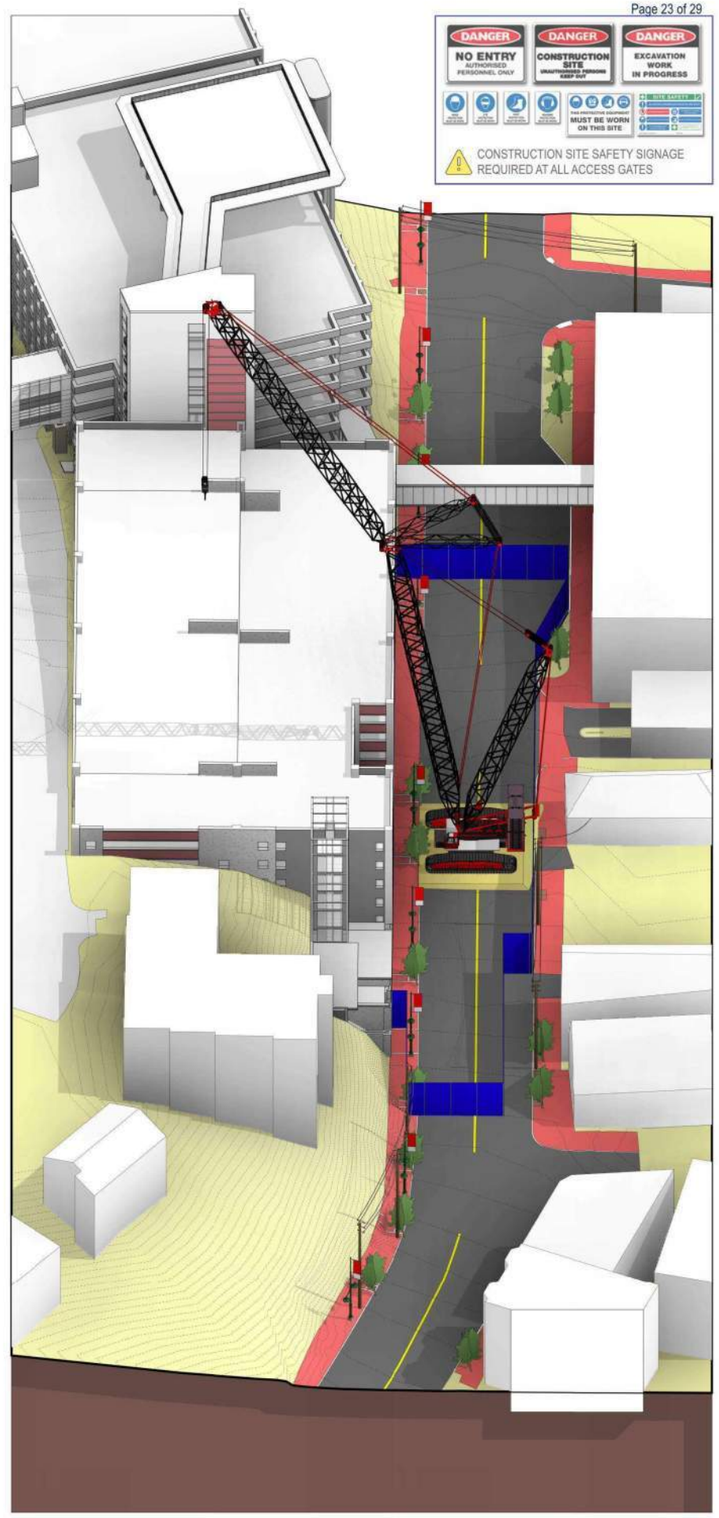
1 CONGRESS STREET - CRANE PICK PLAN
3/64" = 1'-0"

General Notes:

1)Congress Street has to be closed for a period of 8 weeks.)
a.Week one – build crane.
b.Week 2-7 – erect precast garage.
c.Week 8 – dismantle crane.
2)Precast truck traffic path and quantities.
a.Up to 10 trucks per day for 30 days - up to 85 ft length.
b.Trucks travel off Park Street onto Weymouth Street).
c.At Congress Street truck takes a two point turn and backs into the construction site.



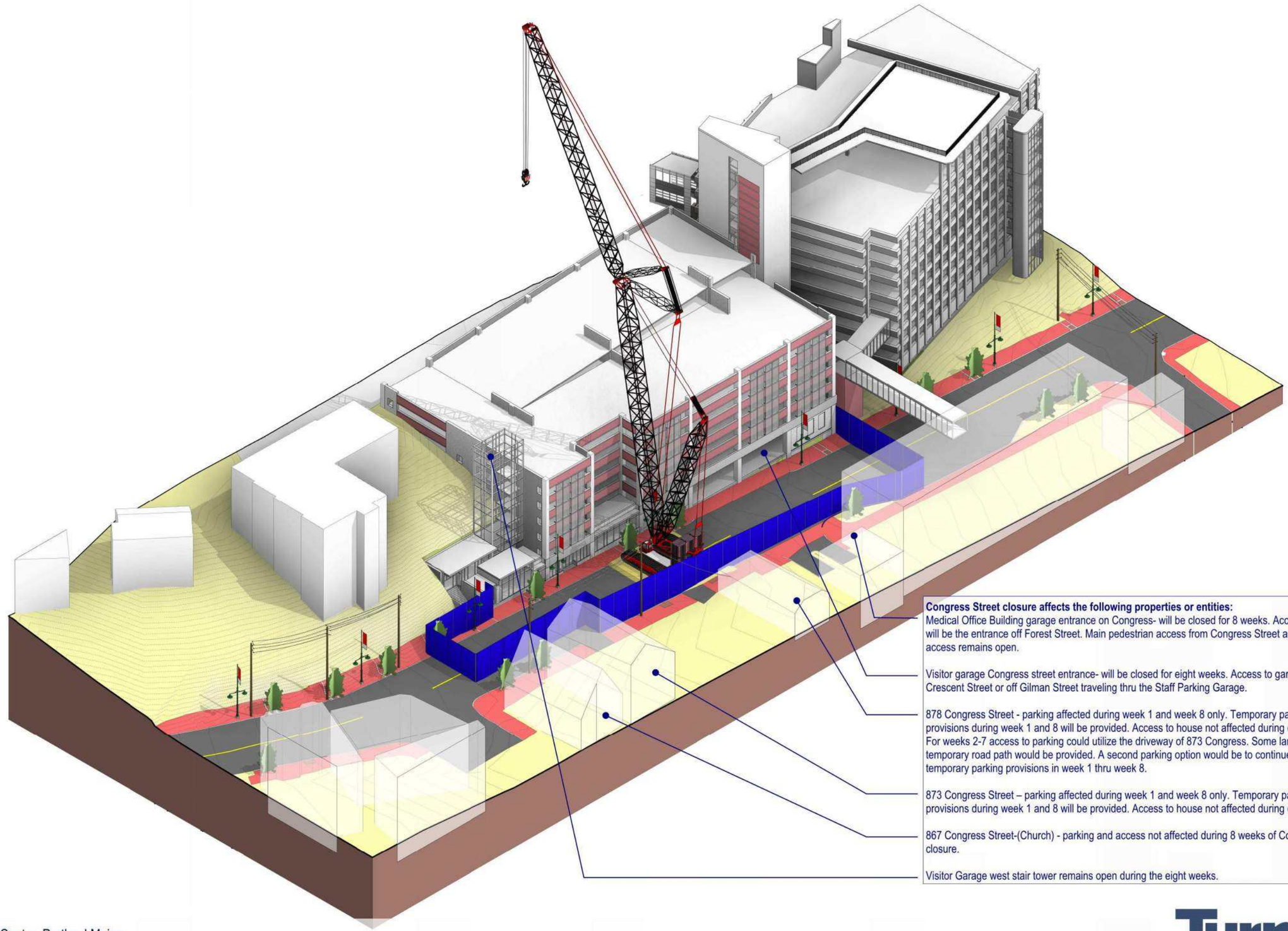
2 CONGRESS STREET - SITE SECTION
1/16" = 1'-0"



3 CONGRESS STREET - AXON VIEW

Maine Medical Center, Portland Maine
Additions and Renovations [Congress Street Crane Location 2]

Turner



Congress Street closure affects the following properties or entities:

Medical Office Building garage entrance on Congress- will be closed for 8 weeks. Access to garage will be the entrance off Forest Street. Main pedestrian access from Congress Street and bridge access remains open.

Visitor garage Congress street entrance- will be closed for eight weeks. Access to garage will be off Crescent Street or off Gilman Street traveling thru the Staff Parking Garage.

878 Congress Street - parking affected during week 1 and week 8 only. Temporary parking provisions during week 1 and 8 will be provided. Access to house not affected during eight weeks. For weeks 2-7 access to parking could utilize the driveway of 873 Congress. Some landscape and temporary road path would be provided. A second parking option would be to continue the same temporary parking provisions in week 1 thru week 8.

873 Congress Street – parking affected during week 1 and week 8 only. Temporary parking provisions during week 1 and 8 will be provided. Access to house not affected during eight weeks.

867 Congress Street-(Church) - parking and access not affected during 8 weeks of Congress closure.

Visitor Garage west stair tower remains open during the eight weeks.



887 Delivery / Drop off area

Do Not Block Loading Area Signage

NO VEHICULAR TRAFFIC ON THIS PORTION OF CONGRESS STREET FOR 8 WEEKS.

RELOCATION OF PEDESTRIAN WALKING PATH

440 TON CRAWLER WITH 150' MAIN BOOM AND 160' LUFFING JIB. SWING RADIUS OF 50' OFF FACE OF EXISTING VISITORS GARAGE.

EXISTING OVERHEAD POWER LOCATION

CRAWLER CRANE LOCATION 1

CRAWLER CRANE LOCATION 2

30'-0"

30'-0"

TEMPORARY VEHICULAR GARAGE ACCESS THROUGH E.D. ENTRANCE/EXIT ONLY

887 Drop Off

Truck and Delivery turn around

Truck Turn Around Signage

160'-0"

160'-1"

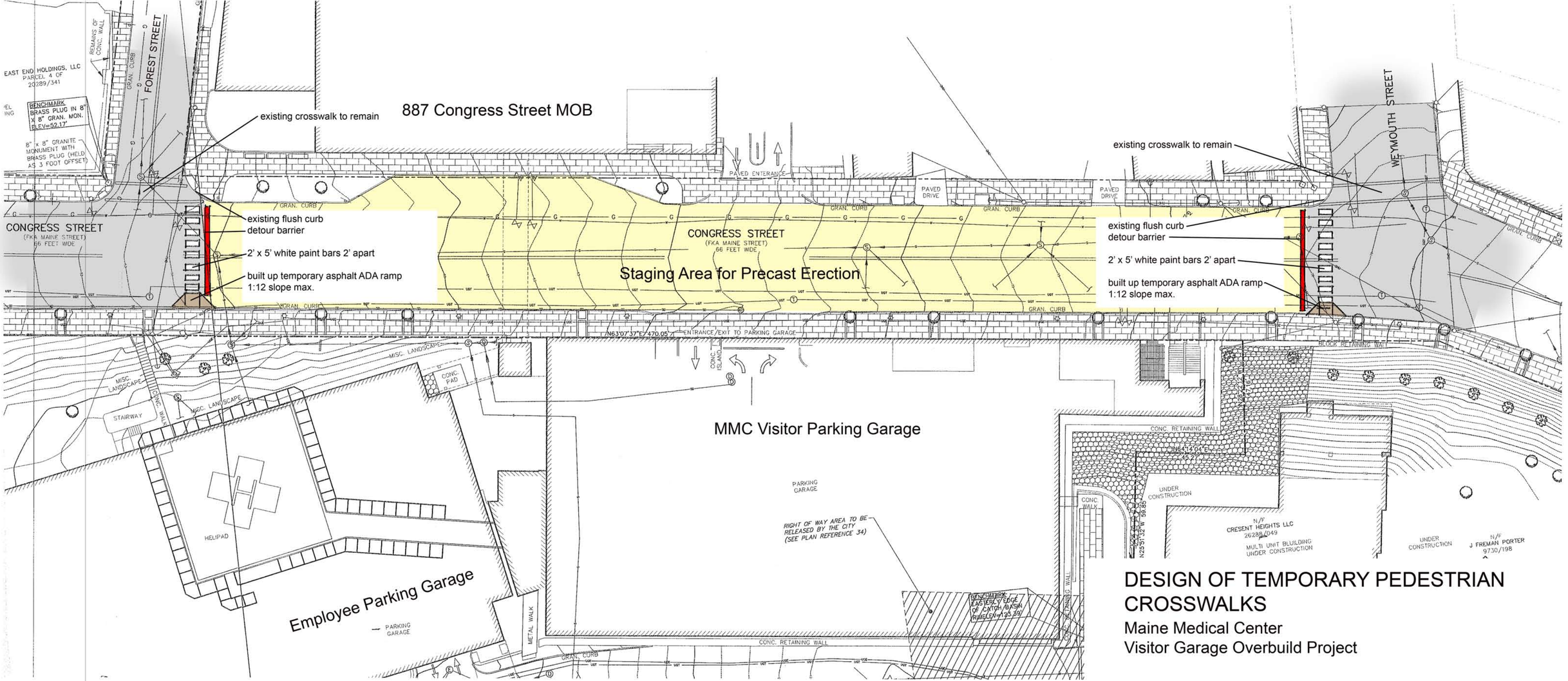
159'-10"

160'-0"

121'-0

210'-2"

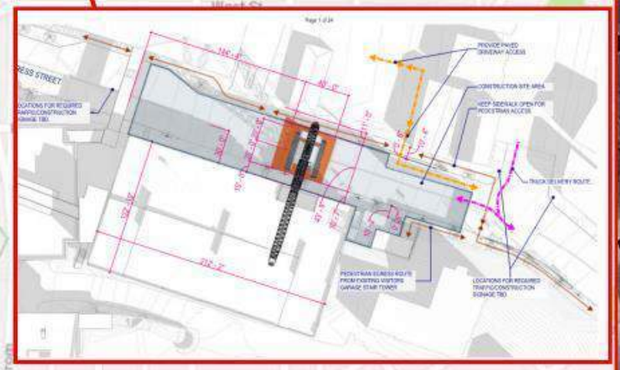
REFER TO "CONGRESS STREET CRANE LOCATION" DRAWINGS FOR MORE INFORMATION AND DETAILS.



DESIGN OF TEMPORARY PEDESTRIAN CROSSWALKS

Maine Medical Center
Visitor Garage Overbuild Project

MMC VISITOR GARAGE EXPANSION
PRECAST CONCRETE TRUCKS
INBOUND ROUTE TO CONGRESS STREET SITE
PORTLAND YACHT STAGING YARD TO W. COMMERCIAL STREET TO VALLEY STREET TO PARK ST TO WEYMOUTH ST TO CONGRESS ST SITE

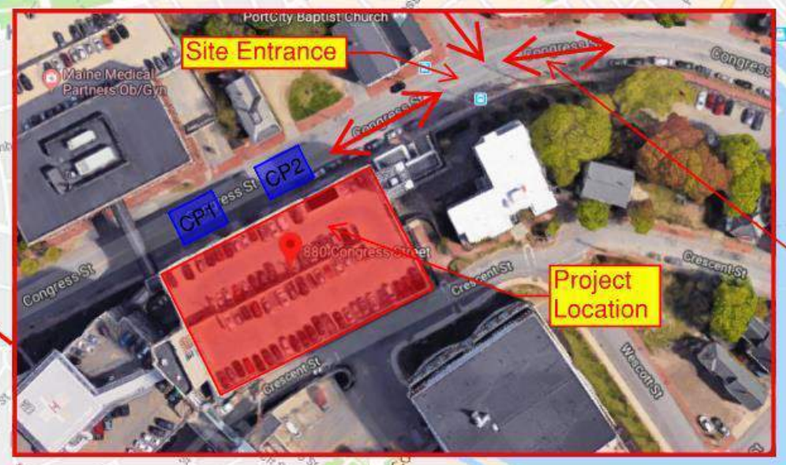




Maine Medical Center, Portland Maine
Additions and Renovations [Precast Delivery and Egress Paths] - Option 1

Google Maps 100 W Commercial St

Maine Medical Center PG Expansion #51264
Trucking Route - Precast Concrete Deliveries
3-6-18



Police Detail req'd at the end of Weymouth St. to allow trucks to turn left onto Congress St and the back to the crane



From Staging Yard (100 W Commercial St): RED arrows
left onto W Commercial St
right onto Fore River Pkwy
continue onto Congress St
left onto St John St
right onto Park Ave
right onto Weymouth St
turn left onto Congress St and then back into project site limits (need Police Detail)

Direct to crane: BLUE arrows
from I-295 N
take exit 5 to Congress St
follow same directions as noted above

Oversize load travel restrictions on I-95: No travel 7am to 9am and 3pm to 5pm

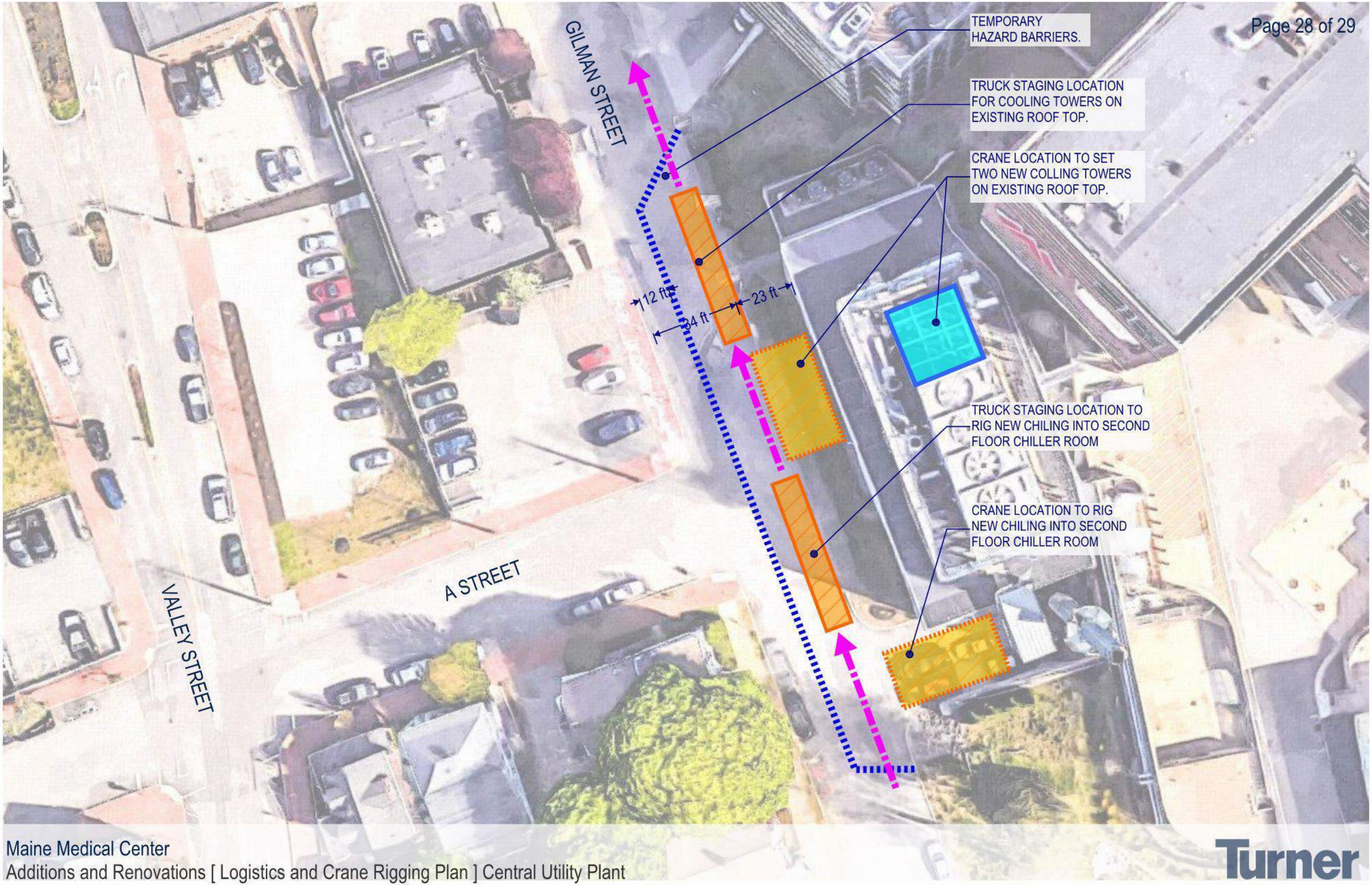
Staging for 15-20 loads to be at staging yard.

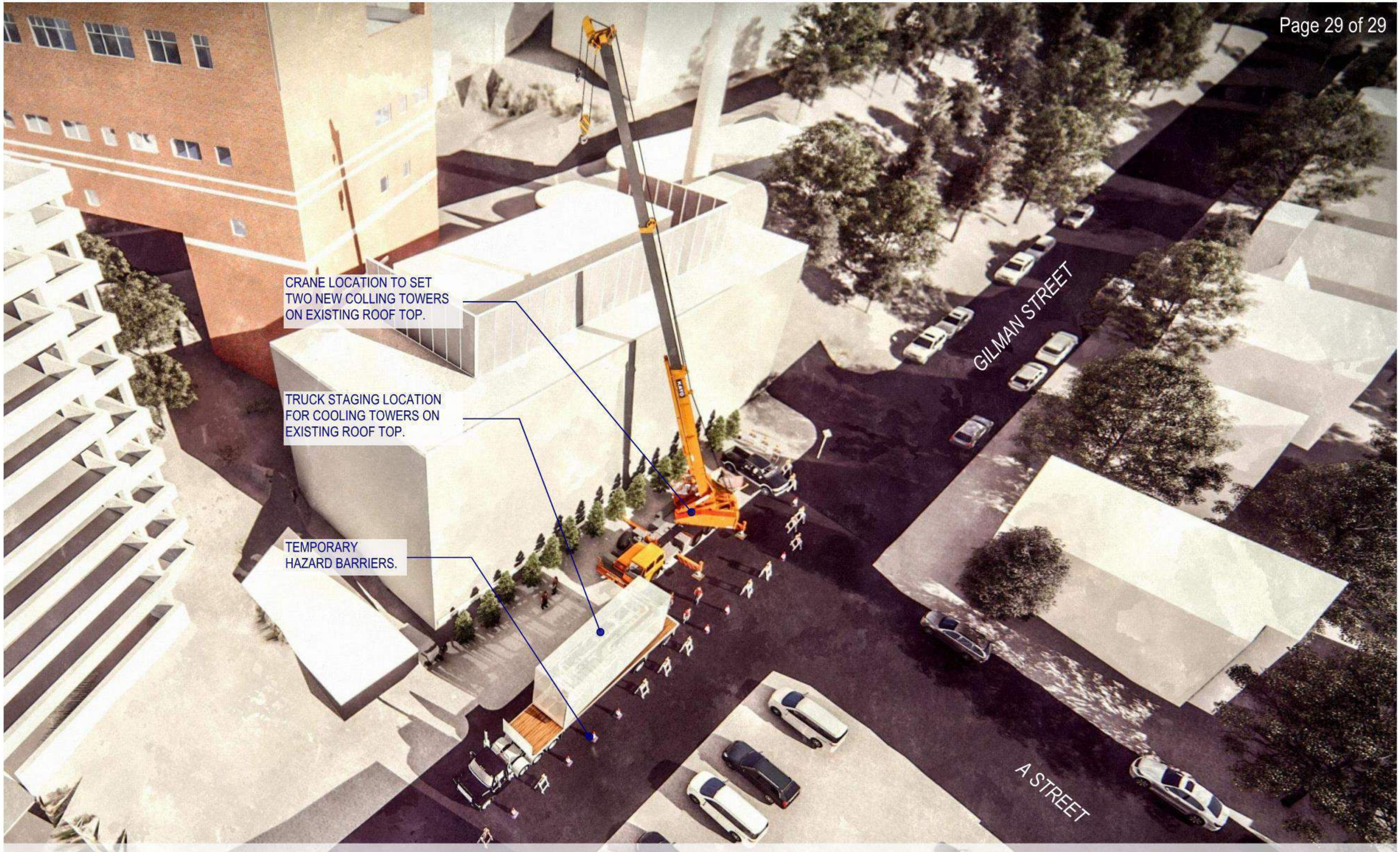
Map data ©2018 Google 1000 ft



[Central Utility Plant] Logistics Plans and Studies

Turner


GILMAN STREET
A STREET
VALLEY STREET
TEMPORARY HAZARD BARRIERS.
TRUCK STAGING LOCATION FOR COOLING TOWERS ON EXISTING ROOF TOP.
CRANE LOCATION TO SET TWO NEW COLLING TOWERS ON EXISTING ROOF TOP.
12 ft
34 ft
23 ft
TRUCK STAGING LOCATION TO RIG NEW CHILING INTO SECOND FLOOR CHILLER ROOM
CRANE LOCATION TO RIG NEW CHILING INTO SECOND FLOOR CHILLER ROOM



Maine Medical Center

Additions and Renovations [Logistics and Crane Rigging Plan - Typical Both Locations] Central Utility Plant

Turner

GORRILL PALMER

707 Sable Oaks Drive, Suite 30
South Portland, Maine 04106
207.772.2515

Evaluation of Congress Street Detour
Maine Medical Center (MMC) – Bramhall Campus
Portland, Maine

March 20, 2018

Proposed Detour:

The MMC Team met with City staff (including Fire and Police representatives) several times over the past few weeks to discuss various detour options for the closure of Congress Street between Forest Street and Weymouth Street. Based on those discussions, there was general consensus that the best approach was to combine different aspects of the alternatives into one alternative to create a multi-layered approach.

The proposed traffic control plan (TCP) is intended to operate as a three layered approach. The purpose of the multi-layer approach is to gradually decrease the volume of traffic that approaches the closure location, such that traffic is less concentrated at one specific location, minimize the impact of the closure and provide a safe and reliable system for commuters and local traffic. A more detailed description of the three layers is as follows, with plans of the TCP attached:

Layer 1 (Figure 1 of attached plans)

The first, or outer most, layer involves the use of four Variable Message Boards (VMB). The current detour plan identifies the use of three mobile units on the downtown streets and the use of two mobile units on I-295 (one northbound and one southbound). The locations are as follows:

- St. John Street southbound prior to the intersection with Park Avenue
- Outer Congress Street inbound prior to Fore River Parkway
- Upper Congress Street outbound prior to Mellen Street
- I-295 northbound direction preferably south of ramps that would allow for traffic to seek an alternate route, and I-295 southbound direction preferably north of ramps that would allow for traffic to seek an alternate route. MaineDOT has given permission for the placement of these VMB subject to approval of the exact locations which are to be determined. Final locations will be proximate to I-295 off-ramps in order to remain relevant to commuters and will not impact views of existing highway signage.

The VMBs will flash "Lower Congress Closed" "Seek Alt Route". The VMBs are specifically located such that it provides notice to drivers as they enter the downtown such that they have alternate routes to take to avoid the Lower Congress Street closure.

Prior to closure – We recommend that the VMBs be placed and utilized a week in advance of the actual closure to inform drivers of the upcoming closure.

Additional Mitigation beyond that shown on the plans: None anticipated

Layer 2 (Figure 2 of attached plans)

For drivers on Congress Street that are approaching the general area, a primary detour will be established. Inbound traffic on Congress Street will be directed to use St. John Street to Park Avenue to Weymouth Street and back up to Congress Street. A Type III barricade will be placed on Congress Street to discourage through traffic, but will provide enough roadway width such that through traffic will still be allowed to reach local destinations such as the Gilman garage, MOB garage, and local businesses. The Type III barricade on Congress St will also have a "Local Businesses Open" sign indicating continued access to all points on Congress St between St John St and the closure.

For outbound Congress Street traffic, the primary detour will direct traffic onto Weymouth Street to Park Avenue to the intersection with St. John Street. The end detour will be at the intersection with St. John Street because based on our evaluation of the roadway network and traffic patterns, it does not appear to make sense to detour all the traffic back to the Congress Street / St. John Street intersection since the only options at the intersection would be to go back inbound where they just came from or to continue on St John Street, and the outbound volume onto St. John Street has been identified as minimal.

Additional Mitigation beyond that shown on the plans:

- Retiming of the traffic signals. Any exclusive pedestrian timing of the signals involved will be changed to concurrent pedestrian timing to maximize capacity while still providing accommodations for pedestrians. Signage will be erected at the pedestrian push buttons that informs the pedestrian that the phasing has been changed.

St John St was selected to be the primary inbound detour route because it had the least impact to the surrounding neighborhoods, provides the most capacity to accommodate the increase in traffic, accommodates emergency vehicles the best and provides the safest route.

Alternate Detours Considered: In evaluating the inbound detour from Congress onto St. John Street to Park Avenue, other options were considered. Those options are identified as follows:

- Valley to Park: This option did offer some benefits such as minimal impacts to neighborhood parking, the street width was adequate and emergency vehicle access appeared acceptable. However, this option was not pursued for several reasons. The first is the close proximity of the intersection with Park Ave to the signalized intersection. This close proximity with an increase in traffic volume introduces a concern with vehicle / pedestrian / bicycle safety. A second challenge is that this section of Valley Street is not familiar to most drivers, which could confuse drivers as to where they are being detoured. A third challenge is the proximity of the unsignalized intersection on Congress Street and the close proximity to the signalized intersection with St. John Street. The Congress Street traffic volume outbound will be reduced as a result of the closure; however, given the volume of traffic anticipated to be detoured, back up of the left turns from Congress onto Valley would interfere with the signalized intersection at Congress St and St John St.

- Gilman to Park: This option was not selected for several reasons. First, Gilman is currently one-way from Park Ave toward Congress Street, which would need to be reversed, causing significant confusion to those who currently use the road. Second, this option had more impacts to neighborhood parking. Approximately 20 spaces would have to be temporarily closed. Third, the street width is narrower and would be more challenging for emergency vehicles – primarily fire

trucks. Fourth, similar to Valley, it is relatively unknown to those who are not local. Lastly, it is too close to the signalized intersection with Park / St. John Street.

- Forest to Park: This option was not selected for several reasons. First, this option does not appear to be realistic in expecting that drivers would by-pass Boynton to continue to Park Avenue then back up Weymouth. Second, this option impacted neighborhood parking – approximately 15 spaces. Lastly, Forest St has a narrow street width and would be challenging for emergency vehicles.

- Park to State Street: This option does have benefits; however, there are some significant challenges to this option. The first significant impact would be to local businesses. There are numerous businesses located between the closure and State Street. By detouring traffic away from that half a mile section of Congress Street, it would decrease potential customers and may make it more difficult for customers to find their destination. Second, State Street is one-way. By using this as the primary detour, a separate detour would be required for out bound traffic, leading to potentially more confusion for drivers. The goal of a detour is to keep it relatively isolated and as small as possible to reduce the impacts to neighborhoods and businesses and limit the length of time a driver is actually detoured. Third, State St is a mostly residential street. Residents of State St have recently experienced a significant disruption due to the City of Portland's State Street project. Including State St in the detour would further disrupt its residents. This option does not accomplish the goals of the detour.

Layer 3 (Figure 2 & 3 of attached plans)

For what is expected to be minimal inbound traffic that manages to reach the actual Congress Street closure, rather than try to turn them around, the third layer provides a route. This route would direct traffic onto Forest Street to Boynton Street to Weymouth Street. The current plan is to convert Boynton to one-way inbound which will minimize the potential of outbound traffic trying to use this route. Instead, all outbound traffic will be required to use the primary route described in Layer 2 that directs them to Park Ave.

To allow emergency vehicles adequate width to maneuver, we recommend that on-street parking be temporarily closed while the Congress Street closure is in effect (approximately 8 weeks). This would eliminate approximately four on-street parking spaces on Forest Street and 14 on-street parking spaces on Boynton Street. To also accommodate emergency vehicles, MMC is proposing to increase the south east radius of the Forest Street / Boynton Street intersection to accommodate a firetruck size vehicle. This will include modifications to the sidewalk, as well as construction of a new ADA ramp on that corner. MMC is working with the residents along Boynton Street to provide alternative parking arrangements such as within the MOB parking garage. Letters that MMC has sent to these neighbors has been submitted to the City of Portland.

Additional Mitigation beyond that shown on the plans: None anticipated

Capacity Analysis:

To further evaluate the options, key intersections were evaluated using Synchro/SimTraffic computer analysis software. Level of service rankings are similar to the academic ranking system, where an 'A' is good with little control delay and an 'F' represents poor traffic conditions. If levels of service fall below a 'D', an evaluation should be made to determine if mitigation should be implemented. The following

tables summarize the relationship between level of service and control delay per vehicle for unsignalized and signalized intersections:

Level of Service Criteria for Unsignalized Intersections

Level of Service	Control Delay per Vehicle (sec)
A	Less than 10.0
B	10.1 to 15.0
C	15.1 to 25.0
D	25.1 to 35.0
E	35.1 to 50.0
F	Greater than 50.0

Level of Service Criteria for Signalized Intersections

Level of Service	Control Delay per Vehicle (sec)
A	Less than 10.0
B	10.1 to 20.0
C	20.1 to 35.0
D	35.1 to 55.0
E	55.1 to 80.0
F	Greater than 80.0

The results are based on the average of five SimTraffic runs. It should be noted that detours are typically for those drivers that do not know the area and need guidance due to the street closure. Those drivers that know the area will seek their own routes other than the detour. For the purpose of this evaluation, we assumed that all drivers would use the detours, and therefore this evaluation is conservative and actual levels of service may be better than summarized.

The following summarizes the capacity analysis results.

The key intersections for this detour option have been identified as the following:

- Park Avenue / Weymouth Street
- St. John Street / Park Avenue
- Congress Street / St. John Street

The following table summarizes the forecast operation of the key intersections for existing conditions and with the detour in place. Detailed results are attached.

Level of Service Summary

Approach*	Existing Conditions		With Detour	
	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
Park / Weymouth (Existing = U, Detour = S)				
Park EB	A	A	B	D
Park WB	A	A	B	B
Weymouth NB	C	E	C	D
Parking Lot SB	B	B	A	B
Overall	**N/A**	**N/A**	**B**	**C**

St. John / Park (S)				
Park WB	C	B	C	C
St. John NB	B	D	B	C
St. John SB	B	C	C	C
Overall	**B**	**C**	**C**	**C**
Congress / St. John (S)				
Congress EB	C	C	B	C
Congress WB	B	B	B	B
St. John NB	C	C	C	C
St. John SB	C	C	C	C
Overall	**C**	**C**	**C**	**C**

*(U) = Unsignalized, (S) = Signalized

As shown in the table, the intersections of St. John Street with Park Avenue and Congress Street with St. John Street are forecast to operate at similar levels of service to the existing conditions if the detour is implemented. Additionally, the three key intersections are forecast to operate at acceptable levels of service if the detour is implemented. It should be noted that at the intersection of Park Avenue with Weymouth Street, the eastbound and westbound approaches are forecast to operate at lower levels of service with the detour in place than with the existing conditions. This is due to the temporary signalization of the intersection while the detour is operational, which increases the delay of the traffic that is free-flowing in the existing condition. Although the levels of service on Park Avenue are forecast to be lower than the existing conditions, the levels of service on the Weymouth Street approach and the Parking Lot approach are forecast to be maintained or improve from the existing conditions.

Visitor / Patient Garage

Since the Congress Street access to the Visitor / Patient garage will be unavailable during the Congress Street closure, MMC is proposing a plan (attached Figure 7) to provide access to the Visitor / Patient garage through the Gilman Street access to the employee garage. The two garages are already connected on the base level. The attached plans show the layout that includes an entrance lane for employees and a separate entrance for visitors / patients. Both entrances will be well signed as to communicate who uses which lane. To avoid any crossing of entrance traffic, employees would be required to access the garage from the direction of A Street, while visitors / patients would be expected to access the garage via Congress Street. Signage will be erected within the detour to guide visitors / patients to the garage (see attached Figures 2 & 4). To get employees in the habit of entering from the A Street direction, the new set up would be implemented a minimum of one week prior to the actual closure of the Congress Street access.

Once in the garage, employees would continue into the employee section of the garage and visitors / patients would continue to the other garage. Exiting traffic from both garages would merge into one exit lane. A flagger(s) would be stationed within the merge area during busy times to ensure proper guidance. MMC is committed to safety so if additional flaggers or additional time periods are required they will be supplied as needed.

METRO Impacts:

The MMC Team met with METRO twice to provide advance notice of the closure of a short section of Congress Street and to show them what the closure would include. Based on these discussions with METRO, they will close the following four bus stops for the duration of the Congress Street closure:

- Eastbound:
  - Congress / Gilman
  - Congress / Weymouth
- Westbound:
  - Congress / Weymouth
  - Congress / Valley

In addition, METRO is considering relocating the eastbound stop at Park / Weymouth approximately 50 feet to the west on Park Avenue to avoid impacts to the temporary signal. MMC will make the necessary improvements to ensure the temporary stop meets ADA requirements, including providing paved access from the curb to the sidewalk. Relocating the bus stop will require the removal of one on-street parking space on Park Avenue. The potential METRO modifications are shown on the attached Figure 5. METRO will make a final decision and MMC will assist as appropriate.

The temporary changes will be communicated to the public by MMC and METRO prior to implementation via social media and press releases.

Sea Dogs Impact:

MMC met with the Sea Dogs general manager to discuss management of traffic during afternoon games and on Sunday May 13th for the Mother's Day 5K race. A proposed plan to manage traffic during game days and on May 13th has been submitted to City staff for review.

Construction Related Deliveries, Delivery Routes, and Parking Restrictions:

Turner Construction will be the responsible party for the actual construction and will be providing number, type (size), and routes for deliveries in the construction management plan also submitted to the City of Portland. It should be noted, that additional on-street parking restrictions may be identified when delivery routes are reviewed in the field to ensure proper turning of larger delivery vehicles can be accommodated.

Parking for construction workers will be provided off-site at satellite parking areas, such as the MMC Scarborough Campus, and workers will be shuttled to the work site. Any non-essential vehicles not critical to the work site will be restricted from the site. Any parking by workers in the immediate area reported to MMC or Turner Construction will be taken seriously and addressed by Turner Construction.

Patient / Visitor Garage Traffic Control Plan

Figure No. 1



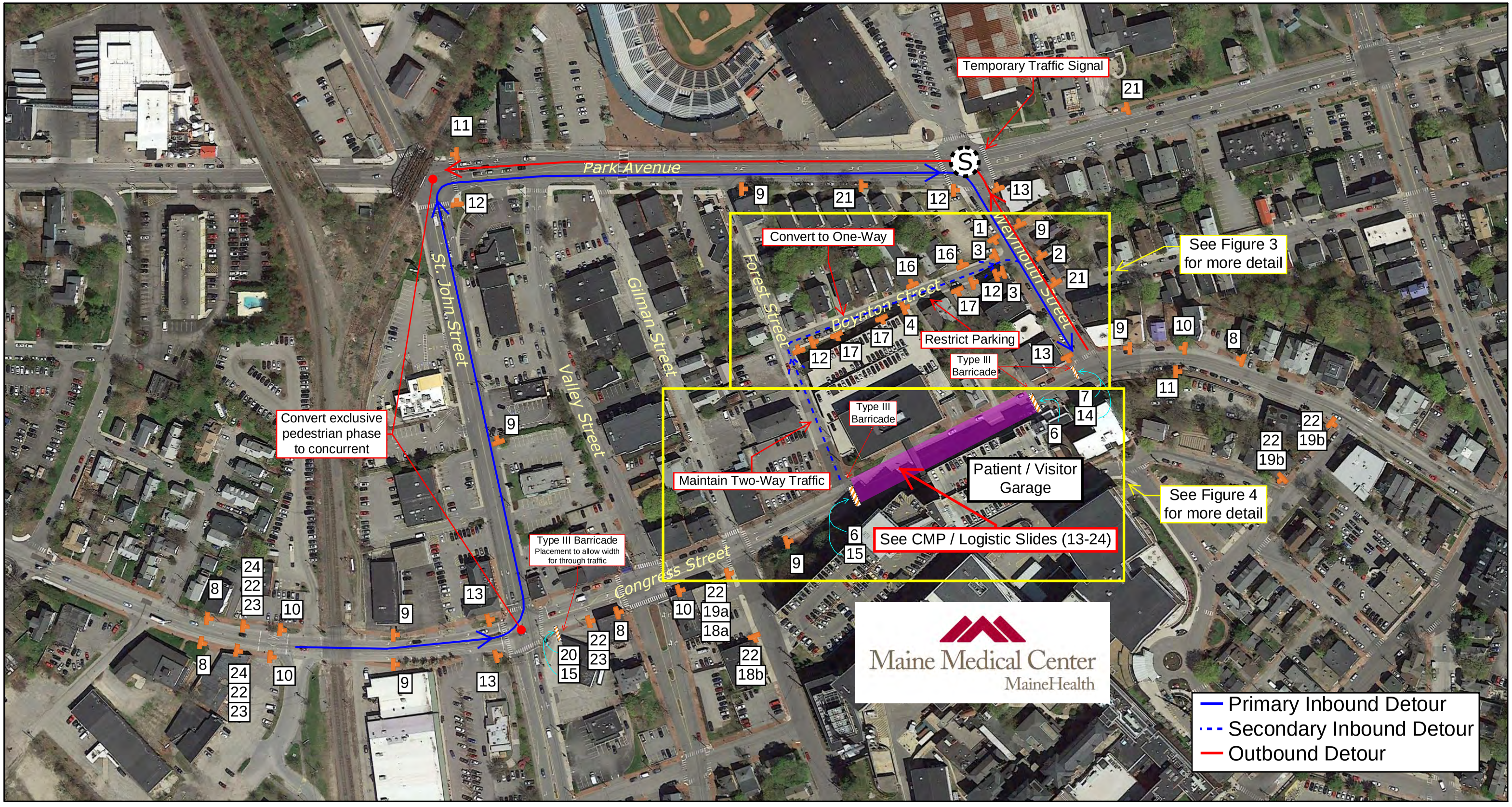
Maine Medical Center Expansion
PORTLAND, MAINE

Design: ET
Draft:
Checked: RED
Scale: NONE
Date: MAR 2018
File Name: 2866-01-TRAFF.dwg

GORRILL PALMER
Relationships. Responsiveness. Results.
www.gorrillpalmer.com
207.772.2515

Congress Street Detour

Figure No. 2



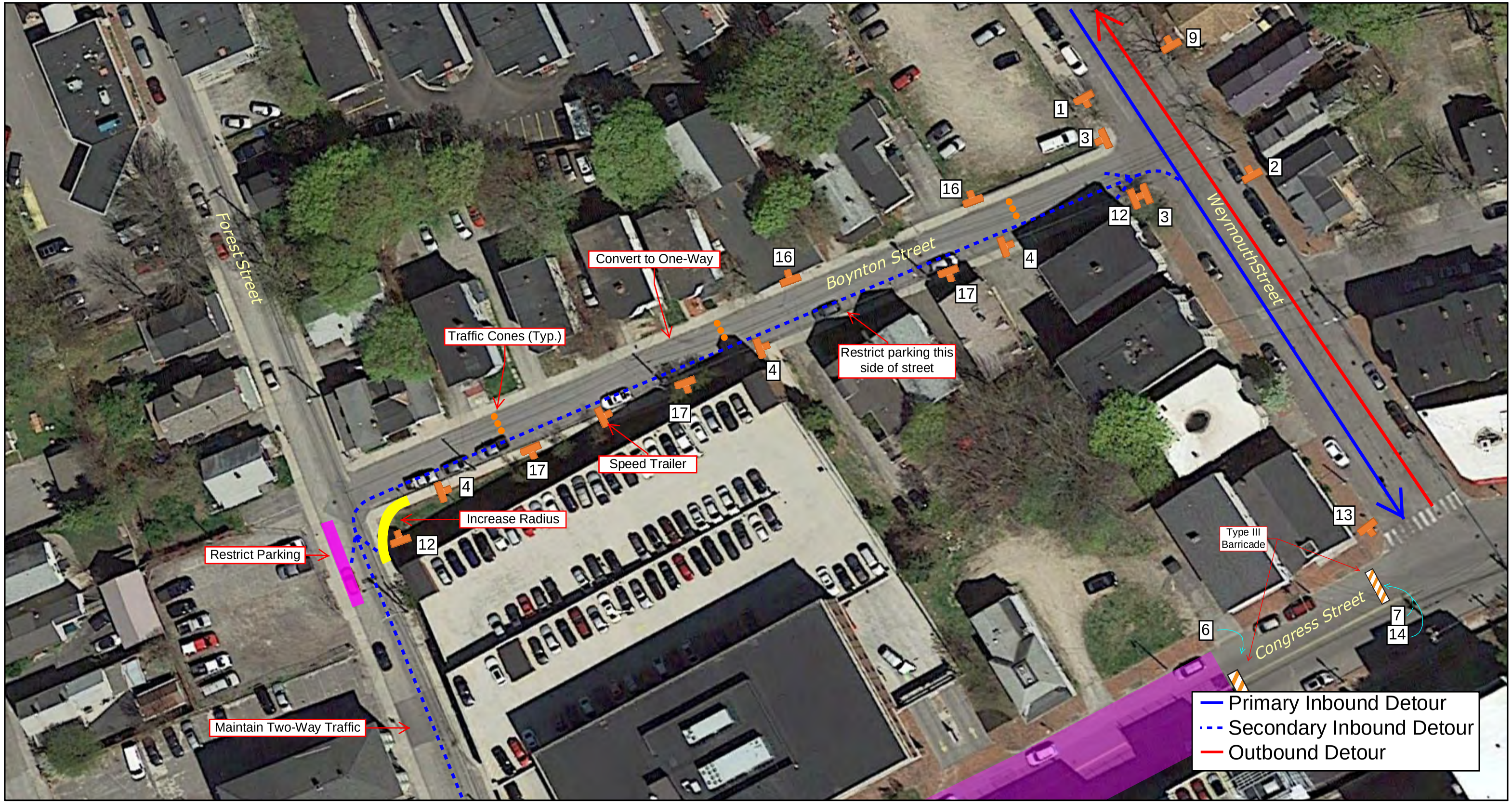
Maine Medical Center Expansion
PORTLAND, MAINE

Design: ET
Draft:
Checked: RED
Scale: NONE
Date: MAR 2018
File Name: 2866-01-TRAFF.dwg

GORRILL PALMER
Relationships. Responsiveness. Results.
www.gorrillpalmer.com
207.772.2515

Boynton Street Detail

Figure No. 3



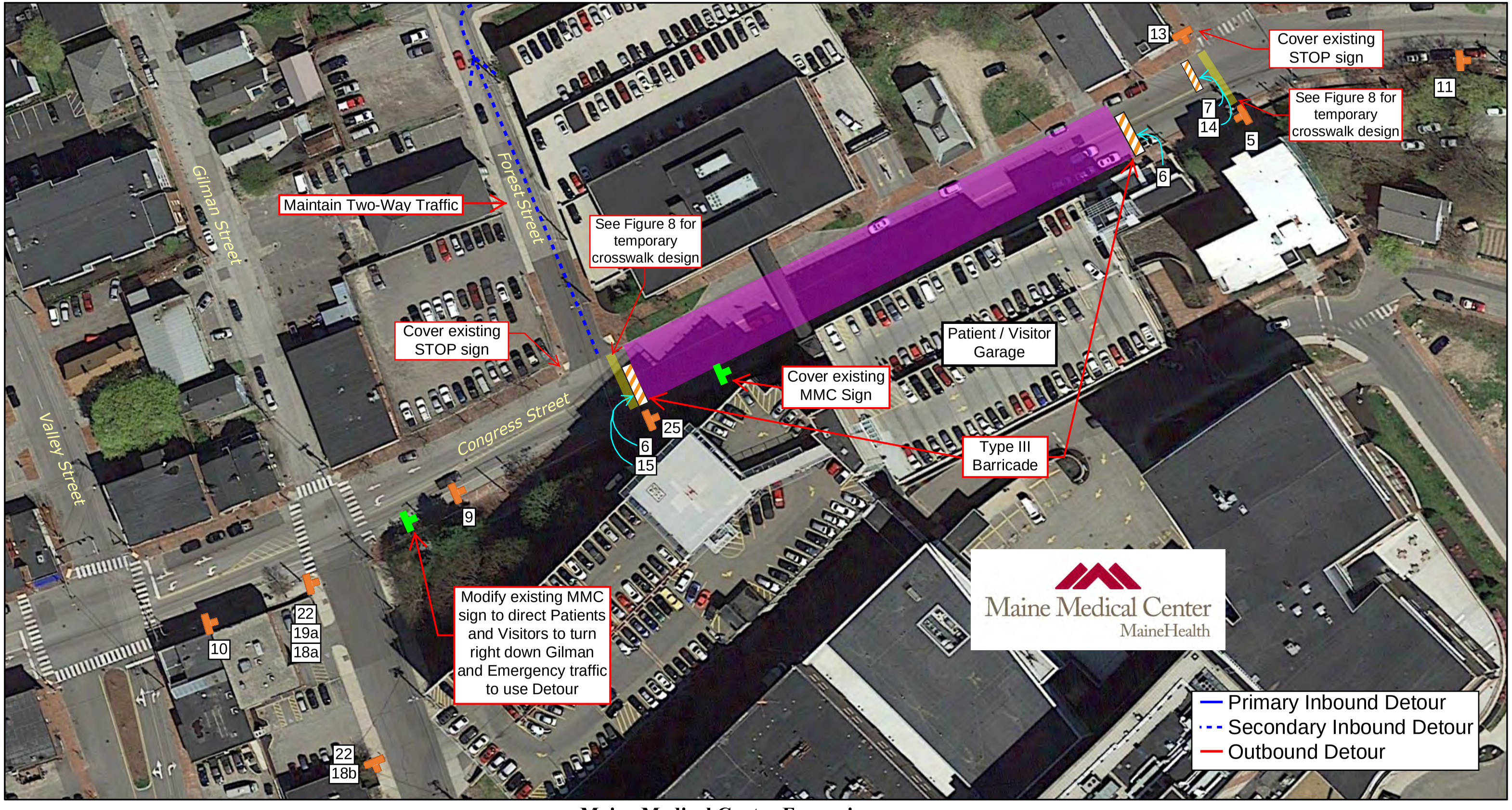
Maine Medical Center Expansion
PORTLAND, MAINE

Design: ET
Draft:
Checked: RED
Scale: NONE
Date: MAR 2018
File Name: 2866-01-TRAFF.dwg

GORRILL PALMER
Relationships. Responsiveness. Results.
www.gorrillpalmer.com
207.772.2515

Congress Street Detail

Figure No. 4



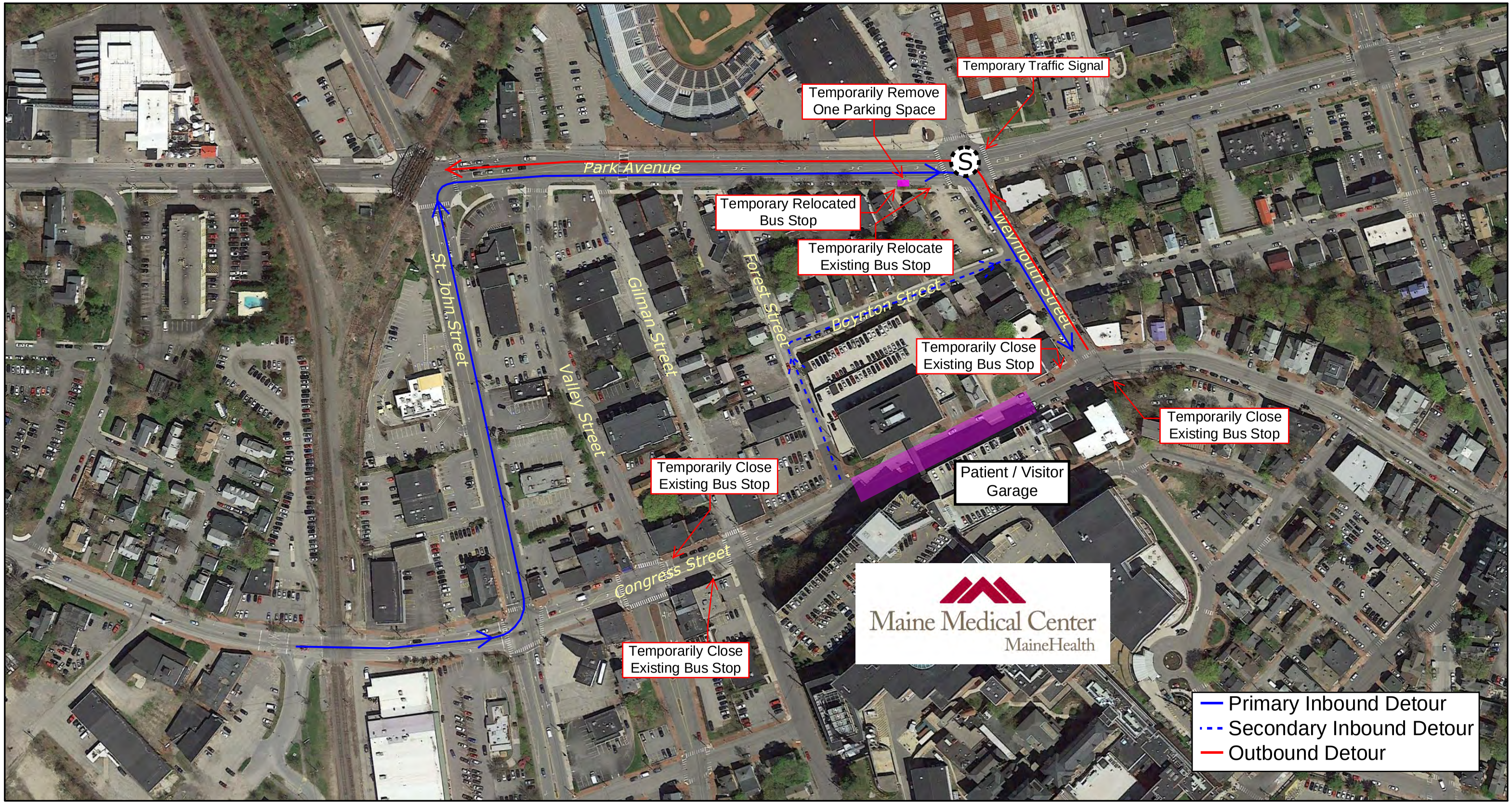
Maine Medical Center Expansion
PORTLAND, MAINE

Design: ET
Draft:
Checked: RED
Scale: NONE
Date: MAR 2018
File Name: 2866-01-TRAFF.dwg

GORRILL PALMER
Relationships. Responsiveness. Results.
www.gorrillpalmer.com
207.772.2515

METRO Modifications Due to Congress Street Closure

Figure No. 5



Maine Medical Center Expansion
PORTLAND, MAINE

Design: ET
Draft:
Checked: RED
Scale: NONE
Date: MAR 2018
File Name: 2866-01-TRAFF.dwg

GORRILL PALMER
Relationships. Responsiveness. Results.
www.gorrillpalmer.com
207.772.2515

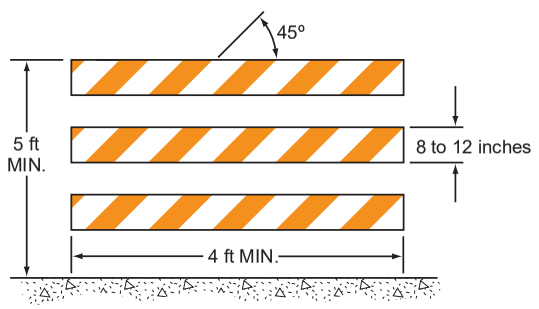
General Notes and Sign Specifications

Figure No. 6

GENERAL NOTES:

1. ALL TRAFFIC CONTROL SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREET AND HIGHWAYS (MUTCD), USDOT, FHWA, LATEST EDITION, AND CITY STANDARDS.
2. SIGN LOCATIONS SHOWN ARE APPROXIMATE. ACTUAL LOCATIONS SHALL BE DETERMINED IN THE FIELD AND APPROVED BY THE CITY.
3. OTHER SIGNS MAY BE NEEDED AS DIRECTED BY THE
4. CITY. ALL CONTROL DEVICES SHALL BE PLACED IN HIGHLY VISIBLE LOCATIONS.
5. ALL CONSTRUCTION RELATED TRAFFIC CONTROL SIGNS NOT IN EFFECT SHALL BE COVERED OR TURNED FROM TRAFFIC VIEW UNTIL THEY ARE MADE ACTIVE. SIGNS SHALL BE COVERED OR REMOVED WHEN THE WORK IS NOT ACTIVE.
6. ANY EXISTING SIGNS OR PAVEMENT MARKINGS DAMAGED DURING CONTRUCTION SHALL BE RESTORED TO THEIR ORIGINAL CONDITIONS OR REPLACED AS NEEDED.
7. ANY CONFLICTING SIGNS OR PAVEMENT MARKINGS SHALL BE COVERED OR REMOVED AS NEEDED.
8. CHANNELIZING DEVICES SHALL BE PLACED PER MUTCD.
9. POST-MOUNTED SIGNS SHALL BE A MINIMUM HEIGHT OF 7 FEET (TO THE BOTTOM OF THE SIGN) AND MUST BE CRASHWORTHY.

NOTE: SIZES OF SIGNS AND LETTERING ON ALL SIGNS SHALL BE VERIFIED THAT THEY MEET MUTCD REQUIREMENTS PRIOR TO ORDERING AND INSTALLATION.



TYPE 3 BARRICADE

SIGN SPECIFICATIONS:


R3-1
24" x 24"
1


R3-2
24" x 24"
2



R5-1
30" x 30"
3



R8-3 / R7-201aP
24" x 24" / 12" x 6"
4



R9-11
24" x 18"
5



R11-2
60" x 30"
6



R11-3a
60" x 30"
7



W20-1
36" x 36"
8



W20-2
36" x 36"
9



W20-3
36" x 36"
10



M4-8a
24" x 18"
11



M4-9R
30" x 24"
12



M4-9L
30" x 24"
13



M4-10R
48" x 18"
14



M4-10L
48" x 18"
15



R6-1R
36" x 12"
16



R6-1L
36" x 12"
17



Custom
18a



Custom
18b



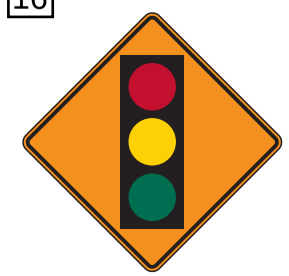
Custom
19a



Custom
19b



R11-3a
60" x 30"
20


W3-3
36" x 36"
21


D9-2
24" x 24"
22


M6-3
21" x 15"
23



M4-8a Modified
24" x 18"
24



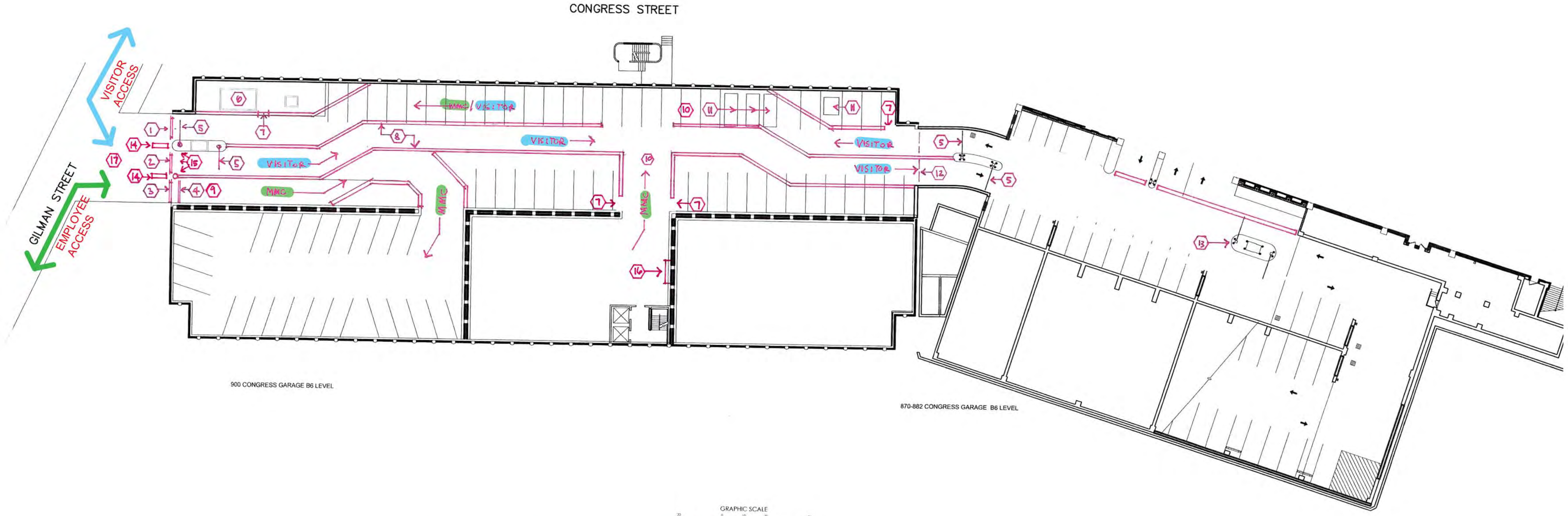
R9-11a
24" x 12"
25

TEMPORARY SIGNALIZATION: SIGNAL SHALL BE ON FLASH FOR A MINIMUM OF ONE WEEK PRIOR TO BEING PUT INTO RED-YELLOW-GREEN OPERATION. THE SIGNAL SHALL BE PUT INTO RED-YELLOW-GREEN OPERATION PRIOR TO 6 AM ON A MONDAY MORNING AND SIGNAL CONTRACTOR SHALL REMAIN ON-SITE UNTIL A MINIMUM OF 9 AM TO MAKE ADJUSTMENTS TO SIGNALS / TIMING PER THE DIRECTION OF THE CITY TRAFFIC ENGINEER OR REPRESENTATIVE. THE CONTRACTOR SHALL ALSO BE AVAILABLE FROM 11 AM TO 1 PM AND AGAIN FROM 3 PM TO 6 PM ON THE SAME DAY TO MAKE ADJUSTMENTS AS DIRECTED BY THE CITY ENGINEER OR THEIR REPRESENTATIVE. TWO WEEKS AFTER INITIAL RED-YELLOW-GREEN INITIALIZATION, THE CONTRACTOR SHALL BE AVAILABLE AT THOSE SAME TIMES FOR FURTHER ADJUSTMENTS AS DIRECTED BY THE CITY TRAFFIC ENGINEER OR THEIR REPRESENTATIVE.

Maine Medical Center Expansion
PORTLAND, MAINE

Design: ET Scale: NONE
Draft: Date: MAR 2018
Checked: RED File Name: 2866-01-TRAFF.dwg

GORRILL PALMER
Relationships. Responsiveness. Results.
www.gorrillpalmer.com
207.772.2515

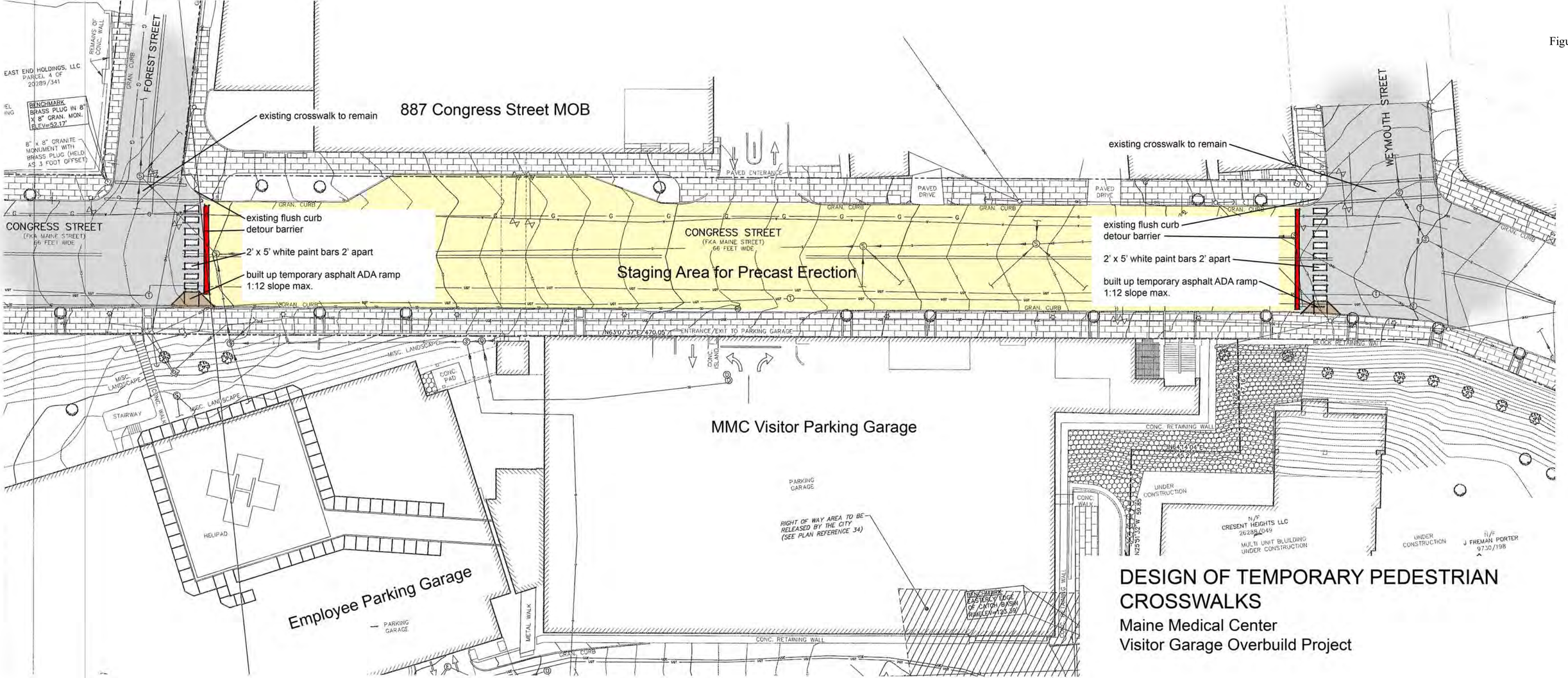


Maine Medical Center - Garage Access During Congress Street Closure

LEGEND :

1 - "Exit Only" Sign Facing Gilman Street
2 - " Visitor Entry Only " Sign Facing Gilman Street
3 - "Employee Entry Only " Sign Facing Gilman Street
4 - Add horizontal pvc pipe over employee entry lane
5 - Gate arms to remain in upright position
6 - Temporary office to remain
7- 5 Foot opening in barrier for pedestrian access
8 - Jersey Barriers, typical
9 - Temporary gate arm to conttrol employee access lane
10- Stop sign and staff person at this location during peak times
11 - Remove storage containers
12- Remove chain link fence gates
13 - Visitor access booth to remain as currently functioning
14 - One jersey barrier section on driveway apron
15 - Activate traffic signal lights
16 - Stop Ahead sign
17 - Staff person at Gilman Street Entrance at peak times

Figure No. 8

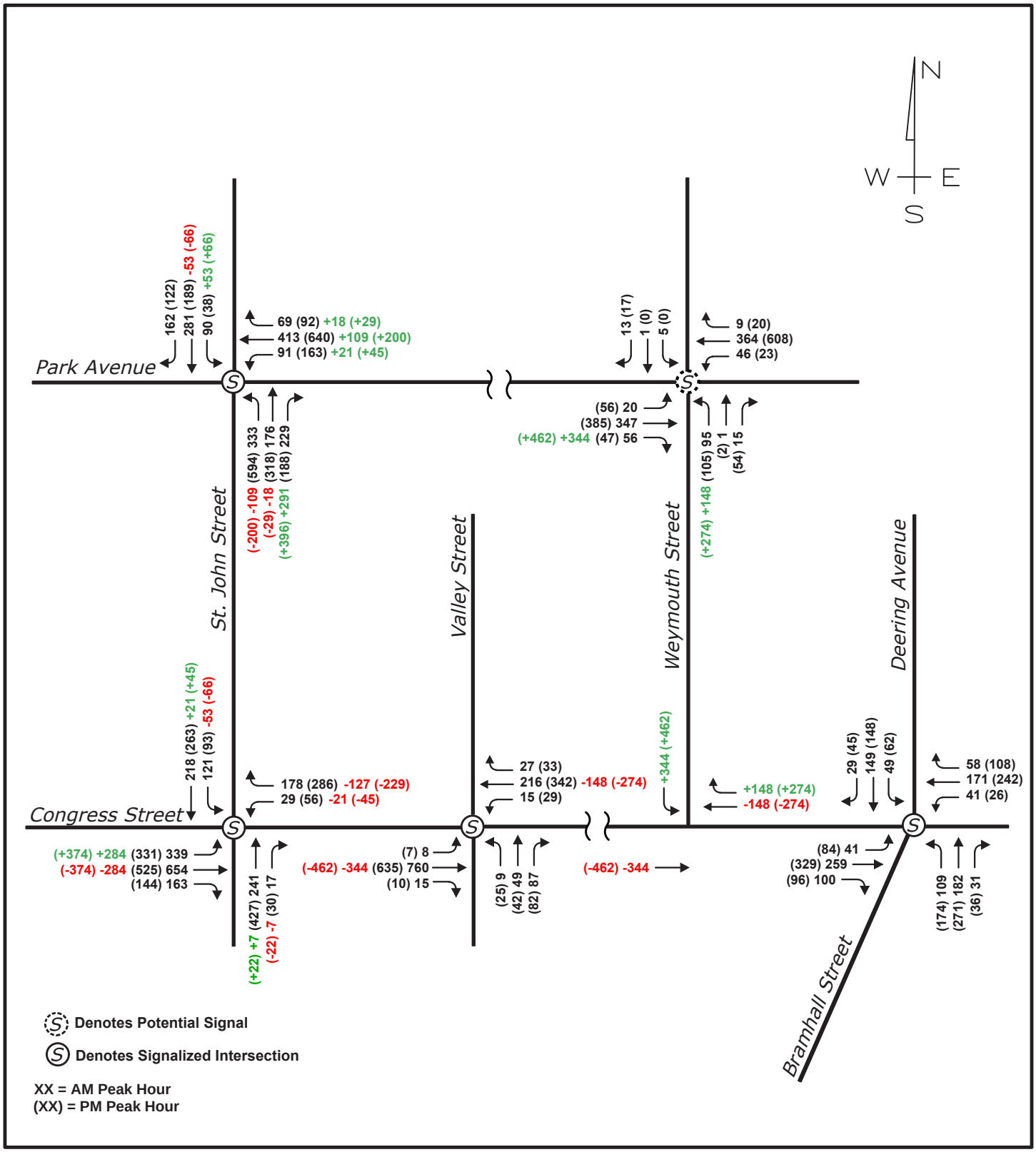


DESIGN OF TEMPORARY PEDESTRIAN CROSSWALKS

Maine Medical Center
Visitor Garage Overbuild Project

DETOUR VOLUMES

Figure No. 9



MAINE MEDICAL CENTER EXPANSION
PORTLAND, MAINE

Design: ET
Draft:
Checked: RED
Scale: NONE
Date: FEB 2018
File Name: 2866.01-TRAFF.dwg

GORRILL PALMER
Relationships. Responsiveness. Results.
www.gorrillpalmer.com
207.772.2515

Congress St Closure Implementation Schedule
Monday, March 12, 2018

Task Name	Start	Finish
Congress St Detour Implementation Schedule	**Mon 4/2/18**	**Thu 6/28/18**
Communication Team	**Mon 4/9/18**	**Fri 5/4/18**
Facebook Posts	Mon 4/9/18	Fri 5/4/18
Other Social Media Posts: "Earned Media"	Mon 4/23/18	Fri 5/4/18
Press Release on Closure	Mon 4/30/18	Fri 5/4/18
Community Update	Mon 4/30/18	Fri 5/4/18
Boosted Facebook Post	Mon 4/30/18	Fri 5/4/18
City 'Alert' to Parking Ban List	Mon 4/30/18	Fri 5/4/18
Joint City / MMC Press Conference	Mon 4/30/18	Fri 5/4/18
Construction Team	**Mon 4/2/18**	**Thu 6/28/18**
Weymouth St Road Patching	Mon 4/2/18	Fri 5/4/18
Install Temporary Bus Stop on Park Ave	Mon 4/2/18	Fri 5/4/18
Sign Location Spray Painted	Mon 4/23/18	Mon 4/23/18
Temporary Signal In Place	Mon 4/30/18	Mon 4/30/18
Temporary Signage In Place	Mon 4/30/18	Mon 4/30/18
Variable Message Boards In Place	Mon 4/30/18	Mon 4/30/18
Congress St Closed	Mon 5/7/18	Thu 6/28/18

DRAFT

Maine Medical Center
MaineHealth

March 21, 2018

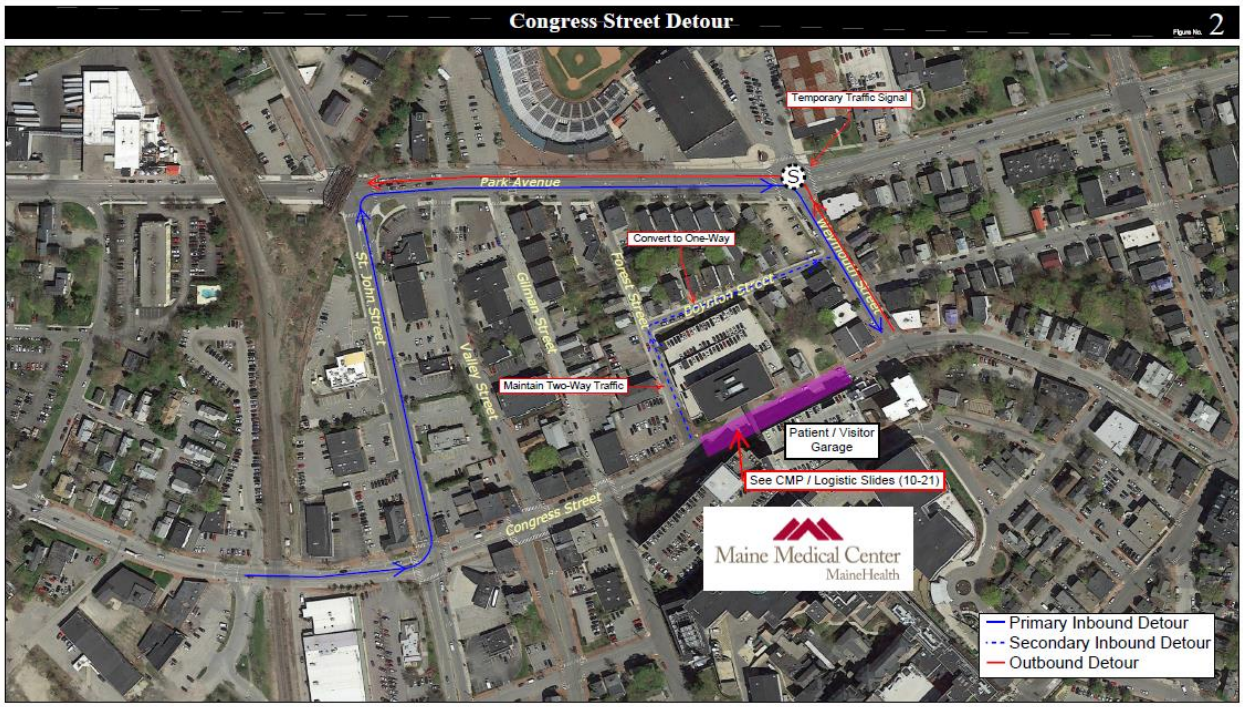
Jean Fraser, City Planner
City of Portland
Planning Department
389 Congress Street
Portland, ME, 04101

RE: Weymouth St Proposal

Dear Ms. Fraser,

The purpose of this memo is to propose a set of impact mitigation steps caused by the temporary closure of Congress St. – part of the first Site Plan Application which includes the East Tower and Visitor Garage overbuilds. The detour route illustrated in Figure 1 utilizes Weymouth St for two-way traffic for a period of eight weeks in May and June of 2018. This detour route is the result of several working sessions between MMC and their consultants including Randy Dunton of Gorrill Palmer and several departments of the City of Portland and their consultants including Tom Errico of TY Lin.

Figure 1 – Congress St Detour Route

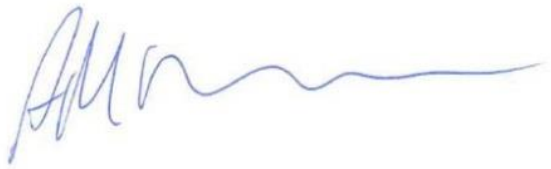


Maine Medical Center Expansion
PORTLAND, MAINE

Turner Construction consulted with Shaw Brothers Construction Inc., a local construction company that works closely with the City of Portland on several roadway repair projects, to determine the best course of action before the detour begins to ensure safe and reliable transportation during the 8 week period and to mitigate impacts of the detour once Congress St is re-opened. Shaw Brothers' recommendations are outlined in the attached letter.

Turner Construction is updating the Construction Management Plan to reflect these recommendations and requests approval from the City of Portland of this proposal.

Thank you,



Alexander M. Green
Director of Planning

Cc: Mark Harris, Senior Vice President of Planning, MaineHealth
Will Conway, Sebago Technics

SHAW BROTHERS CONSTRUCTION, INC.
P.O. Box 69 • 341 Mosher Rd. • Gorham, Me 04038
Tel: (207) 839-2552 • Fax: (207)839-6239
Website: www.shawbrothers.com

March 21, 2018

Turner Construction Company
Two Seaport Lane
2nd Floor
Boston, MA 02210

Attn: Gregg Scholler, V.P.

Re: Weymouth Street

Mr. Scholler:

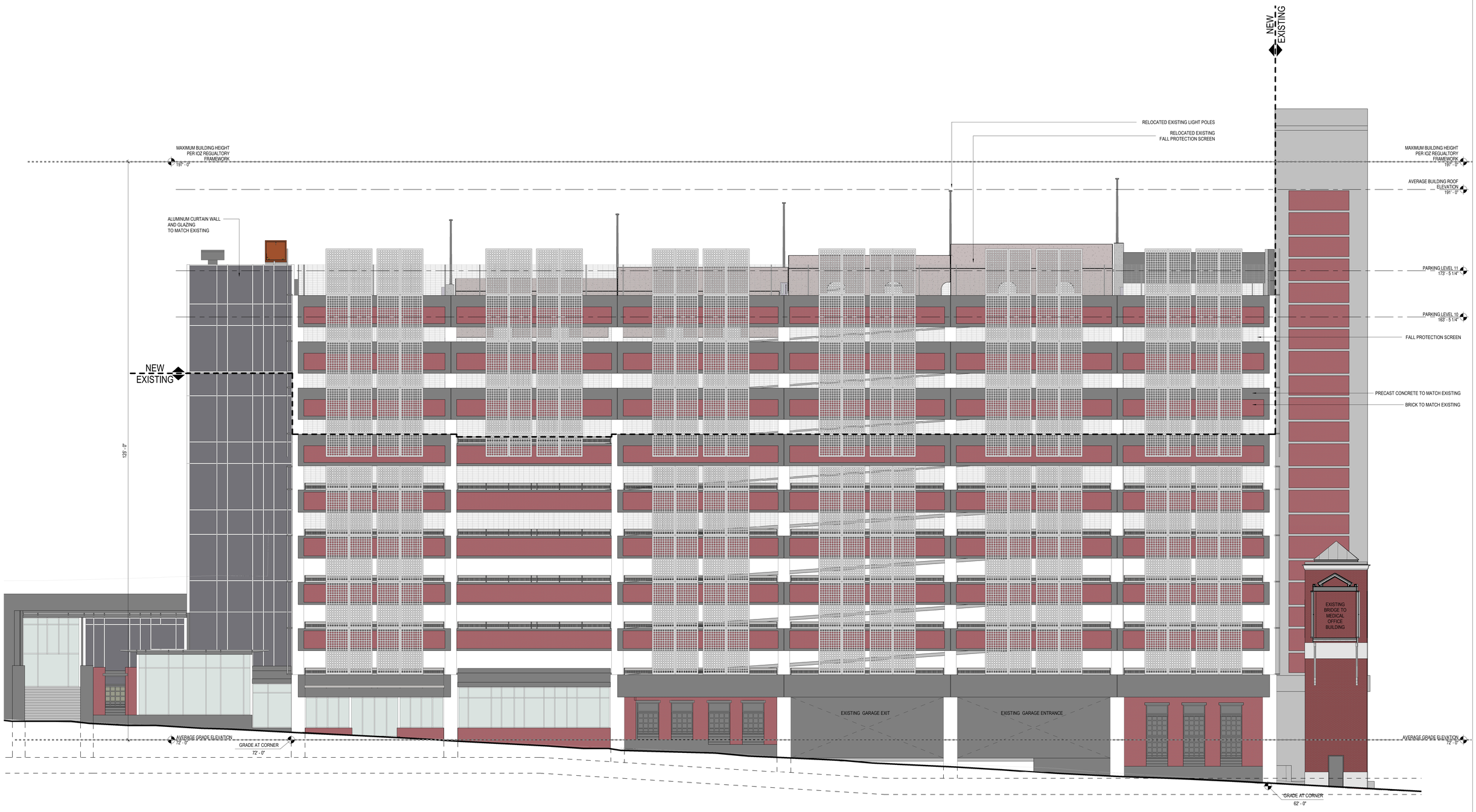
It is our understanding that Turner Construction will be closing Congress Street and detouring traffic onto Weymouth Street for a period of approximately 8 weeks. In addition to the detour traffic you will be routing construction traffic, including precast concrete delivery trailers, onto Weymouth Street during this period. With this understanding Shaw Brothers Construction has reviewed the condition of Weymouth Street from Park Avenue to Congress Street and we offer the following:

1. 2 large areas of deteriorated pavement (approx. 1,000 sf) should be removed and replaced with 4" of 19.0mm HMA.
2. 1 large area (approx 400 sf) at the Congress Street end should be shimmed with 9.5mm HMA.
3. Small potholes at various locations on the street should be filled in with 9.5mm HMA.
4. At the end of the detour period Weymouth Street should be reviewed for additional deterioration caused by the additional traffic loads. At this point in time we feel that a 2" mill and fill may be necessary.
5. During the shutdown period Shaw Brothers Construction would be available within 12 hours to patch/repair any areas that become deteriorated to the point that it is unsafe for the traveling public.

We trust that this provides you with the information that you require. If we can be of further assistance or if you have any additional questions, please free to contact us at your convenience.

Regards,
Shaw Brothers Construction
Robert Brady

Robert Brady, Estimator

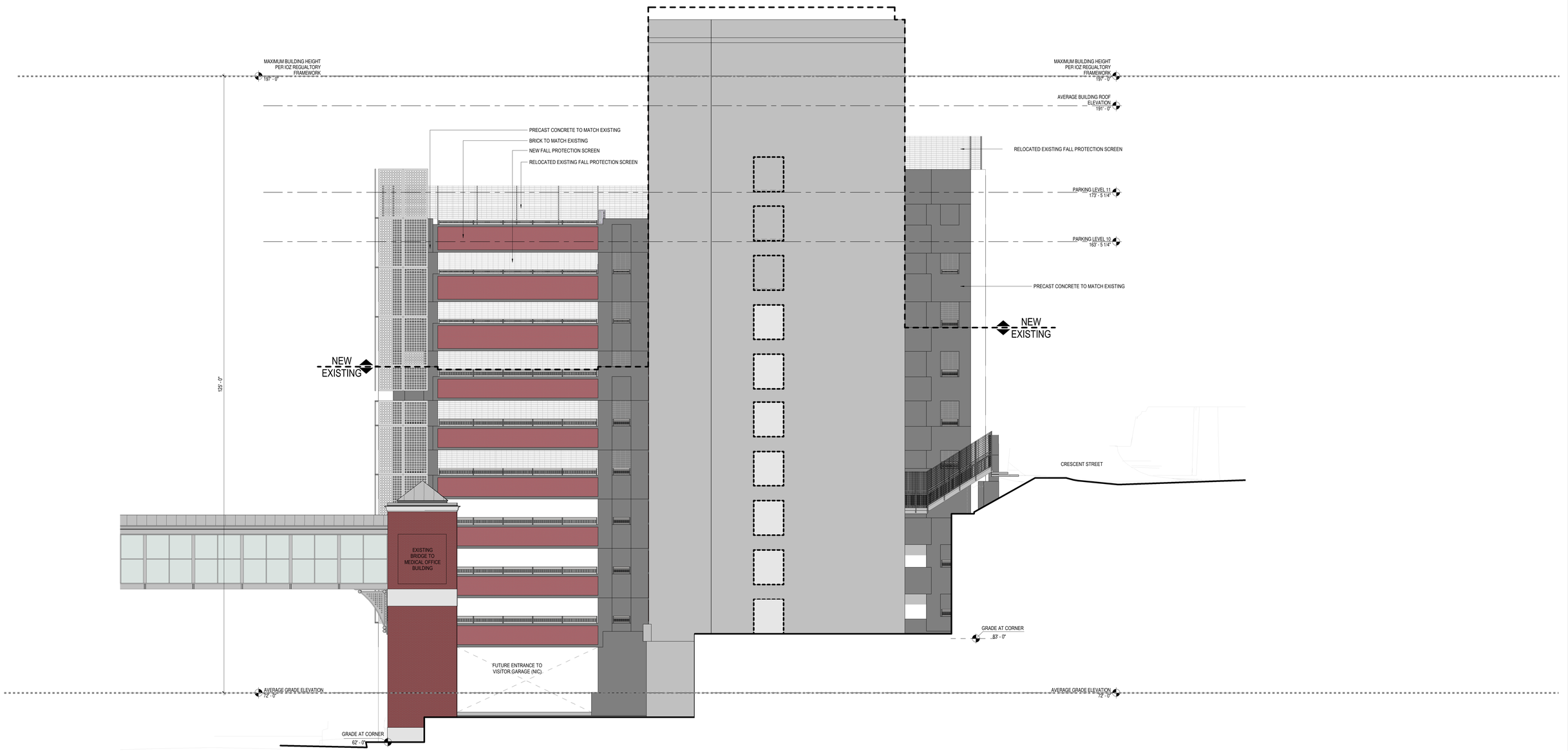


Visitor Garage Expansion

NORTH ELEVATION

PERKINS+WILL

2018.03.22 DOCUMENT SET

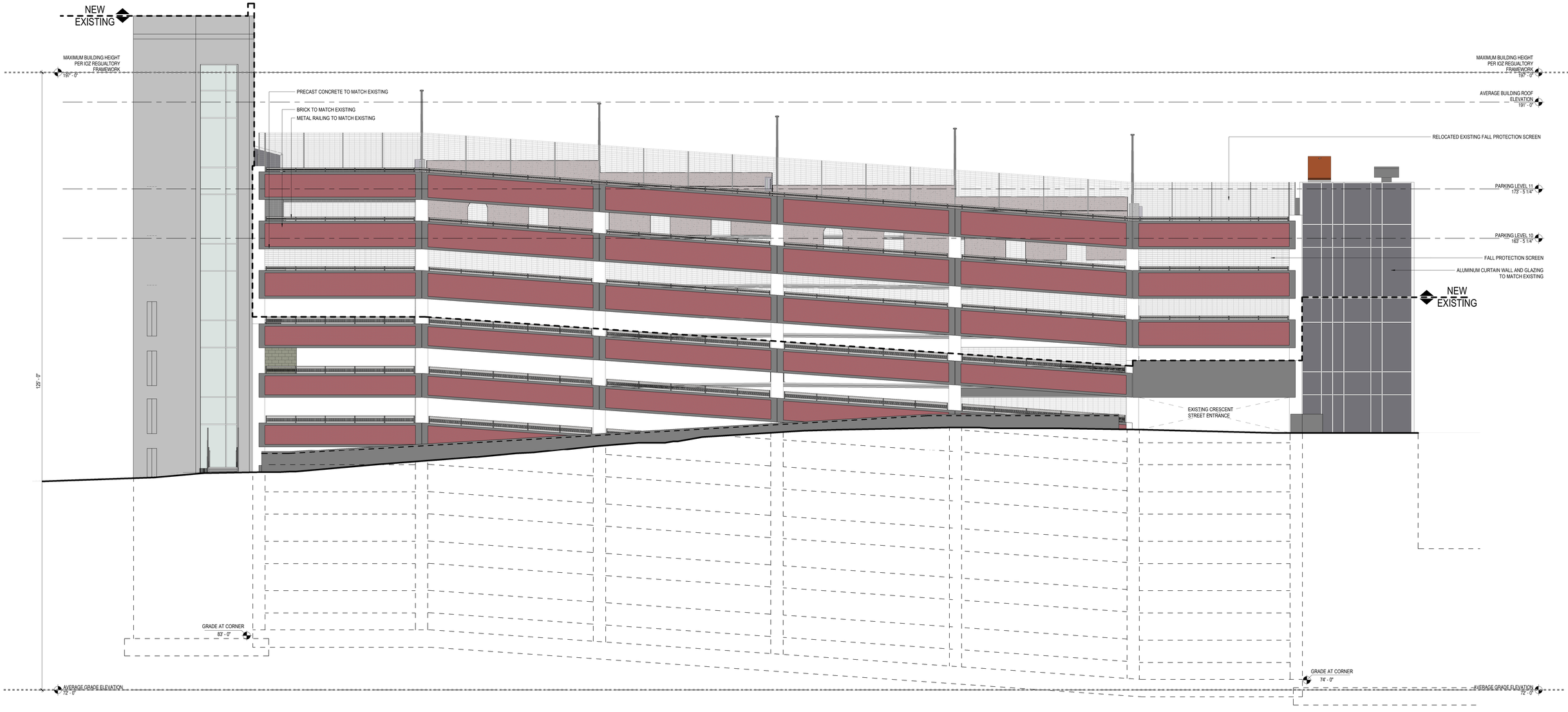


Visitor Garage Expansion

WEST ELEVATION

PERKINS+WILL

2018.03.22 DOCUMENT SET

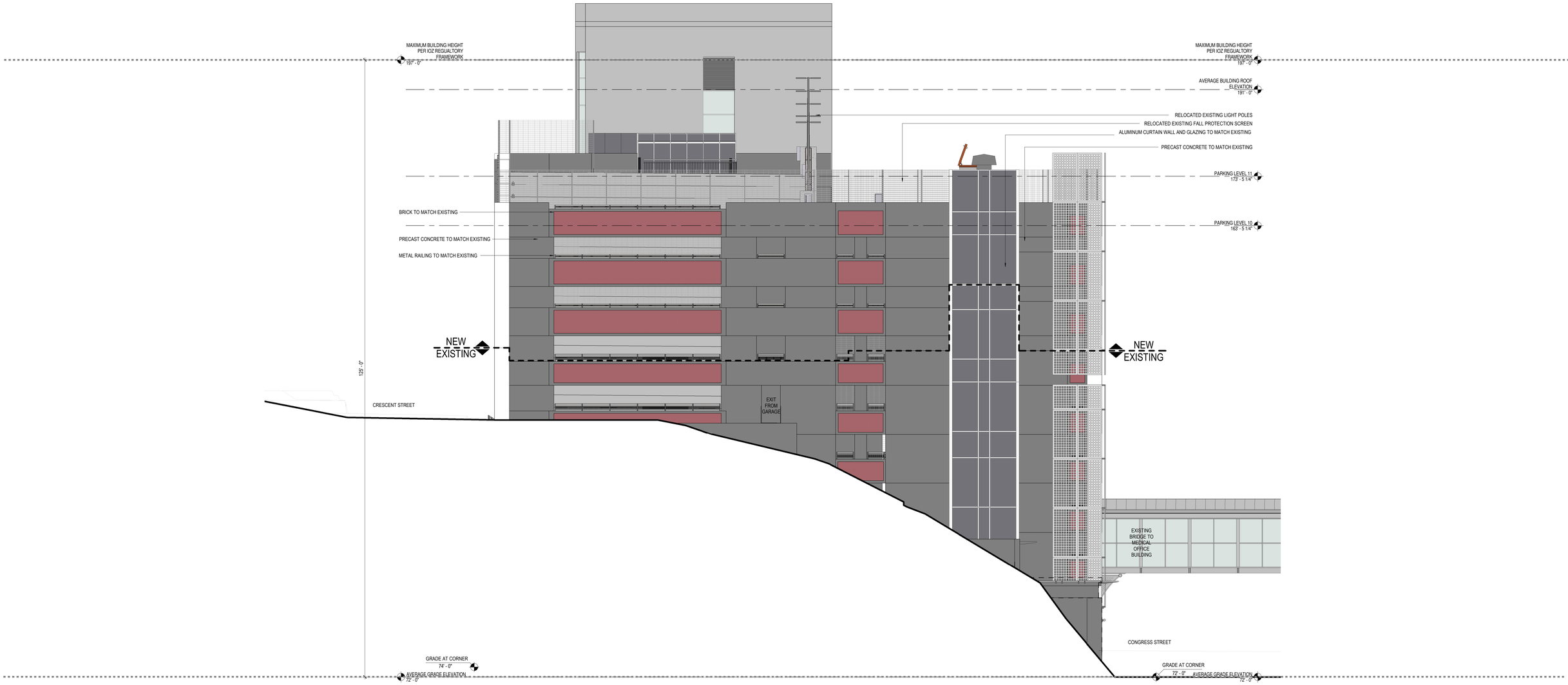


Visitor Garage Expansion

SOUTH ELEVATION

PERKINS+WILL

2018.03.22 DOCUMENT SET



Visitor Garage Expansion

EAST ELEVATION

PERKINS+WILL

2018.03.22 DOCUMENT SET


I-295
Portland, Maine
Google, Inc.
Street View - Aug 2017
©2017 Google
Payson St
Granite St
Exeter St
295
LIBBYTOWN
Google

Comment for March 27 MMC Expansion Meeting

Jenny MacKenzie <gabeat@msn.com> Mar 27, 2018 1:17 PM
Posted in group: **Planning Board**

To Planning Board Members,

I have concerns about the closing of Congress Street during Phase I expansion of MMC and have the following suggestions -

- Traffic be alerted by flashing signage on 295, in the vicinity of Exit 4 or 5 that an alternate route should be sought (suggest taking Exit 4 or Exit 6).
- Traffic coming off the Veteran's Bridge should be directed towards St. John Street or Fore River Parkway (concern about increased traffic on Valley). Another flashing sign would be helpful here.
- Traffic coming in-town via outer Congress and Exit 5 should be diverted to Park Street via St. John Street. I would like to see "Local Traffic Only" signs at the corner of Valley/Congress and Gilman/Congress to prevent excessive traffic from filtering down Forest and Boynton Streets.
- Increased monitoring of on-street parking violations during Sea Dogs games.
- Suspension of the weekly overnight parking restrictions in the surrounding streets (St. John, Valley, A, C, D, Gilman, Boynton, Weymouth, Forest, Park, etc.)

In addition, I would like an update from MMC on the plans for baseline inspections of the home owner's and business foundation walls in the surrounding neighborhoods. I am especially concerned about the construction of the employee garage on St. John, the new entrance on Congress and demolition of the old garage which could adversely impact properties.

Thank you.
Jenny MacKenzie
8 A Street

PLANNING BOARD REPORT
PORTLAND, MAINE

Parris Terraces, 60 Parris Street
Level III Subdivision and Conditional Use Review
2017-287
Horton LLC

Submitted to: Portland Planning Board Date: March 23, 2018 Public Hearing Date: March 27, 2018	Prepared by: Nell Donaldson, Planner CBLs: 33-A-13 Project #: 2017-287

I. INTRODUCTION

Horton LLC appears before the Planning Board for a public hearing associated with the site plan, subdivision, and inclusionary zoning conditional use review of a proposed 23-unit condominium project at 60 Parris Street in West Bayside. Notice of this hearing appeared in the *Portland Press Herald on* March 21 and 22, 2018. Notices were also sent to 106 property owners within 500 feet and to the interested citizens list.

It should be noted that the prior workshop materials to the Planning Board mistakenly labeled the address for the project as 56 Parris, the result of a GIS error. Planning staff have confirmed with the Assessor that 60 Parris is the correct address for the two parcels under consideration in this review.

Applicant: Jack Soley, Horton LLC
Consultants: Kaplan Thompson Architects, Ransom Consulting, Titcomb Associates

II. REQUIRED REVIEWS

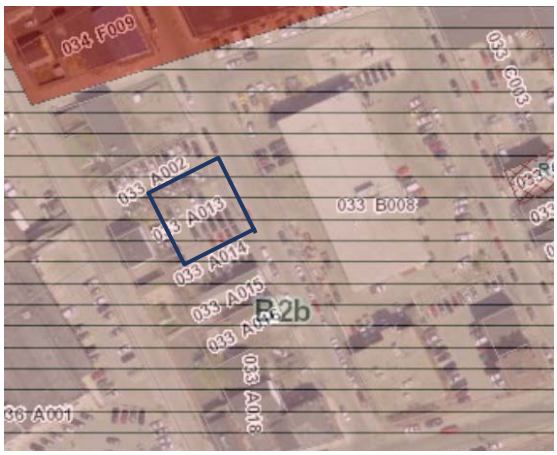
Waiver Requests	*Applicable Standards*
Driveway Separation – to allow a curb cut approximately 40' from the adjacent property's	Technical Manual, *Section 1.7.2.7.* Along arterial, collector, and local streets, minimum acceptable spacing shall be 100-150 feet, depending on speed limit.
Driveway Width – to allow a driveway less than 20' in width	Technical Manual, *Section 1.7.2.3.* Two-way driveways for multi-family developments with over 10 parking spaces shall be a minimum of 20 feet in width, with a preferred width of 24 feet.
Compact Parking Spaces – to allow compact parking spaces at a ratio of greater than 20%	Technical Manual, *Section 1.14.* In parking areas of over 10 parking spaces, no more than 20% of parking spaces shall be compact in size.

Review	*Applicable Statute*
Subdivision	*Article IV*
Site Plan	*Article V*
IZ Conditional Use	*Section 14-487*

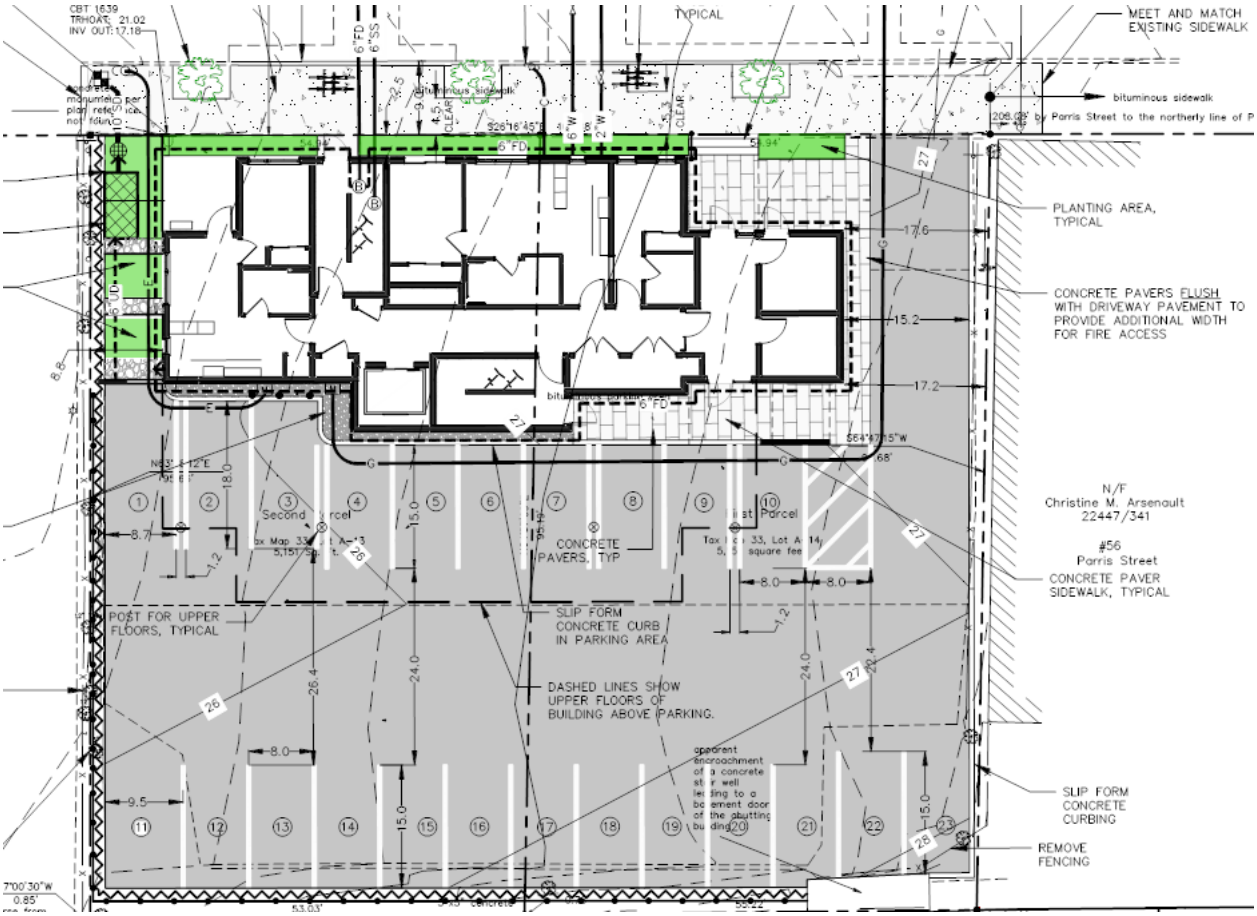
III. PROJECT DATA

Existing Zoning	B-2b
Existing Use	Surface Parking
Proposed Use	Multi-Family Residential
Proposed Development Program	23-Unit Condominium
Parcel Size	10,302 SF

	Existing	*Proposed*	*Net Change*
Building Footprint	0 SF	2,216 SF	2,216 SF
Building Floor Area	0 SF	14,132 SF	14,132 SF
Impervious Surface Area	9,103 SF	9,103 SF	0 SF
Parking Spaces	Approximately 32	23	-9
Bicycle Parking Spaces	0	4 exterior + 6 interior	10
Estimated Cost of Project	$1.98 million		







Figures 1, 2, and 3 (from top left): 60 Parris zoning context; 60 Parris site; final site plan

IV. CONTEXT

60 Parris Street is located on the west side of Parris Street between Portland Street and Kennebec Street in West Bayside. The property is one of several the city is in the process of selling as a part of the plan to relocate the Department of Public Works from Bayside to Canco Road. The site is zoned B-2b within the Bayside Height Overlay, and is currently used as a surface parking lot. Residential properties surround the site to the west and south, Fork Food Lab lies to the immediate north. The city's DPW garage facilities lie to the east across Parris Street; these properties are slated for future redevelopment.

V. PROPOSED DEVELOPMENT

The proposed development at 60 Parris Street, to be called Parris Terraces, is a four-story residential condominium project on the top portion of Parris Street between Portland and Kennebec Streets. The project includes 23 one-bedroom units, 20 of which are slated to be sold to households below 120% of AMI and two of which will be deed restricted per the city's affordable housing ordinance. The project also includes 23 parking spaces, a rain garden and stormwater treatment, and a new concrete sidewalk and street trees on Parris Street.

VI. PUBLIC COMMENT

In the final submittal, the applicant has provided notes from a neighborhood meeting held on March 1 *(Attachment C).* The notes indicate that attendees raised questions regarding material choices, the width of the drive aisle, short term rentals and ownership, exterior lighting, snow removal, and security. The Planning Division also received one public comment on the Parris Terraces application (PC-1). This comment generally focused on two aspects of the project – the design and the long-term affordability of the units.

VII. RIGHT, TITLE, & INTEREST

The application includes a purchase and sales agreement as evidence of right, title, and interest (*Attachment D*).

VIII. FINANCIAL & TECHNICAL CAPACITY

The estimated cost of the project is approximately $2 million. The applicant has provided a letter from Norway Savings Bank attesting to their financial capacity *(Attachment E)*.

IX. ZONING ANALYSIS

Staff has conducted a zoning analysis and found that the project complies with the dimensional requirements of the B-2b zone. It should be noted that the project is subject to the Bayside Height Overlay, which permits a height of 55' on the lot. The proposed building height, at 49' 9", complies with this standard.

X. SITE PLAN SUBMISSION REQUIREMENTS (Section 14-527), SUBDIVISION PLAT AND RECORDING PLAT REQUIREMENTS (Section 14-496), TECHNICAL AND DESIGN STANDARDS (Section 14-498), & REQUIRED IMPROVEMENTS (Section 14-499)

Per the city's land use ordinance, the applicant has submitted a draft subdivision plat. Revisions to this plat, including those necessary to address the stormwater maintenance agreement, parking ownership arrangements, deed restrictions under the inclusionary zoning ordinance, and references to condominium documents, will be required. Review of the final subdivision plat and condominium documents has been suggested as a condition of approval, as has review of the condominium documents.

The applicant has submitted a draft construction management plan in the final submittal *(Attachment Q)*. Lauren Swett, the city's consulting civil engineer, has reviewed the plan and writes,

> *A construction management plan should be provided in the format of the City of Portland's current template, available for download on the City's website. The plan should include specific details on pedestrian and traffic management during sidewalk construction and utility*

> *installation when detours may be necessary and during building construction when work is in close proximity to the sidewalk*
>
> .

A final construction management plan has been suggested as a condition of approval.

Ms. Swett has also suggested a minor edit to the civil set, writing,

> *The existing conditions layers remain turned on for many of the plans, as is typical in may situations. We suggest that the "bituminous sidewalk" labels for the existing condition be turned off, in particular on sheets like the subdivision plat and the utility plan where the new concrete sidewalk is not specifically called out.*

This edit has also been suggested within the conditions of approval. Other comments related to plans and required improvements are discussed under site plan review below.

XI. SUBDIVISION REVIEW (14-497(a). Review Criteria)

The proposed development has been reviewed by staff for conformance with the relevant review standards of the City of Portland's subdivision ordinance. Staff comments are below.

1. Water, Air Pollution

The site is currently occupied by a surface parking lot and is almost entirely impervious. The applicant proposed to increase the impervious surface area by just under 300 SF. The majority of the post-development impervious surface would be comprised of roof, which is expected to improve the quality of the water leaving the site.

It should be noted that an environmental assessment has been performed at the site, and that assessment identified contaminants within the soil *(Attachments H & I).* No VRAP is required.

2 & 3. Adequacy of Water Supply

The applicant has provided evidence of capacity from the Portland Water District *(Attachment G)*.

4. Soil Erosion

No unreasonable soil erosion or reduction in the capacity of the land to hold water is anticipated.

5. Impacts on Existing or Proposed Highways and Public Roads

The city's consulting traffic engineer has reviewed the project and has noted that he does not anticipate significant traffic generation from the project, nor significant impacts to adjacent streets *(Attachment 1)*.

6. Sanitary Sewer/Stormwater Disposal

All sewer connections are proposed to the combined system in Parris Street. The applicant has submitted a wastewater capacity application to the Department of Public Services *(Attachment F)*. Verification of capacity has been suggested as a condition of approval.

As proposed, 94% of the site's runoff would flow to a rain garden system at the site's northeast corner, where a Focal Point biofiltration system is proposed, and from there to a storm drain connection to the combined system in Parris Street. Foundation drains would outlet directly to Parris Street. A small area of the site's driveway would sheet flow to Parris Street. The city's consulting civil engineer, Lauren Swett, has reviewed the stormwater management plan. Her comments are discussed under site plan review below.

7. Solid Waste
The applicant has proposed a trash and recycling room at the southern end of the building proximate to the driveway. In the final submittal, the applicant has provided a waste management plan that indicates that a private contractor will handle waste removal *(Attachment O).*

8. Scenic Beauty
This proposal is not deemed to have an adverse impact on the scenic beauty of the area.

9. Comprehensive Plan
The Parris Terraces project addresses several of Portland's Plan's housing goals, including increasing the overall housing supply available to residents of all financial capabilities and encouraging housing density proximate to nodes and services.

10. Financial and Technical Capacity
The applicant has submitted a letter from Norway Savings Bank indicating the intent to consider project financing (*Attachment E*).

11. Wetland/Water Body Impacts
There are no anticipated impacts to wetlands.

12. Groundwater Impacts
There are no anticipated impacts to groundwater supplies.

13. Flood-Prone Area
The site does not lie within a flood zone.

XII. SITE PLAN REVIEW *(Section 14-526)*
The proposed development has been reviewed by staff for conformance with the relevant review standards of the City of Portland's site plan ordinance. Staff comments are below.

1. Transportation Standards
a. Impact on Surrounding Street Systems

Tom Errico, the city's consulting engineer, has completed a preliminary review and has not identified any potential detrimental impact to surrounding street systems. He writes,

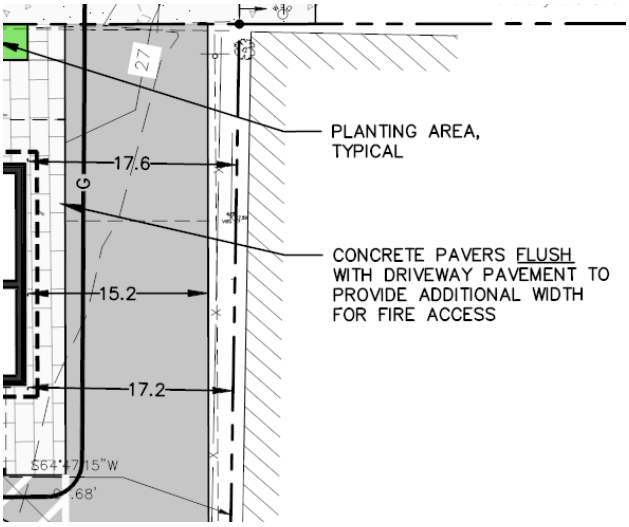


Figure 4: Proposed driveway

The project is not expected to generate a significant amount of traffic and thus is not expected to significantly impact traffic mobility and safety in the project area.

b. Access and Circulation

In response to staff comments, the applicant has increased the driveway width at the southern end of the site to 15.2'. The northerly edge of this driveway is proposed with flush concrete pavers as a means of differentiating a pedestrian way along the edge of the building.

As a driveway with two-way access of less than 20 feet in width, a waiver is required. Fire has reviewed the plan and indicated that they are satisfied with the driveway layout *(Attachment 4).*

Mr. Errico has also reviewed the vehicular access and writes,

> *The plans have been revised to provide a 15.2 foot wide driveway entrance that will function as a shared driveway (pedestrian facility will be flush). As noted previously, the project site would be expected to generate very low traffic volumes and during peak time periods traffic will primarily either be entering the site (returning home) or exiting the site (leaving home). During the morning peak hour, approximately 8 vehicles would be expected to exit the site and 2 vehicles will enter the site. This corresponds to one vehicle every 6 minutes. During the afternoon peak hour, about 8 vehicles would be expected to enter the site and 4 vehicles exit. This corresponds to one vehicle every 5 minutes. Given vehicle movement infrequency, the likelihood that trip levels will be less given the urban location, and low traffic volumes on Parris Street, I support a waiver from the minimum driveway width standard of 20 feet.*

A driveway separation is also required, as the driveway is located within 100 feet of the nearest driveway to the south. Regarding this waiver, Mr. Errico writes,

> *The proposed driveway does not meet City standards as it relates to driveway separation. Given that the non-conformity is an existing condition, the abutting driveway is to a single vehicle driveway, and traffic volumes are relatively low on Parris Street, I support a waiver from the City's Technical standards.*

A new 9 foot concrete sidewalk is proposed along Parris Street. In the final plans, the applicant has shown 4.5 feet of clearance around the street trees proposed in the sidewalk, and has added limits of sidewalk construction. The sidewalk material is shown on the site plan as reinforced concrete, which conforms to the city's material policy for Parris Street. Documentation regarding accessible routes to the main entrance and from the parking area has also been added to the plans.

c. *Public Transit Access*

There is no public transit line on Parris Street. As such, no provisions for public transit access are required.

d. *Parking*

The final plans show 23 parking spaces at the rear of the site to serve the building's 23 units. Per Division 20 of the city's land use code, parking is required on the site at a ratio of 1/unit, although the code includes provisions to allow lesser parking supply, including the option to substitute shared use vehicles and to submit a parking analysis documenting that unique conditions exist that might result in lesser parking demand.

The final plans show that 19 of these spaces are designed at 8'x15', three are designed at 8+'x18', and one is designed at 9.5'x15'. Thus, none of the parking spaces technically comply with standard space dimensions as outlined in the *Technical Manual.* The applicant has provided turning templates in the final submittal as evidence of the functionality of the parking design *(Attachment K).* On the parking layout, Mr. Errico writes,

> *The parking supply for the site includes all compact sized parking spaces and thus exceeds the City standard for percent of compact parking spaces. I support a waiver for exceeding the number of compact parking spaces given constrained site conditions and the results of the vehicle circulation analysis using a full size passenger car. It would also be my expectation that vehicles may be smaller in size given the target tenant type*.

> *The applicant has provided detailed vehicle turning templates for the parking spaces that will be the most challenging from an access/egress perspective. The analysis was based on use of a full-size passenger car. While the maneuvering will not be easy given parking lot layout and building column constraints, the analysis indicates vehicles can enter and exit parking spaces (with multiple turns in some cases). It is my understanding that the parking spaces will be sold separately and thus some spaces may be leased to nearby off-site land uses. It is my recommendation that parking conditions be monitored 6 months after occupancy to assess parking conditions and if safety or access/egress problems are identified, the Applicant would be responsible for developing a Parking Management Plan for review and approval by the Planning Authority.*

Staff has suggested condition of approval requiring post-construction monitoring.

Four exterior bicycle parking spaces are shown in the sidewalk in front of the building. An interior bike room with room for six additional spaces is also shown on the architectural plans.

e. *Transportation Demand Management*
The project is not required to submit a Transportation Demand Management Plan.

2. Environmental Quality Standards

a. *Preservation of Significant Natural Features*
There are no known significant natural features on the site.

b. *Landscaping and Landscape Preservation*
The applicant has submitted a landscape plan with the final submittal *(Plan 10)*. The plan includes ornamental grasses at the sidewalk, three gingko trees with ferns in tree wells along the street, a rain garden with a mix of red twig dogwood, witch hazel trees, perennials, and grasses; and a living fence with chocolate vines around the northern and western property lines. Jeff Tarling, the City Arborist, has reviewed the plan and writes,

> *The proposed building footprint takes up a large percentage of the project site leaving minimal space for landscape treatment. Proposed tree & landscape features include three Sentry (upright) Ginkgo trees with Hay Scented Fern planted in the tree sidewalk, ornamental grasses planted near the bullding foundation along with Red-twig Dogwood. These are durable plants and should fare well in the landscape. Review comments, conditions might include: switching the proposed Ginkgo tree type to an ornamental scale tree type that can survive under the overhead utility lines to reduce future topping. Recommendations include: Adirondack Crabapple, Honeylocust, Accolade Cherry.*

A condition of approval has been suggested to address Mr. Tarling's comment regarding street tree species.

Per the site plan standards, 23 street trees are technically required. However, due to site constraints, only three have been proposed. A contribution to the tree fund for the remainder of the required street trees has been suggested as a condition of approval.

c. *Water Quality/Storm Water Management/Erosion Control*
The site is currently mostly impervious. The impervious area is proposed to increase by 257 SF as a product of the redevelopment plans. As noted above, the applicant has proposed to install a rain garden with a

storage and Focal Point biofiltration system as a means of controlling and treating stormwater leaving the site. This system is proposed to outlet to the combined system in Parris Street. The applicant has provided a stormwater management plan in the final submittal. Lauren Swett, the city's consulting civil engineer, has reviewed the plans and writes,

> *Basic Standard: Plans, notes, and details should be provided to address erosion and sediment control requirements, inspection and maintenance requirements, and good housekeeping practices in accordance with Appendix A, B, & C of MaineDEP Chapter 500.*
>
> - *In the Stormwater Management Narrative, the Applicant indicates erosion control measures are described on Sheet C-1 with details on C-4. However, no erosion control measures are specifically identified on the plan.*
> - *A construction erosion and sedimentation control plan that addresses erosion and sediment control requirements, inspection and maintenance requirements, and good housekeeping practices should be included in the plan set.*
>
> *General Standard: The project will result in a de minimis increase in impervious area of approximately 300 square feet. As such, the project is not required to include any specific stormwater management features for stormwater quality control.*
>
> - *The Applicant is proposing to provide treatment using a FocalPoint system. Sizing calculations should be provided for this system and sediment loading calculations should be provided for the sediment forebays.*
> - *The Focal Point and R-Tank stormwater system detail includes some elevations (R-Tank top and bottom), but it appears that these are not consistent with on-site grades.*
> - *The peak elevation of the 24-hr 1-inch storm is 21.51 feet, as indicated in the HydroCAD model. This elevation is approximately 1 foot above the surface of the FocalPoint system and 0.5 feet above the beehive grate inlet. The grading in this area is unclear, but it appears that this may be at or above the sidewalk and road grade as well. The Applicant should evaluate the stormwater overflow flow path and it's potential impact on abutters.*
>
> *Flooding Standard: The project will result in a de minimis increase in impervious area of approximately 300 square feet . As such, the project is not required to include any specific stormwater management features to control the rate or quantity of stormwater runoff from the site.*
>
> *A retaining wall is proposed around a portion of the site and a geotechnical evaluation has been conducted. A note on the Grading, Drainage and Stormwater Plan (Sheet C-2) references structural and landscaping details for the proposed retaining wall, but it appears that no structural details have been submitted. Please provide structural details for the proposed retaining wall.*

These comments have been suggested within the conditions of approval.

3. Public Infrastructure and Community Safety Standards

a. Consistency with Related Master Plans

The project is generally deemed consistent with related master plans.

b. *Public Safety and Fire Prevention*
Robert Thompson, of the city's Fire Prevention Bureau, has reviewed the plans. He has indicated that he is satisfied with the site plan from a Fire Prevention perspective *(Attachment 4)*.

c. *Availability and Capacity of Public Utilities*
The applicant has proposed all utilities from Parris Street, including underground electric from a pole on the west side of Parris Street just north of the site, fire and domestic water, and gas. As noted above, evidence of sewer capacity has been suggested as a condition of approval.

In her review of the utility plan, Ms. Swett notes,

> *Note that the City of Portland does not allow 9.5 mm HMA as surface pavement within the ROW. The Typical Trench Paving Detail should be updated to provide 12.5 mm HMA surface pavement for any paving in the ROW.*

This has also been suggested within the conditions of approval.

4. Site Design Standards

a. *Massing, Ventilation, and Wind Impact*
The bulk, location, or height of the proposed buildings are not likely to result in health or safety problems from a reduction in ventilation to abutting structures.

b. *Shadows*
The project is not anticipated to result in shadows on publicly accessible open space.

c. *Snow and Ice Loading*
The project is not anticipated to result in snow or ice accumulation on public ways or adjacent properties.

d. *View Corridors*
The project does not abut a protected view corridor.

e. *Historic Resources*
The site does not lie adjacent to or within 100 feet of a historic landmark, district, or landscape.

f. *Exterior Lighting*
In the final submittal, the applicant has provided a photometric plan that shows under canopy and wall pack exterior light fixtures at the building's rear. This plan conforms with the *Technical Manual* standards for exterior lighting.

Parris Street is identified as part of the West Bayside lighting district in the city's *Technical Manual,* which specifies the Bayside small scale light fixture. The final plans, however, show the retention of one cobrahead street light near the center of the site frontage and no decorative fixtures. Though revisions to the street lighting specifications in the *Technical Manual* are currently being considered, Planning staff who are involved the revisions have indicated that the geography of the West Bayside lighting district will likely stay the same. However, there may be provisions for streets with existing LED cobraheads. Given the uncertainty of the future standard for Parris Street, final street lighting design has been suggested as a condition of approval.

g. *Noise and Vibration*
In the final submittal, the applicant has identified the location of mechanicals at the center of the roof.

h. Signage and Wayfinding
No new signage or wayfinding is proposed.

i. Zoning-Related Design Standards
The final elevations continue to show a contemporary four-story building, located at the street with a clear building entry and use of balconies and windows to provide visual interest and relief. The final architectural drawings show fiber cement clapboard with a vertical cedar siding at the ground floor and balconies. Per the Planning Board's request, the applicant has provided a rendering *(Figure 5)* and material swatch showing how the cedar is likely to age over time.

The project is subject to the B-2b and multi-family standards of the city's *Design Manual.* It should be noted that, due to the timing of the submission, Caitlin Cameron, the city's Urban Designer, has not reviewed the final drawings. In her most recent design review comments, she highlighted the following concerns,

> *B-2b Commercial Business Zone Design Standards*
> *Standard (1) c. Building Entrances – Main building entrance faces and is directly accessible from the street.* ***For legibility of primary entrance, staff prefer the trash room door be relocated to the side of the building to not compete with residential entrance.*** *To respond to the concerns about emphasis of the main entry, the design now includes a material and color change – staff support this direction.* ***However, how will the material transition from the vertical siding? Is more than one color really needed to achieve the effect? Could any more be done to add emphasis to this entry – canopy or similar gesture?***
> *Standard (1) g. Building Materials – Primary material was revised to fiber cement clapboard with vertical cedar board. Staff support the scale, orientation, and type of materials as proposed, however,* ***we question whether natural cedar finish on the ground floor is contextually appropriate. Though natural cedar has been approved for accent materials like fences and railings, as a prominent siding material, it is more rural in character. Planning Board also asked to better understand how that material will age/patina.***
>
> *(i) Two-Family, . . . Multiple-Family . . . :*
> *Standard (1) . Exterior Design – Context currently does not include multi-family buildings of this scale. The project successfully incorporates industrial and residential references. This context is appropriate for more contemporary design and more flexibility of forms, scale, and patterns. The project includes interesting forms and massing as well as articulation elements such as balconies to provide a visually interesting, contemporary design. Staff observe that though building type, scale, and placement vary throughout the neighborhood, there is a consistent use of material, trim, roof overhangs, and other articulation elements to add texture, fine-grain*





Figures 5 & 6: Rendering from the northeast; east elevation



Figure 7: Material swatches

scale, and visual interest to the buildings, even if in a vernacular way. This design was revised to use clapboard with a varying reveal on the upper floors, cedar balconies, and vertical board with natural cedar. Staff finds these changes to be responsive to review comment and gives some articulation and texture to the building in a way that is contextual. ***There remains some question as to whether natural cedar is a contextually appropriate siding material, especially on the ground floor.***

The applicant's final plans attempt to address these comments, and the applicant has submitted a design response narrative in an effort to explain the design choices expressed in the final drawings *(Attachment M).* In this narrative, the applicant notes that they have attempted to de-emphasize the trash room door by coordinating its color with the surrounding siding; emphasize the entrance with lighting, decorative signage, and color panels; provide an accurate depiction of the cedar siding as it ages; and identify other projects in which cedar has been used, including 75 York Street. A final design review based on the most current elevations and rendering has been suggested as a condition of approval.

XIII. WORKFORCE HOUSING CONDITIONAL USE (Section 14-487)

The Parris Terraces project is subject to the city's inclusionary zoning ordinance, which requires that residential developments of ten or more units be reviewed as conditional uses subject to 14-487, and that these projects provide on-site workforce housing units or make an in-lieu payment to the City's Housing Trust Fund. As proposed, 20 of the project's 23 one-bedroom units would be affordable at 120% of AMI. Per the inclusionary zoning ordinance, two of these will be required to include deed restrictions. Victoria Volent, the city's Housing Program Manager, has reviewed the conditional use application and writes,

> *The development located at 60 Parris Street proposes the creation of 23 dwelling units of owner occupied housing consisting of twenty-three (23) one-bedroom units. As dwelling units for sale, the designated Workforce Units will be restricted to households earning up to 120% of Area Median Income (AMI). Based on the requirements outlined in Section 14-487, the development is required to provide a minimum of two (2) workforce units consisting of one (1) bedroom in each unit. The Applicant has elected to provide two (2) workforce units, on-site, consisting of two (2) one-bedroom units to satisfy the ordinance's minimum requirements. As such, the project has met the minimum requirements set forth in Section 14-487.*
>
> *Staff recommends the Board Approve this Conditional Use provided the Applicant and the City enter into an Affordable Housing Agreement (AHA) before a Building Permit may be issued.*
>
> *The Affordable Housing Agreement will outline the details of the affordability restrictions placed on the workforce units and will be filed as covenant to the 60 Parris Street property's deed with the Cumberland County Registry of Deeds before a Certificate of Occupancy may be issued.*

XIV. STAFF RECOMMENDATION

Subject to the proposed motions and conditions of approval listed below, Planning Division staff recommends that the Planning Board approve the proposed Parris Terraces at 60 Parris Street.

XV. PROPOSED MOTIONS

1. *Conditional Use*

On the basis of the application, plans, reports and other information submitted by the applicant; recommendations contained in the Planning Board report for the public hearing on March 27, 2018 for application 2017-287 relevant to Portland's affordable housing ordinance, conditional use standards, and other regulations; and the testimony presented at the Planning Board hearing, the Planning Board finds the proposed conditional use for workforce housing [**does** /**does not**] meet the standards of Section 14-484 with the following conditions:

1. The Applicant and the city shall enter into an Affordable Housing Agreement (AHA) which outlines the details of the affordability restrictions placed on the workforce units prior to the issuance of a building permit; and

2. The applicant shall file the Affordable Housing Agreement as covenant to the property's deed with the Cumberland County Registry of Deeds prior to the issuance of a Certificate of Occupancy.

3. Waivers

On the basis of the application, plans, reports and other information submitted by the applicant; findings and recommendations contained in the Planning Board report for the public hearing on March 27, 2018 for application 2017-287 relevant to Portland's technical and design standards and other regulations; and the testimony presented at the Planning Board hearing:

1. The Planning Board [**finds/does not find**], based upon the consulting transportation engineer's review *(Attachment 1),* that extraordinary conditions exist or undue hardship may result from strict compliance with the Technical *Manual* standard *(Section 1.7.2.7)* which requires that along arterial, collector and local streets, minimum acceptable spacing between double or multiple driveways for driveways on adjacent lots or on the same parcel shall meet the criteria of 100 feet for 25 mph. The Planning Board [**waives/does not waive**] the *Technical Manual* standard *(Section 1.7.2.7)* to allow a separation of approximately 40 feet between the new driveway and the existing driveway on the southerly side of the parcel; and

2. The Planning Board [**finds/does not find**], based upon the consulting transportation engineer's review *(Attachment 1),* that extraordinary conditions exist or undue hardship may result from strict compliance with the *Technical Manual* standard *(Section 1.7.2.3)* which establishes a minimum driveway width of 20 feet for sites with two-way access, that substantial justice and the public interest are secured with the variation in this standard, and that the variation is consistent with the intent of the ordinance. The Planning Board [**waives/does not waive**] the *Technical Manual* standard *(Section 1.7.2.3)* to allow a 15.2 foot driveway on the site; and

3. The Planning Board [**finds/does not find**], based upon the consulting transportation engineer's review *(Attachment 1),* that extraordinary conditions exist or undue hardship may result from strict compliance with the *Technical Manual* standard (*Section 1.14 and Figures I-27 to I-29)* limiting compact spaces to 20% of total parking supply, that substantial justice and the public interest are secured with the variation in this standard, and that the variation is consistent with

the intent of the ordinance. The planning board [waives/does not waive] the Technical Manual standard (*Section 1.14 and Figures I-27 to I-29)* to allow 100% compact spaces.

4. *Subdivision*

On the basis of the application, plans, reports and other information submitted by the applicant; findings and recommendations contained in the Planning Board report for the public hearing on March 27, 2018 for application 2017-287 relevant to the subdivision regulations; and the testimony presented at the Planning Board hearing, the Planning Board finds that the plan [is/is not] in conformance with the subdivision standards of the land use code, subject to the following conditions of approval, which must be met prior to the signing of the plat:

1. The applicant shall finalize the subdivision plat for review and approval by Corporation Counsel, the Department of Public Services, and the Planning Authority; and

2. Prior to Certificate of Occupancy, the applicant shall provide condominium association documents for review by Corporation Counsel and the Planning Authority.

5. Development Review

On the basis of the application, plans, reports and other information submitted by the applicant; findings and recommendations contained in the Planning Board Report for the public hearing on March 27, 2018 for application 2017-287 relevant to the site plan regulations; and the testimony presented at the Planning Board hearing, the Planning Board finds that the plan [is/is not] in conformance with the site plan standards of the land use code, subject to the following conditions of approval that must be met prior to the issuance of a building permit, unless otherwise stated:

1. The applicant shall provide a final construction management plan for review and approval by the Department of Public Works; and

2. Within 6 months of certificate of occupancy, the applicant shall provide a parking assessment that documents any safety or access/egress issues on the site for review and approval by the Planning Authority and the Department of Public Works. If such issues are identified, the applicant shall develop a Parking Management Plan for review and approval by the Planning Authority and the Department of Works;

3. The applicant shall revise the street tree species as shown in the landscape plan for review and approval by the City Arborist;

4. The applicant shall revise the stormwater submittal to:
    a. Provide final plans, notes, and details that address erosion and sediment control requirements, inspection and maintenance requirements, and good housekeeping practices in accordance with the final review provided by the city's consulting civil engineer *(Attachment 3)*, and
    b. Include details for the Focal Point and R-Tank system to address the comments in accordance with the final review provided by the city's consulting civil engineer *(Attachment 3)*

    for review and approval by the Department of Public Works; and

5. The applicant shall revise the site plan set to:
    a. Eliminate 'bituminous sidewalk' labels in existing conditions layers;
    b. Provide structural details for the proposed retaining wall; and

c. Revise the trench paving detail to show 12.5 mm HMA surface pavement for any paving in the right-of-way

for review and approval by the Department of Public Works; and

6. The applicant shall provide evidence of sewer capacity for review and approval by the Planning Authority; and

7. Prior to installation of any street lights, the applicant shall provide lighting plan which includes street lights in conformance with the city's *Technical Manual* for review and approval by the Planning Authority; and

8. The applicant shall make a contribution for 20 street trees to the city's Tree Fund for review and approval by the Planning Authority; and

9. The applicant shall provide final elevations, renderings, and details as required per the B-2b and Multi-Family design reviews for review and approval by the Planning Authority.

XV. ATTACHMENTS

PLANNING BOARD REPORT ATTACHMENTS

1. Traffic Engineer review (memo from Thomas Errico, 3/23/18)
2. City Arborist review (memo from Jeff Tarling, 3/22/18)
3. Civil Engineer review (memo from Lauren Swett, 3/23/18)
4. Fire Prevention Bureau review (memo from Mike Thompson, 3/14/18)
5. Urban Designer review (memo from Caitlin Cameron, 3/16/18)
6. Housing Program Manager review (memo from Victoria Volent, 3/21/18)

APPLICANT'S SUBMITTALS

A. Level III Site Plan Application
B. Project Summary
C. Neighborhood Meeting Minutes
D. Evidence of Right, Title, and Interest
E. Financial Capacity Letter
F. Wastewater Capacity Application
G. Water Capacity Letter
H. Geotechnical Report
I. Phase II ESA Report
J. Site Lighting
K. Parking Memo
L. Stormwater Management Narrative
M. Design Review Memo
N. Sheet Pile Retaining Wall Profile
O. Solid Waste Removal Plan
P. Snow Removal Plan
Q. Construction Management Plan

PLANS

Plan 1 Cover Sheet
Plan 2 Boundary Survey
Plan 3 Subdivision Plat
Plan 4 C-1 Site Plan

Plan 5 C-2 Grading, Stormwater, & Drainage Plan
Plan 6 C-3 Utility Plan
Plan 7 C-4 Civil Details
Plan 8 C-5 Civil Details
Plan 9 E-1 Site Lighting Layout
Plan 10 L-1 Landscape Plan
Plan 11 L-2 Landscape Details
Plan 12 A-0.1 Code Summary
Plan 13 A-1.0 Basement Plan
Plan 14 A-1.1 Ground Floor Plan
Plan 15 A-1.2 Second Floor Plan
Plan 16 A-1.3 Third Floor Plan
Plan 17 A-1.4 Fourth Floor Plan
Plan 18 A-1.5 Roof Plan
Plan 19 A-2.1 East Elevation
Plan 20 A-2.2 North & South Elevations
Plan 21 A-2.3 West Elevation
Plan 22 A-9.0 Perspective Rendering

Portland Maine | Yes. Google's good here.

Helen Donaldson <hcd@portlandmaine.gov>

60 Parris Street - Final Traffic Comments

Tom Errico <thomas.errico@tylin.com> Fri, Mar 23, 2018 at 8:12 AM
To: Helen Donaldson <HCD@portlandmaine.gov>
Cc: Keith Gray <kgray@portlandmaine.gov>, Jeremiah Bartlett <JBartlett@portlandmaine.gov>, Bruce Hyman <bhyman@portlandmaine.gov>, Lauren Swett <lswett@woodardcurran.com>, "Jeff Tarling (JST@portlandmaine.gov)" <JST@portlandmaine.gov>

Hi Nell – I have reviewed updated application materials and offer the following Final Traffic Comments as a status update of prior comments.

- The project is not expected to generate a significant amount of traffic and thus is not expected to significantly impact traffic mobility and safety in the project area.

  Status: I have no further comment.

- It is my understanding that the driveway is being widened to 16-feet per Fire Department comments. I will review the revised plan when provided. In general, I support a waiver from City standards given, low trip generation to and from the site and low traffic volumes on Parris Street.

  Status: The plans have been revised to provide a 15.2 foot wide driveway entrance that will function as a shared driveway (pedestrian facility will be flush). As noted previously, the project site would be expected to generate very low traffic volumes and during peak time periods traffic will primarily either be entering the site (returning home) or exiting the site (leaving home). During the morning peak hour, approximately 8 vehicles would be expected to exit the site and 2 vehicles will enter the site. This corresponds to one vehicle every 6 minutes. During the afternoon peak hour, about 8 vehicles would be expected to enter the site and 4 vehicles exit. This corresponds to one vehicle every 5 minutes. Given vehicle movement infrequency, the likelihood that trip levels will be less given the urban location, and low traffic volumes on Parris Street, I support a waiver from the minimum driveway width standard of 20 feet.

- The project is proposing a significant number of compact parking spaces and thus does not comply with City standards. I will be conducting informal observations at existing similar sites to assess likely vehicle size characteristics. I will also provide comments regarding on-site vehicle circulation at that time.

  Status: The applicant has provided detailed vehicle turning templates for the parking spaces that will be the most challenging from an access/egress perspective. The analysis was based on use of a full-size passenger car. While the maneuvering will not be easy given parking lot layout and building column constraints, the analysis indicates vehicles can enter and exit parking spaces (with multiple turns in some cases). It is my understanding that the parking spaces will be sold separately and thus some spaces may be leased to nearby off-site land uses. It is my recommendation that parking conditions be monitored 6 months after occupancy to assess parking conditions and if safety or access/egress problems are identified, the Applicant would be responsible for developing a Parking Management Plan for review and approval by the Planning Authority.

  <u>New Comments</u>

- **The parking supply for the site includes all compact sized parking spaces and thus exceeds the City standard for percent of compact parking spaces. I support a waiver for exceeding the number of compact parking spaces given constrained site conditions and the results of the vehicle circulation analysis using a full-**

size passenger car. It would also be my expectation that vehicles may be smaller in size given the target tenant type.

- **The proposed driveway does not meet City standards as it relates to driveway separation. Given that the non-conformity is an existing condition, the abutting driveway is to a single vehicle driveway, and traffic volumes are relatively low on Parris Street, I support a waiver from the City's Technical standards.**

If you have any questions, please contact me.

Best regards,

Thomas A. Errico, PE
Senior Associate
Traffic Engineering Director
T·Y·LIN INTERNATIONAL
12 Northbrook Drive
Falmouth, ME 04105
+1.207.781.4721 main
+1.207.347.4354 direct
+1.207.400.0719 mobile
+1.207.781.4753 fax
thomas.errico@tylin.com
Visit us online at www.tylin.com
Twitter | Facebook | LinkedIn | Google+

"One Vision, One Company"

Portland Maine Yes. Google's good here.

Helen Donaldson <hcd@portlandmaine.gov>

Re: Planning Reviews

Jeff Tarling <jst@portlandmaine.gov> Thu, Mar 22, 2018 at 3:58 PM
To: Helen Donaldson <hcd@portlandmaine.gov>

Hi Nel -

60 Parris Street project - tree & landscape review comments.

The proposed building footprint takes up a large percentage of the project site leaving minimal space for landscape treatment. Proposed tree & landscape features include three Sentry (upright) Ginkgo trees with Hay Scented Fern planted in the tree sidewalk, ornamental grasses planted near the bullding foundation along with Red-twig Dogwood. These are durable plants and should fare well in the landscape. Review comments, conditions might include: switching the proposed Ginkgo tree type to an ornamental scale tree type that can survive under the overhead utility lines to reduce future topping. Recommendations include: Adirondack Crabapple, Honeylocust, Accolade Cherry.

Overall the tree and landscape plan are acceptable with some minor tweaks with tree type that fits under the wires.

Thanks

Jeff

Jeff Tarling
City Arborist - City of Portland Maine
Parks, Recreation & Facilities Department
Forestry & Horticulture
212 Canco Road
Portland, ME. 04103
(207) 808-5446
jst@portlandmaine.gov

[Quoted text hidden]

COMMITMENT & INTEGRITY
DRIVE RESULTS

41 Hutchins Drive
Portland, Maine 04102
www.woodardcurran.com

T 800.426.4262
T 207.774.2112
F 207.774.6635

MEMORANDUM

TO: Nell Donaldson, Planner
FROM: Lauren Swett, P.E. & Amy LeBel, E.I.T.
DATE: March 23, 2018
RE: 56-60 Parris Street Condominiums, Level III Preliminary

Woodard & Curran has reviewed the Level III Preliminary Site Plan Application for the proposed residential development, *Parris Terraces*, located at 56-60 Parris Street in Portland, Maine. The project involves construction of 23 unit condominium and associated site improvements.

Documents Reviewed by Woodard & Curran

- Level III Final Site Plan Application and attachments, dated March 13, 2018, prepared by Donald M Peterson, Inc., on behalf of Horton, LLC.
- Engineering Plans, Sheets C1-C5, dated March 13, 2017, prepared by Ransom Consulting, Inc., on behalf of Horton, LLC.

Comments

1) The Applicant has provided an Ability to Serve Letter from the Portland Water District. The Applicant is waiting on their sewer capacity approval from Public Works..
2) In accordance with Section 5 of the City of Portland Technical Manual, a Level III development project is required to submit a stormwater management plan pursuant to the regulations of MaineDEP Chapter 500 Stormwater Management Rules, including conformance with the Basic, General, and Flooding Standards. We offer the following comments
   a) Basic Standard: Plans, notes, and details should be provided to address erosion and sediment control requirements, inspection and maintenance requirements, and good housekeeping practices in accordance with Appendix A, B, & C of MaineDEP Chapter 500.
      - In the Stormwater Management Narrative, the Applicant indicates erosion control measures are described on Sheet C-1 with details on C-4. However, no erosion control measures are specifically identified on the plan.
      - A construction erosion and sedimentation control plan that addresses erosion and sediment control requirements, inspection and maintenance requirements, and good housekeeping practices should be included in the plan set.
   b) General Standard: The project will result in a de minimis increase in impervious area of approximately 300 square feet. As such, the project is not required to include any specific stormwater management features for stormwater quality control.
      - The Applicant is proposing to provide treatment using a FocalPoint system. Sizing calculations should be provided for this system and sediment loading calculations should be provided for the sediment forebays.
      - The Focal Point and R-Tank stormwater system detail includes some elevations (R-Tank top and bottom), but it appears that these are not consistent with on-site grades.
      - The peak elevation of the 24-hr 1-inch storm is 21.51 feet, as indicated in the HydroCAD model. This elevation is approximately 1 foot above the surface of the FocalPoint system and 0.5 feet above the beehive grate inlet. The grading in this area is unclear, but it appears that this may be at or above the sidewalk and road grade as well. The Applicant should evaluate the stormwater overflow flow path and it's potential impact on abutters.
   c) Flooding Standard: The project will result in a de minimis increase in impervious area of approximately 300 square feet . As such, the project is not required to include any specific stormwater management features to control the rate or quantity of stormwater runoff from the site.

3) A retaining wall is proposed around a portion of the site and a geotechnical evaluation has been conducted. A note on the Grading, Drainage and Stormwater Plan (Sheet C-2) references structural and landscaping details for the proposed retaining wall, but it appears that no structural details have been submitted. Please provide structural details for the proposed retaining wall.
4) The existing conditions layers remain turned on for many of the plans, as is typical in may situations. We suggest that the "bituminous sidewalk" labels for the existing condition be turned off, in particular on sheets like the subdivision plat and the utility plan where the new concrete sidewalk is not specifically called out.
5) Note that the City of Portland does not allow 9.5 mm HMA as surface pavement within the ROW. The Typical Trench Paving Detail should be updated to provide 12.5 mm HMA surface pavement for any paving in the ROW.
6) A construction management plan should be provided in the format of the City of Portland's current template, available for download on the City's website: https://www.portlandmaine.gov/551/Development-Review The plan should include specific details on pedestrian and traffic management during sidewalk construction and utility installation when detours may be necessary and during building construction when work is in close proximity to the sidewalk.

Portland Maine Yes. Google's good here.

Helen Donaldson <hcd@portlandmaine.gov>

Final plans - Parris Terraces (2017-287)

10 messages

Helen Donaldson <hcd@portlandmaine.gov> Wed, Mar 14, 2018 at 12:19 PM
To: Keith Gray <kgray@portlandmaine.gov>, Thomas Errico <thomas.errico@tylin.com>, Lauren Swett <lswett@woodardcurran.com>, Jeff Tarling <jst@portlandmaine.gov>, Robert Thompson <rmt@portlandmaine.gov>

All,

The applicant on Parris Terraces has just uploaded final plans and documents for the 23-unit housing project proposed at 56 Parris. I know this is rushed, but I will be trying to put together a planning board report on this project for next Friday, the 23rd.

Can you please take a look and get me your final comments by the end of the day on Thursday, the 22nd?

Thanks so much, and sorry to put you guys in this position.

Thanks,
Nell

--
Nell Donaldson
City of Portland Planning Division
874-8723
hcd@portlandmaine.gov

Robert Thompson <rmt@portlandmaine.gov> Mon, Mar 19, 2018 at 10:48 AM
To: Helen Donaldson <hcd@portlandmaine.gov>

Hi Nell,

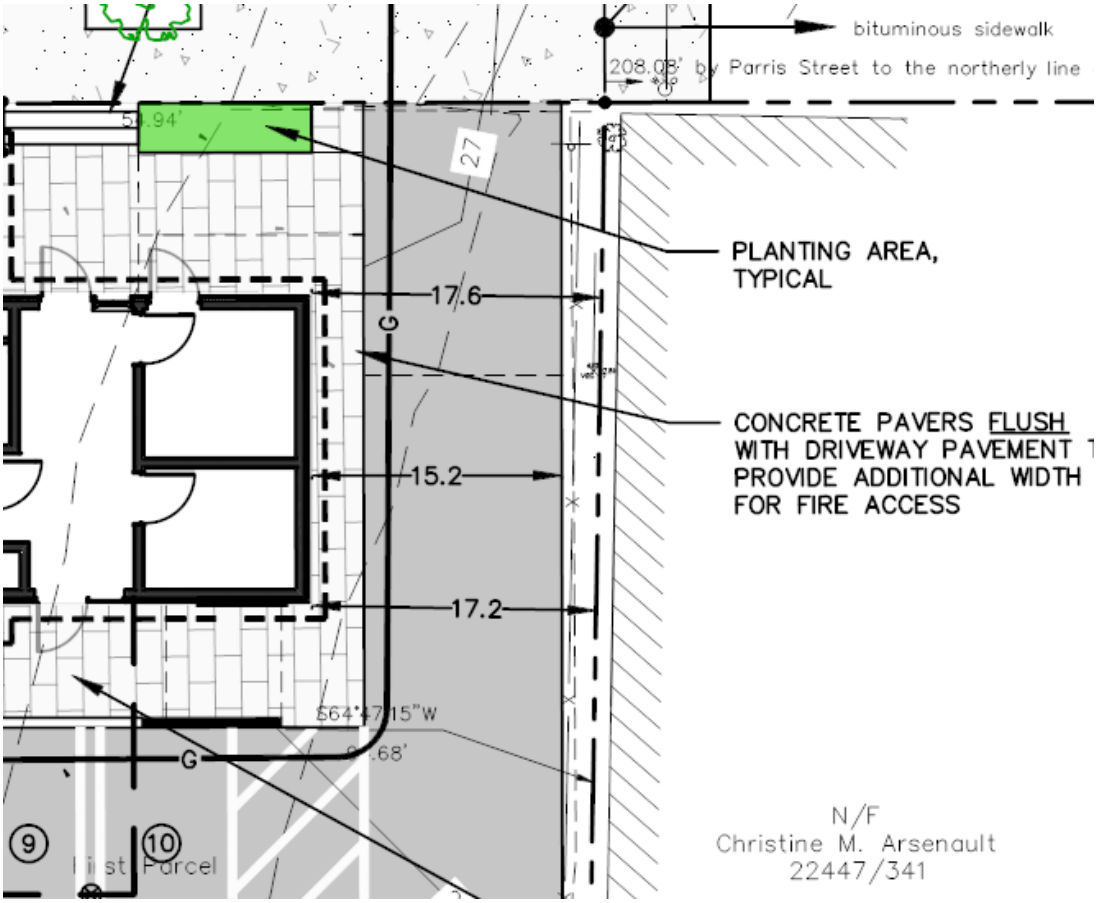
The final plans are showing a 12' driveway, not the 15+. As we discussed previously, is the sidewalk still going to be flush with the driveway and painted? And, if this is going to work, the planter on the uphill side will have to be reduced to the same width as the driveway and sidewalk to allow turning, or eliminated completely.

Thanks,
Mike
[Quoted text hidden]
--
Robert M. Thompson
Division Fire Chief
Portland Fire Department
(207) 874-8400
rmt@portlandmaine.gov

Helen Donaldson <hcd@portlandmaine.gov> Mon, Mar 19, 2018 at 10:55 AM
To: Robert Thompson <rmt@portlandmaine.gov>

Mike,

Take a look at the site plan (and make sure you're looking at the most recent version?). They show 15.2' with a change in surface material at the edge abutting the building:



What do you think?

Nell
[Quoted text hidden]

Robert Thompson <rmt@portlandmaine.gov> Mon, Mar 19, 2018 at 11:55 AM
To: Helen Donaldson <hcd@portlandmaine.gov>

Hi Nell,

I was looking at the newest set of plans in EPlan, which didn't show it this way, unless it wasn't the latest version. This works, thank you.

Mike
[Quoted text hidden]

Helen Donaldson <hcd@portlandmaine.gov> Mon, Mar 19, 2018 at 11:59 AM
To: Robert Thompson <rmt@portlandmaine.gov>

Strange.

If you are okay with this layout, then I will make sure that all the final plans show it.

Thanks, Mike.
[Quoted text hidden]

Planning and Urban Development Department
Planning Division

Subject: B-2b Design Review – 56 Parris Street

Written by: Caitlin Cameron, Urban Designer

Date of Review: Friday, February 16 2018

The revisions to the project at 56 Parris Street was reviewed according to the *City of Portland Design Manual* standards by Caitlin Cameron, Urban Designer, Shukria Wiar, Planner, and Nell Donaldson, Senior Planner, against *the B2b Commercial Business Zones Standards* (Section (d) of the Design Manual) and *Multiple-Family Standards*.

Design Review Comments*: (questions and unmet standards in red)*

- Planning Board requested more information/depiction of the natural cedar material.

(d) B-2b Commercial Business Zones

Standard (1) a. Urban Street Wall – Building placement is near the property line with a setback to accommodate landscape buffer, stoops, and some privacy.

Standard (1) b. Mixed Uses – Not applicable

Standard (1) c. Building Entrances – Main building entrance faces and is directly accessible from the street. For legibility of primary entrance, staff prefer the trash room door be relocated to the side of the building to not compete with residential entrance. **To respond to the concerns about emphasis of the main entry, the design now includes a material and color change – staff support this direction.** However, how will the material transition from the vertical siding? Is more than one color really needed to achieve the effect? Could any more be done to add emphasis to this entry – canopy or similar gesture?

Standard (1) d. Windows –Windows are provided along street frontage as required. VT of .7 or greater is required. Window height is raised due to private nature of program.

Standard (1) e. Façade Character – Building is private residences with no commercial/public program but front door/lobby oriented to the street and includes some transparency.

Standard (1) f. Building Design – See multi-family comments below.

Standard (1) g. Building Materials – **Primary material was revised to fiber cement clapboard with vertical cedar board. Staff support the scale, orientation, and type of materials as proposed, however,** we question whether natural cedar finish on the ground floor is contextually appropriate. Though natural cedar has been approved for accent materials like fences and railings, as a prominent siding material, it is more rural in character. Planning Board also asked to better understand how that material will age/patina.

Standard (1) h. Building Scale – Not applicable

Standard (1) i. Landscaping and Buffers – Parking is to the rear of the property and is screened from view by the building (except for parking space 1).

(i) Two-Family, . . . Multiple-Family . . . :

Standard (1) . Exterior Design – Context currently does not include multi-family buildings of this scale. The project successfully incorporates industrial and residential references. This context is appropriate for more contemporary design and more flexibility of forms, scale, and patterns. The project includes interesting forms and massing as well as articulation elements such as balconies to provide a visually interesting, contemporary design. Staff observe that though building type, scale, and placement vary throughout the neighborhood, there is a consistent use of material, trim, roof overhangs, and other articulation elements to add texture, fine-grain scale, and visual interest to the buildings, even if in a vernacular way. **This design was revised to use clapboard with a varying reveal on the upper floors, cedar balconies, and vertical board with natural cedar. Staff finds these changes to be responsive to review comment and gives some articulation and texture to the building in a way that is contextual.** There remains some question as to whether natural cedar is a contextually appropriate siding material, especially on the ground floor.

Standard (2). Relationship to Street – Existing neighborhood is a mix of small-scale residential and industrial building types. In addition, there are many undeveloped lots. There is not, therefore, a consistent street wall or building relationship to the street. That being said, the building placement of the proposal is consistent with the residential buildings adjacent – close to the street with a small setback buffer. Building is oriented to the street as desired by the B-2b standards.

Standard (3). Open Space – Open spaces provided through balconies.

Standard (4). Light and Air – All units provided with ample windows and some storage space.

Standard (5). Parking – Parking is to the rear of the property behind the building.

Standard (6). Not applicable

Portland, Maine Yes. Life's good here.

Planning & Urban Development Department

To: Helen Donaldson, Planner, Planning & Urban Development Department

From: Victoria Volent, Housing Program Manager, Housing & Community Development Division

Date: March 21, 2018

Subject: 60 Parris Street – Inclusionary Zoning Conditional Use

---

All developments of ten (10) units or more are conditional uses subject to Planning Board review on the condition that they comply with the requirements set forth in Division 30, Section 14-487 of the Zoning Ordinance.

Division 30, Section 14-487, Ensuring Workforce Housing, requires at least ten percent (10%) of the dwelling units in the development shall meet the definition of Workforce Housing units for sale or for rent. The ordinance under Section 14-487 e 3 also requires the number of bedrooms in the Workforce units shall be at least 10% of the total number of bedrooms made available as part of the development.

The development located at 60 Parris Street proposes the creation of 23 dwelling units of owner occupied housing consisting of twenty-three (23) one-bedroom units. As dwelling units for sale, the designated Workforce Units will be restricted to households earning up to 120% of Area Median Income (AMI). Based on the requirements outlined in Section 14-487, the development is required to provide a minimum of two (2) workforce units consisting of one (1) bedroom in each unit. The Applicant has elected to provide two (2) workforce units, on-site, consisting of two (2) one-bedroom units to satisfy the ordinance's minimum requirements. As such, the project has met the minimum requirements set forth in Section 14-487.

Staff recommends the Board Approve this Conditional Use provided the Applicant and the City enter into an Affordable Housing Agreement (AHA) before a Building Permit may be issued.

The Affordable Housing Agreement will outline the details of the affordability restrictions placed on the workforce units and will be filed as covenant to the 60 Parris Street property's deed with the Cumberland County Registry of Deeds before a Certificate of Occupancy may be issued.

Sincerely,

Victoria Volent
Housing Program Manager

Level III – Preliminary and Final Site Plans
Development Review Application
Portland, Maine

Planning and Urban Development Department
Planning Division

Portland's Planning and Urban Development Department coordinates the development review process for site plan, subdivision and other applications under the City's Land Use Code. Attached is the application form for a Level III: Preliminary or Final Site Plan. Please note that Portland has delegated review from the State of Maine for reviews under the Site Location of Development Act, Chapter 500 Stormwater Permits, and Traffic Movement Permits.

Level III: Site Plan Development includes:

- New structures with a total floor area of 10,000 sq. ft. or more except in Industrial Zones.
- New structures with a total floor area of 20,000 sq. ft. or more in Industrial Zones.
- New temporary or permanent parking area(s) or paving of existing unpaved parking areas for more than 75 vehicles.
- Building addition(s) with a total floor area of 10,000 sq. ft. or more (cumulatively within a 3 year period) except in Industrial Zones.
- Building addition(s) with a total floor area of 20,000 sq. ft. or more in Industrial Zones.
- A change in the use of a total floor area of 20,000 sq. ft. or more in any existing building (cumulatively within a 3 year period).
- Multiple family development (3 or more dwelling units) or the addition of any additional dwelling unit if subject to subdivision review.
- Any new major or minor auto business in the B-2 or B-5 Zone, or the construction of any new major or minor auto business greater than 10,000 sq. ft. of building area in any other permitted zone.
- Correctional prerelease facilities.
- Park improvements: New structures greater than 10,000 sq. ft. and/or facilities encompassing 20,000 sq. ft. or more (excludes rehabilitation or replacement of existing facilities); new nighttime outdoor lighting of sports, athletic or recreation facilities not previously illuminated.
- Land disturbance of 3 acres or more (includes stripping, grading, grubbing, filling or excavation).

Portland's development review process and requirements are outlined in the Land Use Code (Chapter 14), Design Manual and Technical Manual.

Planning Division
Fourth Floor, City Hall
389 Congress Street
(207) 874-8719
planning@portlandmaine.gov

Office Hours
Monday thru Friday
8:00 a.m. – 4:30 p.m.

I. Project Information (Please enter n/a on those fields that are not applicable)

Project Name:	Parris Terraces
Proposed Development Address:	60 Parris Street, Portland ME
Project Description:	23 - 1BRm Residential Condominiums w/ 23 On-site Parking Spaces
Chart/Block/Lot:	Map 33, Lots A-13 and A-14
Preliminary Plan	December 6, 2017
Final Plan	March 13, 2018

II. Contact Information (Please enter n/a on those fields that are not applicable)

APPLICANT

Name:	Jack Soley
Business Name:	Horton LLC
Address:	100 Commercial Street / Box 411
City/State:	Portland ME
Zip Code:	04101
Work #:	207.808.4714
Home #:	
Cell #:	
Fax #:	
E-mail:	jsoley@eastbrowncow.com

OWNER

Name:	Horton LLC
Address:	100 Commercial Street / Box 411
City/State:	Portland ME
Zip Code:	04101
Work #:	207.808.4714
Home #:	
Cell #:	
Fax #:	
E-mail:	jsoley@eastbrowncow.com

AGENT/REPRESENTATIVE

Name:	Donald M Peterson, Inc
Address:	1 Avon Road
City/State:	Cape Elizabeth
Zip Code:	04107
Work #:	
Home #:	
Cell #:	207.415.0707
Fax #:	
E-mail:	dmpetersoninc@gmail.com

BILLING (to whom invoices will be forwarded to)

Name:	Jack Soley, Horton LLC
Address:	100 Commercial Street / Box 411
City/State:	Porland ME
Zip Code:	04101
Work #:	207.775.2252
Home #:	
Cell #:	207.808.4714
Fax #:	
E-mail:	jsoley@eastbrowncow.com

ENGINEER

Name:	Ransom Engineering, John Mahoney
Address:	100 Commercial Street, Suite 404
City/State:	Portland ME
Zip Code:	04101
Work #:	207.772.2891
Home #:	
Cell #:	
Fax #:	
E-mail:	john.mahoney@ransomenv.com

SURVEYOR

Name:	Titcomb Associates, Rex Croteau
Address:	133 Gray Road
City/State:	Falmouth ME
Zip Code:	04105
Work #:	207.791.9199
Home #:	
Cell #:	
Fax #:	
E-mail:	RCroteau@titcombsurvey.com

ARCHITECT

Name:	Kaplan Thompson Architects, Jesse Thompson
Address:	102 Exchange Street, 2nd Floor
City/State:	Portland ME
Zip Code:	04101
Work #:	207.842.2888
Home #:	
Cell #:	
Fax #:	
E-mail:	jesse@kaplanthompson.com

ATTORNEY

Name:	Michael Friedman
Address:	130 Main Street, Unit 4
City/State:	Bridgeton ME
Zip Code:	04009
Work #:	207.647.8380
Home #:	
Cell #:	
Fax #:	207.647.2050
E-mail:	friedman@mgfriedmanlaw.com

DESIGNATED PERSON(S) FOR UPLOADING INTO e-PLAN

Name:	Adam Wallace
E-mail:	adam@kaplanthompson.com
Name:	
E-mail:	
Name:	
E-mail:	

III. APPLICATION FEES

LEVEL III DEVELOPMENT (check applicable review)

☑	Less than 50,000 sq. ft.	$750.00
☐	50,000 – 100,000 sq. ft.	$1,000.00
☐	100,000 – 200,000 sq. ft.	$2,000.00
☐	200,000 – 300,000 sq. ft.	$3,000.00
☐	Over 300,000 sq. ft.	$5,000.00
☐	Parking lots over 100 spaces	$1,000.00
☐	After-the-fact Review	$1,000.00 + applicable application fee above

PLAN AMENDMENTS (check applicable review)

☑	Planning Staff Review	$250.00
☑	Planning Board Review	$500.00

OTHER REVIEWS (check applicable review)

☐	Traffic Movement	$1,500.00
☑	Stormwater Quality	$250.00
☑	Subdivision	$500.00 + applicable fee for lots/units below
	# of Subdivision Lots/Units [ ] x $25.00 each	$ 575 = 23x$25
☐	Site Location	$3,500.00 + applicable fee for lots/units below
	# of Site Location Lots/Units [ ] x $200.00 each	$
☐	Change of Use	
☐	Flood Plain	
☐	Shoreland	
☑	Design Review	
☐	Housing Replacement	
☐	Historic Preservation	
	TOTAL APPLICATION FEE DUE:	$ 2,825.00

IV. FEES ASSESSED AND INVOICED SEPARATELY

- Notices to abutters (receipt of application, workshop and public hearing meetings) ($.75 each)
- Legal Ad in the Newspaper (% of total ad)
- Planning Review ($52.00 hour)
- Legal Review ($75.00 hour)
- Third Party Review (all outside reviews or analysis, eg. Traffic/Peer Engineer, are the responsibility of the applicant and will be assessed and billed separately)

V. PROJECT DATA (Please enter n/a on those fields that are not applicable)

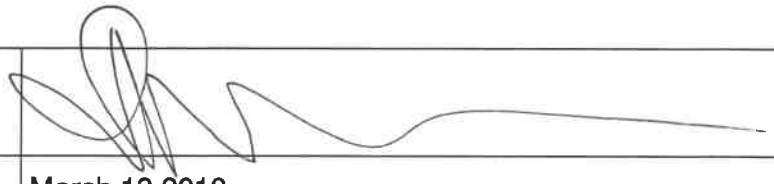
TOTAL AREA OF SITE	10,378	sq. ft.
PROPOSED DISTURBED AREA OF THE SITE	10,378	sq. ft.
If the proposed disturbance is greater than one acre, then the applicant shall apply for a Maine Construction General Permit (MCGP) with DEP and a Stormwater Management Permit, Chapter 500, with the City of Portland.		
IMPERVIOUS SURFACE AREA		
Impervious Area (Total Existing)	10,378	sq. ft.
Impervious Area (Total Proposed)	10,021	sq. ft.
Building Ground Floor Area and Total Floor		
Building Footprint (Total Existing)		sq. ft.
Building Footprint (Total Proposed)	2.155	sq. ft.
Building Floor Area (Total Existing)		sq. ft.
Building Floor Area (Total Proposed)	13,707	sq. ft.
ZONING		
Existing	B2b	
Proposed, if applicable		
LAND USE		
Existing	Parking Lot	
Proposed	Residential Multi-Family	
RESIDENTIAL, IF APPLICABLE		
# of Residential Units (Total Existing)	0	
# of Residential Units (Total Proposed)	23	
# of Lots (Total Proposed)		
# of Affordable Housing Units (Total Proposed)	2	
PROPOSED BEDROOM MIX		
# of Efficiency Units (Total Proposed)		
# of One-Bedroom Units (Total Proposed)	23	
# of Two-Bedroom Units (Total Proposed)		
# of Three-Bedroom Units (Total Proposed)		
PARKING SPACES		
# of Parking Spaces (Total Existing)		
# of Parking Spaces (Total Proposed)	23	
# of Handicapped Spaces (Total Proposed)	2	
BICYCLE PARKING SPACES		
# of Bicycle Spaces (Total Existing)	0	
# of Bicycle Spaces (Total Proposed)	10	
ESTIMATED COST OF THE PROJECT	$1,979,000	

VI. APPLICANT SIGNATURE

By digitally signing the attached document(s), you are signifying your understanding this is a legal document and your electronic signature is considered a ***legal signature*** per Maine state law.

I hereby certify that I am the Owner of record of the named property, or that the owner of record authorizes the proposed work and that I have been authorized by the owner to make this application as his/her authorized agent. I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in this application is issued, I certify that the Planning Authority and Code Enforcement's authorized representative shall have the authority to enter all areas covered by this permit at any reasonable hour to enforce the provisions of the codes applicable to this permit.

This application is for a Level III Site Plan review. It is not a permit to begin construction. An approved site plan, a Performance Guarantee, Inspection Fee, Building Permit, and associated fees will be required prior to construction. Other Federal, State or local permits may be required prior to construction, which are the responsibility of the applicant to obtain.

Signature of Applicant:	
Date:	March 13,2018

13 March 2018

To: City of Portland Planning Department
City of Portland Planning Board Members

Fm: Donald M Peterson, Owner Representative

Re: PROJECT SUMMARY
Parris Terraces
60 Parris Street
Portland ME 04101

Dear Mr O'Brien, Chair Dundon, Planning Board Members and City Staff,

On behalf of Horton LLC, project owner, we are pleased to submit this Level III Final Site Plan Application to construct a new 23-unit residential condominium project to be located at 60 Parris Street in Bayside, Portland Maine.

The parcel to be developed is current a paved surface parking lot used by City employees. Our plans are to transform the site and construct an attractive, four level structure with associated on-site parking for residents.

This new building will provide a boost to the local economy, add new construction related employment and create some permanent management positions. It will also add to the city's tax roles while creating 23 new units of critically needed work force housing.

THE SITE

The site is comprised 10,378 sf and is bordered by the USPS parking lot to the west and Parris Street to the north. Currently the site is used as a parking lot for about 30 vehicles. Adjacent to the site on the east is a multi-unit apartment building and to the south 2-single / two-family residences. Across Parris Street is a City car maintenance facility. Other structures in the surrounding neighborhood are both industrial and residential that typically range in height from 2 to 4 stories tall.

PROJECT DESCRIPTION

Parris Terraces is planned to be a twenty-three (23) one-bedroom residential condominium project. The project is located in the B2b zone.

The ground level will include a front and rear entrance, common areas, mailbox station, mechanical room, recycling room, bicycle storage and the elevator serving all four levels. Two (2) one-bedroom units and a guest bedroom suite with bath will also be located at the ground level.

The upper three levels will include seven (7) living units on each level. Units will range in size from 364sf to 540sf and every unit is envisioned to have a balcony. Other project amenities include in unit laundry hook-ups, full kitchens with dishwashers, large windows and energy efficient construction. The first level guest suite (with no kitchen) will be managed by the Condominium Association.

Twenty (20) of the units are anticipated to be sold at or below 120% of the area medium income that for the year 2017 was $199,467. The three (3) remaining units will be sold at a price of ~ $275,000. It will be the first known multi-family home ownership project in the City of Portland to target a population earning 120% of AMI and be developed without municipal, state or federal subsidies.

Twenty-three (23) on-site (compact) parking spaces will also be available for owner's to purchase at a below market price, yet TBD.

PROJECT DESIGN ELEMENTS

Parris Terraces is a unique project that will create affordable homeownership in the City of Portland. The project is efficiently designed to conform to the Design Standards of the City of Portland and the Bayside Design & Zoning Standards.

The long side of the building is positioned parallel to Parris Street and is

held back 2.5 feet to allow for metal planters adjacent to the structure will also providing three trees in the public sidewalk. Three lollipop bike racks (6 bike capacity) will also be provided in the sidewalk area.

The main entrance, adjacent to the entrance driveway at the SE corner of the lot will be recessed and well lighted. Pavers in this location will welcome both residents and visitors and transition pedestrians from public to private spaces. Handicap accessibility will be provided at both main entrances.

Each unit is designed to maximize natural light. The units are arranged around the perimeter of the building and corridor/elevator/stair tower core. Each unit will have a balcony with direct open-air access. Three units on the fourth floor will have sloped ceilings and extra windows.

Exterior finishes are envisioned to be vertical white cedar at the first level and at the balconies. Exterior siding on the upper levels will be painted fiber cement clapboard applied is a tasteful and creative pattern of varying widths.

WAIVERS REQUESTED

Horton LLC requests two waivers due to site constraints:

1 All parking spaces to be compact size.
2 Paved access driveway to be reduced to 15.2' of pavement

On February 14, 2017 we conducted a successful Workshop reviewing our Level III Preliminary Plans and a Neighborhood Meeting was conducted on March 1, 2018.

We look forward to this Level III Final Plan review and approval on March 27, 2018.

Portland Maine | Yes. Google's good here.

Helen Donaldson <hcd@portlandmaine.gov>

quick follow up on revised submittals for 56 Parris

Jesse Thompson <jesse@kaplanthompson.com> Thu, Mar 22, 2018 at 12:16 PM
To: Nell Donaldson <hcd@portlandmaine.gov>
Cc: Don Peterson <dmpetersoninc@gmail.com>, Adam Wallace <adam@kaplanthompson.com>, Jack Soley <jsoley@eastbrowncow.com>

Nell,

Here is a response to Tom, hopefully this gets there in time:

> - Tom Errico, in writing his final comments on the waiver for the driveway width, would like to have some written documentation from you all as to the justification (i.e. why the building can't be shifted northward or made smaller, why the driveway couldn't extend to the southerly property line). Can you provide? (A response to this email would suffice.)

The Parris St lot is tightly constrained by neighboring buildings built very close to the Property Line on the South and East sides and an elevation drop to the parking lot property to the north, there is no space to move the building in either direction on the lot. We placed the car parking on the rear of the lot away from the street, which led to a building oriented north-south along Parris St.

Due to the pitch of the site the water drainage had to run in a northerly (towards Marginal Way) direction, which required that the stormwater rain garden be located on that side of the property. The building is currently placed to give adequate space to the rain garden. As well, Building Code limits unprotected window openings between 5-0 and 10-0 of the Property Line to only 25% of wall area, and unprotected window openings between 3-0 and 5-0 of the Property Line to only 15% of wall area, both of which inherently limit how close the building could be placed to the Property Line. In no situation could we provide 20-0 of clearance for the drive aisle, which is why the project is seeking a Waiver from this width standard.

> - Second, Tom and Fire wondered aloud whether the guardrail at the edge of the driveway could be removed. I know you mentioned the function of this guardrail in protecting the neighbor's foundation, which I understand, but could we use another treatment for this purpose that would allow for better maneuverability in the driveway?

We did not feel that removing the guardrail would add any maneuverability to the drive aisle because we would then need to add back new fencing along that property edge along with room for plantings, and it would likely take up the same or greater space than the current guardrail. As well, our Civil Engineer has requested that we minimize construction work close to the neighboring buildings and leaving the guard rail in place maximized the protection for those buildings and minimized site disturbances in that area.

Thank you for your consideration,

Jesse Thompson
PRINCIPAL, AIA, LEED AP, CPHC
Maine Licensed Architect

Kaplan Thompson Architects
102 Exchange Street, Portland, ME 04101
office: (207) 842-2888 x202
direct: (207) 536-4672
kaplanthompson.com
[Quoted text hidden]

February 12, 2018

Horton, LLC
100 Commercial Street
Portland, Maine 04101

Dear Neighbor,

Please join us for a neighborhood meeting to discuss plans for developing twenty-three newly constructed one-bedroom residential condominium units and related parking. Known as Parris Terraces, this project will be located at 60 Parris Street, Portland Maine. It will contain twenty work force and three market rate living units.

Meeting Location: Unity Village Community Room
24 Stone Street
Portland Maine

Meeting Date: Thursday March 1, 2018

Meeting Time: 6:00pm

The City code requires that property owners within 500 feet of the proposed development and residents on an "interested parties list" be invited to participate in a neighborhood meeting. A sign-in sheet will be circulated and minutes of the meeting will be taken.

Both the sign-in sheet and minutes will be submitted to the Planning Board.

If you have any questions, please contact Don Peterson, Owner Representative at 207.415.0707 or dmpinc@gwi.net.

We look forward to meeting you and discussing this exciting new development.

Sincerely,

Donald M Peterson
Owner Representative

Parris Terraces Neighborhood Meeting
March 1, 2018
Attendance Sheet

Name	Address
Will Bartlett	16 St. Lawrence St.
Susan McCloskey	25 Parris St.
Sarah Michniewicz	47 Cedar St.
George Rheault	28 Hanover St.
Ross Y. Furman	Boxiwo Portland, ME 04112
Ron Spinella	377 Cumberland Ave 04101
Christine Arsenault	56 Parris Street

MINUTES Neighborhood Meeting

Project: Parris Terrace (PT)
60 Parris Street, Portland ME
A Condominium Project of
23 One Bedroom Workforce Homes

Owner: Horton LLC

Meeting Location: 24 Stone Street, Portland ME
Meeting Date: 1 March 2018
Meeting Start Time: 6:07pm

Conducting the meeting on behalf of the Owner were Don Peterson (DP), Owner's Representative and Jesse Thompson (JT), Project Architect and principal in Kaplan Thompson Architects.

Seven interested neighbors attended the meeting.
A list of their names and addresses is attached to these minutes.

DP introduced the project team present, summarized the project and the overall intent of the meeting as follows:

Project Goal: To develop a new, quality, affordable homes targeted at owner occupants that contributes positively to the neighborhood at a below market cost (based on 120% AMI). Sales price for twenty units is anticipated to be ~$200,000 and the remaining three units sales price is planned at ~$275,000. Unit are anticipated to range in size from ~364sf to 540sf.

Meeting Goal: To fully explain the project and solicit ideas, concerns or suggestions from the participants that might help to improve the project. Concerns, questions and suggestions from the participants were also specifically solicited.

JT presented the site plan, typical floor plan and exterior perspective of the building.

He then further explained that the building will be a four level structure with two units at grade level and the remaining units serviced by an elevator. Each unit will have individually metered and controlled HVAC (heat pump)systems. Amenities to be included are high ceilings, oversize windows, energy efficient building systems, unit dishwashers, movable kitchen island and individual unit balconies. On-site laundry and storage facilities as well as an engineered rain garden will control site storm runoff will be provided. Twenty-three parking spaces will be located on-site. A guest suite on the first level is also being considered. Exterior siding will be fiber-cement clapboard of varying width on the upper three levels. At ground level white cedar vertical siding is anticipated.

Questions, concerns and comments from the percipients were recorded as follows:

Q Will short-term rentals be allowed?
A DP: Rentals of less than thirty days will (probably) not be allowed
Air B+B units will be specifically prohibited by the condominium documents

Q How will snow removal occur and can salting minimal?
A The is limited area for snow storage so snow will be removed for the site
The owner will evaluate methods to minimize the use of salt etc consistent with safety standards and shared environmental concerns.

Q Will gas be used for heat?
A DP: No, it is anticipated that mini split electric heat pumps will provide HVAC.

Q How will the white cedar be preserved overtime?
A JT: A "warm" natural finish is desired. His team is still studying the best finish alternative. Long term, periodic staining may be the choice of the condo association.

Q Will there be piles under the building?
A JT: Geotechnical investigation suggests piles are not required.
The building will be placed on spread footings.

Q How far away is the new building from 56 Parris Street?
A JT: It is approximately 17.6' to 17.2' from the new building to the property line common with 56 Parris Street.

Q How wide is the drive isle along the side of the building?
A JT: The paved area is 15.2'.

Q Why don't you build more units?
A DP: The owner wanted to provide 1 parking space per unit and twenty-three is the maximum number of parking spaces possible at grade.
JT: Lot/ area ratio is also near the max.

Q Can you add some pavers or "brick" highlights to break up the concrete sidewalk?
A JT: We have pavers specified at the entrance. Brick sidewalks are not in the budget and the city typically wants a single sidewalk material.

Q Can the condo documents require something more than a majority to change the prohibition of Air B+B rentals? Maybe at least super majority?
A DP: That's a very interesting idea. I will take it to the owner.

Q How to you screen people and keep out speculators and flippers?
How do you maximize the chance for work force buyers to actually purchase?
A DP: The owner intends to have the sales force make every effort to assess the true income eligibility and home ownership intent of prospective buyers. There is no way to absolutely insure that flipping will not occur.

Q Will there be an exclusive real estate broker acting as your sales agent?
A DP: No agent has been retained. That process is currently under discussion.

Q Will window shades be provided in the units?
A JT: That amenity will be considered.

Q What is the level of sound insulation between units?
A JT: we intend to strive for a very good sound attenuation between units. These details are currently being developed.

Q What exterior lighting will be provided?
The more the better, please….
A DP: We are working with Public Works remove cobra head fixture currently lighting the parking lot removed because it encumbers the building on the street side. The city indicated the remaining streetlight will be changed out to an LED fixture.
JT: Exterior lighting will be provided at the front entrance and under the building over the parking spaces in the parking lot.

Q Will there be any security cameras around the project?
A JT: that's a good question. We'll look into options for that.

Q Is there any fence around the water garden from the street?
A JT: Not in the present design.

The meeting was adjourned at 7:10pm.

Respectively submitted
Donald M Peterson
Owner Representative

Parcel 3

PURCHASE AND SALE AGREEMENT

THIS PURCHASE AND SALE AGREEMENT IS made this 12th day of October, 2017 by and between the City OF PORTLAND, a body politic and corporate located in Cumberland County, Maine, (hereinafter referred to as "Seller" or "City"), and HORTON, LLC, or assigns, a Maine limited liability company having a mailing address of 100 Commercial Street, Box 411, Portland, ME 04101 (hereinafter referred to as "Buyer" or "Horton, LLC").

RECITALS

WHEREAS, the CITY is the owner of approximately .23 acres of land at or near 56 Parris Street, Portland, Maine as generally depicted on the plan attached hereto as Exhibit A (the "Premises") and incorporated herein; and

WHEREAS, Buyer desires to purchase the Premises, and the City desires to convey the Premises to Buyer, subject to all easements of record and any other existing easements burdening the Premises;

NOW THEREFORE, in consideration of the foregoing and for other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties, intending to be legally bound, hereby agree as follows:

1. **SALE.** City agrees to sell the Premises to Buyer, and Buyer agrees to purchase the Premises in accordance with the terms and conditions set forth in this Agreement. This Agreement is for the sale of land only.

2. **CONSIDERATION**. The purchase price for the Premises shall be One Hundred Seventy-Five Thousand Seven Hundred Dollars ($175,000) (the "Purchase Price"), subject to the following cost adjustments and conditions:

    a. Buyer shall deposit in the sum of Five Thousand Dollars ($5,000.00) (the "Deposit") within 3 business days after the full execution of this Agreement that the parties agree will be held in escrow as of the date of this Agreement, in a non-interest bearing account with CBRE | The Boulos Company; the Deposit shall be fully refundable until the end of the Due Diligence Period and the Financing Period as both are described herein; after both such Periods, the Deposit shall be non-refundable; and

    b. The Buyer shall pay the remainder of the Purchase Price to the City by wire transfer (or as otherwise reasonably requested by the City) at closing.

3. TITLE AND DUE DILIGENCE.

a. Due Diligence Period. Buyer will have from the date of this Agreement until 4:00 PM Eastern Daylight Savings Time on the day that is sixty (60) calendar days after the date of this Agreement (the "Due Diligence Period") to complete any survey, environmental review and title examinations.

b. Property Description. The property description contained in the deed will be a survey description based upon a survey plan (the "Premises") that will more specifically describe the property shown on Exhibit A hereto. The Premises will be distributed to the parties hereto prior to expiration of the Due Diligence Period and the parties will agree on the property description prior to closing.

c. Financing Contingency. Buyer shall have from the date of this Agreement until 4:00 PM Eastern Daylight Savings Time on the day that is thirty (30) calendar days after the date of this Agreement (the "Financing Period") to obtain commercially reasonable financing, and shall take timely and commercially reasonable steps to secure such financing.

d. Title and Survey Objections. Buyer will have until the end of the Due Diligence Period to deliver to City any written objections to title, environmental, or survey matters (other than the permitted exceptions identified herein) that materially affect marketability or use. Objections not made prior to the end of the Due Diligence Period will be deemed waived; provided, however, that objections pertaining to matters of record first appearing after the end of the Due Diligence Period may be made at any time prior to the closing.

e. Option to Cure. In the event of a title or survey objection, City will have the option, but not the obligation, to cure the objection and will notify Buyer of its election within ten (10) business days after receipt of the objection. In the event that the City elects to cure the objection, it will have sixty (60) days from the date of the notice of election, or such other reasonable time as the parties may agree, to cure the objection. In the event that the City does not elect to cure the objection, or, having elected to cure the objection fails to timely do so to Buyer's reasonable satisfaction, Buyer will have the option to (1) terminate this Agreement and obtain a refund of the Deposit (after which neither party will have any further obligation or liability to the other under this Agreement), (2) waive the objection and close, or (3) undertake the cure of such objection at its own expense (in which case it shall have 60 days to do so).

f. Deed. City shall convey the Premises to Buyer at the closing in fee simple by a municipal quitclaim deed without covenant. Title shall be good and insurable title, free and clear of all encumbrances except (i) easements described herein; (ii) easements for utilities servicing the property, (ii) zoning ordinances, and (iii) real estate taxes not yet due and payable. Further, Buyer

acknowledges that the deed shall contain a restriction stating that in the event that the Premises or any portion thereof shall be exempt from real and personal property taxes, by transfer, conversion, or otherwise, then the then-owner of the exempt portion shall make annual payments to the City in lieu of taxes in the amount equal to the amount of property taxes that would have been assessed on the exempt portion of the real and personal property situated on the Premises had such property remained taxable. Such restriction shall also confirm that Buyer and its successors and assigns shall possess and be vested with all rights and privileges as to abatement and appeal of valuations, rates, and the like as are accorded owners of real and personal property in Maine.

4. **INSPECTIONS**.

a. During the Due Diligence Period, Buyer and its employees, consultants, contractors and agents shall have the right, at Buyer's expense, to enter on the Premises at reasonable times in order to (i) inspect the same, (ii) conduct engineering studies, percolation tests, geotechnical exams, environmental assessments, and other such studies, tests, exams, and assessments, and (iii) do such other things as Buyer determines, it is sole discretion, to be required to determine the suitability of the Premises for Buyer's intended use (collectively, the "Inspections"). The City acknowledges that such Inspections may include the digging of test pits, which the City hereby approves.

b. Buyer agrees to defend, indemnify and hold harmless the City against any mechanics liens that may arise from the activities of Buyer and its employees, consultants, contractors and agents on the Premises.

c. Buyer shall exercise the access and inspection rights granted hereunder at its sole risk and expense, and Buyer hereby releases the City from, and agrees to indemnify, defend, and hold the City harmless against, any and all losses, costs, claims, expenses and liabilities (including without limitation reasonable attorney fees and costs) (collectively, "Damages") suffered by the City on account of any injury to person or damage to property arising out of the exercise by Buyer of its rights hereunder, except to the extent that such Damages result from the act or omission of the City.

d. Buyer shall cause any contractors, consultants or any other party conducting the Inspections to procure automobile insurance, if applicable, and general public liability insurance coverage in amounts of not less than Four Hundred Thousand Dollars ($400,000.00) per occurrence for bodily injury, death and property damage, listing the City as an additional insured thereon, and also Workers' Compensation Insurance coverage to the extent required by law; the forms of all such insurance to be subject to City's Corporation Counsel's reasonable satisfaction.

e. In the event that Buyer does not purchase the Premises, Buyer agrees to either return the Premises as nearly as possible to its original condition after conducting the Inspections, or, at the City's option, reimburse the City for any physical damage caused to the Premises in connection with the Inspections; provided, however, the City hereby acknowledges and agrees that the term "physical damage" does not include any disturbance of any pre-existing environmental contamination on the Premises caused by such inspections, studies, tests, exams, and assessments, and that Buyer shall have no obligation to clean-up, remove or take any other action with respect to any pre-existing environmental contamination disturbed thereby.

f. The parties hereto acknowledge and agree that it is a condition to Buyer's obligations under this Agreement that the results of the Inspections be acceptable to Buyer in its sole discretion. If the results of such due diligence are not acceptable to Buyer in its sole discretion, and if Buyer exercises its right to terminate this Agreement, then the City shall refund to Buyer the Deposit, if previously paid, without interest, within ten (10) days after receipt of Buyer's termination notice, and neither party shall have any further obligations or liabilities under this Agreement except as expressly set forth in this Agreement.

5. **REAL ESTATE TAXES, PRORATIONS AND TRANSFER TAX.** Buyer shall be liable for all real estate taxes beginning as of the start of fiscal year following the closing and continuing thereafter. Because the Property is currently owned by the City of Portland, which is exempt from real estate taxes, no taxes were assessed or will be due for any portion of the current fiscal year, and no taxes will be prorated at the closing. Any utilities for the Property shall be prorated as of the closing. The Maine real estate transfer tax shall be paid for by Buyer in accordance with 36 M.R.S.A. § 4641-A. City is exempt from paying the transfer tax pursuant to 36 M.R.S.A. § 4641-C. The recording fee for the deed of conveyance and any expenses relating to Buyer's financing or closing shall be paid for by Buyer.

6. **DEFAULT AND REMEDIES**. In the event that Buyer defaults hereunder for a reason other than the default of the City, City shall retain the deposit as its sole remedy. In the event City defaults under this Agreement, and if Buyer is not then in default hereunder, Buyer shall have the right to pursue specific performance, but at all times may elect in substitution therefor, as its sole remedy, the right to a return of its deposit.

7. **RISK OF LOSS.** The risk of loss or damage to the Premises by fire, eminent domain, condemnation, or otherwise, until transfer of title hereunder, is assumed by the City. The Premises is to be delivered in substantially the same condition as of the date of this Agreement unless otherwise stated. In the event City is not able to deliver the Premises as stated, Buyer may terminate this Agreement and receive a refund of the Deposit without interest, and neither party shall have any further obligations or liabilities under this Agreement except as expressly set forth in this Agreement.

Lead

8. **PROPERTY SOLD "AS IS, WHERE IS."** Buyer acknowledges that Buyer has had an opportunity to inspect the Premises, and to hire professionals to do so, and that Premises will be sold "as is, where is" and "with all faults." City, and its agents, make no representations or warranties with respect to the accuracy of any statement as to boundaries or acreage, or as to any other matters contained in any description of the Premises, or as to the fitness of the Premises for a particular purpose, or as to development rights, merchantability, habitability, or as to any other matter, including without limitation, land use, zoning and subdivision issues or the environmental, mechanical, or structural condition of the Premises. Acceptance by Buyer of the Deed at closing and payment of the purchase price shall be deemed to be full performance and discharge by the City of every agreement and obligation contained herein.

9. **ENVIRONMENTAL INDEMNIFICATION**. Buyer covenants and agrees to indemnify, defend, and hold the City harmless from and against any and all claims, damages, losses, liabilities, obligations, settlement payments, penalties, assessments, citations, directives, claims, litigation, demands, defenses, judgments, costs, or expenses of any kind, including, without limitation, reasonable attorneys', consultants', and experts' fees incurred in investigating, defending, settling, or prosecuting any claim, litigation or proceeding, that may at any time be imposed upon, incurred by or asserted or awarded against Buyer or the City and relating directly or indirectly to the violation of or compliance with any federal, state, or local environmental laws, rules, or regulations governing the release, handling or storage of hazardous wastes or hazardous materials and affecting all or any portion of the Premises, except to the extent that such a claim results directly from the City's release, handling or storage of hazardous wastes or hazardous materials on the Premises. This duty to indemnify, defend, and hold harmless shall be included in a covenant in the deed and shall run with the land conveyed and be binding upon Buyer's successors, assigns, and transferees.

10. **CLOSING**. Time is of the essence in the performance of this agreement. The closing shall be held at the offices of Buyer's counsel at a time agreeable to the parties on or before the day that is five months after the date of this Agreement (the "Closing Date"). At the Closing:

    a. the City shall execute, acknowledge and deliver to Buyer a municipal quitclaim deed conveying to Buyer good and marketable title to the Premises, free and clear of all encumbrances except as otherwise set forth herein.

    b. Buyer shall deliver the balance of the Purchase Price to the City by wire transfer (or as otherwise reasonably requested by the City); and

    c. Each party shall deliver to the other such other documents, certificates and the like as may be required herein or as may be necessary to carry out the obligations under this Agreement.

    d. Buyer shall deliver evidence, reasonably satisfactory to City's Corporation Counsel, that the entity receiving title to the Premises is in good standing

under Maine law, and that the individuals acting to Closing and executing documents on behalf of Buyer are authorized to do so.

11. **BUYER'S POST CLOSING OBLIGATIONS; RIGHTS OF CITY TO REPURCHASE PROPERTY.** Buyer agrees to commence construction of the project, as very generally depicted on the attached Plan which was presented to the City's Economic Development Committee on July 19, 2017, but specifically including at least the same number of ("workforce housing") dwelling units depicted therein (the "Project") within twelve (12) months after closing. Twenty (20) unit sale prices will be calculated for affordability to 120% AMI for 2018 for the initial sale only. If Buyer, its successors, assigns, or transferees fails to commence construction of the Project on the Property within 12 months after the closing, and construct the buildings which are part of the Project within thirty (30) months after closing, the City shall have the right, but not the obligation, to repurchase the Premises at the lesser of (1) the Purchase Price plus all construction and approval expenses incurred by Buyer, or successors, to that juncture, or (2) the fair market value of the Premises determined by an appraiser agreed upon by the parties. The provisions of this paragraph will survive closing, and the City's deed to Buyer shall include a reference to the City's option to repurchase the Premises, and/or a Declaration of Covenants, Conditions and Restrictions, and Option to Repurchase with the provisions of this paragraph with greater detail, executed before or at the time of Closing, shall be recorded in the Cumberland County Registry of Deeds. This right to repurchase shall be assignable by the City.

12. **ENTIRE AGREEMENT.** This Agreement represents the entire and complete Agreement and understanding between the parties and supersedes any prior agreement or understanding, written or oral, between the parties with respect to the acquisition or exchange of the Property hereunder. This Agreement cannot be amended except by written instrument executed by City and Buyer.

13. **NON-WAIVER.** No waiver of any breach of any one or more of the conditions of this Agreement by either party shall be deemed to imply or constitute a waiver of any succeeding or other breach hereunder.

14. **HEADINGS AND CAPTIONS.** The headings and captions appearing herein are for the convenience of reference only and shall not in any way affect the substantive provisions hereof.

15. **BINDING EFFECT**. This Agreement shall be binding upon and inure to the benefit of the parties hereto and their respective heirs, administrators, successors and assigns.

16. **TIME.** The City and Buyer each confirm and agree that each of the time periods set forth herein are essential provisions of the terms of this Agreement.

17. **GOVERNING LAW**. This Agreement shall be construed in all respects in accordance with, and governed by, the laws of the State of Maine. All parties hereto hereby consent to the exclusive jurisdiction of the Superior Court for the County of Cumberland in the State of Maine, for all actions, proceedings and litigation arising

from or relating directly or indirectly to this Agreement or any of the obligations hereunder, and any dispute not otherwise resolved as provided herein shall be litigated solely in said Court. If any provision of this Agreement is determined to be invalid or unenforceable, it shall not affect the validity or enforcement of the remaining provisions hereof.

18. **NOTICE**. All notices, demands and other communications hereunder shall be in writing and shall be deemed to have been duly given on the date of service if served personally on the party to whom notice is to be given, or on the first business day after mailing if mailed to the party to whom notice is to be given by first class mail, postage prepaid, certified, return receipt requested, addressed to the recipient at the addresses set forth below. Either party may change addresses for purposes of this paragraph by giving the other party notice of the new address in the manner described herein.

FOR THE City:	City of Portland ATTN: City MANAGER 389 Congress Street Portland, ME 04101
With a copy to:	The Office of the Corporation Counsel at the same address.
FOR Buyer:	Horton, LLC 100 Commercial St., Box 411 Portland, ME 04101
With a copy to:	Michael G. Friedman, Esq. P.O. Box 10 Bridgton, ME 04009

19. **SIGNATURES; MULTIPLE COUNTERPARTS.** This Agreement may be executed in any number of counterparts and by different parties in separate counterparts. Each counterpart when so executed shall be deemed to be an original and all of which together shall constitute one and the same agreement.

20. **BROKERS.** City shall pay CBRE | The Boulos Company at closing a brokerage commission equal to five percent (5%) of the Purchase Price at closing. The CITY and Buyer each represent and warrant that they have not dealt with a real estate broker in connection with this transaction other than CBRE | The Boulos Company. Buyer agrees to indemnify and hold harmless City from any claims made by any broker should Buyer's representation in this paragraph be false. Subject to the limitations of liability set forth in the Maine Tort Claims Act, City agrees to indemnify and hold harmless Buyer from any claims made by any broker should City's representation in this paragraph be false. The foregoing indemnities shall include all legal fees and costs incurred in defense against any such claim, and shall survive closing.

21. **RECITALS INCORPORATED BY REFERENCE**. The recitals set forth above are incorporated herein by reference and made a part of this Agreement.

IN WITNESS WHEREOF, the parties have caused this instrument to be executed on their behalf by their duly authorized offices or representatives, on the day and year first written above.

WITNESS

WITNESS

Approved as to Form:

Corporation Counsel's Office

City OF PORTLAND

Jon P. Jennings
Its City Manager

HORTON, LLC

Printed Name: Jack Soley
Its PRESIDENT, HORTON, LLC

Norway Savings Bank
COLORFUL SOLUTIONS™

December 5, 2017

City of Portland Planning Authority
389 Congress Street
Portland, ME 04101

Re: Horton, LLC / 60 Parris Street

To whom it may concern:

Please be advised that Jack Soley and his related businesses have maintained a banking relationship with Norway Savings Bank for several years. The relationship includes both deposit accounts and commercial loans both of which have been handled as agreed. We consider the subject companies and its owner Jack Soley valued clients and hold them in the highest regard.

We understand that Horton, LLC intends to acquire and construct a new building at 60 Parris Street, Portland at a total cost of approximately $3,444,200. We feel that the subject company and its owner have the financial capacity including borrowings on a commercial basis to complete this project as presented.

I trust that this reference will satisfy the requirements of the Portland Permitting Authority that the applicant demonstrates its financial capacity to undertake the project. If you have any further questions regarding our client's financial capacity please feel free to contact me at 284-8355 or ngraydon@norwaysavingsbank.com .

Sincerely,

Noel B. Graydon
Regional Vice President

CITY OF PORTLAND WASTEWATER CAPACITY APPLICATION

Department of Public Services,
55 Portland Street,
Portland, Maine 04101-2991

Bradley Roland, P.E.
Water Resources Division

Date: 2017-12-13

1. Please, Submit Utility, Site, and Locus Plans.

Site Address: 60 PARRIS STREET

Chart Block Lot Number: 033 A013

Proposed Use: RESIDENTIAL
Previous Use: SURFACE PARKING
Existing Sanitary Flows: 0 GPD
Existing Process Flows: 0 GPD
Description and location of City sewer that is to receive the proposed building sewer lateral.
15" VIT. CLAY GRAVITY SEWER IN PARRIS ST.

Site Category:
- [ ] Commercial *(see part 4 below)*
- [ ] Industrial *(complete part 5 below)*
- [ ] Governmental
- [x] Residential
- [ ] Other *(specify)*

Clearly, indicate the proposed connections, on the submitted plans.

2. Please, Submit Contact Information.

City Planner's Name: _____ Phone: _____
Owner/Developer Name: HORTON, LLC / JACK SOLEY
Owner/Developer Address: PO BOX 411, 100 COMMERCIAL ST, SUITE 306, PORTLAND
Phone: 775-2252 Fax: _____ E-mail: JSOLEY@EASTBAYCOM.COM
Engineering Consultant Name: JOHN MAHONEY, RANSOM CONSULTING
Engineering Consultant Address: 400 COMMERCIAL ST, PORTLAND, ME
Phone: 772-2891 Fax: _____ E-mail: JOHN.MAHONEY@RANSOMENV.COM

Note: Consultants and Developers should allow +/- 15 days, for capacity status, prior to Planning Board Review.

3. Please, Submit Domestic Wastewater Design Flow Calculations.

Estimated Domestic Wastewater Flow Generated: 2160 GPD
Peaking Factor/ Peak Times: _____
Specify the source of design guidelines: *(i.e.* ✓ *"Handbook of Subsurface Wastewater Disposal in Maine," __ "Plumbers and Pipe Fitters Calculation Manual," __ Portland Water District Records, Other (specify)* _____

Note: Please submit calculations showing the derivation of your design flows, either on the following page, in the space provided, or attached, as a separate sheet.

4. Please, Submit External Grease Interceptor Calculations.

Total Drainage Fixture Unit (DFU) Values: N/A

Size of External Grease Interceptor: _____

Retention Time: _____

Peaking Factor/ Peak Times: _____

Note: In determining your restaurant process water flows, and the size of your external grease interceptor, please use The Uniform Plumbing Code. Note: In determining the retention time, sixty (60) minutes is the minimum retention time. Note: Please submit detailed calculations showing the derivation of your restaurant process water design flows, and please submit detailed calculations showing the derivation of the size of your external grease interceptor, either in the space provided below, or attached, as a separate sheet.

5. Please, Submit Industrial Process Wastewater Flow Calculations

Estimated Industrial Process Wastewater Flows Generated: N/A GPD

Do you currently hold Federal or State discharge permits? Yes ___ No ___

Is the process wastewater termed categorical under CFR 40? Yes ___ No ___

OSHA Standard Industrial Code (SIC): *(http://www.osha.gov/oshstats/sicser.html)*

Peaking Factor/Peak Process Times: _____

Note: On the submitted plans, please show where the building's domestic sanitary sewer laterals, as well as the building's industrial-commercial process wastewater sewer laterals exits the facility. Also, show where these building sewer laterals enter the city's sewer. Finally, show the location of the wet wells, control manholes, or other access points; and, the locations of filters, strainers, or grease traps.

Note: Please submit detailed calculations showing the derivation of your design flows, either in the space provided, or attached, as a separate sheet.

SEE ATTACHED.

60 Parris Street Sewer/Water Capacity Estimate

Dwelling Unit Type	Qty	Total Bedrooms	Flow per Bedroom (GPD)	Design Flow (GPD)
One-bedroom	24	24	90	2160
			Subtotal:	2160

Portland Water District

FROM SEBAGO LAKE TO CASCO BAY

February 21, 2018

John Mahoney
Ransom Consulting, Inc.
400 Commercial Street Suite 404
Portland, ME 04101

Re: 60 Parris Street, PO
Ability to Serve with PWD Water

Dear Mr. Mahoney:

The Portland Water District has received your request for an Ability to Serve Determination for the noted site submitted on February 9, 2018. Based on the information provided per plans dated February 8, 2018, we can confirm that the District will be able to serve the proposed project as further described in this letter. **Please note that this letter constitutes approval of the water system as currently designed. Any changes affecting the approved water system will require further review and approval by PWD.**

Conditions of Service

The following conditions of service apply:

- A new 2-inch domestic service and 6-inch fire service may be installed from the water main in Parris Street. The service should enter through the properties frontage on Parris Street at least 10-feet from any side property lines.

- Please note that only one meter and one bill will be associated to each domestic service line. This one master meter would be located in a common space that all tenants could gain access to if necessary.

Prior to construction, the owner or contractor will need to make an appointment to complete a service application form and pay all necessary fees. The appointment shall be requested through MEANS@pwd.org or by calling 207-774-5961 ext. 3199. Please allow (3) business days to process the service application paperwork. PWD will guide the applicant through the new development process during the appointment.

Existing Site Service

According to District records, the project site does not currently have existing water service.

Water System Characteristics

According to District records, there is an 8-inch diameter ductile iron water main in Parris Street and a public fire hydrant located approximately 300 feet from the site. The most recent static pressure reading was 90 psi on April 3, 2017.

Public Fire Protection

The installation of new public hydrants to be accepted into the District water system will most likely not be required. It is your responsibility to contact the Portland Fire Department to ensure that this project is adequately served by existing and/or proposed hydrants.

Domestic Water Needs

The data noted above indicates there should be adequate pressure and volume of water to serve the domestic water needs of your proposed project. Based on the high water pressure in this area, we recommend that you consider the installation of pressure reducing devices that comply with state plumbing codes.

Private Fire Protection Water Needs

You have indicated that this project will require water service to provide private fire protection to the site. Please note that the District does not guarantee any quantity of water or pressure through a fire protection service. Please share these results with your sprinkler system designer so that they can design the fire protection system to best fit the noted conditions. If the data is out of date or insufficient for their needs, please contact MEANS to request a hydrant flow test and we will work with you to get more complete data.

Should you disagree with this determination, you may request a review by the District's Internal Review Team. Your request for review must be in writing and state the reason for your disagreement with the determination. The request must be sent to MEANS@PWD.org or mailed to 225 Douglass Street, Portland Maine, 04104 c/o MEANS. The Internal Review Team will undertake review as requested within 2 weeks of receipt of a request for review.

If the District can be of further assistance in this matter, please let us know.

Sincerely,
Portland Water District



Robert A. Bartels, P.E.
Senior Project Engineer

The key to success starts with a solid foundation.
ENGINEERING | EXPLORATION | EXPERIENCE

Geotechnical Report

Proposed Parris Terraces

56 Parris Street, Portland, Maine



Client
Thidwick, LLC
100 Commercial Street
PO Box 411
Portland, Maine 04101

SUMMIT
GEOENGINEERING SERVICES

Project #: 17299
Date: 1/31/18

145 Lisbon Street (PO Box 7216) Lewiston, Maine 04243 | (207) 576-3313
173 Pleasant Street Rockland, Maine 04841 | (207) 318-7761
www.summitgeoeng.com

January 31, 2018
Summit #17299

Attn: Jack Soley
Thidwick, LLC
100 Commercial Street
PO Box 411
Portland, Maine 04101

Reference: Geotechnical Engineering Report – Proposed Parris Terraces
56 Parris Street, Portland, Maine

Dear Jack;

Summit Geoengineering Services, Inc. (SGS) has completed a geotechnical investigation for the proposed construction at the site referenced above. Our scope of services included the drilling of 5 test borings and 1 cone penetration tests (CPT), laboratory testing of collected samples, and preparing this geotechnical report summarizing our findings and providing geotechnical recommendations.

Our scope of services for this project included the drilling for the environmental site assessment, which was performed by others. We have included both the geotechnical logs and environmental logs compiled by SGS for this site. The environmental site assessment or further investigation for the presence or absence of hazardous or toxic material on, below, or around the site is the responsibility of others. Any statements in this report, or on the soil boring logs, regarding odors or unusual and suspicious conditions observed are for informational purposes and are not intended to constitute an environmental assessment.

1.0 Project and Site Description

We understand the project consists of the construction of a new residential building at the site referenced above. We further understand that the building will have a footprint of approximately 2,000 square feet, will have a total of 4 stories above ground, and will have a partial basement in the northern portion of the building. The upper 3 floors will be constructed with a larger footprint than the first floor and will overhang a portion the parking area. This overhang will be supported by isolated columns extending into the parking lot.

Currently, the site consists of a paved parking lot with grades ranging from approximately elevation 22 feet to elevation 28 feet, sloping up gradually in a southern direction. We

145 Lisbon Street (PO Box 7216) Lewiston, Maine 04243 | (207) 576-3313
173 Pleasant Street Rockland, Maine 04841 | (207) 318-7761
www.summitgeoeng.com

understand that the proposed finish floor elevation (FFE) for the first floor at grade will be elevation 27.5 feet and FFE for the partial basement will be elevation 18.0 feet. Up to 3 feet of fill will be required for the first floor and up to 8 feet of cut will be required for construction of the basement footings. Up to 4 feet of fill will be placed on the exterior of the basement retaining wall for the northwest corner of the proposed building.

Anticipated structural loads were provided to us by Structural Integrity, Inc. We understand that the maximum column load, including dead and live loads, is anticipated to be approximately 50 kips and the maximum line loads, including dead and live loads, are anticipated to be approximately 2 kips per linear foot for strip footings. Uplift loads were not provided to SGS at the time of preparing this report. We anticipate uplift loads to be supported by the dead weight of the building and soil overlying the footings.

2.0 Subsurface Exploration and Laboratory Testing

2.1 Subsurface Explorations

Summit Geoengineering Services (SGS) observed the subsurface conditions at the site with the drilling of 5 borings (B-1 through B-5) and 1 cone penetration tests (CPT-1) on October 17th, 2017 using a rubber track mounted Power Probe 9500 VTR. All explorations were advanced using 3-inch direct push steel casing. Soils were visually classified (*ASTM D2488*) using SPT split spoon sampling (*ASTM D1586*) and thin wall tube sampling (*ASTM D1587*) in Borings B-1, B-5, and the deeper portion of B-2. Borings were advanced to depths ranging from 6 feet to 22 feet.

The upper portion of Boring B-2 and the entirety of B-3 and B-4 were sampled with the 3" diameter direct push sampler for visual classification and environmental sampling. The "Vibrate" indicated on the boring logs referring the advancement of the steel casing and does not refer to spoon sampling.

One cone penetration tests (*ASTM D5778*) were performed using a 5-ton digital cone anchored using a single-point hollow stem auger system. Parameters obtained include cone resistance (q_c), sleeve friction (f_s), and piezocone pore pressure (u). Shear wave velocity (*ASTM D7400*) was also performed during CPT-1.

The boring and CPT explorations were located by SGS by taping and pacing from existing site features. The exploration locations are shown on the Exploration Location Plan in Appendix A. Logs of the explorations are provided in Appendix B.

145 Lisbon Street (PO Box 7216) Lewiston, Maine 04243 | (207) 576-3313
173 Pleasant Street Rockland, Maine 04841 | (207) 318-7761
www.summitgeoeng.com

2.2 Laboratory Testing

Laboratory tests were performed on collected samples of the native glacial marine soil in order to characterize the deposit and determine engineering properties of the clay. The Shelby Tube collected at a depth of 10' to 12.5' was transported to and tested at the Summit Geoengineering Services Laboratory. Testing consisted of moisture contents (*ASTM D2216*), one-dimensional consolidation test (*ASTM D2435)*, and lab torvane testing. Detailed results of the laboratory tests can be found in Appendix C.

3.0 Subsurface Conditions

3.1 Soil

The following subsurface layers and thicknesses were encountered in our geotechnical investigation, starting from the ground surface:

- ***Pavement,*** 5 inches to 6 inches
- ***Fill,*** 3.5 feet to 7 feet
- ***Glacial Marine,*** 15 feet to greater than 17 feet
- ***Bedrock (refusal depth),*** 22.1 feet depth

The ***Pavement*** was encountered in all of the explorations and ranged in thickness from 5 inches to 6 inches.

The ***Fill*** was encountered in all of the explorations directly below the pavement and ranges in thickness from 3.5 to 7.0 feet. The fill is described as olive brown to reddish brown sandy silt with little to some gravel and no to little clay. The fill contains occasional man-made constituents such as brick fragments, ash, and clinker and trace wood pieces. A 6" concrete slab was encountered at a depth of 3' in Boring B-4. Blow counts from Standard Penetration Testing (SPT-N) split spoon sampling in the fill ranged from 5 to 8 and averaged 6 blows per foot (bpf). SPT-N can also be correlated from the tip resistance measured from the CPT sounding (SPT-N_{CPT}). SPT-N_{CPT} within the fill layer correlated from CPT-1 is approximately 8 blows per foot. The fill is loose, dry to humid, and visually classifies as SP-SM or ML in accordance with the Unified Soil Classification System.

The ***Glacial Marine*** deposit begins at an approximate depth of 4 to 7.5 feet below ground surface (below the fill) and extends to depths ranging from 22.1 feet to greater than 22 feet. Based on the results from the explorations and the laboratory testing, the Glacial Marine deposit at the site can be divided into two sub-layers, an upper clayey silt layer and a lower

145 Lisbon Street (PO Box 7216) Lewiston, Maine 04243 | (207) 576-3313
173 Pleasant Street Rockland, Maine 04841 | (207) 318-7761
www.summitgeoeng.com

sand deposit. The upper clayey silt extends to a depth of approximately 14 to 15 feet below ground surface and is described as grayish brown clayey silt with little sand, trace gravel, and occasional natural wood pieces. SPT-N blow counts in the upper layer ranged from 5 to 10 and average 7 blows per foot (bpf). SPT-N_{CPT} within the fill layer correlated from CPT-1 is approximately 9 blows per foot. Pocket Penetrometer measurements (an estimate of unconfined compressive strength) ranged from 1,000 psf to 6,000 psf, generally decreasing with depth. Laboratory testing of a sample collected in the upper glacial marine soil indicates an average moisture content of 30.4%. The upper glacial marine layer is damp, loose to compact, and visually classifies as ML in general accordance with USCS.

The lower sub-layer begins at a depth of approximately 14 to 15 feet and extends to the bedrock at an a depth of 22.1 to greater than 22.0 feet. This soil is described reddish brown fine to medium sand with no to some silt and gravel. Thin clay seams are present throughout the layer. SPT-N blow counts in the lower layer ranged from 15 to 17 and average 16 blows per foot (bpf). SPT-N_{CPT} within the fill layer correlated from CPT-1 is approximately 29 blows per foot. The lower glacial marine deposit classifies as SP-SM in accordance with the USCS.

3.2 Groundwater

In general, groundwater appears to start at the surface of the lower portion of the Glacial Marine layer. The table below presents the depth and approximate elevation of the groundwater measured on the days of the explorations. Groundwater depth in the borings was either measured during the boring through the casing in the ground or was measured after completion in the open hole. Groundwater from the CPT was determined using the pore pressure measurements collected in the free-draining soil to calculate the hydrostatic pressure.

GROUNDWATER DEPTHS and ELEVATIONS		
Exploration	**Depth (ft.)**	**Approximate Elevation (ft.)**
B-5	13.5’	9.7’ +/-
CPT-1	10.8’	14.7’ +/-

Note: All elevations are approximate and were interpolated from the site plan

The above groundwater depths/elevations were measured on the day of the explorations. Groundwater levels may fluctuate depending on seasonal changes, rainfall, or snowfall amounts.

145 Lisbon Street (PO Box 7216) Lewiston, Maine 04243 | (207) 576-3313
173 Pleasant Street Rockland, Maine 04841 | (207) 318-7761
www.summitgeoeng.com

3.3 Bedrock

Probable bedrock was encountered at a depth of 22.1 feet in CPT-1. Mapping by the Maine Geological Survey indicates bedrock at the site part of the Precambrian Z Spring Point Formation consisting of green schist and amphibolites facies ranging from and mafic to felsic volcanic rock.

4.0 Geotechnical Evaluation

There are three key geotechnical considerations associated with the proposed development, which include:

- Potential for excessive settlement of the loose fill and/or glacial marine soil beneath building footings, particularly the isolated columns.
- Presence of rubble, concrete, or unsuitable fill exposed in footing excavations.
- Potential for temporary shoring required along the eastern building wall to construct the basement adjacent to Parris Street.

Based on the findings from our geotechnical explorations, we anticipate that loose fill soil will be exposed in footing excavations performed in the upper 4 to 7 feet and that soft clay/silt layers may be exposed the basement slab and footing excavations. To minimize the potential of excessive settlement for footings constructed on these soft/loose materials, we recommend that the subgrade preparations provided in Section 5.1 be followed. This will include proofrolling the exposed soil and the use of crushed stone over geotextile beneath all footings. Additionally, we will provide recommendations for filling the entire site to final grade proposed grade prior to excavating for building footings.

A buried concrete slab was encountered in Boring B-4 at a depth of 3 feet below ground surface, close to the proposed bottom of footing elevation. The extent of this concrete is unknown. There is potential for similar buried rubble/concrete pieces within the existing fill layer which may be uncovered during the foundation excavations and will need to be removed from beneath footings.

SGS performed settlement computations using soil properties determined from the results of the field and laboratory testing results. Assuming the structural loads presented in Section 1.0 are not exceeded, we anticipate the post-construction settlement of footings will range from 0.50” to 1.0” if the recommendations from this report are followed. Given this, the new building can be constructed using conventional spread footings on frost wall foundations and slab-on-grade floors.

145 Lisbon Street (PO Box 7216) Lewiston, Maine 04243 | (207) 576-3313
173 Pleasant Street Rockland, Maine 04841 | (207) 318-7761
www.summitgeoeng.com

5.0 Geotechnical Recommendations

5.1 Initial Site Preparation

The recommendations provided in the sections below are based on the following construction procedure:

1) All pavement and topsoil is removed from the entire site
2) The exposed soil throughout the entire site is proofrolled with a minimum of 10 passes (5 in each north-south and east-west directions) with a large vibratory roller. The vibratory roller should have a minimum operating weight of 15 tons.
3) Once proofrolling is complete, the building footprint and pavement areas are brought to finish grade prior to excavating for any building foundations.

5.2 Foundation Bearing Pressure

We anticipate that footings will be constructed on existing fill or glacial marine (clay/silt) soil. We recommend the foundation elements be proportioned using an allowable bearing pressure of 1,500 psf, assuming the recommendations below are followed. Post construction settlement is anticipated to be limited to 1" and differential settlement within the building footprint is estimated at less than a deflection of 1/300 (δ/L deflection divided by span length) between column footings. The bearing pressure and associated settlement are based on the following:

- The construction sequence from Section 5.1 is followed.
- Exterior footings exposed to freezing temperatures are constructed at a depth of 3 feet below exterior finish grade on a minimum of 12" of ¾" crushed stone.
- Exposed soil beneath footings disturbed during excavation is proofrolled with a minimum of 4 passes with a large plate compactor or vibratory roller. Proofrolling should be performed on dry, unfrozen soils. Any loose or soft areas identified during the proofrolling process should be removed and replaced with ¾" crushed stone.
- Soft, unsuitable fill or concrete/rubble encountered at the bottom of the footing excavations is removed and replaced with ¾" crushed stone prior to proofrolling. If a significant amount of soft/unsuitable soils are encountered, SGS should be notified. Unsuitable soils should be removed from beneath footings at a 2V:1H taper beyond all edges of the footing.
- Soft or wet soils are exposed in the basement footing excavations are covered with a non-woven geotextile (Mirafi 180N or equivalent) on the proofrolled subgrade prior to installing the ¾" crushed stone.

145 Lisbon Street (PO Box 7216) Lewiston, Maine 04243 | (207) 576-3313
173 Pleasant Street Rockland, Maine 04841 | (207) 318-7761
www.summitgeoeng.com

- Perimeter underdrains are included along the entire exterior basement foundation wall as outlined in Section 5.5.
- All fill placed within the proposed building footprints consists of Structural Fill (SF, See Section 5.6 for gradation requirements) or ¾" crushed stone placed in 8" to 12" lifts. SF should be compacted to 95% of the optimum dry density in accordance with ASTM D1557. ¾" Crushed Stone should be compacted with a minimum of 4 passes with a walk behind plate compactor.

Summit Geoengineering Services (SGS) should be retained to perform a subgrade inspection for the exterior isolated footings supporting the columns beneath the upper floor overhang. SGS should observe the soil exposed in the excavation prior to installing the ¾" crushed stone.

5.3 Frost Protection

The design air freezing index for the Portland area is approximately 1,200 degree F days (10 year, 90% probability). Based on this, a total of 4 feet of frost protection should be provided for the exterior footings. In order to provide sufficient frost protection and to maintain tolerable settlements by keeping the footings as high as possible above the glacial marine soil, we recommend that the footings be constructed at a depth of 3 feet below exterior finish grade and be placed on 12" of ¾" crushed stone overlying the geotextile.

We recommend that the exterior of all foundation elements exposed to freezing temperatures be backfilled with Foundation Backfill (FB). The portion of FB passing the 3" sieve size should meet the following gradation requirements:

FOUNDATION BACKFILL	
Sieve Size	**Percent Finer**
3 inch	100
¼ inch	25 to 100
No. 40	0 to 50
No. 200	0 to 7

Reference: MDOT Specification 703.06, Type E

Maximum particle size should be limited to 4 inches. Foundation backfill should be placed in 6 to 12 inch lifts and compacted to 95% of its optimum dry density determined in accordance with ASTM D1557. The compaction requirement can be reduced to 92% beneath landscaped areas.

145 Lisbon Street (PO Box 7216) Lewiston, Maine 04243 | (207) 576-3313
173 Pleasant Street Rockland, Maine 04841 | (207) 318-7761
www.summitgeoeng.com

5.4 Seismic Design

Based on the summary of field testing, laboratory results, and shear wave velocity testing performed during the CPT explorations, we recommend Site Class D be used in accordance with the 2012 or 2015 International Building Code. The following seismic site coefficients should be used:

SUBGRADE SITE SEISMIC DESIGN COEFFICIENTS - IBC	
Seismic Coefficient	**Site Class D**
Short period spectral response (S_S)	0.241
1 second spectral response (S_1)	0.078
Maximum short period spectral response (S_{MS})	0.386
Maximum 1 second spectral response (S_{M1})	0.188
Design short period spectral response (S_{DS})	0.257
Design 1 second spectral response (S_{D1})	0.125

Subgrade conditions are not considered susceptible to liquefaction during seismic events.

5.5 Groundwater Control

Groundwater in the borings was encountered at or near the proposed basement floor elevation. We recommend an underdrain be installed along the exterior foundation wall at the basement footing. Perimeter underdrains should consist of 6 inch rigid perforated PVC placed adjacent to the footing and surrounded by a minimum of 6 inches of crushed stone wrapped in filter fabric to prevent clogging from the migration of the fine soil particles in the foundation backfill soils. The underdrain pipe should be outlet to a location where it will be free flowing. Where exposed at the ground surface, the ends of pipes should be screened or otherwise protected from entry and nesting of wildlife, which could cause clogging.

If the grades do not allow a gravity outlet, a sump and pump would be required. If a sump pump is used to permanently dewater the basement, we recommend that a redundant system be installed to accommodate any failures of the primary sump or during power outages. In this case the basement slab does not need to be designed to account for hydrostatic pressure.

Alternatively, the underdrain can be placed as low as possible to attain a gravity outlet. Portions of the basement walls below the underdrain should be waterproofed and designed to accommodate the applicable lateral water pressure. The slab should be designed to support the excess hydrostatic pressure equal to the unit weight of water times the distance from the bottom of the basement slab to the underdrain. Joints between the slab and foundation walls

145 Lisbon Street (PO Box 7216) Lewiston, Maine 04243 | (207) 576-3313
173 Pleasant Street Rockland, Maine 04841 | (207) 318-7761
www.summitgeoeng.com

should be sealed to preclude water seepage. If this option is selected, SGS should be notified so we can provide additional recommendations.

5.6 Slab-on-Grade

We anticipate that existing fill and glacial marine (clay/silt) will be exposed in the slab excavations for the first floor and basement floors, respectively. We recommend that the slab for the building be constructed on a minimum of 12" of Structural Fill or ¾" crushed stone. The coefficient of subgrade reaction, k (per 12-inch plate) applies to the design of reinforced concrete foundations over soil. For the conditions described above, the slab can be designed using a coefficient of subgrade reaction of 150 pci. Prior to constructing the slab, the exposed soil should be proof rolled with a minimum of 5 passes in each of two perpendicular directions with a 15 ton minimum (operating weight) vibratory roller.

For exterior slabs or slabs in unheated areas, the slab subgrade thickness should be increased to 24" and the slab should be constructed on 1.5" of rigid insulation. Alternatively, the subgrade soil thickness could be increased to 48" (including the slab) if rigid insulation is not used to provide adequate frost heave protection. The portion of SF passing the 3" sieve shall meet the following gradation requirements:

STRUCTURAL FILL (SF)	
Sieve Size	**Percent finer**
3 inch	100
½ inch	35 to 80
¼ inch	25 to 65
No. 40	0 to 30
No. 200	0 to 7

Reference: MDOT Specification 703.06, Type D

The maximum particle size should be limited to 6 inches. Structural Fill should be placed in 12" loose lifts and should be compacted to a minimum of 95 percent of its maximum dry density, determined in accordance with ASTM D1557.

6.0 Pavement Recommendations

The mean annual freezing index for the Portland, Maine area is estimated at 900 degree days. Based on the subgrade and mean annual freezing index, the anticipated mean annual frost penetration depth is 30 inches.

145 Lisbon Street (PO Box 7216) Lewiston, Maine 04243 | (207) 576-3313
173 Pleasant Street Rockland, Maine 04841 | (207) 318-7761
www.summitgeoeng.com

We recommend a minimum total section thickness of 18 inches for pavement areas for light duty traffic. We further recommend that the pavement section consist of the following materials:

MATERIAL	THICKNESS (in) Light Duty	SPECIFICATION
Asphalt Surface Course	1	MDOT 703.09 Type 9.5 mm or Type 12.5 mm
Asphalt Binder Course	2	MDOT 703.09 Type 19 mm
Base Soil	3	MDOT 703.06 Type A
Subbase Soil	12	MDOT 703.06 Type D or ¾" Crushed Stone

For portions of the pavement subjected to light traffic loads of cars and light trucks we recommend MDOT Type 9.5mm surface course. The following specifications are for MDOT base and subbase gravel:

SIEVE SIZE	Percent Passing a 3-inch Sieve	
	MDOT Type A (Base)	MDOT Type D (Subbase)
3 Inch	100	100
2 Inch	100	--
½ Inch	45 – 70	35 – 80
¼ Inch	30 – 55	25 – 65
No. 40	0 – 20	0 – 30
No. 200	0 – 6	0 – 7

Reference: MDOT Specification 703.06, Aggregate for Base and Subbase (2014)

7.0 Retaining Wall Design

7.1 Temporary Retaining Walls

The following elevations and soil properties can be used for design of temporary and permanent retaining walls at the site.

Existing Fill: Ground Surface to Elevation 18.0 feet
Glacial Marine (Silt/Clay): Elevation 18.0 feet to Elevation 6.0 feet
Bedrock: Elevation 6.0 feet

145 Lisbon Street (PO Box 7216) Lewiston, Maine 04243 | (207) 576-3313
173 Pleasant Street Rockland, Maine 04841 | (207) 318-7761
www.summitgeoeng.com

DESIGN PARAMETERS – TEMPORARY RETAINING WALL DESIGN			
PARAMETER	**EXISTING FILL**	**GLACIAL MARINE (Silt/Clay)**	**[1]STRUCTURAL FILL and FOUNDATION BACKFILL**
Total Unit Weight (γ_t)	125 pcf	120 pcf	135 pcf
Submerged Unit Weight (γ_B)	68 pcf	63 pcf	78 pcf
Effective Friction Angle (ϕ')	32°	22°	34°
Cohesion (c)	0 psf	400 psf	0 psf
Interface Friction Angle (δ), Steel	17°	8°	24°
Interface Friction Angle (δ), C.I.P. Conc.	19°	10°	28°
Adhesion (c_a)	0 psf	250 psf	0 psf

[1]**Note:** Soil Parameters for Structural Fill and Foundation Backfill assume that the fill is placed in 12" maximum lifts and compacted to 95% of the dry density in accordance with ASTM D1557 If the proposed retaining wall is restricted against horizontal deflection or is not designed to accommodate deflections which will engage the active pressure state, at-rest earth pressure should be used in the wall design.

We recommend that retaining walls be backfilled with FB meeting the gradation requirements presented in Section 5.3. FB should be compacted to 95% of its maximum dry density in accordance with ASTM D1557. Geotextile (Mirafi 180N or equivalent) should be placed between the native soil and the FB.

7.2 Permanent or Basement Walls

The following table can be used to design permanent basement walls with the equivalent fluid pressure method of soil. Note that these values assume a flat backslope or toeslope and will require a modification if there is a slope.

EQUIVALENT FLUID PRESSURE (EFP)			
SOIL	**ACTIVE EFP**	**AT-REST EFP**	**PASSIVE EFP**
Foundation Backfill	42 psf	60 psf	400 psf

As discussed in Section 5.2, we recommend that the subgrade below basement wall footings include a minimum of 12" of ¾" crushed stone placed over the proofrolled subgrade. If soft or wet soils are encountered in the bottom of the footing excavation, a non-woven geotextile (Mirafi 180N or equivalent) should be placed on the proofrolled subgrade. Additionally, as discussed in Section 5.5, a perimeter underdrain should be included around the basement footings.

A sliding coefficient of 0.60 can be used for cast-in-place concrete on ¾" crushed stone. Retaining walls should be designed to accommodate traffic and construction surcharge loads.

8.0 Earthwork Considerations

It will be critical to follow the construction sequence provided in Section 5.1. The entire site should be stripped, proofrolled, and filled to finish grade prior to excavating for any foundations.

Fill within the building footprint and below the isolated column footings should consist of compacted Structural Fill (SF, See Section 5.6), while fill in areas outside the building footprint may consist of Gravel Borrow.

GRAVEL BORROW (GB)	
Sieve Size	**Percent finer**
¼ inch	0 to 70
No. 200	0 to 10.0

Reference: MDOT Specification 703.19, Gravel Borrow

The maximum GB particle size should be limited to 6 inches. GB should be placed in 6 to 12 inch lifts and should be compacted to a minimum of 95 percent of its maximum dry density, determined in accordance with ASTM D1557.

The table below summarizes the OSHA general excavation guidelines for occupied excavations for the soils encountered in our geotechnical explorations. All permissible slopes below apply to soil above groundwater table:

145 Lisbon Street (PO Box 7216) Lewiston, Maine 04243 | (207) 576-3313
173 Pleasant Street Rockland, Maine 04841 | (207) 318-7761
www.summitgeoeng.com

OSHA Excavation Slopes		
Soil	**OSHA Classification**	**Permissible Slope**
Existing Fill	Type C	1.5H:1V
Glacial Marine	Type B	1.0H:1V

The above permissible slopes are for soil above the groundwater table. If any excavated soil is found to be below the groundwater table and is not de-watered, the permissible slope for the submerged soil is 1.5H to 1V. Any excavations greater than 20 feet should be designed by a qualified Maine Licensed Professional Engineer.

Surface water should be redirected from excavation areas. Where softened, we recommend the subgrade at the base of the footing or slab excavation be over-excavated and replaced with a minimum of 12 inches of Crushed Stone. Crushed Stone should be should be tamped to lock the stone structure together. Crushed Stone should meet the following gradation specification:

CRUSHED STONE ¾ INCH	
Sieve Size	**Percent finer**
1 inch	100
¾ inch	90 to 100
½ inch	20 to 55
⅜ inch	0 to 15
No. 4	0 to 5

Reference: MDOT Specification 703.13, Crushed Stone ¾-Inch (2014)

In general, we do not anticipate groundwater within footing excavations. If localized perched groundwater is encountered, dewatering may consist of shallow sumps at the base of the excavation. Diversion and control of surface water should be performed to prevent water flow from rain or snowmelt from entering the excavations.

We recommend that a qualified geotechnical consultant be retained to monitor and test soil materials used during construction and confirm that soil conditions and construction methods are consistent with this report.

9.0 Closure

Our recommendations are based on professional judgment and generally accepted principles of geotechnical engineering and project information provided by others. Some changes in subsurface conditions from those presented in this report may occur. Should these conditions

or the proposed development differ from those described in this report, SGS should be notified so that we can re-evaluate our recommendations.

It is recommended that this report be made available in its entirety to contractors for informational purposes and be incorporated in the construction Contract Documents. We recommend that SGS be retained to review final construction documents relevant to the recommendations in this report.

We appreciate the opportunity to serve you during this phase of your project. If there are any questions or additional information is required, please do not hesitate to call.

Sincerely yours,

Mathew Hardison, PE
Senior Geotechnical Engineer



145 Lisbon Street (PO Box 7216) Lewiston, Maine 04243 | (207) 576-3313
173 Pleasant Street Rockland, Maine 04841 | (207) 318-7761
www.summitgeoeng.com

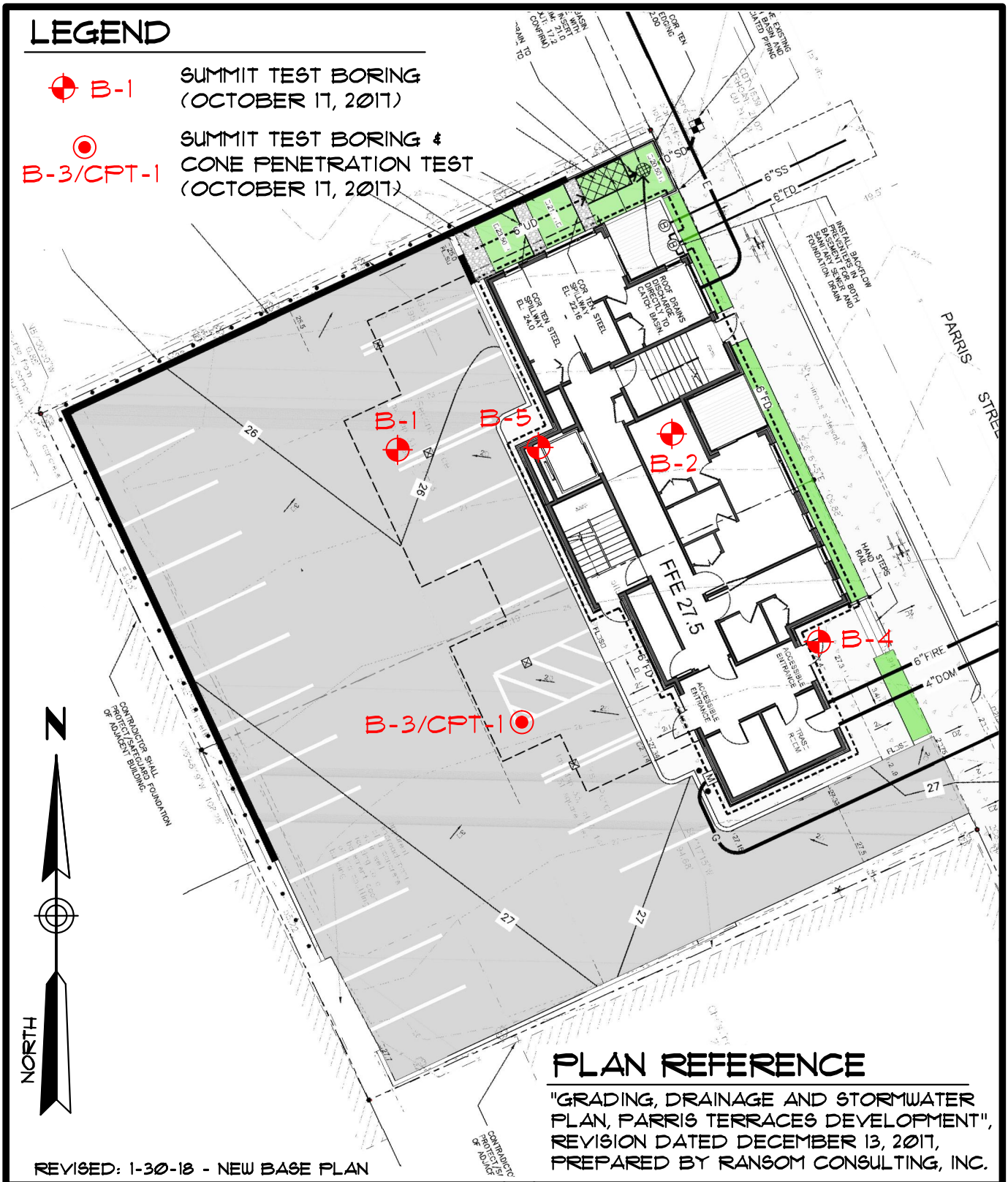
APPENDIX A

EXPLORATION LOCATION PLAN

LEGEND

B-1 — SUMMIT TEST BORING (OCTOBER 17, 2017)

B-3/CPT-1 — SUMMIT TEST BORING & CONE PENETRATION TEST (OCTOBER 17, 2017)



REVISED: 1-30-18 - NEW BASE PLAN

PLAN REFERENCE

"GRADING, DRAINAGE AND STORMWATER PLAN, PARRIS TERRACES DEVELOPMENT", REVISION DATED DECEMBER 13, 2017, PREPARED BY RANSOM CONSULTING, INC.

SUBSURFACE EXPLORATION LOCATION PLAN

PROPOSED BUILDING

56 PARRIS STREET - PORTLAND, MAINE

PREPARED FOR

JACK SOLEY

DATE: 10-18-2017	DRAWN BY: KRF	CHECKED BY: WMP
JOB: 17299	SCALE: 1" = 20'	FILE: 17299 BOR

145 LISBON ST. - SUITE 701
LEWISTON, ME 04240
Tel.: (207) 576-3313

173 PLEASANT STREET
ROCKLAND, ME 04841
Tel.: (207) 318-7761

SUMMIT
GEOENGINEERING SERVICES
www.summitgeoeng.com

APPENDIX B

EXPLORATION LOGS

EXPLORATION COVER SHEET

The exploration logs are prepared by the geotechnical engineer from both field and laboratory data. Soil descriptions are based upon the Unified Soil Classification System (USCS) per ASTM D2487 and/or ASTM D2488 as applicable. Supplemental descriptive terms for estimated particle percentage, color, density, moisture condition, and bedrock may also be included to further describe conditions.

Drilling and Sampling Symbols:

SS = Split Spoon Sample
UT = Thin Wall Shelby Tube
SSA = Solid Stem Auger
HSA = Hollow Stem Auger
RW = Rotary Wash
SV = Shear Vane
PP = Pocket Penetrometer
RC = Rock Core Sample
FV = Field Vane Shear Test
PS = Concrete Punch Sample
Hyd = Hydraulic Advancement of Drilling Rods
Push = Direct Push of Drilling Rods
WOH = Weight of Hammer
WOR = Weight of Rod
PI = Plasticity Index
LL = Liquid Limit
W = Natural Water Content
USCS = Unified Soil Classification System
Su = Undrained Shear Strength
Su(r) = Remolded Shear Strength

Water Level Measurements:

Water levels indicated on the boring logs are the levels measured in the boring at the times indicated. In pervious soils, the indicated elevations are considered reliable groundwater levels. In impervious soils, the accurate determination of groundwater elevations may not be possible, even after several days of observations. Groundwater monitoring wells may be required to record accurate depths and fluctuation.

Gradation Description and Terminology:

Boulders:	Over 12 inches	Trace:	Less than 5%
Cobbles:	12 inches to 3 inches	Little:	5% to 15%
Gravel:	3 inches to No.4 sieve	Some:	15% to 30%
Sand:	No.4 to No. 200 sieve	Silty, Sandy, etc.:	Greater than 30%
Silt:	No. 200 sieve to 0.005 mm		
Clay:	less than 0.005 mm		

Density of Granular Soils and Consistency of Cohesive Soils:

CONSISTENCY OF COHESIVE SOILS		DENSITY OF GRANULAR SOILS	
SPT N-value blows/ft	**Consistency**	**SPT N-value blows/ft**	**Relative Density**
0 to 2	Very Soft	0 to 4	Very Loose
2 to 4	Soft	5 to 10	Loose
5 to 8	Firm	11 to 30	Compact
9 to 15	Stiff	31 to 50	Dense
16 to 30	Very Stiff	>50	Very Dense
>30	Hard		

SUMMIT GEOENGINEERING SERVICES

SOIL BORING LOG

Project:	Proposed Building	Boring #:	**B-1**
Location:	56 Parris Street	Project #:	17299
City, State:	Portland, Maine	Sheet:	1 of 1
		Chkd by:	

Drilling Co:	Summit Geoengineering Services, Inc.	Boring Elevation:	23.5 ft. +/-
Driller:	C. Coolidge, P.E.	Reference:	Grading Plan, Parris Terraces Development, dated 12/13/17 by Sebago Technics
Summit Staff:	M. Hardison, E.I.	Date started: 10/17/2017	Date Completed: 10/17/2017

DRILLING METHOD		SAMPLER	
Vehicle:	Tracked	Length:	24" SS
Model:	AMS Power Probe	Diameter:	2"OD/1.5"ID
Method:	3" ID Casing	Hammer:	140 lb
Hammer Style:	Auto	Method:	ASTM D1586

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
10/17/2017	-	-	None Encountered

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	blows/6"	Elev. (ft.)	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
						6" Pavement		PAVEMENT
1	S-1	24/8	0.5 to 2.5	10		Top 3": Gray to Brown m-c SAND, little Silt and Gravel		
				3		Olive brown SILT, little to some Sand, little Clay,		
2				2		trace Gravel, humid, loose, ML		FILL
				2				
3	S-2	24/12	2.5 to 4.5	4		Similar to above, increasing Gravel content, trace brick	PP = 1,000 psf	
				3		fragments		
4				2				
				3				
5	S-3	24/6	4.5 to 6.0	4		Reddish brown Gravelly SAND, little Silt, humid, loose,		
				3		trace brick fragments, SP-SM		
6				5				
						End of Boring at 6.0 feet, no refusal		
7								
						Set Soil Vapor Well at 6.0 feet depth		
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								

Granular Soils		Cohesive Soils		% Composition
Blows/ft.	Density	Blows/ft.	Consistency	ASTM D2487
0-4	V. Loose	<2	V. soft	
5-10	Loose	2-4	Soft	< 5% Trace
11-30	Compact	5-8	Firm	5-15% Little
31-50	Dense	9-15	Stiff	15-30% Some
>50	V. Dense	16-30	V. Stiff	> 30% With
		>30	Hard	

NOTES: PP = Pocket Penetrometer, MC = Moisture Content
LL = Liquid Limit, PI = Plastic Index, FV = Field Vane Test
Su = Undrained Shear Strength, Su(r) = Remolded Shear Strength

Bedrock Joints
Shallow = 0 to 35 degrees
Dipping = 35 to 55 degrees
Steep = 55 to 90 degrees

Boulders = diameter > 12 inches, Cobbles = diameter < 12 inches and > 3 inches
Gravel = < 3 inch and > No 4, Sand = < No 4 and >No 200, Silt/Clay = < No 200

Soil Moisture Condition
Dry: S = 0%
Humid: S = 1 to 25%
Damp: S = 26 to 50%
Moist: S = 51 to 75%
Wet: S = 76 to 99%
Saturated: S = 100%

SUMMIT
GEOENGINEERING SERVICES

SOIL BORING LOG

Boring #: **B-2**

Project:	Proposed Building	Project #:	17299
Location:	56 Parris Street	Sheet:	1 of 1
City, State:	Portland, Maine	Chkd by:	

Drilling Co:	Summit Geoengineering Services, Inc.	Boring Elevation:	23.5 ft. +/-
Driller:	C. Coolidge, P.E.	Reference:	Grading Plan, Parris Terraces Development, dated 12/13/17 by Sebago Technics
Summit Staff:	M. Hardison, E.I.	Date started: 10/17/2017	Date Completed: 10/17/2017

DRILLING METHOD		SAMPLER	
Vehicle:	Tracked	Length:	24" Direct Push
Model:	AMS Power Probe	Diameter:	3.0" ID
Method:	3" ID Casing	Hammer:	Auto
Hammer Style:	Auto	Method:	

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
10/17/2017	-	-	None Encountered

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	blows/6"	Elev. (ft.)	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
				VIBRATE		5.5" Pavement		PAVEMENT
1	DP-1	24/18	0.5 to 2.0			Top 8": Gray to Brown medium to coarse SAND, little Silt and Gravel, humid, SP-SM		
2						Olive gray SILT, little Gravel, Sand, and Clay, trace		FILL
	DP-2	24/18	2 to 4			brick, ash, clinker, and wood pieces, soft, ML		
3								
						Similar to above, moist, recovered large wood piece		
4								
	DP-3	24/12	4 to 6			Olive Gray SILT, little Clay, trace Sand and Gravel,		
5						moist, slightly mottled, ML		GLACIAL MARINE
				▼				
6						Drove 3" Casing to 10.0' depth to collect Shelby Tube		
7								
8								
9								
10								
	UT-1	30/16	10 to 12.5	PUSH		Collected Undisturbed Shelby Tube	MC = 30.4%	
11								
12				▼				
13						End of Boring at 12.5 feet, no refusal		
14								
15								
16								
17								
18								
19								
20								
21								
22								

Granular Soils		Cohesive Soils		% Composition
Blows/ft.	Density	Blows/ft.	Consistency	ASTM D2487
0-4	V. Loose	<2	V. soft	
5-10	Loose	2-4	Soft	< 5% Trace
11-30	Compact	5-8	Firm	5-15% Little
31-50	Dense	9-15	Stiff	15-30% Some
>50	V. Dense	16-30	V. Stiff	> 30% With
		>30	Hard	

NOTES: PP = Pocket Penetrometer, MC = Moisture Content
LL = Liquid Limit, PI = Plastic Index, FV = Field Vane Test
Su = Undrained Shear Strength, Su(r) = Remolded Shear Strength

Bedrock Joints
Shallow = 0 to 35 degrees
Dipping = 35 to 55 degrees
Steep = 55 to 90 degrees

Boulders = diameter > 12 inches, Cobbles = diameter < 12 inches and > 3 inches
Gravel = < 3 inch and > No 4, Sand = < No 4 and >No 200, Silt/Clay = < No 200

Soil Moisture Condition
Dry: S = 0%
Humid: S = 1 to 25%
Damp: S = 26 to 50%
Moist: S = 51 to 75%
Wet: S = 76 to 99%
Saturated: S = 100%

SUMMIT GEOENGINEERING SERVICES

SOIL BORING LOG

Boring #: **B-3**

Project:	Proposed Building	Project #:	17299
Location:	56 Parris Street	Sheet:	1 of 1
City, State:	Portland, Maine	Chkd by:	

Drilling Co:	Summit Geoengineering Services, Inc.	Boring Elevation:	25.5 ft. +/-
Driller:	C. Coolidge, P.E.	Reference:	Grading Plan, Parris Terraces Development, dated 12/13/17 by Sebago Technics
Summit Staff:	M. Hardison, E.I.	Date started: 10/17/2017	Date Completed: 10/17/2017

DRILLING METHOD		SAMPLER	
Vehicle:	Tracked	Length:	24" Direct Push
Model:	AMS Power Probe	Diameter:	3.0" ID
Method:	3" ID Casing	Hammer:	Auto
Hammer Style:	Auto	Method:	

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
10/17/2017	10.8 ft.	14.7 ft. +/-	Measured in CPT hole

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	blows/6"	Elev. (ft.)	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
				VIBRATE		5" Pavement		PAVEMENT
1	DP-1	24/18	0.5 to 2.0			Top 8": Gray to Brown medium to coarse SAND, little Silt and and Gravel, humid, SP-SM		
2						2" Black ASH		ASH
	DP-2	24/20	2 to 4			Olive brown Sandy SILT, intermixed brick, ash, and		
3						clinker pieces, humid, ML		FILL
4								
	DP-3	24/18	4 to 6			Similar to above, Gravelly SAND, large brick pieces,		
5						frequent ash		
6								
						End of Boring at 6.0 feet, no refusal		
7								
						Set Soil Vapor Well at 6.0 feet depth		
8								
						Performed CPT-1 directly adjacent to B-3 Borehole		
9								
10								
11							▽ Groundwater	
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								

Granular Soils		Cohesive Soils		% Composition
Blows/ft.	Density	Blows/ft.	Consistency	ASTM D2487
0-4	V. Loose	<2	V. soft	
5-10	Loose	2-4	Soft	< 5% Trace
11-30	Compact	5-8	Firm	5-15% Little
31-50	Dense	9-15	Stiff	15-30% Some
>50	V. Dense	16-30	V. Stiff	> 30% With
		>30	Hard	

NOTES: PP = Pocket Penetrometer, MC = Moisture Content
LL = Liquid Limit, PI = Plastic Index, FV = Field Vane Test
Su = Undrained Shear Strength, Su(r) = Remolded Shear Strength

Bedrock Joints
Shallow = 0 to 35 degrees
Dipping = 35 to 55 degrees
Steep = 55 to 90 degrees

Boulders = diameter > 12 inches, Cobbles = diameter < 12 inches and > 3 inches
Gravel = < 3 inch and > No 4, Sand = < No 4 and >No 200, Silt/Clay = < No 200

Soil Moisture Condition
Dry: S = 0%
Humid: S = 1 to 25%
Damp: S = 26 to 50%
Moist: S = 51 to 75%
Wet: S = 76 to 99%
Saturated: S = 100%

SUMMIT GEOENGINEERING SERVICES

SOIL BORING LOG

Boring #: **B-4**

Project:	Proposed Building	Project #:	17299
Location:	56 Parris Street	Sheet:	1 of 1
City, State:	Portland, Maine	Chkd by:	

Drilling Co:	Summit Geoengineering Services, Inc.	Boring Elevation:	25.5 ft. +/-
Driller:	C. Coolidge, P.E.	Reference:	Grading Plan, Parris Terraces Development, dated 12/13/17 by Sebago Technics
Summit Staff:	M. Hardison, E.I.	Date started: 10/17/2017	Date Completed: 10/17/2017

DRILLING METHOD		SAMPLER	
Vehicle:	Tracked	Length:	24" Direct Push
Model:	AMS Power Probe	Diameter:	3.0" ID
Method:	3" ID Casing	Hammer:	Auto
Hammer Style:	Auto	Method:	

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
10/17/2017	-	-	None Encountered

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	blows/6"	Elev. (ft.)	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
				VIBRATE		5" Pavement		PAVEMENT
1	DP-1	24/18	0.5 to 2.0			Brown Gravelly fine to coarse SAND, little Silt, humid, concrete pieces near bottom of sample		
2								FILL
3	DP-2	24/20	2 to 4			Olive brown Sandy SILT, intermixed brick, ash, and clinker pieces, humid		
4						6" Concrete (Possible Old Slab)		CONCRETE
5	DP-3	24/18	4 to 6			Olive brown Sandy SILT, intermixed brick, ash, and clinker pieces, humid		
6								
7						End of Boring at 6.0 feet, no refusal Set Soil Vapor Well at 6.0 feet depth		
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								

Granular Soils		Cohesive Soils		% Composition
Blows/ft.	Density	Blows/ft.	Consistency	ASTM D2487
0-4	V. Loose	<2	V. soft	
5-10	Loose	2-4	Soft	< 5% Trace
11-30	Compact	5-8	Firm	5-15% Little
31-50	Dense	9-15	Stiff	15-30% Some
>50	V. Dense	16-30	V. Stiff	> 30% With
		>30	Hard	

NOTES: PP = Pocket Penetrometer, MC = Moisture Content
LL = Liquid Limit, PI = Plastic Index, FV = Field Vane Test
Bedrock Joints Su = Undrained Shear Strength, Su(r) = Remolded Shear Strength
Shallow = 0 to 35 degrees
Dipping = 35 to 55 degrees
Steep = 55 to 90 degrees

Boulders = diameter > 12 inches, Cobbles = diameter < 12 inches and > 3 inches
Gravel = < 3 inch and > No 4, Sand = < No 4 and >No 200, Silt/Clay = < No 200

Soil Moisture Condition
Dry: S = 0%
Humid: S = 1 to 25%
Damp: S = 26 to 50%
Moist: S = 51 to 75%
Wet: S = 76 to 99%
Saturated: S = 100%

SUMMIT GEOENGINEERING SERVICES

SOIL BORING LOG

Boring #: **B-5**

Project:	Proposed Building	Project #:	17299
Location:	56 Parris Street	Sheet:	1 of 1
City, State:	Portland, Maine	Chkd by:	

Drilling Co:	Summit Geoengineering Services, Inc.	Boring Elevation:	23.5 ft. +/-
Driller:	C. Coolidge, P.E.	Reference:	Grading Plan, Parris Terraces Development, dated 12/13/17 by Sebago Technics
Summit Staff:	M. Hardison, E.I.	Date started: 10/17/2017	Date Completed: 10/17/2017

DRILLING METHOD		SAMPLER	
Vehicle:	Tracked	Length:	24" SS
Model:	AMS Power Probe	Diameter:	2"OD/1.5"ID
Method:	3" ID Casing	Hammer:	140 lb
Hammer Style:	Auto	Method:	ASTM D1586

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
10/17/2017	16.8 ft.	6.7 ft. +/-	Measured directly upon completion
10/17/2017	13.8 ft.	9.7 ft. +/-	Measured 5 hours after completion

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	blows/6"	Elev. (ft.)	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
						6" Pavement		PAVEMENT
1								
2								FILL
	S-1	24/14	2 to 4	2		Olive brown Silty SAND, trace Gravel, Clay, and Brick	PP = 1,000 psf	
3				2		pieces, humid to damp, loose	to 3,000 psf	
				3				
4				28*		* = Likely Gravel/Cobble Piece		
5								
	S-2	24/20	5 to 7	3		Grayish brown SILT, little Sand and Clay, wood piece	PP = 3,000 psf	
6				4		(natural) from 5.6' to 6.1' depth, trace fine Gravel,	to 6,000 psf	GLACIAL MARINE
				6		damp, loose to compact, ML		
7				8				
8								
9								
10								
	S-3	24/18	10 to 12	2		Grayish brown Clayey SILT, little to some intermixed	PP = 2,000 psf	
11				2		fine Sand, trace organics, damp, increasing moisture	to 1,000 psf	
				3		content in spoon tip, ML	(decrease w/	
12				3			depth)	
13								
							▽Groundwater	
14								
15								
	S-4	24/20	15 to 17	5		Reddish brown fine to medium SAND, little to some		
16				8		Silt, heavily mottled, compact, moist to wet, SP-SM		
				7				
17				9				
18								
19								
20								
	S-5	24/20	20 to 22	7		Same as above, little to some Gravel		
21				8		Silty CLAY seam from 20.3' to 20.6'	PP = 6,000 psf	
				9		Reddish brown fine to medium SAND, little to some		
22				3		Gravel and Silt, heavily mottled, compact, wet, SP-SM		
						End of Boring at 22.0', no refusal		

Granular Soils		Cohesive Soils		% Composition
Blows/ft.	Density	Blows/ft.	Consistency	ASTM D2487
0-4	V. Loose	<2	V. soft	
5-10	Loose	2-4	Soft	< 5% Trace
11-30	Compact	5-8	Firm	5-15% Little
31-50	Dense	9-15	Stiff	15-30% Some
>50	V. Dense	16-30	V. Stiff	> 30% With
		>30	Hard	

NOTES: PP = Pocket Penetrometer, MC = Moisture Content
LL = Liquid Limit, PI = Plastic Index, FV = Field Vane Test
Su = Undrained Shear Strength, Su(r) = Remolded Shear Strength

Bedrock Joints
Shallow = 0 to 35 degrees
Dipping = 35 to 55 degrees
Steep = 55 to 90 degrees

Boulders = diameter > 12 inches, Cobbles = diameter < 12 inches and > 3 inches
Gravel = < 3 inch and > No 4, Sand = < No 4 and >No 200, Silt/Clay = < No 200

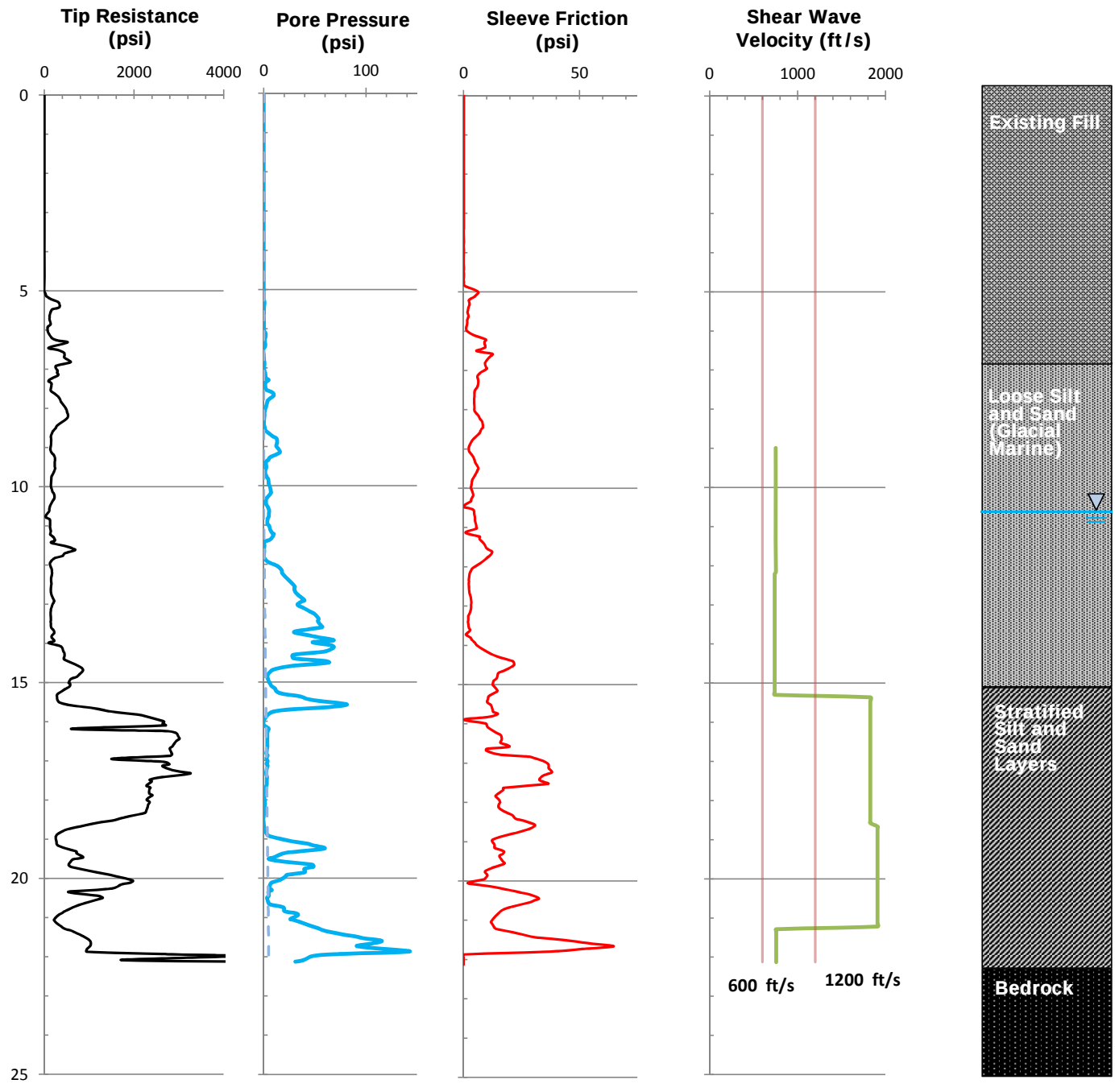
Soil Moisture Condition
Dry: S = 0%
Humid: S = 1 to 25%
Damp: S = 26 to 50%
Moist: S = 51 to 75%
Wet: S = 76 to 99%
Saturated: S = 100%

SUMMIT GEOENGINEERING SERVICES

PIEZOCONE PENETRATION LOG

Test Number:	CPT-1		
Sheet:	1 of 1		
Project:	Proposed Building	Project Number:	17266
Location:	56 Parris Street	Method:	ASTM D5778
City, State	Portland, Maine	Weather:	70° Sunny

Cone ID:	Vertek #4544.101	Test Elevation:	25.5 ft. +/-
Cone Type:	VTK 5 Ton Digital Cone	Reference:	Grading Plan, Parris Terraces Development, dated 12/13/17 by Sebago Technics
Piezocone:	Silicone Single Filter	Date started:	10/17/2017 Date Completed: 10/17/2017
Push Rig:	AMS Power Probe 9500 VTR	ESTIMATED GROUND WATER DEPTH	
Anchor Style:	Single Point Anchor	Date / Depth / Elevation / Reference	
Performed By:	Craig Coolidge, P.E.	10/17/2017 / 10.8 / 14.7 ft. +/- / Measured in hole after cone retrieval	



NOTES:

Soil Profile based on interpretation of CPT measurements and nearby borings

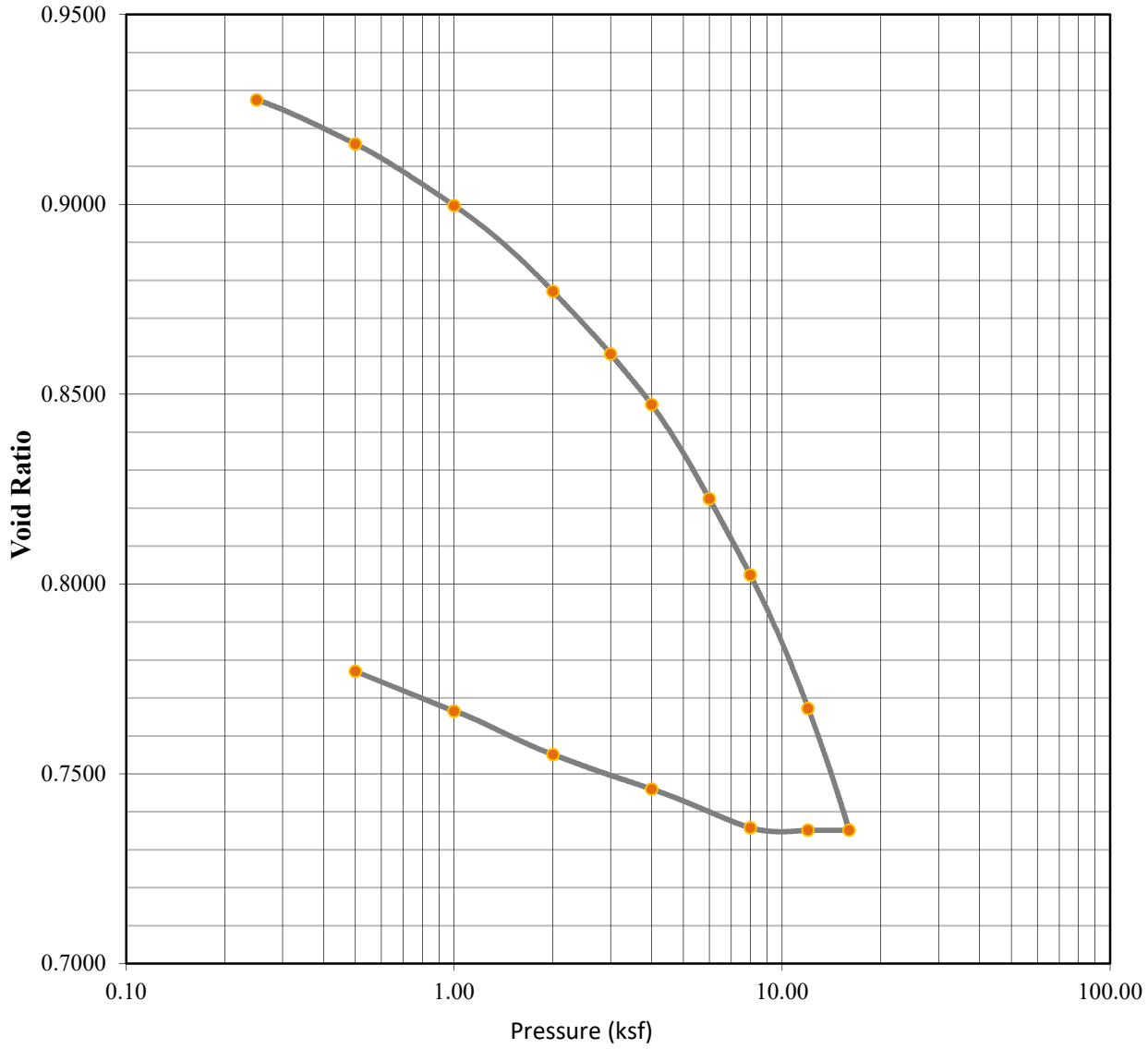
Shear Wave Velocity test (V_s) performed at 3.3 feet (1-meter) increments

Abrupt push refusal encountered at depth of 22.1 feet on likely bedrock

APPENDIX C

LABORATORY TESTING RESULTS

Consolidation Test
Test Results



	Before	After				
Moisture (%):	32.30	30.16	**Liquid Limits:**	Unknown	**Test Date:**	10/20/17
Dry Density (pcf):	88.51	95.60	**Plastic Limits:**	Unknown	**Performed By:**	ELS
Saturation (%):	94.54	104.23	**Plasticity Index (%):**	Unknown	**Reviewed By:**	WMP
Void Ratio:	0.9357	0.7767	**Specific Gravity:**	2.750	Assumed	

Soil Description: Gray Silty CLAY, trace fine Sand lenses, CL

Project Number: 17299 **Depth:** 10' - 12.5'

Sample Number: UT-1 **Boring Number:** B-2

Project: New Building

Client: Thidwick, LLC

Location: Boring B-2

SUMMIT GEOENGINEERING SERVICES

145 Lisbon Street (PO Box 7216), Lewiston, Maine 04243, (207) 576-3313
173 Pleasant Street, Rockland, Maine 04841, (207) 318-7761

SUMMIT
GEOENGINEERING SERVICES

THIN WALLED TUBE SAMPLING

PROJECT NAME:	Proposed Building	PROJECT #:	17299
PROJECT LOCATION:	56 Parris Street, Portland, ME	CLIENT:	Thidwick, LLC
COLLECTION DATE:	10/17/2017	SAMPLE #:	UT-1
TEST DATE:	10/20/2017	TECHNICIAN:	Erika Stewart, P.E.

Test Boring Information

Boring Number: B-2
Drilling Method: Direct push
Drilling Tooling: 3-inch casing
Sampling Method: Direct push

Sample Information

Tube Length: 30"
Recovery: 23.5"
Tube Diameter: 2.5"
Depth: 10' - 12.5'

Trial / Specimen Number	Moisture Content	Unit Weight	Torvane
1	32.3%	119 pcf	1300 psf
2	29.7%	118 pcf	1000 psf
3	29.3%	117 pcf	1300 psf
Average	30.4%	118 pcf	1200 psf

Visual Description (ASTM D2488):

Olive brown to gray Silty CLAY, frequent fine Sand lenses, stiff, moist, CL, interlayered with larger seams of mottled brown fine SAND, little Silt, compact, wet, SP-SM to SM



Photograph of two cross sectional sample views.



Photograph of longitudinal sample view.

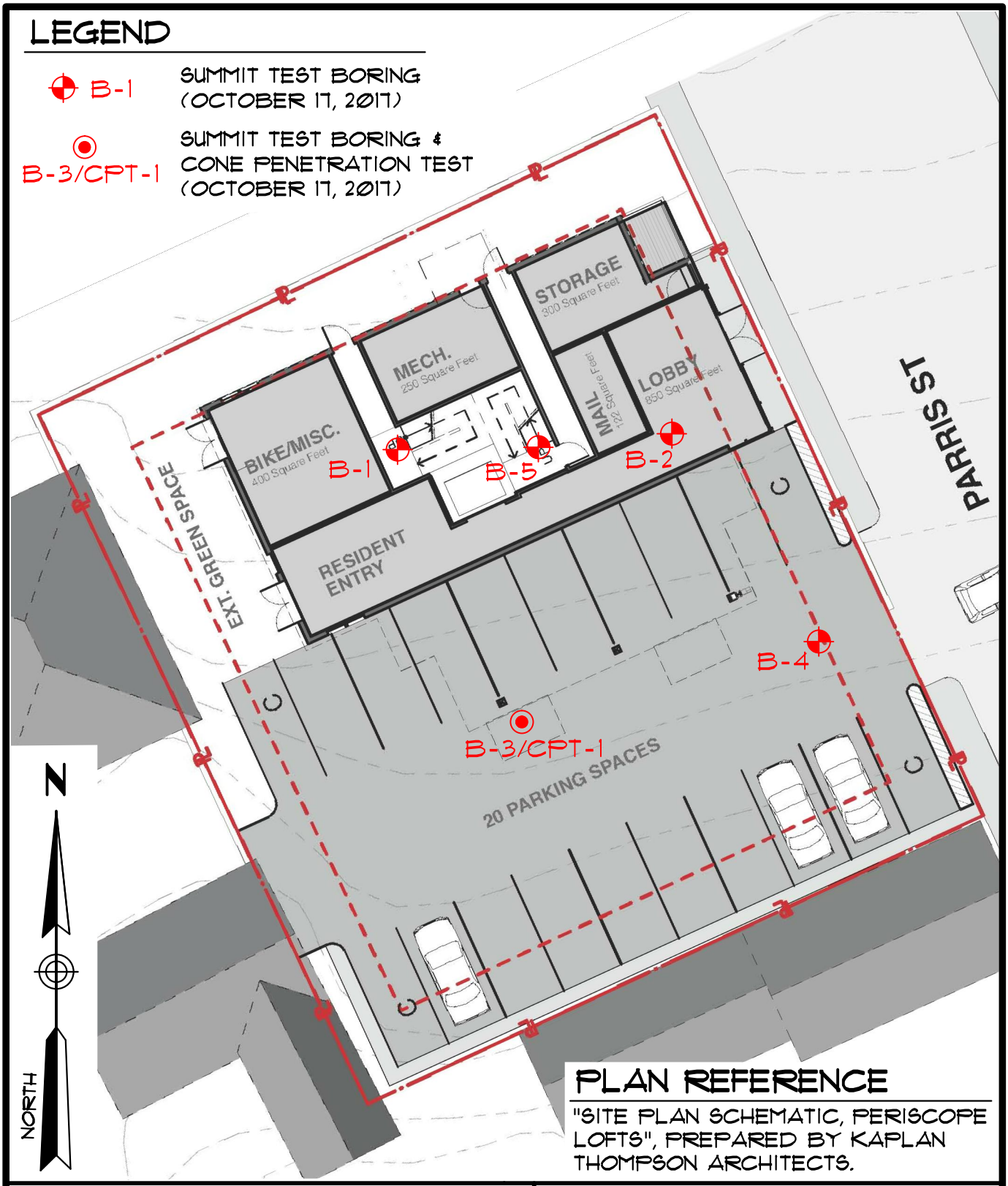
REMARKS: The bottom 8 inches of the tube consisted of sand, transistioning to more clay near the top. Approximately 5 inches of the sample in the tube was clay without significant sand lenses.

145 Lisbon Street (PO Box 7216), Lewiston, Maine 04243, (207) 576-3313
173 Pleasant Street, Rockland, Maine 04841, (207) 318-7761

LEGEND

B-1 — SUMMIT TEST BORING (OCTOBER 17, 2017)

B-3/CPT-1 — SUMMIT TEST BORING & CONE PENETRATION TEST (OCTOBER 17, 2017)



PLAN REFERENCE

"SITE PLAN SCHEMATIC, PERISCOPE LOFTS", PREPARED BY KAPLAN THOMPSON ARCHITECTS.

SUBSURFACE EXPLORATION LOCATION PLAN

PROPOSED BUILDING

56 PARRIS STREET - PORTLAND, MAINE

PREPARED FOR

JACK SOLEY

DATE: 10-18-2017	DRAWN BY: KRF	CHECKED BY: WMP
JOB: 17299	SCALE: 1" = 20'	FILE: 17299 BOR

145 LISBON ST. - SUITE 101
LEWISTON, ME 04240
Tel.: (207) 576-3313

173 PLEASANT STREET
ROCKLAND, ME 04841
Tel.: (207) 318-7761

SUMMIT
GEOENGINEERING SERVICES
www.summitgeoeng.com

EXPLORATION COVER SHEET

The exploration logs are prepared by the geotechnical engineer from both field and laboratory data. Soil descriptions are based upon the Unified Soil Classification System (USCS) per ASTM D2487 and/or ASTM D2488 as applicable. Supplemental descriptive terms for estimated particle percentage, color, density, moisture condition, and bedrock may also be included to further describe conditions.

Drilling and Sampling Symbols:

SS = Split Spoon Sample
UT = Thin Wall Shelby Tube
SSA = Solid Stem Auger
HSA = Hollow Stem Auger
RW = Rotary Wash
SV = Shear Vane
PP = Pocket Penetrometer
RC = Rock Core Sample
FV = Field Vane Shear Test
PS = Concrete Punch Sample
Hyd = Hydraulic Advancement of Drilling Rods
Push = Direct Push of Drilling Rods
WOH = Weight of Hammer
WOR = Weight of Rod
PI = Plasticity Index
LL = Liquid Limit
W = Natural Water Content
USCS = Unified Soil Classification System
Su = Undrained Shear Strength
Su(r) = Remolded Shear Strength

Water Level Measurements:

Water levels indicated on the boring logs are the levels measured in the boring at the times indicated. In pervious soils, the indicated elevations are considered reliable groundwater levels. In impervious soils, the accurate determination of groundwater elevations may not be possible, even after several days of observations. Groundwater monitoring wells may be required to record accurate depths and fluctuation.

Gradation Description and Terminology:

Boulders:	Over 12 inches	Trace:	Less than 5%
Cobbles:	12 inches to 3 inches	Little:	5% to 15%
Gravel:	3 inches to No.4 sieve	Some:	15% to 30%
Sand:	No.4 to No. 200 sieve	Silty, Sandy, etc.:	Greater than 30%
Silt:	No. 200 sieve to 0.005 mm		
Clay:	less than 0.005 mm		

Density of Granular Soils and Consistency of Cohesive Soils:

CONSISTENCY OF COHESIVE SOILS		DENSITY OF GRANULAR SOILS	
SPT N-value blows/ft	**Consistency**	**SPT N-value blows/ft**	**Relative Density**
0 to 2	Very Soft	0 to 4	Very Loose
2 to 4	Soft	5 to 10	Loose
5 to 8	Firm	11 to 30	Compact
9 to 15	Stiff	31 to 50	Dense
16 to 30	Very Stiff	>50	Very Dense
>30	Hard		

SUMMIT GEOENGINEERING SERVICES

SOIL BORING LOG

Boring #: **B-1**

Project: Proposed Building | Project #: 17299
Location: 56 Parris Street | Sheet: 1 of 1
City, State: Portland, Maine | Chkd by:

Drilling Co: Summit Geoengineering Services, Inc. | Boring Elevation:
Driller: C. Coolidge, P.E. | Reference:
Summit Staff: M. Hardison, E.I. | Date started: 10/17/2017 Date Completed: 10/17/2017

DRILLING METHOD		SAMPLER	
Vehicle:	Tracked	Length:	24" SS
Model:	AMS Power Probe	Diameter:	2"OD/1.5"ID
Method:	3" ID Casing	Hammer:	140 lb
Hammer Style:	Auto	Method:	ASTM D1586

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
10/17/2017	-		None Encountered

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	blows/6"	Elev. (ft.)	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
						6" Pavement		PAVEMENT
1	S-1	24/8	0.5 to 2.5	10		Top 3": Gray to Brown m-c SAND, little Silt and Gravel		
				3		Olive brown SILT, little to some Sand, little Clay,		
2				2		trace Gravel, humid, loose, ML		FILL
				2				
3	S-2	24/12	2.5 to 4.5	4		Similar to above, increasing Gravel content, trace brick	PP = 1,000 psf	
				3		fragments		
4				2				
				3				
5	S-3	24/6	4.5 to 6.0	4		Reddish brown Gravelly SAND, little Silt, humid, loose,		
				3		trace brick fragments, SP-SM		
6				5				
						End of Boring at 6.0 feet, no refusal		
7								
						Set Soil Vapor Well at 6.0 feet depth		
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								

Granular Soils		Cohesive Soils		% Composition
Blows/ft.	Density	Blows/ft.	Consistency	ASTM D2487
0-4	V. Loose	<2	V. soft	
5-10	Loose	2-4	Soft	< 5% Trace
11-30	Compact	5-8	Firm	5-15% Little
31-50	Dense	9-15	Stiff	15-30% Some
>50	V. Dense	16-30	V. Stiff	> 30% With
		>30	Hard	

NOTES: PP = Pocket Penetrometer, MC = Moisture Content
LL = Liquid Limit, PI = Plastic Index, FV = Field Vane Test
Su = Undrained Shear Strength, Su(r) = Remolded Shear Strength

Bedrock Joints
Shallow = 0 to 35 degrees
Dipping = 35 to 55 degrees
Steep = 55 to 90 degrees

Boulders = diameter > 12 inches, Cobbles = diameter < 12 inches and > 3 inches
Gravel = < 3 inch and > No 4, Sand = < No 4 and >No 200, Silt/Clay = < No 200

Soil Moisture Condition
Dry: S = 0%
Humid: S = 1 to 25%
Damp: S = 26 to 50%
Moist: S = 51 to 75%
Wet: S = 76 to 99%
Saturated: S = 100%

SUMMIT GEOENGINEERING SERVICES

SOIL BORING LOG

Project:	Proposed Building	Boring #:	B-2
Location:	56 Parris Street	Project #:	17299
City, State:	Portland, Maine	Sheet:	1 of 1
		Chkd by:	

Drilling Co:	Summit Geoengineering Services, Inc.	Boring Elevation:	
Driller:	C. Coolidge, P.E.	Reference:	
Summit Staff:	M. Hardison, E.I.	Date started: 10/17/2017	Date Completed: 10/17/2017

DRILLING METHOD		SAMPLER	
Vehicle:	Tracked	Length:	24" Direct Push
Model:	AMS Power Probe	Diameter:	3.0" ID
Method:	3" ID Casing	Hammer:	Auto
Hammer Style:	Auto	Method:	

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
10/17/2017	-		None Encountered

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	blows/6"	Elev. (ft.)	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
				PUSH		5.5" Pavement		PAVEMENT
1	DP-1	24/18	0.5 to 2.0			Top 8": Gray to Brown medium to coarse SAND, little Silt and Gravel, humid, SP-SM		
2						Olive gray SILT, little Gravel, Sand, and Clay, trace		FILL
	DP-2	24/18	2 to 4			brick, ash, clinker, and wood pieces, soft, ML		
3								
						Similar to above, moist, recovered large wood piece		
4								
	DP-3	24/12	4 to 6			Olive Gray SILT, little Clay, trace Sand and Gravel,		
5						moist, slightly mottled, ML		GLACIAL MARINE
6				▼				
						Drove 3" Casing to 10.0' depth to collect Shelby Tube		
7								
8								
9								
10								
	UT-1	30/16	10 to 12.5	PUSH		Collected Undisturbed Shelby Tube		
11								
12								
				▼				
13						End of Boring at 12.5 feet, no refusal		
14								
15								
16								
17								
18								
19								
20								
21								
22								

Granular Soils		Cohesive Soils		% Composition
Blows/ft.	Density	Blows/ft.	Consistency	ASTM D2487
0-4	V. Loose	<2	V. soft	
5-10	Loose	2-4	Soft	< 5% Trace
11-30	Compact	5-8	Firm	5-15% Little
31-50	Dense	9-15	Stiff	15-30% Some
>50	V. Dense	16-30	V. Stiff	> 30% With
		>30	Hard	

NOTES: PP = Pocket Penetrometer, MC = Moisture Content
LL = Liquid Limit, PI = Plastic Index, FV = Field Vane Test
Su = Undrained Shear Strength, Su(r) = Remolded Shear Strength

Bedrock Joints
Shallow = 0 to 35 degrees
Dipping = 35 to 55 degrees
Steep = 55 to 90 degrees

Boulders = diameter > 12 inches, Cobbles = diameter < 12 inches and > 3 inches
Gravel = < 3 inch and > No 4, Sand = < No 4 and >No 200, Silt/Clay = < No 200

Soil Moisture Condition
Dry: S = 0%
Humid: S = 1 to 25%
Damp: S = 26 to 50%
Moist: S = 51 to 75%
Wet: S = 76 to 99%
Saturated: S = 100%

SOIL BORING LOG

SUMMIT GEOENGINEERING SERVICES

Project:	Proposed Building	Boring #:	B-3
Location:	56 Parris Street	Project #:	17299
City, State:	Portland, Maine	Sheet:	1 of 1
		Chkd by:	

Drilling Co:	Summit Geoengineering Services, Inc.	Boring Elevation:	
Driller:	C. Coolidge, P.E.	Reference:	
Summit Staff:	M. Hardison, E.I.	Date started: 10/17/2017	Date Completed: 10/17/2017

DRILLING METHOD		SAMPLER	
Vehicle:	Tracked	Length:	24" Direct Push
Model:	AMS Power Probe	Diameter:	3.0" ID
Method:	3" ID Casing	Hammer:	Auto
Hammer Style:	Auto	Method:	

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
10/17/2017	10.8 ft.		Measured in CPT hole

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	blows/6"	Elev. (ft.)	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
				PUSH		5" Pavement		PAVEMENT
1	DP-1	24/18	0.5 to 2.0			Top 8": Gray to Brown medium to coarse SAND, little Silt and and Gravel, humid, SP-SM		
2						2" Black ASH		ASH
	DP-2	24/20	2 to 4			Olive brown Sandy SILT, intermixed brick, ash, and		
3						clinker pieces, humid, ML		FILL
4								
	DP-3	24/18	4 to 6			Similar to above, Gravelly SAND, large brick pieces,		
5						frequent ash		
6				▼				
						End of Boring at 6.0 feet, no refusal		
7								
						Set Soil Vapor Well at 6.0 feet depth		
8								
						Performed CPT-1 directly adjacent to B-3 Borehole		
9								
10								
11							▽ Groundwater	
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								

Granular Soils		Cohesive Soils		% Composition
Blows/ft.	Density	Blows/ft.	Consistency	ASTM D2487
0-4	V. Loose	<2	V. soft	
5-10	Loose	2-4	Soft	< 5% Trace
11-30	Compact	5-8	Firm	5-15% Little
31-50	Dense	9-15	Stiff	15-30% Some
>50	V. Dense	16-30	V. Stiff	> 30% With
		>30	Hard	

NOTES: PP = Pocket Penetrometer, MC = Moisture Content
LL = Liquid Limit, PI = Plastic Index, FV = Field Vane Test
Bedrock Joints Su = Undrained Shear Strength, Su(r) = Remolded Shear Strength
Shallow = 0 to 35 degrees
Dipping = 35 to 55 degrees
Steep = 55 to 90 degrees

Boulders = diameter > 12 inches, Cobbles = diameter < 12 inches and > 3 inches
Gravel = < 3 inch and > No 4, Sand = < No 4 and >No 200, Silt/Clay = < No 200

Soil Moisture Condition
Dry: S = 0%
Humid: S = 1 to 25%
Damp: S = 26 to 50%
Moist: S = 51 to 75%
Wet: S = 76 to 99%
Saturated: S = 100%

SUMMIT GEOENGINEERING SERVICES

SOIL BORING LOG

Boring #: **B-4**

Project:	Proposed Building	Project #:	17299
Location:	56 Parris Street	Sheet:	1 of 1
City, State:	Portland, Maine	Chkd by:	

Drilling Co:	Summit Geoengineering Services, Inc.	Boring Elevation:	
Driller:	C. Coolidge, P.E.	Reference:	
Summit Staff:	M. Hardison, E.I.	Date started: 10/17/2017	Date Completed: 10/17/2017

DRILLING METHOD		SAMPLER	
Vehicle:	Tracked	Length:	24" Direct Push
Model:	AMS Power Probe	Diameter:	3.0" ID
Method:	3" ID Casing	Hammer:	Auto
Hammer Style:	Auto	Method:	

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
10/17/2017	-		None Encountered

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	blows/6"	Elev. (ft.)	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
				PUSH		5" Pavement		PAVEMENT
1	DP-1	24/18	0.5 to 2.0			Brown Gravelly fine to coarse SAND, little Silt, humid, concrete pieces near bottom of sample		
2								FILL
	DP-2	24/20	2 to 4			Olive brown Sandy SILT, intermixed brick, ash, and		
3						clinker pieces, humid		
						6" Concrete (Possible Old Slab)		CONCRETE
4								
	DP-3	24/18	4 to 6			Olive brown Sandy SILT, intermixed brick, ash, and		
5						clinker pieces, humid		
6								
						End of Boring at 6.0 feet, no refusal		
7								
						Set Soil Vapor Well at 6.0 feet depth		
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								

Granular Soils		Cohesive Soils		% Composition
Blows/ft.	Density	Blows/ft.	Consistency	ASTM D2487
0-4	V. Loose	<2	V. soft	
5-10	Loose	2-4	Soft	< 5% Trace
11-30	Compact	5-8	Firm	5-15% Little
31-50	Dense	9-15	Stiff	15-30% Some
>50	V. Dense	16-30	V. Stiff	> 30% With
		>30	Hard	

NOTES: PP = Pocket Penetrometer, MC = Moisture Content
LL = Liquid Limit, PI = Plastic Index, FV = Field Vane Test
Bedrock Joints Su = Undrained Shear Strength, Su(r) = Remolded Shear Strength
Shallow = 0 to 35 degrees
Dipping = 35 to 55 degrees
Steep = 55 to 90 degrees

Boulders = diameter > 12 inches, Cobbles = diameter < 12 inches and > 3 inches
Gravel = < 3 inch and > No 4, Sand = < No 4 and >No 200, Silt/Clay = < No 200

Soil Moisture Condition
Dry: S = 0%
Humid: S = 1 to 25%
Damp: S = 26 to 50%
Moist: S = 51 to 75%
Wet: S = 76 to 99%
Saturated: S = 100%

SUMMIT GEOENGINEERING SERVICES

SOIL BORING LOG

Boring #: **B-5**

Project:	Proposed Building	Project #:	17299
Location:	56 Parris Street	Sheet:	1 of 1
City, State:	Portland, Maine	Chkd by:	

Drilling Co:	Summit Geoengineering Services, Inc.	Boring Elevation:	
Driller:	C. Coolidge, P.E.	Reference:	
Summit Staff:	M. Hardison, E.I.	Date started: 10/17/2017	Date Completed: 10/17/2017

DRILLING METHOD		SAMPLER	
Vehicle:	Tracked	Length:	24" SS
Model:	AMS Power Probe	Diameter:	2"OD/1.5"ID
Method:	3" ID Casing	Hammer:	140 lb
Hammer Style:	Auto	Method:	ASTM D1586

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
10/17/2017	16.8 ft.		Measured directly upon completion
10/17/2017	13.8 ft.		Measured 5 hours after completion

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	blows/6"	Elev. (ft.)	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
						6" Pavement		PAVEMENT
1								
2								FILL
	S-1	24/14	2 to 4	2		Olive brown Silty SAND, trace Gravel, Clay, and Brick	PP = 1,000 psf	
3				2		pieces, humid to damp, loose	to 3,000 psf	
				3				
4				28*		* = Likely Gravel/Cobble Piece		
5								
	S-2	24/20	5 to 7	3		Grayish brown SILT, little Sand and Clay, wood piece	PP = 3,000 psf	
6				4		(natural) from 5.6' to 6.1' depth, trace fine Gravel,	to 6,000 psf	GLACIAL MARINE
				6		damp, loose to compact, ML		
7				8				
8								
9								
10								
	S-3	24/18	10 to 12	2		Grayish brown Clayey SILT, little to some intermixed	PP = 2,000 psf	
11				2		fine Sand, trace organics, damp, increasing moisture	to 1,000 psf	
				3		content in spoon tip, ML	(decrease w/	
12				3			depth)	
13								
							▽Groundwater	
14								
15								
	S-4	24/20	15 to 17	5		Reddish brown fine to medium SAND, little to some		
16				8		Silt, heavily mottled, compact, moist to wet, SP-SM		
				7				
17				9				
18								
19								
20								
	S-5	24/20	20 to 22	7		Same as above, little to some Gravel		
21				8		Silty CLAY seam from 20.3' to 20.6'	PP = 6,000 psf	
				9		Reddish brown fine to medium SAND, little to some		
22				3		Gravel and Silt, heavily mottled, compact, wet, SP-SM		
						End of Boring at 22.0', no refusal		

Granular Soils		Cohesive Soils		% Composition
Blows/ft.	Density	Blows/ft.	Consistency	ASTM D2487
0-4	V. Loose	<2	V. soft	
5-10	Loose	2-4	Soft	< 5% Trace
11-30	Compact	5-8	Firm	5-15% Little
31-50	Dense	9-15	Stiff	15-30% Some
>50	V. Dense	16-30	V. Stiff	> 30% With
		>30	Hard	

NOTES: PP = Pocket Penetrometer, MC = Moisture Content
LL = Liquid Limit, PI = Plastic Index, FV = Field Vane Test
Bedrock Joints Su = Undrained Shear Strength, Su(r) = Remolded Shear Strength
Shallow = 0 to 35 degrees
Dipping = 35 to 55 degrees
Steep = 55 to 90 degrees

Boulders = diameter > 12 inches, Cobbles = diameter < 12 inches and > 3 inches
Gravel = < 3 inch and > No 4, Sand = < No 4 and >No 200, Silt/Clay = < No 200

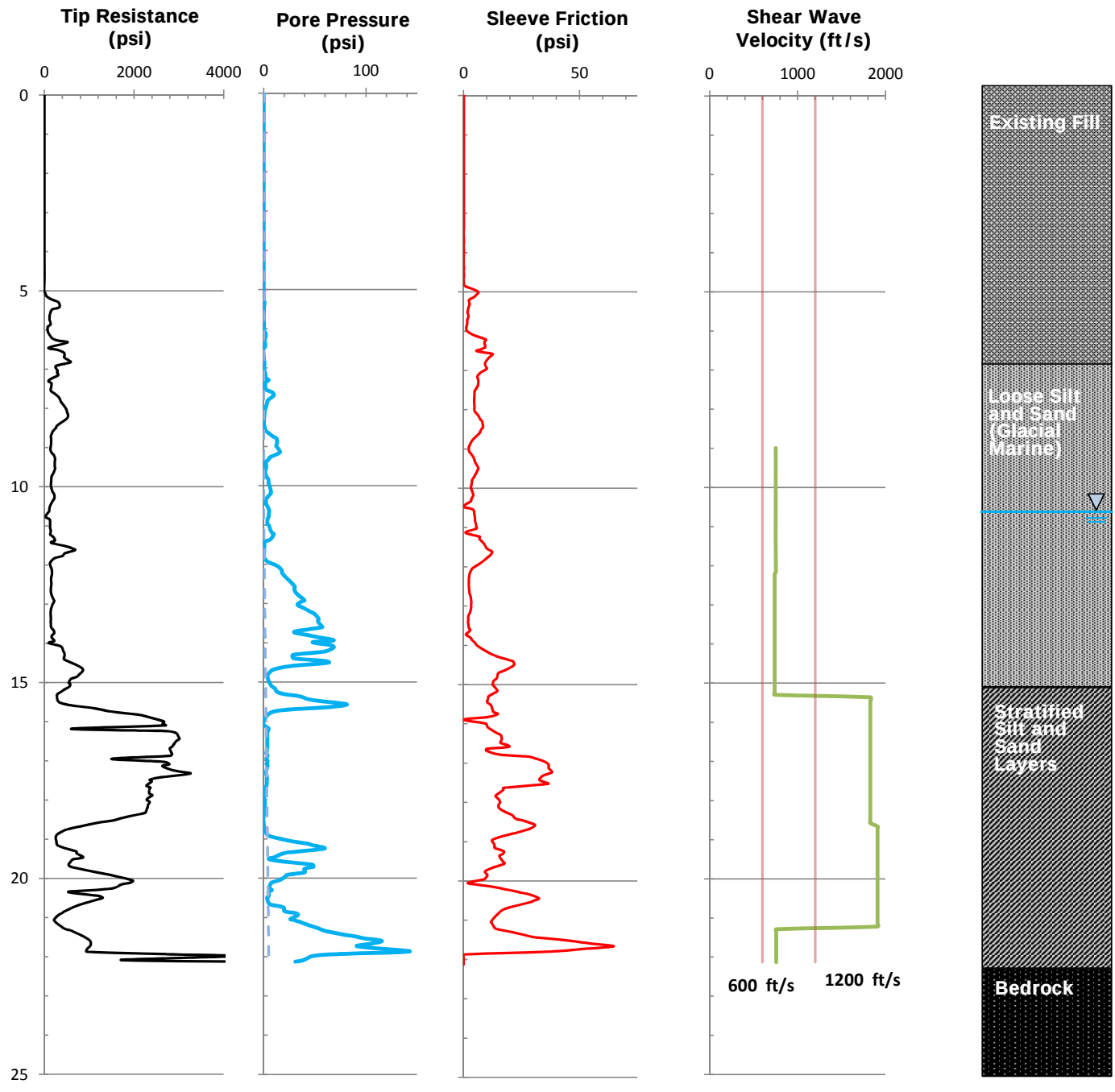
Soil Moisture Condition
Dry: S = 0%
Humid: S = 1 to 25%
Damp: S = 26 to 50%
Moist: S = 51 to 75%
Wet: S = 76 to 99%
Saturated: S = 100%

SUMMIT GEOENGINEERING SERVICES

PIEZOCONE PENETRATION LOG

Test Number:	CPT-1		
Sheet:	1 of 1		
Project:	Proposed Building	Project Number:	17266
Location:	56 Parris Street	Method:	ASTM D5778
City, State	Portland, Maine	Weather:	70° Sunny

Cone ID:	Vertek #4544.101	Test Elevation:	
Cone Type:	VTK 5 Ton Digital Cone	Reference:	
Piezocone:	Silicone Single Filter	Date started: 10/17/2017	Date Completed: 10/17/2017
Push Rig:	AMS Power Probe 9500 VTR	ESTIMATED GROUND WATER DEPTH	
Anchor Style:	Single Point Anchor	Date: 10/17/2017	Depth: 10.8
Performed By:	Craig Coolidge, P.E.	Elevation:	Reference: Measured in hole after cone retrieval



NOTES:

Soil Profile based on interpretation of CPT measurements and nearby borings

Shear Wave Velocity test (V_s) performed at 3.3 feet (1-meter) increments

Abrupt push refusal encountered at depth of 22.1 feet on likely bedrock

Figure Exported: 9/7/2017 By: nkatsiaficas Using: \\woodardcurran.net\shared\Projects\229649 GPCOG - 2016 Brownfields Assessment\wip\GIS\Project Files\56 Parris Street\F3-2 Sampling Locations.mxd



Legend

- Previous 2002 Tewhey Soil Boring Location
- Proposed Soil Boring/Soil Vapor Location
- Site Boundary

30 15 0 30 60 Feet

56 PARRIS STREET
PORTLAND, MAINE

Proposed Soil Boring Locations

FIGURE 3-2

WOODARD &CURRAN

Woodard & Curran shall assume no liability for any of the following; 1.Any errors, omissions, or inaccuracies in the information provided regardless of how caused or; 2.Any decision or action taken or not taken by the reader in reliance upon any information or data furnished hereunder.

SCALE: 1 " = 30 '	DOC: F3-2 Sampling Locations.mxd
DATE: SEPTEMBER 2017	PROJECT #: 0229649.00
DRAWN BY: NJK	SOURCE: ESRI

Phase II Environmental Site Assessment Report

56 Parris Street
Portland, Maine

229649

Greater Portland Council of Governments

March 6, 2018

woodardcurran.com
COMMITMENT & INTEGRITY DRIVE RESULTS

TABLE OF CONTENTS

SECTION			PAGE NO.
EXECUTIVE SUMMARY			**ES-1**
1.	**INTRODUCTION**		**1-1**
1.1	Purpose		1-1
1.2	Methodology		1-1
1.3	Limitations and Exceptions		1-1
2.	**SITE DESCRIPTION**		**2-1**
2.1	Site History		2-1
2.2	Previous Work		2-1
2.2.1	Environmental Assessment, Tewhey Associates – 2002		2-1
2.2.2	Phase I Environmental Site Assessments, Credere Associates – 2017		2-2
2.3	Potential Sources and Contaminants of Concern		2-2
2.3.1	AOC 1 – Urban Fill Underlying Site		2-2
2.3.2	AOC 2 – Near-Surface Soil Vapor		2-3
3.	**PHASE II ENVIRONMENTAL SITE ASSESSMENT**		**3-1**
3.1	HASP Development and Utility Clearance		3-1
3.2	Soil Boring Installation		3-1
3.3	Soil Sampling		3-2
3.4	Soil Vapor Sampling		3-3
3.5	Data Validation		3-4
4.	**FINDINGS**		**4-1**
4.1	Site Geology		4-1
4.2	PID Screening and Field Observations		4-1
4.3	Soil Samples		4-1
4.3.1	Soil Samples from Test Borings		4-1
4.3.2	Soil Samples for Waste Characterization		4-3
4.3.2.1	Supplemental Soil Investigation		4-5
4.4	Soil Vapor Samples		4-6
4.5	Data Validation		4-8
4.5.1	Data Completeness		4-8
4.5.2	Sample Preservation and Technical Holding Times		4-8
4.5.3	Method and Methanol Blanks		4-9
4.5.4	Trip Blanks		4-9
4.5.5	Surrogate Recoveries		4-9
4.5.6	Matrix Spike Samples		4-9
4.5.7	Laboratory Control Samples		4-9
4.5.8	Laboratory Duplicate		4-10
4.5.9	Field Duplicates		4-10
4.5.10	Summary and Overall Assessment of Data		4-11
5.	**CONCLUSIONS**		**5-1**
6.	**RECOMMENDATIONS**		**6-1**

7. REFERENCES 7-1

LIST OF TABLES

TABLE		PAGE NO.
Table 3-1:	Soil Descriptions	3-2
Table 3-2:	Soil Vapor Sampling Field Measurements	3-4
Table 4-1:	Soil Sample Laboratory Analytical Results – Detections Only	4-3
Table 4-2:	Soil Sample Laboratory Analytical Results Compared to Disposal Criteria	4-4
Table 4-3:	Supplemental Soil Sample Laboratory Analytical Results	4-6
Table 4-4:	Soil Vapor Laboratory Analytical Results – Detections Only	4-7
Table 4-5:	OSHA Permissible Exposure Limits	4-8
Table 4-6:	Field Duplicate Laboratory Analytical Summary	4-10

LIST OF FIGURES

FIGURE	
Figure 1-1:	Site Location
Figure 2-1:	Site Layout and Sample Locations
Figure 4-1:	Supplemental Soil Boring Locations

APPENDICES

APPENDIX	
Appendix A:	Tabulated Analytical Results
Appendix B:	Soil Laboratory Analytical Reports
Appendix C:	Soil Vapor Laboratory Analytical Report

EXECUTIVE SUMMARY

Woodard & Curran was retained by the Greater Portland Council of Governments (GPCOG) to conduct a Phase II Environmental Site Assessment (ESA) of the property located at 56 Parris Street in Portland, Maine (the "Site"). The purpose of this Phase II ESA was to evaulate current environmental conditions at the Site so they may be considered during a proposed redevelopment effort, which may include constructing 23 units of workforce ownership housing known as Periscope Lofts.

The Site consists of two parcels located along Parris Street, totaling 0.2345 acres, that are developed as a paved parking lot for the City of Portland Public Works Department (PWD). The Site is located in an urban area of Portland that has been developed since the 1800s and was reportedly filled between 1850 and the 1870s. According to Sanborn Fire Insurance Maps, residential structures were situated on the Site by at least 1886. By 1975, the Site buildings were removed and the Site was used as a parking lot.

Woodard & Curran developed a Phase II ESA work plan based on previous assessments and investigations completed at the Site. The work plan included a Conceptual Site Model (CSM) detailing potential contaminant sources, migration pathways, and exposure routes in two Areas of Concern (AOCs):

AOC 1: Urban fill that could contain concentrations of oil and/or hazardous substances may be located throughout the Site. These materials may be encountered by workers and/or generated as excess during redevelopment activities, or may be encountered by residents during future use.

AOC 2: Near-surface soil vapor that may have been impacted by potential chlorinated solvent sources (i.e., former laundry facilities) near the Site.

The Phase II ESA included a program of test borings and soil vapor points and the collection of soil and vapor samples to assess the above AOCs. Based on the findings of the Phase II ESA, Woodard & Curran developed the following conclusions:

AOC 1:

- The only extractable petroleum hydrocarbons (EPH) concentration to exceed the Maine Department of Environmental Protection (DEP) Remedial Action Guideline (RAG) for the residential exposure scenario was the concentration of benzo(a)pyrene in boring B3 at a depth of 2 to 6 feet below ground surface (bgs) (1.6 mg/kg), which exceeded the residential RAG of 0.26 mg/kg. Arsenic concentrations at the Site ranged from 5.9 mg/kg to 25 mg/kg. These concentrations also exceed residential RAG of 1.4 mg/kg. Four samples (including the duplicate sample) had lead concentrations ranging from 590 mg/kg to 1,800 mg/kg, which exceeded the residential RAG of 340 mg/kg. These results are typical of conditions at urban properties in the Bayside neighborhood of Portland. As described in the recommendations below, risk reduction measures to minimize direct contact with existing soil during the future residential use of the Site could be incorporated into the future design.

- All detected EPH and arsenic concentrations were below the construction worker RAGs. One lead concentration (1,800 mg/kg) exceeded the construction worker RAG of 950 mg/kg. Management of potential risk to Site construction workers is addressed in the recommendations below.

- Initial waste characterization results indicated that the leachable lead concentration at soil sample location B1 (2.5-6.0'), which was quantified using the toxicity characterization leaching potential (TCLP) procedure, exceeded the TCLP limit of 5 mg/L. Therefore, soil represented by this sample would be classified as a hazardous waste once it became a waste material (i.e., during excavation activities expected to occur during redevelopment). Supplemental sampling conducted to delineate the extent of

this hazardous waste soil indicated that the volume of this material was limited to approximately 2 cubic yards. This soil will need to be properly handled and disposed of as hazardous waste prior to or during redevelopment. No additional special soil disposal restrictions were identified during the Phase II ESA, and (with the exception of soil at location B1 (2.5-6.0')) excess soil generated during Site redevelopment is likely to be acceptable for disposal at Commercial Paving & Recycling Company (CPRC), located in Scarborough, Maine, or a similar receiving facility.

AOC 2:

- Soil vapor results indicate that the derived soil vapor screening levels for all detected volatile organic compounds (VOCs) were below the indoor air residential vapor screening levels presented in the RAGs. As such, detected VOC concentrations are not likely to present a risk to the health of future residents at the Site.

- Detected VOC concentrations in soil vapor samples were below the available Occupational Safety and Health Administration (OSHA) time-weighted average (TWA) permissible exposure limits (PELs). Therefore, though it is unlikely that a significant risk to construction workers exists at the Site, Site conditions should be evaluated by qualified personnel relative to worker safety requirements prior to redevelopment.

Based on these conclusions, Woodard & Curran recommends the following actions, assuming future residential use under the proposed redevelopment scenario:

1. Though not required, consider submitting an application for participation in the Maine DEP Voluntary Response Action Program (VRAP) program prior to the initiation of redevelopment activities. VRAP participation can provide additional levels of assurance to developers, lenders, and other project partners as the redevelopment proceeds.

2. Prior to the initiation of redevelopment activities, a soil management plan (SMP) that describes proper management and disposal options for soil that may be disturbed during construction should be developed and implemented.

   The SMP should describe the appropriate procedures to remove, manage, and dispose of hazardous waste soil characterized by the lead concentration in sample B1 (2.5-6.0'). This soil should be addressed prior to, or as a first step during the redevelopment of the Site.

   Remaining construction-derived soil originating from the Site should be managed on-site in accordance with the SMP and reused during redevelopment to the greatest extent possible in order to minimize construction costs. However, if all non-hazardous soil generated during redevelopment cannot be reused onsite, it is likely that this excess material may be transported off-site for reuse or disposal at a Maine DEP permitted solid waste landfill, a Maine DEP licensed commercial processing facility, or could be beneficially reused following appropriate Maine DEP permitting.

   In addition, as groundwater was not evaluated as part of the Phase II ESA, the appropriate handling of groundwater that may be encountered during redevelopment activities should be included in the SMP.

3. The concentration of lead at one soil sample location exceeded the construction worker RAG, and therefore potential direct contact risk may exist for workers during construction. However, it is unlikely that workers would be exposed to this single location for a duration that would exceed the assumptions used during the development of the construction worker RAG. In addition, the average concentration of lead in soil samples analyzed as part of this Phase II ESA is 503 mg/kg, which is below the construction worker RAG of 950 mg/kg.

None of the soil vapor concentrations identified at the Site exceeded the available OSHA TWA PELs. Therefore, though it is unlikely that a significant risk to construction workers exists at the Site, Site conditions should be evaluated by qualified personnel relative to worker safety requirements prior to redevelopment.

Based on the conditions above, it is probable that the potential risk posed by soil and soil vapor conditions may be addressed in the training and hazard communications sections of a SMP, and that no specific training will be required for workers who participate in the redevelopment effort.

4. Woodard & Curran recommends that the redevelopment design incorporate risk reduction measures to minimize direct contact with existing urban fill soil during the future residential use of the Site. Example approaches, which may be detailed in the SMP, include but are not limited to covering existing soil with asphalt pavement, 8 inches or greater of clean imported materials (e.g., loam, topsoil) and landscaping, or permanent building foundations. Appropriate risk reduction measure maintenance procedures may be described in a long-term Environmental Management Plan (EMP), which should be developed and implemented at the Site following the completion of redevelopment activities.

5. Although soil vapor sample results did not exceed residential vapor screening levels, a passive sub-slab ventilation system (SSVS) and/or vapor barrier may be installed during the construction of the proposed residential building as a low-cost voluntary potential risk reduction measure at the discretion of the developer.

1. INTRODUCTION

1.1 PURPOSE

Woodard & Curran was retained by the Greater Portland Council of Governments (GPCOG) to conduct a Phase II Environmental Site Assessment (ESA) of two parcels located at 56 Parris Street in Portland, Maine (the "Site"; see **Figure 1-1**). The purpose of this Phase II ESA was to evaulate current environmental conditions at the Site so they can be considered during a proposed redevelopment effort, which may include constructing a residential building at the Site. Specifically, the Site is proposed to be redeveloped to provide 23 units of workforce ownership housing known as Periscope Lofts.

1.2 METHODOLOGY

The Phase II ESA was conducted in general conformance with the ASTM International *"Standard Practice for Environmental Site Assessments: Phase II Environmental Site Assessment Process"* (E1903-911). The primary objectives of conducting a Phase II ESA include:

- evaluating the Recognized Environmental Conditions (RECs) identified in the Phase I ESA or transaction screen process for the purpose of describing the nature and extent of contamination;
- assisting in making informed business decisions about the Site; and
- where applicable, providing the level of knowledge necessary to satisfy the innocent purchaser defense under CERCLA.

The Phase II ESA may be an iterative process to generate sufficient data for making business decisions. For this Phase II ESA, two rounds of data collection have been completed as described in **Section 3**.

1.3 LIMITATIONS AND EXCEPTIONS

The evaluations contained in this Phase II ESA represent Woodard and Curran's professional opinions and judgments based on the current, generally accepted engineering and technical practices for the nature and scope of this Phase II ESA authorized by the GPCOG. This Phase II ESA is based on the conditions observed on the date of field investigation and records review as described herein.

In no event may a Third Party rely on the evaluation, conclusions, and professional opinions presented in this Phase II ESA Report without first obtaining the expressed written consent of Woodard & Curran. Woodard & Curran shall bear no liability for any unauthorized use of the information contained in this report. In the event that new information not contained in this report is obtained relating to environmental or hazardous waste issues at the Site or nearby, such information shall be brought to Woodard & Curran's attention promptly and Woodard & Curran may, upon evaluation, modify the conclusions stated in this report.

As described in **Section 3**, the Phase II ESA included soil sampling and soil vapor sampling. No other physical sampling of Site media was conducted during this Phase II ESA.

ASTM E1903-11 recognizes inherent limitations for Phase II ESAs including:

- Elimination of Uncertainty – No Phase II ESA can eliminate all uncertainty. Furthermore, any sample, either surface or subsurface, taken for chemical analysis may or may not be representative of a larger population. Professional judgment and interpretation are inherent in the process, and even when exercised in accordance with objective scientific principles, uncertainty is inevitable. Additional assessment beyond that which was reasonably undertaken may reduce the uncertainty.
- Failure to Detect – Even when Phase II ESA work is executed competently and in accordance with this practice, certain conditions present especially difficult target analyte detection problems (e.g., complex

geological settings; unusual or generally poorly understood behavior and fate characteristics of certain substances; complex, discontinuous, random, or spotty distributions of existing target analytes; physical impediments to investigation imposed by the location of utilities and other man-made objects; and the inherent limitations of assessment technologies).

- Limitations of Information – The effectiveness of a Phase II ESA may be compromised by limitations or defects in the information used to define the objectives and scope of the investigation, including inability to obtain information concerning historic site uses or prior site assessment activities despite the efforts of the user and Phase II Assessor to obtain such information.
- Chemical Analysis Error – Chemical testing methods have inherent uncertainties and limitations.


Augusta
Portland
BACK COVE
Tidal Flats
Woodfords
Woodfords Corner
Highlands
Oakdale
Libbytown
Substation
Deering Oaks Park
King Jr High Sch
Portland Stadium
High Sch
Jack Jr High Sch
Emerson Sch
Shailer Sch
East End
Munjoy Hill
Fish Point
PORTLAND
HARBOR
FORE RIVER
PORTLAND HARBOR
Staples Sch
Butler Sch
West End
McClellan Sch
Thompson Point
Gravel Pit
Mud
Western Cem
Veterans Memorial Bridge
Portland Bridge
Turner Island
Gasoline
Forest City
Ligonia
Hutchins Sch
Hersey Sch
Roosevelt Sch
Holy Cross Sch
Coast Guard
Playground
Power Plant
Ruins
Piling
Pilings
Oil
Gas
Maine Medical Center
Mercy Hospital
YMCA
YWCA
U.S. Customs
City Hall
State Pier
Cheverus High Sch
Deering
Tukey Bridge
Gasoline
Reservoir
Standpipe
Observatory
Fort Allen Park
Munjoy Hill
Eastern Cem
Dolphin
Pile
Piles
Tidal Flat
Cemetery
Grass
Culvert
Hospital
University of Maine (Portland)
Deering Oaks Park
Portland Stadium
Maine Medical Center
Western Cem
Forest City Cem
Standpipe
Playground
Park
Cemetery
Tidal Flat
Ruins
Piling
Pilings
Oil
Gas
Power Plant
Coast Guard
Playground
Standpipe
Reservoir

2. SITE DESCRIPTION

The Site consists of two parcels totaling 0.2345 acres located along Parris Street in Portland, Maine that are developed as a paved parking lot for the City of Portland Public Works Department (PWD) (see **Figure 2-1**). The Site is accessible from Parris Street.

The Site is located within the surficial drainage basin of Back Cove, a tidal surface water body that is located approximately 0.4 miles north of the Site.

According to the Maine Geologic Survey Significant Sand and Gravel Aquifer map for the Portland West Quadrangle, Maine, the Site is not located within a significant sand and gravel aquifer.

During an environmental assessment conducted at the Site in 2002 (Tewhey, 2003), groundwater was present at approximately 8 to 15 feet below ground surface (bgs). Based on mapped topography and the location of the nearest surface water body, groundwater at the Site is presumed to flow northwest toward Back Cove. The Site does not currently have water service, but municipal water supply lines are available to the Site and vicinity.

2.1 SITE HISTORY

The Site is located in an urban area of Portland that has been developed since the 1800s. The Site was reportedly filled between 1850 and the 1870s. According to the Sanborn Fire Insurance Maps, residential structures were situated on the Site by at least 1886. By 1975, the Site buildings were removed and the Site was used as a parking lot. The Site was paved by at least 1977 (Credere, 2017a). Further details on the Site background and prior investigations are provided in **Section 2.2** below.

2.2 PREVIOUS WORK

The City of Portland, Maine provided Woodard & Curran with the following documents , which served as the basis for developing the conceptual model for the Site:

- "Environmental Assessment", Portland Brownfields/DPW Project, Portland, Maine by Tewhey Associates; June 2003. (Tewhey, 2003)
- "Phase I Environmental Site Assessment", 56 Parris Street, Portland, Maine by Credere Associates; April 5, 2017. (Credere, 2017a)
- "Phase I Environmental Site Assessment", 44 Hanover Street (Future 55 Portland Street), Portland, Maine by Credere Associates; April 5, 2017. (Credere, 2017b)

These previous assessments are summarized below.

2.2.1 Environmental Assessment, Tewhey Associates – 2002

In 2002, Tewhey Associates (Tewhey) was retained by the City of Portland through a Brownfields grant to conduct an environmental assessment of a 5-acre area (10 separate parcels), which included the 56 Parris Street Site, in the western portion of Portland's Bayside neighborhood. Depending on the results of the assessment, it was proposed that the PWD would be moved to another location in Portland and either commercial, light industrial, or residential development would occur in the area of the assessment.

In December 2002, a total of 21 Geoprobe borings were installed throughout the 5-acre study area and 27 soil samples were collected for field and laboratory analysis. Boring locations were selected based on spill reports, underground storage tank (UST) files, Sanborn Fire Insurance maps, discussions with knowledgeable PWD employees, and general reconnaissance of the PWD facilities.

Of the 21 soil borings installed, four were advanced at the 56 Parris Street Site: B10 through B13 (see **Figure 2-1**). Shallow soil samples were collected from B10 and B13 at a depth of 0 to 4 feet bgs, and deeper soil samples were collected from B11 and B12 at depths of 8 to 10 feet bgs and 3 to 8 feet bgs, respectively. The lead concentration at B12 (523 mg/kg), which was collected from the southwest corner of the parking lot, exceeded the then applicable Maine Department of Environmental Protection (DEP) residential Remedial Action Guideline (RAG) for lead. In addition, polycyclic aromatic hydrocarbon (PAH) concentrations exceeded the Residential RAGs at borings B10 and B12, and arsenic concentrations exceeded the Residential RAG at all four boring locations. Tewhey presumed the source of the arsenic was likely derived from natural sources, and the source of the lead and PAHs was the presence of ash fill, petroleum residue, and burn debris associated with the filling of the Back Cove area of Portland. (Tewhey, 2003 and Credere, 2017a)

2.2.2 Phase I Environmental Site Assessments, Credere Associates – 2017

In 2017, Credere Associates (Credere) was retained by the City of Portland to prepare a Phase I ESA of the 56 Parris Street site for the purpose of identifying RECs. Based on a review of historical sources, environmental databases, interviews, and Site reconnaissance, the following REC was identified in connection with the Site:

- Documented lead and PAHs in soil associated with historical filling of the Site.

No other historical RECs, controlled RECs, *de minimus* conditions, or environmental conditions were identified (Credere, 2017a).

In addition, Credere conducted a Phase I ESA of 44 Hanover Street (and future 55 Portland Street), situated across Parris Street to the east and southeast of the Site. The Phase I ESA identified a former laundry facility located in the area of 55 Portland Street, situated less than 0.1-mile southeast of the Site, between at least 1886 and 1924. It is not known if the laundry facility was exclusively wet laundering or if it included dry cleaning. The assessment also identified a former laundry facility (New System Laundry Inc.) at 82 Parris Street, situated less than 0.1-mile north of the Site (Credere, 2017b).

2.3 POTENTIAL SOURCES AND CONTAMINANTS OF CONCERN

Based on the prior documentation for the Site, the following Areas of Concern (AOCs) were identified by Woodard & Curran:

1. Urban fill that could contain concentrations of oil and/or hazardous substances may be located throughout the Site. These materials may be encountered by workers and/or generated as excess soil during redevelopment activities, or may be encountered by residents during future use.

2. Near-surface soil vapor that may have been impacted by potential chlorinated solvent sources (i.e., former laundry facilities) near the Site.

These AOCs are described in more detail below.

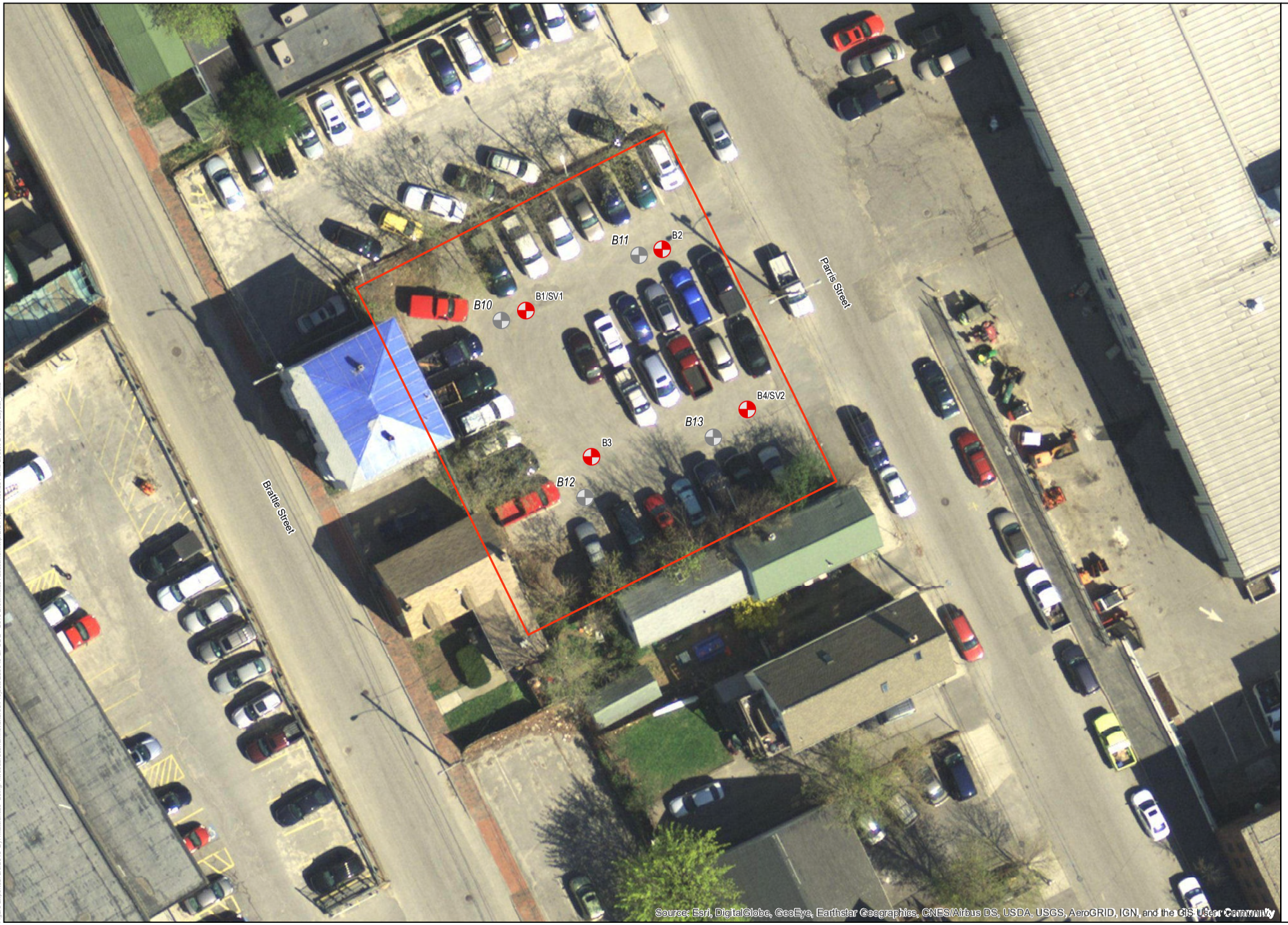
2.3.1 AOC 1 – Urban Fill Underlying Site

The soil located below the Site parking lots consists of urban fill containing non-native, disturbed material that may be mixed with ash, petroleum residue, demolition debris, and asphalt associated with the filling of the Back Cove area of Portland. Potential contaminants of concern (COCs) in Site soil, as identified during the 2002 Tewhey assessment, consist of extractable petroleum hydrocarbons (EPH), lead, and arsenic. This AOC was investigated to evaluate potential risk to construction workers and future residents.

In addition, this AOC was evaluated to assess whether excess soil that may be generated as waste material during redevelopment is likely to be acceptable for reuse or disposal at Maine Department of Environmental Protection (Maine DEP)-permitted solid waste facilities, or similar state permitted non-hazardous receiving facilities. Typical solid waste facility disposal parameters that are not included as Site COCs consist of volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), volatile petroleum hydrocarbons (VPH), polychlorinated biphenyls (PCBs), pesticides, herbicides, barium, mercury, selenium, silver, extractable organic halides (EOX), reactivity, corrosivity, and ignitability.

2.3.2 AOC 2 – Near-Surface Soil Vapor

The Phase I ESA of 44 Hanover Street (and future 55 Portland Street) identified former laundry facilities located less than 0.1-mile from the Site. Based on the presence of these former laundry facilities, the COCs consist of VOCs (TO-15) in soil vapor. This AOC was evaluated to assess the possibility of a completed vapor intrusion pathway into the area of the new Site residential structure via the volatilization of dissolved phase and unsaturated zone contaminants, as well as to assess the potential risk to construction workers during Site excavation work (e.g., utility trenching or foundations).



PHASE II ESA
56 PARRIS STREET
PORTLAND, MAINE

FIGURE 2-1

Site Layout and Sampling Locations

N

Legend

- Previous 2002 Tewhey Soil Boring Location
- Phase II ESA Soil Boring/Soil Vapor Location
- Site Boundary

Site Boundary is based on the City of Portland parcel layer provided by MEGIS.

0 12.5 25 Feet

WOODARD & CURRAN

Project #: 0229649.00
Map Created: January 2018

Third Party GIS Disclaimer: This map is for reference and graphical purposes only and should not be relied upon by third parties for any legal decisions. Any reliance upon the map or data contained herein shall be at the users' sole risk. **Data Sources:** ESRI, MEGIS

3. PHASE II ENVIRONMENTAL SITE ASSESSMENT

Based on the identification of potential RECs associated with the Site during previous environmental assessments conducted at the Site, a focused Phase II ESA was initiated and included the following general scope of work:

1. Development of a Site-specific Health and Safety Plan (HASP) and the clearance of proposed exploration locations by Dig Safe and private utility survey contractors.
2. Installation of four initial soil boings using a direct push drill rig to assess whether soil conditions could present a significant risk both during redevelopment and future residential use, as well as to assess available disposal options for soil that may be generated as excess during redevelopment. Based on initial analytical results, an additional five borings were installed.
3. Installation of two soil vapor testing points to assess the possibility of a completed vapor intrusion pathway into the area of the new Site structure, as well as to assess potential risk to construction workers during redevelopment activities.
4. Collection and independent laboratory analysis of soil and soil vapor samples.
5. Data validation to verify that field and analytical results are usable for their intended purpose.

These activities were performed in accordance with Woodard & Curran's *Site-Specific Quality Assurance Project Plan (SSQAPP), 56 Parris Street, Portland, Maine*, dated September 7, 2017, and Woodard & Curran's Supplemental Sampling Plan memorandum to Maine DEP and EPA, dated November 7, 2017.

3.1 HASP DEVELOPMENT AND UTILITY CLEARANCE

Prior to initiating Phase II ESA field activities, Woodard & Curran pre-marked investigation locations and coordinated with DigSafe for utility clearance. In addition, the locations were cleared by Dig-Smart of Maine, a private utility survey contractor, to further reduce the risk of contact or damage to underground utilities. Woodard & Curran also prepared a Site-specific HASP for the field-related tasks that was adhered to throughout the Phase II investigation.

3.2 SOIL BORING INSTALLATION

Soil boring installation was completed at the Site on October 17, 2017. Weather conditions on this day were clear with temperatures of approximately 35 degrees Fahrenheit. In accordance with the September 7, 2017 SSQAPP, Woodard & Curran's drilling subcontractor (Summit Geoengineering Services of Lewiston, Maine [SGS]) completed four soil borings (B1 through B4) on the Site using split spoons and a truck-mounted hollow stem auger drill rig. These locations were selected to be generally consistent with the future location of the building foundation, as well as to be representative of the materials located throughout the Site. The borings locations were also generally similar to those included in the 2002 Tewhey investigation to provide correlation to previous data if needed. Soil boring locations are presented in **Figure 2-1**.

During boring installation, Woodard & Curran collected soil samples continuously in 2-foot increments to a maximum depth of 6 feet bgs, which is the anticipated depth of the base of the building foundation and/or future utility structures. Each 2-foot increment was logged (lithology and physical observations) in the field. In addition, each 2-foot increment was field screened for total VOCs using a handheld photoionization detector (PID) in accordance with the Maine DEP SOP TS004. Soil boring descriptions, PID readings, and associated samples collected are provided in in **Table 3-1** below.

Each installed soil boring was backfilled using excavated material and finished with asphalt patch to match existing grades.

Table 3-1: Soil Descriptions

Boring ID	Interval (ft below grade)	Description	PID Reading (ppmv)	Associated Soil Sample	Associated Waste Characterization Sample
B1	0 – 0.5	Pavement	--	--	WC1
	0.5 – 2.5	Brown, silty, clayey, fine sand	0.57	B1 (0.5-2.5')	
	2.5 – 4.5	Brown, silty, clayey, fine sand with brick pieces	0.09	B1 (2.5-6')	
	4.5 – 6.0	Brown, silty, coarse sand/gravel with small pieces of brick	0.25		
B2	0 – 0.5	Pavement	--	--	
	0.5 – 2	Brown, coarse to fine sandy, silty clay	0.0	B2 (0-2')	
	2 – 4	Brown, coarse and fine sandy, silty clay with some small rocks	6.2	B2 (2-6')	
	4 – 6	Brown, coarse and fine sandy, silty clay with some rocks	11.0		
B3	0 – 0.5	Pavement	--	--	WC2
	0.5 – 1	Brown, coarse to fine sand with interbedded rocks	0.0	B3 (0-2')	
	1 – 2	Brown, silty, clayey fine sand with interbedded rocks and pieces of glass			
	2 – 4	Brown, silty fine sand with rocks and pieces of bricks, concrete, coal, and pottery	33	B3 (2-6')	
	4 – 6	Brown, silty fine sand with some coarse gravel and bricks	10.4		
B4	0 – 0.5	Pavement	--	--	
	0.5 – 1	Brown, silty fine to coarse sand	0.9	B4 (0-2')	
	1 – 2	Brown, fine sandy, silty clay			
	2 – 3	Brown, fine sandy, silty clay	3.4	B4 (2-6')	
	3 – 3.4	Concrete slab			
	3.4 – 4	Brown, fine to coarse silty sand			
	4 – 6	Brown, silty fine sand with gravel, ash, pieces of brick, concrete dust, and wood	13.7		

3.3 SOIL SAMPLING

Utilizing the rationale described above and documented in the SSQAPP, Phase II ESA soil sampling activities were performed at the Site by Woodard & Curran personnel on October 17, 2017. Soil sampling was conducted in accordance with Maine DEP SOP No. RWM-DR-006.

At each of the four soil borings (B1 through B4), one soil sample was collected from a depth of 0 to 2 feet bgs to assess potential direct contact with Site soils. In addition, one composite soil sample was collected to represent material located from 2 to 6 feet bgs to assess potential risk to construction workers during redevelopment. A total of four discrete soil samples (B1 (0.5-2.5'), B2 (0-2'), B3 (0-2'), and B4 (0-2')) and four composite soil samples ((B1 (2.5-6'),

B2 (2-6'), B3 (2-6'), and B4 (2-6')) were submitted to Absolute Resource Associates (ARA) of Portsmouth, New Hampshire for laboratory analysis of Site COCs EPH, lead, and arsenic.

In addition to the soil samples described above, two composite waste characterization soil samples were created from the soil borings from below the asphalt surface to 6 feet bgs in accordance with Maine DEP SOP No. RWM-DR-006. These two samples were collected to provide data that is representative of the condition and total volume of excess soil that may be generated during redevelopment. One sample (WC1) was a composite sample from soil borings B1 and B2, and the other sample (WC2) was a composite sample from soil borings B3 and B4. Composite samples were created from the 0 to 6 foot interval at each soil boring. The two composite soil samples were submitted to ARA for laboratory analysis of Site COCs (EPH, lead, and arsenic) as well as the remaining waste disposal parameters. The complete analytical list consisted of EPH, VPH, VOCs, total RCRA 8 metals, SVOCs, PCB, pesticides, herbicides, EOX, reactivity, corrosivity, and ignitability. Please note that, in accordance with Maine DEP SOP No. RWM-DR-006, the composited VOC soil samples (WC1 and WC2) were prepared from individual aliquots from each soil boring to minimize the risk of low bias that could result from agitating the soil sample during compositing.

Further, relative to the soil samples described above, if total RCRA 8 metals results indicated that any individual metal exceeded a value that exceeded 20 times the applicable toxicity characterization leaching potential (TCLP) limit, the sample would be reanalyzed for each total metal that exceeded this limit using the TCLP procedure. This process, which was described in the SSQAPP, would facilitate further evaluation of soil disposal options in the event that elevated total metals concentrations were found.

Results for Phase II ESA soil samples analyzed per the approach outlined above are presented in **Section 4.3**.

3.4 SOIL VAPOR SAMPLING

Two soil vapor (SV) samples were collected from below the footprint of the proposed Site structure to assess the possibility of a completed Vapor Intrusion (VI) pathway into the structure. The two soil vapor samples (designated as SV1 and SV2) were collected from boring locations B1 and B4, respectively, to address potential impacts to the upgradient and downgradient portions of the Site (see **Figure 2-1**).

The vapor samples were collected once the probe reached a depth of 6 feet below grade, which is the anticipated depth of foundation footings. The dedicated stainless steel screen sample points were then installed in the borehole and sealed with bentonite to minimize potential cross-contamination. To help verify the proper installation of the sampling points, field measurements of oxygen and carbon dioxide were recorded both before and after sample collection from ambient air and the subsurface vapor points using a handheld multi-gas meter (i.e., Landtec Gem 2000) (see **Table 3-2**). PID measurements for total VOCs in ambient air and from the vapor points were also recorded before and after sample collection, and these results are also included in **Table 3-2**. Based on the results presented in **Table 3-2**, though there is some variation in the parameters, there is no clear indication of a connection between ambient air and subsurface air, which suggests that the installed seals at each point were adequate.

Soil vapor samples were collected in laboratory certified clean (100% individually certified) 6-liter SUMMA canisters equipped with pre-set flow meters. Vapor samples were obtained over a 30-minute period using a flow rate of approximately 200 milliliters per minute, in accordance with the SSQAPP. A duplicate soil vapor sample was collected from SV2 simultaneously with the primary sample using a split tubing manifold. The soil vapor sampling was conducted in accordance with Maine DEP SOP No. RWM-DR-026 for soil vapor sampling.

Following collection, the canisters were logged on a chain of custody form and shipped to Con-Test for analysis of VOCs by EPA Method TO-15. The analytical results for soil vapor are presented in **Section 4.4**.

Table 3-2: Soil Vapor Sampling Field Measurements

Parameter	Ambient Air	Subsurface Air
SV1		
Before Sample Collection		
CO_2	0.4%	10.5%
O_2	20%	6.1%
VOCs	0.0 ppmv	11.3 ppmv
After Sample Collection		
CO_2	0.0%	11.6%
O_2	20%	4.4%
VOCs	0.0 ppmv	10.7 ppmv
SV2		
Before Sample Collection		
CO_2	0.0%	0.0%
O_2	20%	4.2%
VOCs	0.0 ppmv	8.05 ppmv
After Sample Collection		
CO_2	0.0%	0.4%
O_2	20%	0.1%
VOCs	0.0 ppmv	5.8 ppmv

3.5 DATA VALIDATION

Data validation was completed to assess the quality of the data associated with these samples. Criteria from the National Functional Guidelines for Inorganic Superfund Data Review (USEPA, 2016), National Functional Guidelines for Superfund Organic Methods Data Review (USEPA, 2016), Environmental Data Review Supplement for Regional Data Review Elements and Superfund Specific Guidance/Procedures (USEPA, April 22, 2013), and the SSQAPP (Woodard & Curran, 2017) were used as references in the validation process.

Data validation included a modified Tier 1 Plus evaluation of data quality which included the following quality control parameters:

- Data completeness
- Sample Preservation and Technical Holding Times
- Method and Methanol Blanks
- Trip Blanks
- Surrogate Recoveries
- Matrix Spike Samples
- Laboratory Control Samples
- Laboratory Duplicate
- Field Duplicates

A summary of the results of the data validation is presented in **Section 4.5**.

4. FINDINGS

4.1 SITE GEOLOGY

The Site slopes slightly toward Back Cove, with an elevation of between approximately 20 feet above mean sea level on the northwest end of the Site and approximately 30 feet above mean sea level on the southeast end. Obvious bedrock outcrops were not observed at the Site. The borings installed as part of this Phase II ESA were completed to a depth of 6 feet bgs, and neither groundwater nor bedrock were encountered in any of the borings. However, a geotechnical investigation was conducted at the Site concurrently with this Phase II ESA, and groundwater was encountered at a depth of 10.5 feet bgs at boring location B3 during this separate investigation. This is consistent with the presence of groundwater at approximately 8 to 15 feet during the 2002 environmental assessment conducted at the Site (Tewhey, 2003).

Subsurface materials encountered during the advancement of the soil borings consisted primarily of brown, fine to coarse sand with varying amounts of silt and clay, and varying amounts of gravel, ash, brick pieces, concrete dust, wood, pottery, and glass.

No public or off-Site private water supply wells were identified in the vicinity of the Site. The Site does not currently have water service; however, the surrounding neighborhood is connected to public water supply and sewer services, and municipal water supply and sewer lines are available to the Site.

4.2 PID SCREENING AND FIELD OBSERVATIONS

Results of PID screening of soils for VOCs are shown in the soil descriptions in **Table 3-1**. Elevated PID readings indicative of significant petroleum contamination were not identified during the Phase II ESA. In general, PID readings recorded during soil boring activities ranged from 0.0 ppm to 13.7 ppm. No petroleum saturated soil was observed during the Phase II ESA.

4.3 SOIL SAMPLES

The laboratory analysis of soil samples collected from test borings associated with AOC 1 (B1 through B4) was performed by ARA. In addition, ARA analyzed the waste characterization samples (WC1 and WC2) for disposal criteria. These sample results are summarized in the sections below. Complete analytical results are tabulated in **Appendix A** and a copy of the laboratory analytical package is provided in **Appendix B**.

As discussed further in **Section 4.5**, a duplicate sample was collected from sample location B4 (2-6') for quality assurance and quality control purposes.

4.3.1 Soil Samples from Test Borings

Soil samples were collected from the test borings to evaluate whether Site soil could present a significant risk to future users of the Site and/or to construction workers that may experience exposure during redevelopment. The results were compared to the current residential and excavation/construction worker risk-based RAGs published by Maine DEP, given the proposed redevelopment activities and future residential usage. As shown in **Table 4-1** below, EPH was detected in all but two samples collected. All detected EPH concentrations were below the construction worker RAGs. The only EPH concentration to exceed the residential RAG was the concentration of benzo(a)pyrene in boring B3 at a depth of 2 to 6 feet bgs (1.6 mg/kg), which exceeded the residential RAG of 0.26 mg/kg. It is relevant to note that this concentration was identified at a depth of greater than 2 feet below existing grade, so would not be considered "accessible" for residential receptors under current Site conditions.

Lead and arsenic were detected in all soil samples collected from the test borings. Arsenic concentrations ranged from 5.9 mg/kg to 25 mg/kg, which exceed the residential RAG of 1.4 mg/kg. None of the arsenic concentrations exceeded the construction worker RAG of 42 mg/kg. Two arsenic results exceeded the state-wide background Upper Prediction Limit (UPL) for arsenic of 16 mg/kg.

Lead concentrations ranged from 23 mg/kg to 1,800 mg/kg. Four samples (including one duplicate sample) had lead concentrations that exceeded the residential RAG of 340 mg/kg, and one lead concentration (1,800 mg/kg) exceeded the construction worker RAG of 950 mg/kg. All but one of the lead results exceeded the state-wide background UPL for lead of 32 mg/kg.

Preliminary waste characterization results indicated that the leachable lead concentration at soil sample B1 (2.5-6.0') using the toxicity characteristic leaching procedure (TCLP) was 20 mg/L, which exceeds the TCLP limit of 5 mg/L. The TCLP lead result of the overlying soil sample B1 (0.5-2.5') was 1.9 mg/L, which is below the TCLP limit.

Based on these results, additional sampling was proposed in the area of soil boring B1 to delineate the extent of material that may demonstrate a hazardous characteristic once generated as waste during construction. Woodard & Curran submitted a Supplemental Sampling Plan memorandum to Maine DEP and EPA, dated November 7, 2017, which was subsequently approved by the agencies. The supplemental investigation is described below in **Section 4.3.1.1**.

Table 4-1: Soil Sample Laboratory Analytical Results – Detections Only

Compound	B1 (0.5-2.5')	B1 (2.5-6')	B2 (0-2')	B2 (2-6')	B3 (0-2')	B3 (2-6')	B4 (0-2')	B4 (2-6')	B4 (2-6') DUP[1]	Residential RAG[2]	Construction Worker RAG[2]
Extractable Petroleum Hydrocarbons (mg/kg)											
Phenanthrene	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	**0.3**	< 0.2	< 0.2	< 0.2	3,700	8,900
Fluoranthene	**0.2**	< 0.2	< 0.2	< 0.2	< 0.2	**2.8**	< 0.2	< 0.2	< 0.2	5,000	10,000
Pyrene	**0.2**	< 0.2	< 0.2	< 0.2	< 0.2	**2.6**	< 0.2	< 0.2	< 0.2	3,700	10,000
Benzo(a)anthracene	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	**1.8**	< 0.2	< 0.2	< 0.2	2.6	430
Chrysene	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	**1.5**	< 0.2	< 0.2	< 0.2	260	10,000
Benzo(b)fluoranthene	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	**1.3**	< 0.2	< 0.2	< 0.2	2.6	430
Benzo(k)fluoranthene	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	**1.3**	< 0.2	< 0.2	< 0.2	26	4,300
Benzo(a)pyrene	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	**1.6**	< 0.2	< 0.2	< 0.2	0.26	43
Indeno(1,2,3-cd)pyrene	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	**0.6**	< 0.2	< 0.2	< 0.2	2.6	430
Benzo(g,h,i)perylene	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	**0.6**	< 0.2	< 0.2	< 0.2	3,700	10,000
C19-C36 Aliphatics	**29**	**180**	< 22	**110**	**130**	**92**	< 21	**270**	**300**	10,000	10,000
C11-C22 Aromatics	< 23	**110**	< 22	**76**	**75**	**110**	< 21	**120**	**150**	750	10,000
Metals (mg/kg)											
Arsenic	**11**	**25**	**11**	**12**	**6.3**	**18 J**	**5.9**	**14**	**14**	1.4	42
Lead	**1,800**	**650**	**300**	**110**	**91**	**340 J**	**23**	**590**	**630**	340	950
TCLP Extract (mg/L)											
Lead	**1.9**	**20**	**0.40**	**0.35**	NA	**0.21**	NA	**0.31**	**0.39**	--	--

[1] This duplicate sample was submitted as a blind sample to the laboratory as FD-1.
[2] RAG: Maine Remedial Action Guidelines for Sites Contaminated with Hazardous Substances, Maine DEP, Bureau of Remediation and Waste Management (revised February 5, 2016)
Samples were collected on October 17, 2017.
Bold = analyte was detected in the given sample
Shading = detected concentration exceeds Residential and/or Construction Worker RAG
< = not detected at indicated reporting limit
-- = no RAGs available for this analyte. The CPRC acceptance criteria of 5 mg/L was used as a reference.
J = Result qualified as estimated during data validation (see Section 4.5)

4.3.2 Soil Samples for Waste Characterization

Results from the two soil samples analyzed for waste disposal parameters were compared to the acceptance requirements of Commercial Paving & Recycling Company (CPRC), located in Scarborough, Maine. As shown in **Table 4-3**, lead was detected at concentrations of 210 mg/kg and 220 mg/kg in samples WC1 and WC2, respectively, which exceed the CPRC acceptance criteria of 100 mg/kg for total lead. However, the TCLP lead results for these samples (0.22 and 1.4 mg/L, respectively) are well below the CPRC acceptance criteria of 5 mg/L. Therefore, no special disposal restrictions were identified based on the analysis of soil samples WC1 and WC2.

Table 4-2: Soil Sample Laboratory Analytical Results Compared to Disposal Criteria

Compound	WC1	WC2	CPRC Acceptance Criteria
Volatile Organic Compounds (mg/kg)	None Detected	None Detected	Various
Volatile Petroleum Hydrocarbons (mg/kg)	None Detected	None Detected	--
Semi-Volatile Organic Compounds (mg/kg) – Detections Only			
Acenaphthylene	< 0.056	**0.10**	--
Phenanthrene	**0.11**	**0.21**	--
Anthracene	< 0.056	**0.069**	--
Fluoranthene	**0.13**	**1.1**	--
Pyrene	**0.14**	**1.1**	--
Benzo(a)anthracene	< 0.056	**0.74**	--
Chrysene	**0.091**	**0.62**	--
Benzo(b)fluoranthene	**0.082**	**0.65**	--
Benzo(k)fluoranthene	< 0.056	**0.64**	--
Benzo(a)pyrene	**0.056**	**0.67**	--
Indeno(1,2,3-cd)pyrene	< 0.056	**0.14**	--
Dibenzo(a,h)anthracene	< 0.056	**0.071**	--
Benzo(g,h,i)perylene	< 0.056	**0.13**	--
Polychlorinated Biphenyls (mg/kg)	None Detected	None Detected	None Detected
Herbicides (mg/kg)	None Detected	None Detected	None Detected
Pesticides (mg/kg)	None Detected	None Detected	None Detected
Extractable Petroleum Hydrocarbons (mg/kg) – Detections Only			
Fluoranthene	< 0.2	**0.9**	--
Pyrene	< 0.2	**0.9**	--
Benzo(a)anthracene	< 0.2	**0.5**	--
Chrysene	< 0.2	**0.5**	--
Benzo(b)fluoranthene	< 0.2	**0.5**	--
Benzo(k)fluoranthene	< 0.2	**0.3**	--
Benzo(a)pyrene	< 0.2	**0.5**	--
C19-C36 Aliphatics	**210**	**89**	--
C11-C22 Aromatics	**140**	**65**	--
Metals (mg/kg) – Detections Only			
Arsenic	**14**	**9.3**	50
Barium	**88**	**51**	1,000
Cadmium	**0.4**	**1.0**	10
Chromium	**25**	**16**	50
Lead	**210**	**220**	100
Mercury	**0.23**	**0.30**	2
TCLP Extract (mg/L)			
Lead	**0.22**	**1.4**	5

Compound	WC1	WC2	CPRC Acceptance Criteria
Other Waste Disposal Parameters			
Reactivity – Cyanide (mg/kg)	< 0.6	< 0.6	< 250
Reactivity – Sulfide (mg/kg)	< 0.5	< 0.4	< 500
EOX (mg/kg)	Not detected (< 49.0)	Not detected (< 46.7)	< 100
Ignitability (deg F)	> 140	> 140	> 140
pH (s.u.)	8.8	9.0	2.0 > pH < 12.5
% Solids	86.1% (no free liquid observed)	90.5% (no free liquid observed)	< 10% free liquids

EOX = extractable organic halides
CPRC = Commercial Paving & Recycling Company in Scarborough, Maine
Samples were collected on October 17, 2017.
Bold = analyte was detected in the given sample
Shading = detected concentration exceeds CPRC Acceptance Criteria
-- = no CPRC acceptance criteria available for this analyte

4.3.2.1 Supplemental Soil Investigation

Preliminary waste characterization results indicated that the leachable lead concentration at soil sample B1 (2.5-6.0') using TCLP was 20 mg/L, which exceeds the TCLP limit of 5 mg/L. Therefore, soil represented by this sample would be classified as a hazardous waste once it became a waste. As this soil may be generated as a waste during excavation associated with Site redevelopment, it was necessary to delineate the extent of soil that demonstrated this hazardous characteristic in order to properly manage waste materials during redevelopment.

As such and in accordance with the November 7, 2017, Supplemental Sampling Plan memorandum prepared by Woodard & Curran, which was subsequently approved by Maine DEP and EPA, the following supplemental investigation was conducted at the Site on November 13, 2017. Supplemental soil boring locations are shown on **Figure 4-1**.

- Additional sampling was conducted at soil boring B1 below a depth of 6 feet to define the vertical extent of soil that may exceed the TCLP limit. One sample was collected from 6 to 8 feet bgs (B1 (6-8')) and one sample was collected from 8 to 10 feet bgs (B1 (8-10')). The sample collected from 8 to 10 feet bgs was placed on hold at the analytical laboratory pending results of the overlying sample. The held sample would only be analyzed if the overlying sample had a concentration that exceeded the TCLP limit of 5 mg/L for lead.

- Four additional soil borings (identified as soil borings B101A through B101D) were completed two feet from boring B1 to the north, south, east, and west. At each boring, samples were collected from 2.5 to 6 feet bgs, 6 to 8 feet bgs, and 8 to 10 feet bgs. The samples collected from 6 to 8 feet bgs and 8 to 10 feet bgs were placed on hold at the analytical laboratory pending results of the overlying sample as well as the results from the B1 sample(s) described above. The held samples would only be analyzed if the overlying samples had concentrations that exceeded the TCLP limit of 5 mg/L for lead.

- Four additional soil borings (identified as soil borings B201A through B201D) were completed four feet from boring B1 to the north, south, east, and west (and two feet from the B101-series borings). At each boring, samples were collected from 2.5 to 6 feet bgs, 6 to 8 feet bgs, and 8 to 10 feet bgs. All samples were placed on hold at the analytical laboratory pending results of the samples from the B101-series borings. If TCLP lead

results did not exceed the 5 mg/L limit at any of the samples from the B101-series borings, none of the samples from the B201-series borings would be analyzed. The held samples would only be analyzed if the associated B101-series sample exceeded the TCLP limit of 5 mg/L for lead. For example, if the only result that exceeded the 5 mg/L limit from the B101-series boring was from sample B101A (2.5-6'), the samples from boring B201A would be the only samples analyzed by the laboratory.

Supplemental soil investigation samples were collected in accordance with the methods described in the SSQAPP and laboratory analysis was completed for lead only using the TCLP procedure. As shown in **Table 4-2**, all lead results from the initial round of samples collected from the most aerially and vertically proximal points to B1 (2.5-6.0') were below the TCLP limit of 5 mg/L. Therefore, the remaining samples that were collected and placed on hold were not released for analysis.

Table 4-3: Supplemental Soil Sample Laboratory Analytical Results

Compound	B1 (6-8')	B101A (2.5-6')	B101B (2.5-6')	B101C (2.5-6')	B101D (2.5-6')
TCLP Extract (mg/L)					
Lead	**0.18**	**0.12**	**0.086**	**0.30**	**0.43**

Bold = analyte was detected in the given sample
Shading = detected concentration exceeds the CPRC acceptance criteria of 5 mg/L.
Samples were collected on November 13, 2017.

4.4 SOIL VAPOR SAMPLES

Soil vapor sample results were compared to the vapor screening levels (VSLs) that were developed using USEPA's June 2015 OSWER Technical Guide for Assessing and Mitigating the Vapor Intrusion Pathway from Subsurface Vapor Sources to Indoor Air (OSWER Technical Guide) and Maine DEP guidance (see **Table 4-4**). The VSLs were derived by dividing the Indoor Air Residential value presented in the February 6, 2016, Maine DEP RAGs by a floor slab attenuation factor to correct for concentration reduction that may be expected due to flooring that is expected to be present between the sample point and indoor air following redevelopment. USEPA's OSWER Technical Guide uses a slab attenuation factor of 0.033, or has a soil vapor screening level of 33 times the values presented in the RAGs.

Soil vapor results indicate that soil vapor concentrations do not exceed the residential soil VSLs in the samples collected. Complete analytical results are tabulated in **Appendix A** and a copy of the laboratory analytical package is provided in **Appendix C**.

Table 4-4: Soil Vapor Laboratory Analytical Results – Detections Only

Compound	SV1 (ug/m³)	SV2 (ug/m³)	SV2 Duplicate (ug/m³)	Residential Vapor Screening Level[1] (ug/m³)
Air Toxics by EPA Compendium Methods (TO-15)				
Acetone	**320**	**810**	**830**	1,056,000
Benzene	**2.2**	**5.9**	**6.0**	102.3
2-Butanone (MEK)	< 59	**61**	**62**	171,600
Carbon Disulfide	< 16	**330**	**330**	24,090
Cyclohexane	< 1.7	**4.5**	**4.4**	--
1,4-Dichlorobenzene	**18**	**16**	**17**	2,079
Ethanol	< 38	**57**	**61**	--
Ethyl Acetate	< 1.8	**2.8 J**	< 1.8 J	--
Ethylbenzene	**5.3**	**8.9**	**8.8**	320.1
4-Ethyltoluene	**3.7**	**11**	**1**	--
Heptane	**2.2**	**13**	**13**	--
2-Hexanone (MBK)	**2.5**	**5.3**	**5.0**	--
4-Methyl-2-pentanone (MIBK)	**25**	**40**	**42**	102,300
Tetrachloroethylene	**3.5**	< 3.4	< 3.4	1,386
Toluene	**12**	**25**	**25**	171,600
1,2,4-Trimethylbenzene	**13**	**32**	**33**	--
1,3,5-Trimethylbenzene	**3.4**	**8.7**	**8.7**	--
m&p-Xylene	**24**	**34**	**34**	3,300
o-Xylene	**9.2**	**17**	**18**	3,300

[1] Vapor Screening Levels were derived by multiplying the Indoor Air Residential values presented in the February 5, 2016, RAGs by an attenuation factor of 33.
Laboratory analytical results are presented in micrograms per cubic meter (ug/m³).
All soil vapor samples were collected on October 17, 2017.
Bold = analyte was detected in the given sample
Shading = detected concentration or reporting limit exceeds the Residential Vapor Screening Level
< = not detected at the indicated reporting limit
-- = no Vapor Screening Level available for this analyte

As a conservative approach to evaluate potential risk to construction workers at the Site, detected soil vapor concentrations were also compared to the current Occupational Safety and Health Administration (OSHA) permissible exposure limits (PELs). OSHA PELs are occupational exposure limits assuming 8-hour time-weighted average concentrations (TWAs) with exposure occurring over a 40-hour work week. The following TWAs were used for this comparison:

Table 4-5: OSHA Permissible Exposure Limits

Compound	Maximum Detected Concentration (ppmv)	OSHA PEL (ppm)
Acetone	0.350	1,000
Benzene	0.0019	1
2-Butanone (MEK)	0.021	200
Carbon Disulfide	0.110	20
Cyclohexane	0.0013	300
1,4-Dichlorobenzene	0.0030	75
Ethanol	0.032	1,000
Ethyl Acetate	0.00077	400
Ethylbenzene	0.0020	100
4-Ethyltoluene	0.0022	--
Heptane	0.0031	500
2-Hexanone (MBK)	0.0013	100
4-Methyl-2-pentanone (MIBK)	0.010	100
Tetrachloroethylene	0.00052	100
Toluene	0.0067	200
1,2,4-Trimethylbenzene	0.0067	--
1,3,5-Trimethylbenzene	0.0018	--
m&p-Xylene	0.0079	100
o-Xylene	0.0040	100

PEL = permissible exposure limit
-- = No OSHA PEL available

Consistent with this comparison, concentrations detected in soil vapor samples collected from the Site were significantly below the OSHA PELs listed above.

4.5 DATA VALIDATION

Data validation was completed in accordance with the methodology described in **Section 3.5**. A summary of the results of the data validation is presented below.

4.5.1 Data Completeness

Samples were organized by the laboratory into the sample delivery group (SDG) 42288 for initial soil samples (ARA), SDG 42587 for supplemental soil samples (ARA), and SDG 17J1101 for soil vapor samples (Con-Test). ARA subcontracted the herbicides and EOX analyses to TestAmerica Laboratories, Inc. Copies of the laboratory analytical packages are provided in **Appendix B** (soil) and **Appendix C** (soil vapor). The Level II data packages were reviewed for completeness to determine if all of the supporting documentation was submitted by the analytical laboratories. The data packages submitted by the laboratories were 100 percent complete.

4.5.2 Sample Preservation and Technical Holding Times

Samples were collected in the appropriate sampling containers per the SSQAPP. Soil samples were then placed in coolers packed with ice to maintain a temperature of roughly 4ºC. According to ARA, soil samples were received in

acceptable condition, between 1 and 4ºC, on ice, and in accordance with sample handling, preservation, and integrity guidelines. According to Con-Test, soil vapor samples were received in good condition. All samples were analyzed prior to the expiration of the associated holding times.

4.5.3 Method and Methanol Blanks

Method blanks were analyzed to determine if concentrations of target compounds were introduced during the preparation and analysis of samples at the laboratories. No analytes were detected in the method blanks, indicating that their introduction during sample analysis was unlikely.

No analytes were detected in the methanol blanks (associated with solid VOC and VPH samples).

4.5.4 Trip Blanks

One trip blank was analyzed for VOCs. No analytes were detected in the trip blank, indicating that transfer of compounds between samples during sample handling and analysis was not likely.

4.5.5 Surrogate Recoveries

Recoveries of the surrogates for all of the samples were compliant indicating that instrument performance during sample analyses was acceptable.

4.5.6 Matrix Spike Samples

A matrix spike (MS) was analyzed for arsenic, lead, and TCLP lead using soil sample B3 (2-6') to evaluate for potential matrix effects. MS recoveries for arsenic and lead were below the lower control limit of 75%, and therefore arsenic and lead results in sample B3 (2-6') were qualified as estimated (J).

4.5.7 Laboratory Control Samples

Laboratory control samples (LCSs; also referred to as laboratory fortified blanks) consist of deionized water which is spiked with known concentrations of the target compounds. The recoveries of the compounds were used to determine the analytical accuracy of the instrumentation used to obtain sample concentrations. A recovery range (e.g., 70-130%, 40-140%, 80-120%) was used as a control limit to determine accuracy for the soil samples. For all the LCSs, the target compounds had compliant recoveries, indicating that concentrations were not affected by the instrumentation or other laboratory conditions during sample analyses, with the exception of the following:

- Vinyl chloride for Batch 10152 had LCS recoveries below the lower control limit. The non-detect vinyl chloride results associated with this LCS (Batch 10152; samples WC1 and WC2) were qualified as estimated (J).
- Naphthalene for Batch 10148 had an LCS recovery below the lower control limit. The non-detect naphthalene results associated with this LCS (Batch 10148; all soil samples in SDG 42288) were qualified as estimated (J).
- Endrin aldehyde for Batch 10151 had an LCS recovery below the lower control limit. The non-detect endrin aldehyde results associated with this LCS (Batch 10151; WC1 and WC2) were qualified as estimated (J).
- Hexachlorocyclopentadiene, 4-nitrophenol, and pentachlorophenol had LCS recoveries below the lower control limits. The non-detect results associated with this LCS (Batch 10149; WC1 and WC2) were qualified as estimated (J).

- Hexachlorobutadiene and 1,2,4-trichlorobenzene, which had LCS recoveries above the upper control limit for soil vapor samples. Therefore, positive hexachlorobutadiene and 1,2,4-trichlorobenzene results would be qualified as estimated for all soil vapor samples; however, all results were non-detect for these analytes and therefore results were not qualified. In addition, styrene had an LCS recovery below the lower control limit, and therefore all soil vapor styrene results were qualified as estimated (J).

LCS duplicate relative percent differences (RPDs) were all within control limits, with the exception of benzo(k)fluoranthene for Batch 10148. The non-detect and positive benzo(a)fluoranthene results associated with this LCS duplicate (Batch 10148; all soil samples in SDG 42288) were qualified as estimated (J).

For metals, Certified Reference Materials (which are similar to a LCS) were analyzed. Certified Reference Materials consist of a solid matrix, which is spiked with known concentrations of the target compounds at levels certified by the vendor. Metals had compliant recoveries indicating that concentrations were not affected by the instrumentation or other laboratory conditions during sample analyses. Certified Reference Material duplicates (which are similar to LCS duplicates) were analyzed for metals; the RPDs were below the 35% control limit.

4.5.8 Laboratory Duplicate

A laboratory duplicate sample was analyzed for arsenic, lead, and TCLP lead using soil sample B3 (2-6') to measure the precision of reported results. The RPDs between the primary and duplicate results for arsenic and lead were greater than 20%, indicating an unacceptable level of analytical precision. Therefore, the arsenic and lead results for sample B3 (2-6') were qualified as estimated (J).

4.5.9 Field Duplicates

The following two field duplicate samples were collected during this sampling event and submitted to the laboratories as blind duplicates:

Table 4-6: Field Duplicate Laboratory Analytical Summary

Duplicate Sample	Associated Sample	Matrix	Analyses
FD-1	B4 (2-6')	Soil	EPH, arsenic, lead
Duplicate	SV2	Soil Vapor	VOCs

For field duplicates with positive detections in both the primary and duplicate samples, the absolute RPD should be less than or equal to 50 percent (RPD ≤ 50%) for non-aqueous samples. For field duplicates with one positive detection and one result below the detection limit for a particular analyte, RPDs are not calculated and results are qualified based on the Environmental Data Review Supplement for Regional Data Review Elements and Superfund Specific Guidance/Procedures (USEPA, April 22, 2013). The field duplicate data validation is summarized below.

- FD-1 / B4 (2-6'): All RPDs were below 50% for analytes with positive results in both the primary and duplicate samples.
- Duplicate / SV2: All RPDs were below 50% for analytes with positive results in both the primary and duplicate samples. Ethyl acetate had a detected concentration in one sample and a result below the reporting limit in the other sample. Therefore, non-detect and positive results for ethyl acetate were qualified as estimated (J) for these two samples.

Complete analytical results for duplicates and their corresponding primary samples are tabulated in **Appendix A** and copies of the laboratory analytical packages are provided in **Appendix B** (soil) and **Appendix C** (soil vapor).

4.5.10 Summary and Overall Assessment of Data

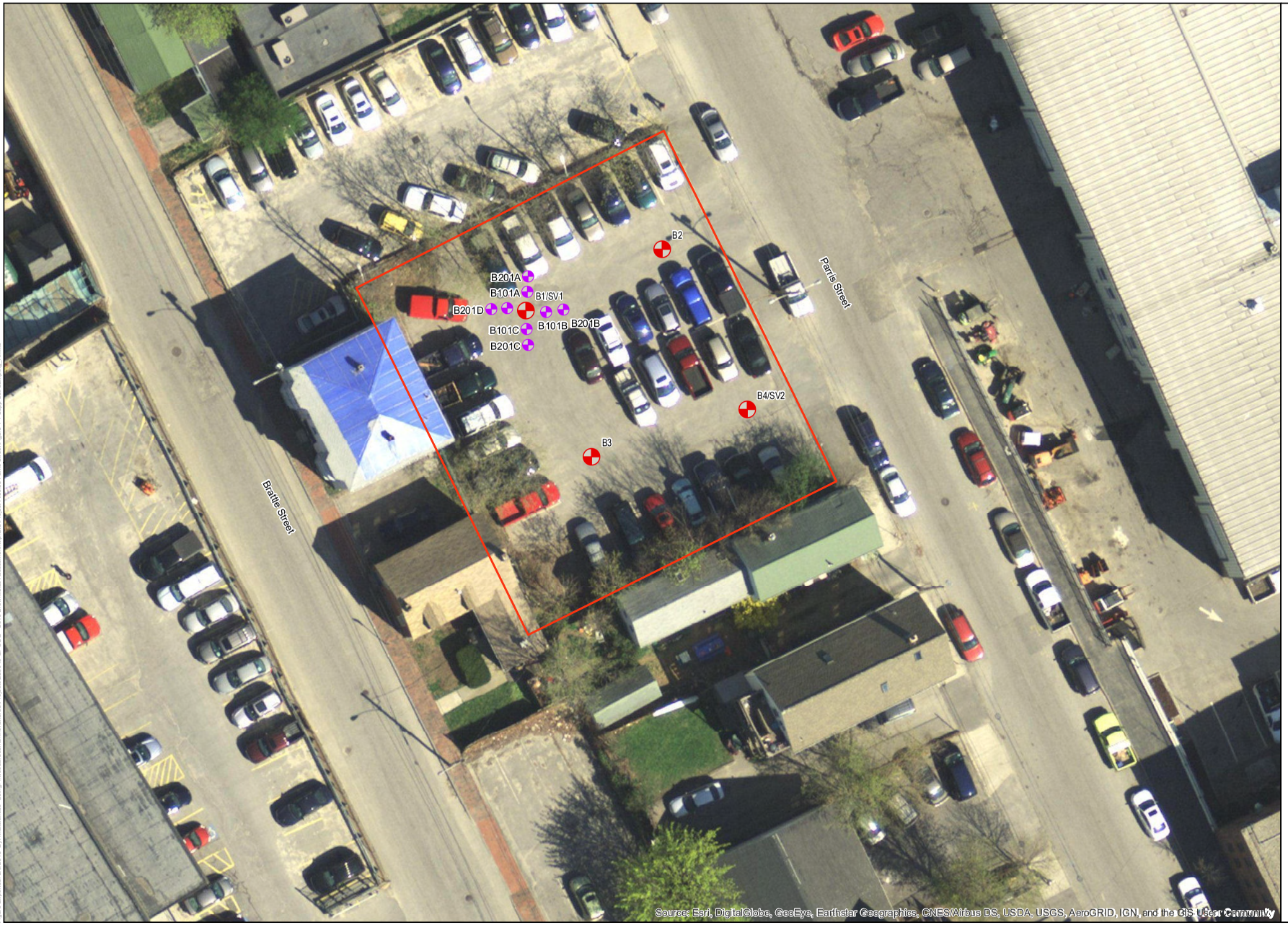
The quality of the data, as indicated from the validation process, suggest that the data are of a sufficient quality for characterization of environmental conditions at the Site.

Due to uncompliant LCS recoveries for the analytes listed in **Section 4.5.7**, results were qualified as estimated (J).

MS recoveries and RPDs in the laboratory duplicate for arsenic and lead were uncompliant, and therefore arsenic and lead results in sample B3 (2-6') were qualified as estimated (J).

In the field duplicate soil vapor sample associated with soil vapor sample SV2, ethyl acetate had detected concentrations in one sample and results below the reporting limit in the other sample. The results for ethyl acetate in these two samples were qualified as estimated (J).

No results were rejected as a result of the data validation. Validation results demonstrate that the quality of the data associated with the Phase II ESA are acceptable for use at the Site.



PHASE II ESA
56 PARRIS STREET
PORTLAND, MAINE

FIGURE 4-1

Supplemental Soil Boring Locations

N

Legend

- Supplemental Soil Boring Installed November 13, 2017
- Phase II ESA Soil Boring/Soil Vapor Location
- Site Boundary

Site Boundary is based on the City of Portland parcel layer provided by MEGIS.

0 12.5 25 Feet

WOODARD & CURRAN

Project #: 0229649.00
Map Created: January 2018

Third Party GIS Disclaimer: This map is for reference and graphical purposes only and should not be relied upon by third parties for any legal decisions. Any reliance upon the map or data contained herein shall be at the users' sole risk. **Data Sources:** ESRI, MEGIS

5. CONCLUSIONS

The Conceptual Site Model (CSM) detailed in Woodard & Curran's SSQAPP included two AOCs: urban fill underlying the Site; and potentially contaminated near-surface soil vapor. Given the proposed redevelopment scenario for the Site, residential use as well as risk to workers involved with Site excavation activities were considered in the assessment of risk.

The Phase II ESA included a program of test borings and soil vapor points. The following conclusions within each AOC were developed based on the findings of the Phase II ESA.

AOC 1 – Urban Fill Underlying Site

Soil samples were collected from the test borings to evaluate whether Site soil could present a significant risk to future users of the Site and/or to construction workers that may experience exposure during redevelopment.

The only EPH concentration to exceed the residential RAG was the concentration of benzo(a)pyrene in boring B3 at a depth of 2 to 6 feet bgs (1.6 mg/kg), which exceeded the residential RAG of 0.26 mg/kg. Arsenic concentrations at the Site ranged from 5.9 mg/kg to 25 mg/kg, which exceed the residential RAG of 1.4 mg/kg. Four samples (including the duplicate sample) had lead concentrations ranging from 590 mg/kg to 1,800 mg/kg that exceeded the residential RAG of 340 mg/kg. These results are typical of conditions at urban properties in the Bayside neighborhood of Portland. As described in **Section 6**, risk reduction measures to minimize direct contact with existing soil during the future residential use of the Site could be incorporated into the future design.

All detected EPH and arsenic concentrations were below the construction worker RAGs. One lead concentration (1,800 mg/kg) exceeded the construction worker RAG of 950 mg/kg.

Initial waste characterization results indicated that the leachable lead concentration at soil sample B1 (2.5-6.0'), which was quantified using the TCLP procedure, exceeded the TCLP limit of 5 mg/L. Therefore, soil represented by this sample would be classified as a hazardous waste once it became a waste material (i.e., during excavation activities expected to occur during redevelopment). Supplemental sampling conducted to delineate the extent of this hazardous waste soil indicated that the volume of this material was limited to approximately 2 cubic yards. This soil will need to be properly handled and disposed of as hazardous waste prior to or during redevelopment. No additional special soil disposal restrictions were identified during the Phase II ESA, and (with the exception of soil at location B1 (2.5-6.0')) excess soil generated during Site redevelopment is likely to be acceptable for disposal at CPRC, or a similar receiving facility.

AOC 2 – Near-Surface Soil Vapor

Soil vapor results indicate that the derived soil vapor screening levels for all detected VOCs were below the indoor air residential RAGs. As such, detected VOC concentrations are not likely to present a risk to the health of future residents at the Site.

Detected VOC concentrations in soil vapor samples were below the available OSHA TWA PELs. Therefore, though it is unlikely that a significant risk to construction workers exists at the Site, Site conditions should be evaluated by qualified personnel relative to worker safety requirements prior to redevelopment.

6. RECOMMENDATIONS

Woodard & Curran recommends the following actions, assuming future residential use under the proposed redevelopment scenario:

1. Though not required, consider submitting an application for participation in the Maine DEP Voluntary Response Action Program (VRAP) program prior to the initiation of redevelopment activities. VRAP participation can provide additional levels of assurance to developers, lenders, and other project partners as the redevelopment proceeds.

2. Prior to the initiation of redevelopment activities, a soil management plan (SMP) that describes proper management and disposal options for soil that may be disturbed during construction should be developed and implemented.

   The SMP should describe the appropriate procedures to remove, manage, and dispose of hazardous waste soil characterized by the lead concentration in sample B1 (2.5-6.0'). This soil should be addressed prior to, or as a first step during the redevelopment of the Site.

   Remaining construction-derived soil originating from the Site should be managed on-site in accordance with the SMP and reused during redevelopment to the greatest extent possible in order to minimize construction costs. However, if all non-hazardous soil generated during redevelopment cannot be reused onsite, it is likely that this excess material may be transported off-site for reuse or disposal at a Maine DEP permitted solid waste landfill, a Maine DEP licensed commercial processing facility, or could be beneficially reused following appropriate Maine DEP permitting.

   In addition, as groundwater was not evaluated as part of the Phase II ESA, the appropriate handling of groundwater that may be encountered during redevelopment activities should be included in the SMP.

3. The concentration of lead at one soil sample location exceeded the construction worker RAG, and therefore potential direct contact risk may exist for workers during construction. However, it is unlikely that workers would be exposed to this single location for a duration that would exceed the assumptions used during the development of the construction worker RAG. In addition, the average concentration of lead in soil samples analyzed as part of this Phase II ESA is 503 mg/kg, which is below the construction worker RAG of 950 mg/kg.

   None of the soil vapor concentrations identified at the Site exceeded the available OSHA TWA PELs. Therefore, though it is unlikely that a significant risk to construction workers exists at the Site, Site conditions should be evaluated by qualified personnel relative to worker safety requirements prior to redevelopment.

   Based on the conditions above, it is probable that the potential risk posed by soil and soil vapor conditions may be addressed in the training and hazard communications sections of a SMP, and that no specific training will be required for workers who participate in the redevelopment effort.

4. Woodard & Curran recommends that the redevelopment design incorporate risk reduction measures to minimize direct contact with existing urban fill soil during the future residential use of the Site. Example approaches, which may be detailed in the SMP, include but are not limited to covering existing soil with asphalt pavement, 8 inches or greater of clean imported materials (e.g., loam, topsoil) and landscaping, or permanent building foundations. Appropriate risk reduction measure maintenance procedures may be described in a long-term Environmental Management Plan (EMP), which should be developed and implemented at the Site following the completion of redevelopment activities.

5. Although soil vapor sample results did not exceed residential vapor screening levels, a passive sub-slab ventilation system (SSVS) and/or vapor barrier may be installed during the construction of the proposed residential building as a low-cost voluntary potential risk reduction measure at the discretion of the developer.

7. REFERENCES

Tewhey Associates, 2003. Environmental Assessment, Portland Brownfields/DPW Project, Portland, Maine by; June.

Credere Associates, 2017a. Phase I Environmental Site Assessment, 56 Parris Street, Portland, Maine; April 5.

Credere Associates, 2017b. Phase I Environmental Site Assessment, 44 Hanover Street (Future 55 Portland Street), Portland, Maine; April 5.

Woodard & Curran, 2017. Site-Specific Quality Assurance Project Plan, 56 Parris Street, Portland, Maine; Rev. 0, September 7.

APPENDIX A: TABULATED ANALYTICAL RESULTS

A-1: Soil Analytical Results
A-2: Soil Vapor Analytical Results

Appendix A-1: Table of Soil Analytical Results

	Initial Sampling Event: October 17, 2017											Supplemental Sampling Event: November 13, 2017				
Sample ID:	**B1 (0.5-2.5')**	**B1 (2.5-6.0')**	**B2 (0-2')**	**B2 (2-6')**	**B3 (0-2')**	**B3 (2-6')**	**B4 (0-2')**	**B4 (2-6')**	**B4 (2-6') Dup**	**WC1**	**WC2**	**B1 (6-8')**	**B101A (2.5-6')**	**B101B (2.5-6')**	**B101C (2.5-6')**	**B101D (2.5-6')**
Date Sampled:	**10/17/2017**	**10/17/2017**	**10/17/2017**	**10/17/2017**	**10/17/2017**	**10/17/2017**	**10/17/2017**	**10/17/2017**	**10/17/2017**	**10/17/2017**	**10/17/2017**	**11/13/2017**	**11/13/2017**	**11/13/2017**	**11/13/2017**	**11/13/2017**
Units:	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**
Volatile Organic Compounds (EPA Method 8260C)																
dichlorodifluoromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.1	< 0.1	NA	NA	NA	NA	NA
chloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.1	< 0.1	NA	NA	NA	NA	NA
vinyl chloride	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.1 J	< 0.1 J	NA	NA	NA	NA	NA
bromomethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.2	< 0.2	NA	NA	NA	NA	NA
chloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.1	< 0.1	NA	NA	NA	NA	NA
trichlorofluoromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.1	< 0.1	NA	NA	NA	NA	NA
diethyl ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.1	< 0.1	NA	NA	NA	NA	NA
acetone	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 2	< 2	NA	NA	NA	NA	NA
1,1-dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.1	< 0.1	NA	NA	NA	NA	NA
methylene chloride	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.1	< 0.1	NA	NA	NA	NA	NA
carbon disulfide	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.1	< 0.1	NA	NA	NA	NA	NA
methyl t-butyl ether (MTBE)	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.1	< 0.1	NA	NA	NA	NA	NA
trans-1,2-dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.1	< 0.1	NA	NA	NA	NA	NA
isopropyl ether (DIPE)	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.1	< 0.1	NA	NA	NA	NA	NA
ethyl t-butyl ether (ETBE)	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.1	< 0.1	NA	NA	NA	NA	NA
1,1-dichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.1	< 0.1	NA	NA	NA	NA	NA
t-butanol (TBA)	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 2	< 2	NA	NA	NA	NA	NA
2-butanone (MEK)	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.2	< 0.2	NA	NA	NA	NA	NA
2,2-dichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.1	< 0.1	NA	NA	NA	NA	NA
cis-1,2-dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.1	< 0.1	NA	NA	NA	NA	NA
chloroform	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.1	< 0.1	NA	NA	NA	NA	NA
bromochloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.1	< 0.1	NA	NA	NA	NA	NA
tetrahydrofuran (THF)	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.4	< 0.3	NA	NA	NA	NA	NA
1,1,1-trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.1	< 0.1	NA	NA	NA	NA	NA
1,1-dichloropropene	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.1	< 0.1	NA	NA	NA	NA	NA
t-amyl-methyl ether (TAME)	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.1	< 0.1	NA	NA	NA	NA	NA
carbon tetrachloride	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.1	< 0.1	NA	NA	NA	NA	NA
1,2-dichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.1	< 0.1	NA	NA	NA	NA	NA
benzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.1	< 0.1	NA	NA	NA	NA	NA
trichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.1	< 0.1	NA	NA	NA	NA	NA
1,2-dichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.1	< 0.1	NA	NA	NA	NA	NA
bromodichloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.1	< 0.1	NA	NA	NA	NA	NA
1,4-dioxane	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 2	< 2	NA	NA	NA	NA	NA
dibromomethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.1	< 0.1	NA	NA	NA	NA	NA
4-methyl-2-pentanone (MIBK)	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	NA
cis-1,3-dichloropropene	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.1	< 0.1	NA	NA	NA	NA	NA
toluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.1	< 0.1	NA	NA	NA	NA	NA
trans-1,3-dichloropropene	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.1	< 0.1	NA	NA	NA	NA	NA
2-hexanone	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.4	< 0.3	NA	NA	NA	NA	NA
1,1,2-trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.1	< 0.1	NA	NA	NA	NA	NA
1,3-dichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.1	< 0.1	NA	NA	NA	NA	NA
tetrachloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.1	< 0.1	NA	NA	NA	NA	NA
dibromochloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.1	< 0.1	NA	NA	NA	NA	NA
1,2-dibromoethane (EDB)	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.1	< 0.1	NA	NA	NA	NA	NA
chlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.1	< 0.1	NA	NA	NA	NA	NA
1,1,1,2-tetrachloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.1	< 0.1	NA	NA	NA	NA	NA
ethylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.1	< 0.1	NA	NA	NA	NA	NA
m&p-xylenes	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.1	< 0.1	NA	NA	NA	NA	NA
o-xylene	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.1	< 0.1	NA	NA	NA	NA	NA
styrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.1	< 0.1	NA	NA	NA	NA	NA
bromoform	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.1	< 0.1	NA	NA	NA	NA	NA
isopropylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.1	< 0.1	NA	NA	NA	NA	NA
1,1,2,2-tetrachloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.1	< 0.1	NA	NA	NA	NA	NA
1,2,3-trichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.1	< 0.1	NA	NA	NA	NA	NA
n-propylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.1	< 0.1	NA	NA	NA	NA	NA
bromobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.1	< 0.1	NA	NA	NA	NA	NA
1,3,5-trimethylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.1	< 0.1	NA	NA	NA	NA	NA
2-chlorotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.1	< 0.1	NA	NA	NA	NA	NA
4-chlorotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.1	< 0.1	NA	NA	NA	NA	NA
tert-butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.1	< 0.1	NA	NA	NA	NA	NA
1,2,4-trimethylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.1	< 0.1	NA	NA	NA	NA	NA
sec-butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.1	< 0.1	NA	NA	NA	NA	NA
1,3-dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.1	< 0.1	NA	NA	NA	NA	NA
4-isopropyltoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.1	< 0.1	NA	NA	NA	NA	NA
1,4-dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.1	< 0.1	NA	NA	NA	NA	NA
1,2-dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.1	< 0.1	NA	NA	NA	NA	NA
n-butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.1	< 0.1	NA	NA	NA	NA	NA
1,2-dibromo-3-chloropropane (DBCP)	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.1	< 0.1	NA	NA	NA	NA	NA

Appendix A-1: Table of Soil Analytical Results

	Initial Sampling Event: October 17, 2017											Supplemental Sampling Event: November 13, 2017				
Sample ID:	**B1 (0.5-2.5')**	**B1 (2.5-6.0')**	**B2 (0-2')**	**B2 (2-6')**	**B3 (0-2')**	**B3 (2-6')**	**B4 (0-2')**	**B4 (2-6')**	**B4 (2-6') Dup**	**WC1**	**WC2**	**B1 (6-8')**	**B101A (2.5-6')**	**B101B (2.5-6')**	**B101C (2.5-6')**	**B101D (2.5-6')**
Date Sampled:	**10/17/2017**	**10/17/2017**	**10/17/2017**	**10/17/2017**	**10/17/2017**	**10/17/2017**	**10/17/2017**	**10/17/2017**	**10/17/2017**	**10/17/2017**	**10/17/2017**	**11/13/2017**	**11/13/2017**	**11/13/2017**	**11/13/2017**	**11/13/2017**
Units:	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**
1,2,4-trichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.1	< 0.1	NA	NA	NA	NA	NA
1,3,5-trichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.1	< 0.1	NA	NA	NA	NA	NA
hexachlorobutadiene	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.1	< 0.1	NA	NA	NA	NA	NA
naphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.1	< 0.1	NA	NA	NA	NA	NA
1,2,3-trichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.1	< 0.1	NA	NA	NA	NA	NA
Semi-Volatile Organic Compounds (EPA Method 8270D)																
N-nitrosodimethylamine	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.22	< 0.21	NA	NA	NA	NA	NA
pyridine	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.22	< 0.21	NA	NA	NA	NA	NA
aniline	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.22	< 0.21	NA	NA	NA	NA	NA
phenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.22	< 0.21	NA	NA	NA	NA	NA
2-chlorophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.56	< 0.53	NA	NA	NA	NA	NA
bis(2-chloroethyl)ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.22	< 0.21	NA	NA	NA	NA	NA
1,3-dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.22	< 0.21	NA	NA	NA	NA	NA
1,4-dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.22	< 0.21	NA	NA	NA	NA	NA
1,2-dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.22	< 0.21	NA	NA	NA	NA	NA
benzyl alcohol	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.22	< 0.21	NA	NA	NA	NA	NA
2-methylphenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.22	< 0.21	NA	NA	NA	NA	NA
2,2'-oxybis(1-chloropropane)	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.22	< 0.21	NA	NA	NA	NA	NA
hexachloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.22	< 0.21	NA	NA	NA	NA	NA
N-nitroso-di-N-propylamine	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.22	< 0.21	NA	NA	NA	NA	NA
4-methylphenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.22	< 0.21	NA	NA	NA	NA	NA
nitrobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.22	< 0.21	NA	NA	NA	NA	NA
isophorone	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.56	< 0.53	NA	NA	NA	NA	NA
2-nitrophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.22	< 0.21	NA	NA	NA	NA	NA
2,4-dimethylphenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.22	< 0.21	NA	NA	NA	NA	NA
bis(2-chloroethoxy)methane	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.22	< 0.21	NA	NA	NA	NA	NA
2,4-dichlorophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.56	< 0.53	NA	NA	NA	NA	NA
1,2,4-trichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.56	< 0.53	NA	NA	NA	NA	NA
naphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.056	< 0.053	NA	NA	NA	NA	NA
benzoic acid	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 5.6	< 5.3	NA	NA	NA	NA	NA
4-chloroaniline	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.22	< 0.21	NA	NA	NA	NA	NA
hexachlorobutadiene	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.22	< 0.21	NA	NA	NA	NA	NA
4-chloro-3-methylphenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.22	< 0.21	NA	NA	NA	NA	NA
2-methylnaphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.056	< 0.053	NA	NA	NA	NA	NA
hexachlorocyclopentadiene	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 1.1 J	< 1.1 J	NA	NA	NA	NA	NA
2,4,6-trichlorophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.22	< 0.21	NA	NA	NA	NA	NA
2,4,5-trichlorophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.22	< 0.21	NA	NA	NA	NA	NA
2-chloronaphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.56	< 0.53	NA	NA	NA	NA	NA
2-nitroaniline	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.22	< 0.21	NA	NA	NA	NA	NA
acenaphthylene	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.056	**0.1**	NA	NA	NA	NA	NA
dimethylphthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.56	< 0.53	NA	NA	NA	NA	NA
2,6-dinitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.22	< 0.21	NA	NA	NA	NA	NA
2,4-dinitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.22	< 0.21	NA	NA	NA	NA	NA
acenaphthene	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.056	< 0.053	NA	NA	NA	NA	NA
3-nitroaniline	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.22	< 0.21	NA	NA	NA	NA	NA
2,4-dinitrophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 5.6	< 5.3	NA	NA	NA	NA	NA
dibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.056	< 0.053	NA	NA	NA	NA	NA
4-nitrophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 1.1 J	< 1.1 J	NA	NA	NA	NA	NA
fluorene	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.056	< 0.053	NA	NA	NA	NA	NA
diethyl phthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.56	< 0.53	NA	NA	NA	NA	NA
4-chlorophenyl phenyl ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.56	< 0.53	NA	NA	NA	NA	NA
4-nitroaniline	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.56	< 0.53	NA	NA	NA	NA	NA
4,6-dinitro-2-methylphenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 2.2	< 2.1	NA	NA	NA	NA	NA
azobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.22	< 0.21	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.22	< 0.21	NA	NA	NA	NA	NA
4-bromophenyl phenyl ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.22	< 0.21	NA	NA	NA	NA	NA
hexachlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.22	< 0.21	NA	NA	NA	NA	NA
pentachlorophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 1.1 J	< 1.1 J	NA	NA	NA	NA	NA
phenanthrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.11**	**0.21**	NA	NA	NA	NA	NA
anthracene	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.056	**0.069**	NA	NA	NA	NA	NA
carbazole	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.22	< 0.21	NA	NA	NA	NA	NA
di-n-butylphthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.56	< 0.53	NA	NA	NA	NA	NA
fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.13**	**1.1**	NA	NA	NA	NA	NA
benzidine	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 3.4	< 3.2	NA	NA	NA	NA	NA
pyrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.14**	**1.1**	NA	NA	NA	NA	NA
butyl benzyl phthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.56	< 0.53	NA	NA	NA	NA	NA
benzo(a)anthracene	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.056	**0.74**	NA	NA	NA	NA	NA
chrysene	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.091**	**0.62**	NA	NA	NA	NA	NA
3,3'-dichlorobenzidine	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 3.4	< 3.2	NA	NA	NA	NA	NA

Appendix A-1: Table of Soil Analytical Results

	Initial Sampling Event: October 17, 2017											Supplemental Sampling Event: November 13, 2017				
Sample ID:	**B1 (0.5-2.5')**	**B1 (2.5-6.0')**	**B2 (0-2')**	**B2 (2-6')**	**B3 (0-2')**	**B3 (2-6')**	**B4 (0-2')**	**B4 (2-6')**	**B4 (2-6') Dup**	**WC1**	**WC2**	**B1 (6-8')**	**B101A (2.5-6')**	**B101B (2.5-6')**	**B101C (2.5-6')**	**B101D (2.5-6')**
Date Sampled:	**10/17/2017**	**10/17/2017**	**10/17/2017**	**10/17/2017**	**10/17/2017**	**10/17/2017**	**10/17/2017**	**10/17/2017**	**10/17/2017**	**10/17/2017**	**10/17/2017**	**11/13/2017**	**11/13/2017**	**11/13/2017**	**11/13/2017**	**11/13/2017**
Units:	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**
bis(2-ethylhexyl)phthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.56	< 0.53	NA	NA	NA	NA	NA
di-n-octyl phthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.56	< 0.53	NA	NA	NA	NA	NA
benzo(b)fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.082**	**0.65**	NA	NA	NA	NA	NA
benzo(k)fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.056	**0.64**	NA	NA	NA	NA	NA
benzo(a)pyrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.056**	**0.67**	NA	NA	NA	NA	NA
indeno(1,2,3-cd)pyrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.056	**0.14**	NA	NA	NA	NA	NA
dibenzo(a,h)anthracene	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.056	**0.071**	NA	NA	NA	NA	NA
benzo(g,h,i)perylene	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.056	**0.13**	NA	NA	NA	NA	NA
Volatile Petroleum Hydrocarbons (Method MA VPH)																
Unadjusted C5-C8 Aliphatics	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 4	< 3	NA	NA	NA	NA	NA
Unadjusted C9-C12 Aliphatics	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 4	< 3	NA	NA	NA	NA	NA
methyl t-butyl ether (MTBE)	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.1	< 0.1	NA	NA	NA	NA	NA
benzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.1	< 0.1	NA	NA	NA	NA	NA
toluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.1	< 0.1	NA	NA	NA	NA	NA
ethylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.1	< 0.1	NA	NA	NA	NA	NA
m&p-xylenes	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.1	< 0.1	NA	NA	NA	NA	NA
o-xylene	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.1	< 0.1	NA	NA	NA	NA	NA
naphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.2	< 0.2	NA	NA	NA	NA	NA
C5-C8 Aliphatics	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 4	< 3	NA	NA	NA	NA	NA
C9-C12 Aliphatics	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 4	< 3	NA	NA	NA	NA	NA
C9-C10 Aromatics	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 4	< 3	NA	NA	NA	NA	NA
Extractable Petroleum Hydrocarbons (Method MA EPH)																
naphthalene	< 0.2 J	< 0.2 J	< 0.2 J	< 0.2 J	< 0.2 J	< 0.2 J	< 0.2 J	< 0.2 J	< 0.2 J	< 0.2 J	< 0.2 J	NA	NA	NA	NA	NA
2-methylnaphthalene	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	NA	NA	NA	NA	NA
phenanthrene	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	**0.3**	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	NA	NA	NA	NA	NA
acenaphthene	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	NA	NA	NA	NA	NA
acenaphthylene	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	NA	NA	NA	NA	NA
fluorene	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	NA	NA	NA	NA	NA
anthracene	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	NA	NA	NA	NA	NA
fluoranthene	**0.2**	< 0.2	< 0.2	< 0.2	< 0.2	**2.8**	< 0.2	< 0.2	< 0.2	< 0.2	**0.9**	NA	NA	NA	NA	NA
pyrene	**0.2**	< 0.2	< 0.2	< 0.2	< 0.2	**2.6**	< 0.2	< 0.2	< 0.2	< 0.2	**0.9**	NA	NA	NA	NA	NA
benzo(a)anthracene	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	**1.8**	< 0.2	< 0.2	< 0.2	< 0.2	**0.5**	NA	NA	NA	NA	NA
chrysene	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	**1.5**	< 0.2	< 0.2	< 0.2	< 0.2	**0.5**	NA	NA	NA	NA	NA
benzo(b)fluoranthene	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	**1.3**	< 0.2	< 0.2	< 0.2	< 0.2	**0.5**	NA	NA	NA	NA	NA
benzo(k)fluoranthene	< 0.2 J	< 0.2 J	< 0.2 J	< 0.2 J	< 0.2 J	**1.3 J**	< 0.2 J	< 0.2 J	< 0.2 J	< 0.2 J	**0.3 J**	NA	NA	NA	NA	NA
benzo(a)pyrene	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	**1.6**	< 0.2	< 0.2	< 0.2	< 0.2	**0.5**	NA	NA	NA	NA	NA
indeno(1,2,3-cd)pyrene	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	**0.6**	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	NA	NA	NA	NA	NA
dibenzo(a,h)anthracene	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	NA	NA	NA	NA	NA
benzo(g,h,i)perylene	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	**0.6**	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	NA	NA	NA	NA	NA
Unadjusted C11-C22 Aromatics	< 23	**110**	< 22	**77**	**75**	**130**	< 21	**120**	**160**	**140**	**70**	NA	NA	NA	NA	NA
C9-C18 Aliphatics	< 23	< 22	< 22	< 22	< 20	< 21	< 21	< 23	< 23	< 22	< 22	NA	NA	NA	NA	NA
C19-C36 Aliphatics	**29**	**180**	< 22	**110**	**130**	**92**	< 21	**270**	**300**	**210**	**89**	NA	NA	NA	NA	NA
C11-C22 Aromatics	< 23	**110**	< 22	**76**	**75**	**110**	< 21	**120**	**150**	**140**	**65**	NA	NA	NA	NA	NA
Polychlorinated Biphenyls (EPA Method 8082A)																
PCB-1016	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.2	< 0.2	NA	NA	NA	NA	NA
PCB-1221	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.2	< 0.2	NA	NA	NA	NA	NA
PCB-1232	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.2	< 0.2	NA	NA	NA	NA	NA
PCB-1242	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.2	< 0.2	NA	NA	NA	NA	NA
PCB-1248	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.2	< 0.2	NA	NA	NA	NA	NA
PCB-1254	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.2	< 0.2	NA	NA	NA	NA	NA
PCB-1260	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.2	< 0.2	NA	NA	NA	NA	NA
Pesticides (EPA Method 8081B)																
alpha-BHC	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.045	< 0.039	NA	NA	NA	NA	NA
beta-BHC	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.045	< 0.039	NA	NA	NA	NA	NA
delta-BHC	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.045	< 0.039	NA	NA	NA	NA	NA
gamma-BHC (Lindane)	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.045	< 0.039	NA	NA	NA	NA	NA
Heptachlor	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.045	< 0.039	NA	NA	NA	NA	NA
Aldrin	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.045	< 0.039	NA	NA	NA	NA	NA
Heptachlor Epoxide	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.045	< 0.039	NA	NA	NA	NA	NA
Endosulfan I	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.045	< 0.039	NA	NA	NA	NA	NA
Dieldrin	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.045	< 0.039	NA	NA	NA	NA	NA
4,4'-DDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.045	< 0.039	NA	NA	NA	NA	NA
Endrin	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.045	< 0.039	NA	NA	NA	NA	NA
Endosulfan II	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.045	< 0.039	NA	NA	NA	NA	NA
4,4'-DDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.045	< 0.039	NA	NA	NA	NA	NA
Endosulfan Sulfate	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.045	< 0.039	NA	NA	NA	NA	NA
4,4'-DDT	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.045	< 0.039	NA	NA	NA	NA	NA
Methoxychlor	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.045	< 0.039	NA	NA	NA	NA	NA
Endrin Ketone	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.045	< 0.039	NA	NA	NA	NA	NA

Appendix A-1: Table of Soil Analytical Results

	Initial Sampling Event: October 17, 2017											Supplemental Sampling Event: November 13, 2017				
Sample ID:	**B1 (0.5-2.5')**	**B1 (2.5-6.0')**	**B2 (0-2')**	**B2 (2-6')**	**B3 (0-2')**	**B3 (2-6')**	**B4 (0-2')**	**B4 (2-6')**	**B4 (2-6') Dup**	**WC1**	**WC2**	**B1 (6-8')**	**B101A (2.5-6')**	**B101B (2.5-6')**	**B101C (2.5-6')**	**B101D (2.5-6')**
Date Sampled:	**10/17/2017**	**10/17/2017**	**10/17/2017**	**10/17/2017**	**10/17/2017**	**10/17/2017**	**10/17/2017**	**10/17/2017**	**10/17/2017**	**10/17/2017**	**10/17/2017**	**11/13/2017**	**11/13/2017**	**11/13/2017**	**11/13/2017**	**11/13/2017**
Units:	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**
Endrin Aldehyde	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.045 J	< 0.039 J	NA	NA	NA	NA	NA
alpha-Chlordane	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.045	< 0.039	NA	NA	NA	NA	NA
gamma-Chlordane	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.045	< 0.039	NA	NA	NA	NA	NA
Toxaphene	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.22	< 0.20	NA	NA	NA	NA	NA
Herbicides (EPA Method 8151A)																
2,4,5-T	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 23	< 22	NA	NA	NA	NA	NA
2,4-D	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 90	< 87	NA	NA	NA	NA	NA
2,4-DB	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 90	< 87	NA	NA	NA	NA	NA
Dalapon	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 100	< 98	NA	NA	NA	NA	NA
Dicamba	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 45	< 44	NA	NA	NA	NA	NA
Dichloroprop	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 90	< 87	NA	NA	NA	NA	NA
MCPA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 9000	< 8700	NA	NA	NA	NA	NA
MCPP	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 9000	< 8700	NA	NA	NA	NA	NA
Pentachlorophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 12	< 12	NA	NA	NA	NA	NA
Silvex (2,4,5-TP)	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 23	< 22	NA	NA	NA	NA	NA
Metals (EPA Method 6020A / 7471B)																
Silver	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 2.0	< 2.2	NA	NA	NA	NA	NA
Arsenic	**11**	**25**	**11**	**12**	**6.3**	**18 J**	**5.9**	**14**	**14**	**14**	**9.3**	NA	NA	NA	NA	NA
Barium	NA	NA	NA	NA	NA	NA	NA	NA	NA	**88**	**51**	NA	NA	NA	NA	NA
Cadmium	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.4**	**1**	NA	NA	NA	NA	NA
Chromium	NA	NA	NA	NA	NA	NA	NA	NA	NA	**25**	**16**	NA	NA	NA	NA	NA
Lead	**1800**	**650**	**300**	**110**	**91**	**340 J**	**23**	**590**	**630**	**210**	**220**	NA	NA	NA	NA	NA
Selenium	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 4	< 4	NA	NA	NA	NA	NA
Mercury	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.23**	**0.3**	NA	NA	NA	NA	NA
Metals - TCLP Extract (EPA Method 6020A)																
Lead (mg/L)	**1.9**	**20**	**0.4**	**0.35**	NA	**0.21**	NA	**0.31**	**0.39**	**0.22**	**1.4**	**0.18**	**0.12**	**0.086**	**0.3**	**0.43**
Additional Parameters																
Cyanide, total (E9014) (mg/kg)	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.6	< 0.6	NA	NA	NA	NA	NA
Ignitability (SW1010) (deg F)	NA	NA	NA	NA	NA	NA	NA	NA	NA	> 140	> 140	NA	NA	NA	NA	NA
pH (SW9045C) (pH)	NA	NA	NA	NA	NA	NA	NA	NA	NA	**8.8**	**9.0**	NA	NA	NA	NA	NA
Sulfide-soluble (SM4500-S2 D+F) (mg/kg)	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.5	< 0.5	NA	NA	NA	NA	NA
Extractable Organic Halides (9023) (mg/kg)	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 49.0	< 46.7	NA	NA	NA	NA	NA
Percent Solids (%)	NA	NA	NA	NA	NA	NA	NA	NA	NA	**86.1**	**90.5**	NA	NA	NA	NA	NA

Notes:
Bold = Analyte was detected in the given sample
EPA = United States Environmental Protection Agency
NA = sample was not analyzed for listed analytical parameter
mg/kg = milligrams per kilogram
< = not detected at indicated reporting limit
J = Result qualified as estimated during data validation

Appendix A-2: Table of Soil Vapor Analytical Results

Sample ID:	SV1	SV2	Duplicate (SV2 DUP)
Date Sampled:	10/17/2017	10/17/2017	10/17/2017
Units:	ug/m^3	ug/m^3	ug/m^3
Air Toxics by EPA Compendium Methods (TO-15)			
Acetone	**320**	**810**	**830**
Benzene	**2.2**	**5.9**	**6**
Benzyl chloride	<2.6	<2.6	<2.6
Bromodichloromethane	<3.4	<3.4	<3.4
Bromoform	<5.2	<5.2	<5.2
Bromomethane	<1.9	<1.9	<1.9
1,3-Butadiene	<1.1	<1.1	<1.1
2-Butanone (MEK)	<59	**61**	**62**
Carbon Disulfide	<16	**330**	**330**
Carbon Tetrachloride	<3.1	<3.1	<3.1
Chlorobenzene	<2.3	<2.3	<2.3
Chloroethane	<1.3	<1.3	<1.3
Chloroform	<2.4	<2.4	<2.4
Chloromethane	<2.1	<2.1	<2.1
Cyclohexane	<1.7	**4.5**	**4.4**
Dibromochloromethane	<4.3	<4.3	<4.3
1,2-Dibromoethane (EDB)	<3.8	<3.8	<3.8
1,2-Dichlorobenzene	<3.0	<3.0	<3.0
1,3-Dichlorobenzene	<3.0	<3.0	<3.0
1,4-Dichlorobenzene	**18**	**16**	**17**
Dichlorodifluoromethane (Freon 12)	<2.5	<2.5	<2.5
1,1-Dichloroethane	<2.0	<2.0	<2.0
1,2-Dichloroethane	<2.0	<2.0	<2.0
1,1-Dichloroethylene	<2.0	<2.0	<2.0
cis-1,2-Dichloroethylene	<2.0	<2.0	<2.0
trans-1,2-Dichloroethylene	<2.0	<2.0	<2.0
1,2-Dichloropropane	<2.3	<2.3	<2.3
cis-1,3-Dichloropropene	<2.3	<2.3	<2.3
trans-1,3-Dichloropropene	<2.3	<2.3	<2.3
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	<3.5	<3.5	<3.5
1,4-Dioxane	<18	<18	<18
Ethanol	<38	**57**	**61**
Ethyl Acetate	<1.8	**2.8 J**	<1.8 J
Ethylbenzene	**5.3**	**8.9**	**8.8**
4-Ethyltoluene	**3.7**	**11**	**11**
Heptane	**2.2**	**13**	**13**
Hexachlorobutadiene	<5.3	<5.3	<5.3
Hexane	<70	<70	<70
2-Hexanone (MBK)	**2.5**	**5.3**	**5**
Isopropanol	<49	<49	<49
Methyl tert-Butyl Ether (MTBE)	<1.8	<1.8	<1.8
Methylene Chloride	<17	<17	<17
4-Methyl-2-pentanone (MIBK)	**25**	**40**	**42**
Naphthalene	<2.6	<2.6	<2.6
Propene	<34	<34	<34
Styrene	<2.1 J	<2.1 J	<2.1 J
1,1,2,2-Tetrachloroethane	<3.4	<3.4	<3.4
Tetrachloroethylene	**3.5**	<3.4	<3.4

Appendix A-2: Table of Soil Vapor Analytical Results

Sample ID:	SV1	SV2	Duplicate (SV2 DUP)
Date Sampled:	10/17/2017	10/17/2017	10/17/2017
Units:	ug/m^3	ug/m^3	ug/m^3
Tetrahydrofuran	<1.5	<1.5	<1.5
Toluene	**12**	**25**	**25**
1,2,4-Trichlorobenzene	<3.7	<3.7	<3.7
1,1,1-Trichloroethane	<2.7	<2.7	<2.7
1,1,2-Trichloroethane	<2.7	<2.7	<2.7
Trichloroethylene	<2.7	<2.7	<2.7
Trichlorofluoromethane (Freon 11)	<11	<11	<11
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	<15	<15	<15
1,2,4-Trimethylbenzene	**13**	**32**	**33**
1,3,5-Trimethylbenzene	**3.4**	**8.7**	**8.7**
Vinyl Acetate	<35	<35	<35
Vinyl Chloride	<1.3	<1.3	<1.3
m&p-Xylene	**24**	**34**	**34**
o-Xylene	**9.2**	**17**	**18**

Notes:
Bold = Analyte was detected in the given sample
ug/m^3 = micrograms per cubic meter
< = not detected at indicated reporting limit
J = Result qualified as estimated during data validation

APPENDIX B: SOIL LABORATORY ANALYTICAL REPORTS

Laboratory Report

Absolute Resource associates
124 Heritage Avenue Portsmouth NH 03801

Jedd Steinglass
Woodard & Curran
41 Hutchins Drive
Portland, ME 04102

PO Number: None
Job ID: 42288
Date Received: 10/18/17

Project: 56 Parris Street 229649

Attached please find results for the analysis of the samples received on the date referenced above.

Unless otherwise noted in the attached report, the analyses performed met the requirements of Absolute Resource Associates' Quality Assurance Plan. The Standard Operating Procedures are based upon USEPA SW-846, USEPA Methods for Chemical Analysis of Water and Wastewater, Standard Methods for the Examination of Water and Wastewater and other recognized methodologies. The results contained in this report pertain only to the samples as indicated on the chain of custody.

Absolute Resource Associates maintains certification with the agencies listed below.

We appreciate the opportunity to provide laboratory services. If you have any questions regarding the enclosed report, please contact the laboratory and we will be glad to assist you.

Sincerely,
Absolute Resource Associates

Jennifer Lowe (for)

Sue Sylvester
Principal, General Manager

Date of Approval: 11/6/2017
Total number of pages: 62

Absolute Resource Associates Certifications

New Hampshire	1732	Massachusetts	M-NH902
Maine	NH903		

Project ID: 56 Parris Street 229649

Lab ID: 42288

Sample Association Table

Field ID	Matrix	Date-Time Sampled	Lab#	Analysis
B1 (0.5-2.5')	Solid	10/17/2017 8:25	42288-001	
				EPH in solids by MADEP Method
				Solid Digestion for ICP Analysis
				Arsenic in solids by 6020
				Lead in solids by 6020
				Percent Dry Matter for Sample Calc by SM2540B,G
B1 (2.5-6.0')	Solid	10/17/2017 9:05	42288-002	
				EPH in solids by MADEP Method
				Solid Digestion for ICP Analysis
				Arsenic in solids by 6020
				Lead in solids by 6020
				Percent Dry Matter for Sample Calc by SM2540B,G
B3 (0-2')	Solid	10/17/2017 14:10	42288-003	
				EPH in solids by MADEP Method
				Solid Digestion for ICP Analysis
				Arsenic in solids by 6020
				Lead in solids by 6020
				Percent Dry Matter for Sample Calc by SM2540B,G
B3 (2-6')	Solid	10/17/2017 14:30	42288-004	
				EPH in solids by MADEP Method
				Solid Digestion for ICP Analysis
				Arsenic in solids by 6020
				Lead in solids by 6020
				Percent Dry Matter for Sample Calc by SM2540B,G
B4 (0-2')	Solid	10/17/2017 15:05	42288-005	
				EPH in solids by MADEP Method
				Solid Digestion for ICP Analysis
				Arsenic in solids by 6020
				Lead in solids by 6020
				Percent Dry Matter for Sample Calc by SM2540B,G
B4 (2-6')	Solid	10/17/2017 15:40	42288-006	
				EPH in solids by MADEP Method
				Solid Digestion for ICP Analysis
				Arsenic in solids by 6020
				Lead in solids by 6020
				Percent Dry Matter for Sample Calc by SM2540B,G
B2 (0-2')	Solid	10/17/2017 16:05	42288-007	
				EPH in solids by MADEP Method
				Solid Digestion for ICP Analysis
				Arsenic in solids by 6020
				Lead in solids by 6020
				Percent Dry Matter for Sample Calc by SM2540B,G
B2 (2-6')	Solid	10/17/2017 16:25	42288-008	
				EPH in solids by MADEP Method
				Solid Digestion for ICP Analysis
				Arsenic in solids by 6020
				Lead in solids by 6020
				Percent Dry Matter for Sample Calc by SM2540B,G
EQUIP BLANK	Water	10/17/2017 11:20	42288-009	
				EPH in water by MADEP Method
				Water Digestion for ICP Analysis
				Arsenic in water by 6020
				Lead in water by 6020

Project ID: 56 Parris Street 229649

Lab ID: 42288

Sample Association Table

Field ID	Matrix	Date-Time Sampled	Lab#	Analysis
FD-1	Solid	10/17/2017 0:00	42288-010	
				EPH in solids by MADEP Method
				Solid Digestion for ICP Analysis
				Arsenic in solids by 6020
				Lead in solids by 6020
				Percent Dry Matter for Sample Calc by SM2540B,G
WC-1	Solid	10/17/2017 16:40	42288-011	
				Pesticides in soil by 8081
				PCBs in soil by 8082
				Acid & Base/Neutral Extractables in solid by 8270
				EPH in solids by MADEP Method
				Solid Digestion for ICP Analysis
				Silver in solids by 6020
				Arsenic in solids by 6020
				Barium in solids by 6020
				Cadmium in solids by 6020
				Chromium in solids by 6020
				Mercury in solids by 7471
				Lead in solids by 6020
				Selenium in solids by 6020
				Percent Dry Matter for Sample Calc by SM2540B,G
				Herbicides (subcontract)
				EOX in soil
				VOCs in solid by 8260 Petro & Haz Waste
				VPH in solids by MA DEP Method
				Total cyanide in solids by 9014
				Ignitability of Solid Samples by SW1010
				pH in solids by SW9045C
				Sulfide-soluble in solid by SM4500-S2 D+F
				Percent Solids in soil by SM2540B,G
WC-2	Solid	10/17/2017 16:55	42288-012	
				Pesticides in soil by 8081
				PCBs in soil by 8082
				Acid & Base/Neutral Extractables in solid by 8270
				EPH in solids by MADEP Method
				Solid Digestion for ICP Analysis
				Silver in solids by 6020
				Arsenic in solids by 6020
				Barium in solids by 6020
				Cadmium in solids by 6020
				Chromium in solids by 6020
				Mercury in solids by 7471
				Lead in solids by 6020
				Selenium in solids by 6020
				Percent Dry Matter for Sample Calc by SM2540B,G
				Herbicides (subcontract)
				EOX in soil
				VOCs in solid by 8260 Petro & Haz Waste
				VPH in solids by MA DEP Method
				Total cyanide in solids by 9014
				Ignitability of Solid Samples by SW1010
				pH in solids by SW9045C
				Sulfide-soluble in solid by SM4500-S2 D+F

Absolute Resource associates

Project ID: 56 Parris Street 229649

Lab ID: 42288

Sample Association Table

Field ID	Matrix	Date-Time Sampled	Lab#	Analysis
WC-2	Solid	10/17/2017 16:55	42288-012	
				Percent Solids in soil by SM2540B,G
Trip Blank	Solid	10/17/2017 0:00	42288-013	
				VOCs in solids by 8260
B1 (0.5-2.5')	TCLP	10/17/2017 8:25	42288-014	
				Water Digestion for ICP Analysis
				TCLP Extraction
				Lead in water by 6020
B1 (2.5-6.0')	TCLP	10/17/2017 9:05	42288-015	
				Water Digestion for ICP Analysis
				TCLP Extraction
				Lead in water by 6020
B3 (2-6')	TCLP	10/17/2017 14:30	42288-016	
				Water Digestion for ICP Analysis
				TCLP Extraction
				Lead in water by 6020
B4 (2-6')	TCLP	10/17/2017 15:40	42288-017	
				Water Digestion for ICP Analysis
				TCLP Extraction
				Lead in water by 6020
B2 (0-2')	TCLP	10/17/2017 16:05	42288-018	
				Water Digestion for ICP Analysis
				TCLP Extraction
				Lead in water by 6020
B2 (2-6')	TCLP	10/17/2017 16:25	42288-019	
				Water Digestion for ICP Analysis
				TCLP Extraction
				Lead in water by 6020
FD-1	TCLP	10/17/2017 0:00	42288-020	
				Water Digestion for ICP Analysis
				TCLP Extraction
				Lead in water by 6020
WC-1	TCLP	10/17/2017 16:40	42288-021	
				Water Digestion for ICP Analysis
				TCLP Extraction
				Lead in water by 6020
WC-2	TCLP	10/17/2017 16:55	42288-022	
				Water Digestion for ICP Analysis
				TCLP Extraction
				Lead in water by 6020

Project ID: 56 Parris Street 229649
Job ID: 42288
Sample#: 42288-011
Sample ID: WC-1
Matrix: Solid Percent Dry: 86.1% Results expressed on a dry weight basis.
Sampled: 10/17/17 16:40

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
dichlorodifluoromethane	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:06	SW5035A8260C
chloromethane	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:06	SW5035A8260C
vinyl chloride	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:06	SW5035A8260C
bromomethane	< 0.2	0.2	ug/g	1	LMM	10/23/17	10152	10/23/17	21:06	SW5035A8260C
chloroethane	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:06	SW5035A8260C
trichlorofluoromethane	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:06	SW5035A8260C
diethyl ether	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:06	SW5035A8260C
acetone	< 2	2	ug/g	1	LMM	10/23/17	10152	10/23/17	21:06	SW5035A8260C
1,1-dichloroethene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:06	SW5035A8260C
methylene chloride	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:06	SW5035A8260C
carbon disulfide	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:06	SW5035A8260C
methyl t-butyl ether (MTBE)	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:06	SW5035A8260C
trans-1,2-dichloroethene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:06	SW5035A8260C
isopropyl ether (DIPE)	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:06	SW5035A8260C
ethyl t-butyl ether (ETBE)	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:06	SW5035A8260C
1,1-dichloroethane	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:06	SW5035A8260C
t-butanol (TBA)	< 2	2	ug/g	1	LMM	10/23/17	10152	10/23/17	21:06	SW5035A8260C
2-butanone (MEK)	< 0.2	0.2	ug/g	1	LMM	10/23/17	10152	10/23/17	21:06	SW5035A8260C
2,2-dichloropropane	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:06	SW5035A8260C
cis-1,2-dichloroethene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:06	SW5035A8260C
chloroform	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:06	SW5035A8260C
bromochloromethane	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:06	SW5035A8260C
tetrahydrofuran (THF)	< 0.4	0.4	ug/g	1	LMM	10/23/17	10152	10/23/17	21:06	SW5035A8260C
1,1,1-trichloroethane	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:06	SW5035A8260C
1,1-dichloropropene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:06	SW5035A8260C
t-amyl-methyl ether (TAME)	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:06	SW5035A8260C
carbon tetrachloride	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:06	SW5035A8260C
1,2-dichloroethane	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:06	SW5035A8260C
benzene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:06	SW5035A8260C
trichloroethene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:06	SW5035A8260C
1,2-dichloropropane	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:06	SW5035A8260C
bromodichloromethane	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:06	SW5035A8260C
1,4-dioxane	< 2	2	ug/g	1	LMM	10/23/17	10152	10/23/17	21:06	SW5035A8260C
dibromomethane	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:06	SW5035A8260C
4-methyl-2-pentanone (MIBK)	< 0.3	0.3	ug/g	1	LMM	10/23/17	10152	10/23/17	21:06	SW5035A8260C
cis-1,3-dichloropropene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:06	SW5035A8260C
toluene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:06	SW5035A8260C
trans-1,3-dichloropropene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:06	SW5035A8260C
2-hexanone	< 0.4	0.4	ug/g	1	LMM	10/23/17	10152	10/23/17	21:06	SW5035A8260C
1,1,2-trichloroethane	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:06	SW5035A8260C
1,3-dichloropropane	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:06	SW5035A8260C
tetrachloroethene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:06	SW5035A8260C
dibromochloromethane	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:06	SW5035A8260C

Project ID: 56 Parris Street 229649
Job ID: 42288
Sample#: 42288-011
Sample ID: WC-1
Matrix: Solid Percent Dry: 86.1% Results expressed on a dry weight basis.
Sampled: 10/17/17 16:40

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
1,2-dibromoethane (EDB)	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:06	SW5035A8260C
chlorobenzene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:06	SW5035A8260C
1,1,1,2-tetrachloroethane	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:06	SW5035A8260C
ethylbenzene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:06	SW5035A8260C
m&p-xylenes	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:06	SW5035A8260C
o-xylene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:06	SW5035A8260C
styrene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:06	SW5035A8260C
bromoform	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:06	SW5035A8260C
isopropylbenzene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:06	SW5035A8260C
1,1,2,2-tetrachloroethane	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:06	SW5035A8260C
1,2,3-trichloropropane	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:06	SW5035A8260C
n-propylbenzene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:06	SW5035A8260C
bromobenzene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:06	SW5035A8260C
1,3,5-trimethylbenzene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:06	SW5035A8260C
2-chlorotoluene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:06	SW5035A8260C
4-chlorotoluene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:06	SW5035A8260C
tert-butylbenzene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:06	SW5035A8260C
1,2,4-trimethylbenzene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:06	SW5035A8260C
sec-butylbenzene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:06	SW5035A8260C
1,3-dichlorobenzene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:06	SW5035A8260C
4-isopropyltoluene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:06	SW5035A8260C
1,4-dichlorobenzene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:06	SW5035A8260C
1,2-dichlorobenzene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:06	SW5035A8260C
n-butylbenzene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:06	SW5035A8260C
1,2-dibromo-3-chloropropane (DBCP)	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:06	SW5035A8260C
1,2,4-trichlorobenzene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:06	SW5035A8260C
1,3,5-trichlorobenzene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:06	SW5035A8260C
hexachlorobutadiene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:06	SW5035A8260C
naphthalene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:06	SW5035A8260C
1,2,3-trichlorobenzene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:06	SW5035A8260C
Surrogate Recovery		**Limits**								
dibromofluoromethane SUR	**83**	78-114	%	1	LMM	10/23/17	10152	10/23/17	21:06	SW5035A8260C
toluene-D8 SUR	**96**	88-110	%	1	LMM	10/23/17	10152	10/23/17	21:06	SW5035A8260C
4-bromofluorobenzene SUR	**94**	86-115	%	1	LMM	10/23/17	10152	10/23/17	21:06	SW5035A8260C
a,a,a-trifluorotoluene SUR	**107**	70-130	%	1	LMM	10/23/17	10152	10/23/17	21:06	SW5035A8260C

Project ID: 56 Parris Street 229649
Job ID: 42288
Sample#: 42288-012
Sample ID: WC-2
Matrix: Solid Percent Dry: 90.5% Results expressed on a dry weight basis.
Sampled: 10/17/17 16:55

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
dichlorodifluoromethane	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:33	SW5035A8260C
chloromethane	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:33	SW5035A8260C
vinyl chloride	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:33	SW5035A8260C
bromomethane	< 0.2	0.2	ug/g	1	LMM	10/23/17	10152	10/23/17	21:33	SW5035A8260C
chloroethane	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:33	SW5035A8260C
trichlorofluoromethane	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:33	SW5035A8260C
diethyl ether	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:33	SW5035A8260C
acetone	< 2	2	ug/g	1	LMM	10/23/17	10152	10/23/17	21:33	SW5035A8260C
1,1-dichloroethene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:33	SW5035A8260C
methylene chloride	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:33	SW5035A8260C
carbon disulfide	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:33	SW5035A8260C
methyl t-butyl ether (MTBE)	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:33	SW5035A8260C
trans-1,2-dichloroethene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:33	SW5035A8260C
isopropyl ether (DIPE)	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:33	SW5035A8260C
ethyl t-butyl ether (ETBE)	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:33	SW5035A8260C
1,1-dichloroethane	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:33	SW5035A8260C
t-butanol (TBA)	< 2	2	ug/g	1	LMM	10/23/17	10152	10/23/17	21:33	SW5035A8260C
2-butanone (MEK)	< 0.2	0.2	ug/g	1	LMM	10/23/17	10152	10/23/17	21:33	SW5035A8260C
2,2-dichloropropane	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:33	SW5035A8260C
cis-1,2-dichloroethene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:33	SW5035A8260C
chloroform	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:33	SW5035A8260C
bromochloromethane	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:33	SW5035A8260C
tetrahydrofuran (THF)	< 0.3	0.3	ug/g	1	LMM	10/23/17	10152	10/23/17	21:33	SW5035A8260C
1,1,1-trichloroethane	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:33	SW5035A8260C
1,1-dichloropropene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:33	SW5035A8260C
t-amyl-methyl ether (TAME)	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:33	SW5035A8260C
carbon tetrachloride	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:33	SW5035A8260C
1,2-dichloroethane	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:33	SW5035A8260C
benzene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:33	SW5035A8260C
trichloroethene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:33	SW5035A8260C
1,2-dichloropropane	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:33	SW5035A8260C
bromodichloromethane	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:33	SW5035A8260C
1,4-dioxane	< 2	2	ug/g	1	LMM	10/23/17	10152	10/23/17	21:33	SW5035A8260C
dibromomethane	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:33	SW5035A8260C
4-methyl-2-pentanone (MIBK)	< 0.3	0.3	ug/g	1	LMM	10/23/17	10152	10/23/17	21:33	SW5035A8260C
cis-1,3-dichloropropene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:33	SW5035A8260C
toluene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:33	SW5035A8260C
trans-1,3-dichloropropene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:33	SW5035A8260C
2-hexanone	< 0.3	0.3	ug/g	1	LMM	10/23/17	10152	10/23/17	21:33	SW5035A8260C
1,1,2-trichloroethane	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:33	SW5035A8260C
1,3-dichloropropane	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:33	SW5035A8260C
tetrachloroethene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:33	SW5035A8260C
dibromochloromethane	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:33	SW5035A8260C

Project ID: 56 Parris Street 229649
Job ID: 42288
Sample#: 42288-012
Sample ID: WC-2
Matrix: Solid Percent Dry: 90.5% Results expressed on a dry weight basis.
Sampled: 10/17/17 16:55

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
1,2-dibromoethane (EDB)	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:33	SW5035A8260C
chlorobenzene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:33	SW5035A8260C
1,1,1,2-tetrachloroethane	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:33	SW5035A8260C
ethylbenzene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:33	SW5035A8260C
m&p-xylenes	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:33	SW5035A8260C
o-xylene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:33	SW5035A8260C
styrene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:33	SW5035A8260C
bromoform	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:33	SW5035A8260C
isopropylbenzene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:33	SW5035A8260C
1,1,2,2-tetrachloroethane	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:33	SW5035A8260C
1,2,3-trichloropropane	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:33	SW5035A8260C
n-propylbenzene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:33	SW5035A8260C
bromobenzene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:33	SW5035A8260C
1,3,5-trimethylbenzene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:33	SW5035A8260C
2-chlorotoluene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:33	SW5035A8260C
4-chlorotoluene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:33	SW5035A8260C
tert-butylbenzene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:33	SW5035A8260C
1,2,4-trimethylbenzene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:33	SW5035A8260C
sec-butylbenzene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:33	SW5035A8260C
1,3-dichlorobenzene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:33	SW5035A8260C
4-isopropyltoluene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:33	SW5035A8260C
1,4-dichlorobenzene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:33	SW5035A8260C
1,2-dichlorobenzene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:33	SW5035A8260C
n-butylbenzene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:33	SW5035A8260C
1,2-dibromo-3-chloropropane (DBCP)	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:33	SW5035A8260C
1,2,4-trichlorobenzene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:33	SW5035A8260C
1,3,5-trichlorobenzene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:33	SW5035A8260C
hexachlorobutadiene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:33	SW5035A8260C
naphthalene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:33	SW5035A8260C
1,2,3-trichlorobenzene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	21:33	SW5035A8260C
Surrogate Recovery		**Limits**								
dibromofluoromethane SUR	**82**	78-114	%	1	LMM	10/23/17	10152	10/23/17	21:33	SW5035A8260C
toluene-D8 SUR	**97**	88-110	%	1	LMM	10/23/17	10152	10/23/17	21:33	SW5035A8260C
4-bromofluorobenzene SUR	**94**	86-115	%	1	LMM	10/23/17	10152	10/23/17	21:33	SW5035A8260C
a,a,a-trifluorotoluene SUR	**98**	70-130	%	1	LMM	10/23/17	10152	10/23/17	21:33	SW5035A8260C

Project ID: 56 Parris Street 229649
Job ID: 42288
Sample#: 42288-013
Sample ID: Trip Blank
Matrix: Solid
Sampled: 10/17/17 0:00

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
dichlorodifluoromethane	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	20:39	SW5035A8260C
chloromethane	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	20:39	SW5035A8260C
vinyl chloride	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	20:39	SW5035A8260C
bromomethane	< 0.2	0.2	ug/g	1	LMM	10/23/17	10152	10/23/17	20:39	SW5035A8260C
chloroethane	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	20:39	SW5035A8260C
trichlorofluoromethane	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	20:39	SW5035A8260C
diethyl ether	< 0.5	0.5	ug/g	1	LMM	10/23/17	10152	10/23/17	20:39	SW5035A8260C
acetone	< 2	2	ug/g	1	LMM	10/23/17	10152	10/23/17	20:39	SW5035A8260C
1,1-dichloroethene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	20:39	SW5035A8260C
methylene chloride	< 0.2	0.2	ug/g	1	LMM	10/23/17	10152	10/23/17	20:39	SW5035A8260C
carbon disulfide	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	20:39	SW5035A8260C
methyl t-butyl ether (MTBE)	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	20:39	SW5035A8260C
trans-1,2-dichloroethene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	20:39	SW5035A8260C
1,1-dichloroethane	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	20:39	SW5035A8260C
2-butanone (MEK)	< 0.3	0.3	ug/g	1	LMM	10/23/17	10152	10/23/17	20:39	SW5035A8260C
2,2-dichloropropane	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	20:39	SW5035A8260C
cis-1,2-dichloroethene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	20:39	SW5035A8260C
chloroform	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	20:39	SW5035A8260C
bromochloromethane	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	20:39	SW5035A8260C
tetrahydrofuran (THF)	< 0.5	0.5	ug/g	1	LMM	10/23/17	10152	10/23/17	20:39	SW5035A8260C
1,1,1-trichloroethane	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	20:39	SW5035A8260C
1,1-dichloropropene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	20:39	SW5035A8260C
carbon tetrachloride	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	20:39	SW5035A8260C
1,2-dichloroethane	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	20:39	SW5035A8260C
benzene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	20:39	SW5035A8260C
trichloroethene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	20:39	SW5035A8260C
1,2-dichloropropane	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	20:39	SW5035A8260C
bromodichloromethane	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	20:39	SW5035A8260C
dibromomethane	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	20:39	SW5035A8260C
4-methyl-2-pentanone (MIBK)	< 0.4	0.4	ug/g	1	LMM	10/23/17	10152	10/23/17	20:39	SW5035A8260C
cis-1,3-dichloropropene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	20:39	SW5035A8260C
toluene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	20:39	SW5035A8260C
trans-1,3-dichloropropene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	20:39	SW5035A8260C
2-hexanone	< 0.5	0.5	ug/g	1	LMM	10/23/17	10152	10/23/17	20:39	SW5035A8260C
1,1,2-trichloroethane	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	20:39	SW5035A8260C
1,3-dichloropropane	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	20:39	SW5035A8260C
tetrachloroethene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	20:39	SW5035A8260C
dibromochloromethane	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	20:39	SW5035A8260C
1,2-dibromoethane (EDB)	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	20:39	SW5035A8260C
chlorobenzene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	20:39	SW5035A8260C
1,1,1,2-tetrachloroethane	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	20:39	SW5035A8260C
ethylbenzene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	20:39	SW5035A8260C
m&p-xylenes	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	20:39	SW5035A8260C

Project ID: 56 Parris Street 229649
Job ID: 42288
Sample#: 42288-013
Sample ID: Trip Blank
Matrix: Solid
Sampled: 10/17/17 0:00

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
o-xylene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	20:39	SW5035A8260C
styrene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	20:39	SW5035A8260C
bromoform	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	20:39	SW5035A8260C
isopropylbenzene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	20:39	SW5035A8260C
1,1,2,2-tetrachloroethane	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	20:39	SW5035A8260C
1,2,3-trichloropropane	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	20:39	SW5035A8260C
n-propylbenzene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	20:39	SW5035A8260C
bromobenzene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	20:39	SW5035A8260C
1,3,5-trimethylbenzene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	20:39	SW5035A8260C
2-chlorotoluene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	20:39	SW5035A8260C
4-chlorotoluene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	20:39	SW5035A8260C
tert-butylbenzene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	20:39	SW5035A8260C
1,2,4-trimethylbenzene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	20:39	SW5035A8260C
sec-butylbenzene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	20:39	SW5035A8260C
1,3-dichlorobenzene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	20:39	SW5035A8260C
4-isopropyltoluene	< 1.0	1.0	ug/g	1	LMM	10/23/17	10152	10/23/17	20:39	SW5035A8260C
1,4-dichlorobenzene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	20:39	SW5035A8260C
1,2-dichlorobenzene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	20:39	SW5035A8260C
n-butylbenzene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	20:39	SW5035A8260C
1,2-dibromo-3-chloropropane (DBCP)	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	20:39	SW5035A8260C
1,2,4-trichlorobenzene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	20:39	SW5035A8260C
hexachlorobutadiene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	20:39	SW5035A8260C
naphthalene	< 0.2	0.2	ug/g	1	LMM	10/23/17	10152	10/23/17	20:39	SW5035A8260C
1,2,3-trichlorobenzene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10152	10/23/17	20:39	SW5035A8260C
Surrogate Recovery		**Limits**								
dibromofluoromethane SUR	**84**	78-114	%	1	LMM	10/23/17	10152	10/23/17	20:39	SW5035A8260C
toluene-D8 SUR	**97**	88-110	%	1	LMM	10/23/17	10152	10/23/17	20:39	SW5035A8260C
4-bromofluorobenzene SUR	**98**	86-115	%	1	LMM	10/23/17	10152	10/23/17	20:39	SW5035A8260C
a,a,a-trifluorotoluene SUR	**91**	70-130	%	1	LMM	10/23/17	10152	10/23/17	20:39	SW5035A8260C

Project ID: 56 Parris Street 229649
Job ID: 42288
Sample#: 42288-011
Sample ID: WC-1
Matrix: Solid Percent Dry: 86.1% Results expressed on a dry weight basis.
Samples prepared in methanol at a ratio of 0.51 mL MeOH/g soil.
Received on ice at 2, 4, 3˚C, in satisfactory condition.
Sampled: 10/17/17 16:40

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Unadjusted C5-C8 Aliphatics	< 4	4	ug/g	1	LMM	10/23/17	10153	10/25/17	13:30	MA VPH
Unadjusted C9-C12 Aliphatics	< 4	4	ug/g	1	LMM	10/23/17	10153	10/25/17	13:30	MA VPH
methyl t-butyl ether (MTBE)	< 0.1	0.1	ug/g	1	LMM	10/23/17	10153	10/25/17	13:30	MA VPH
benzene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10153	10/25/17	13:30	MA VPH
toluene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10153	10/25/17	13:30	MA VPH
ethylbenzene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10153	10/25/17	13:30	MA VPH
m&p-xylenes	< 0.1	0.1	ug/g	1	LMM	10/23/17	10153	10/25/17	13:30	MA VPH
o-xylene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10153	10/25/17	13:30	MA VPH
naphthalene	< 0.2	0.2	ug/g	1	LMM	10/23/17	10153	10/25/17	13:30	MA VPH
C5-C8 Aliphatics	< 4	4	ug/g	1	LMM	10/23/17	10153	10/25/17	13:30	MA VPH
C9-C12 Aliphatics	< 4	4	ug/g	1	LMM	10/23/17	10153	10/25/17	13:30	MA VPH
C9-C10 Aromatics	< 4	4	ug/g	1	LMM	10/23/17	10153	10/25/17	13:30	MA VPH
Surrogate Recovery		**Limits**								
2,5-dibromotoluene as Aromatic SUR	**103**	70-130	%	1	LMM	10/23/17	10153	10/25/17	13:30	MA VPH
2,5-dibromotoluene as Aliphatic SUR	**100**	70-130	%	1	LMM	10/23/17	10153	10/25/17	13:30	MA VPH
a,a,a-trifluorotoluene SUR	**94**	70-130	%	1	LMM	10/23/17	10153	10/25/17	13:30	MA VPH

Hydrocarbon Range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range.
C5-C8 Aliphatic Hydrocarbons exclude the concentration of target analytes eluting in that range.
C9-C12 Aliphatic Hydrocarbons exclude concentration of target analytes eluting in that range AND C9-C10 Aromatics.

Project ID: 56 Parris Street 229649
Job ID: 42288
Sample#: 42288-012
Sample ID: WC-2
Matrix: Solid Percent Dry: 90.5% Results expressed on a dry weight basis.
Samples prepared in methanol at a ratio of 0.5 mL MeOH/g soil.
Received on ice at 2, 4, 3˚C, in satisfactory condition.
Sampled: 10/17/17 16:55

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Unadjusted C5-C8 Aliphatics	< 3	3	ug/g	1	LMM	10/23/17	10153	10/25/17	14:00	MA VPH
Unadjusted C9-C12 Aliphatics	< 3	3	ug/g	1	LMM	10/23/17	10153	10/25/17	14:00	MA VPH
methyl t-butyl ether (MTBE)	< 0.1	0.1	ug/g	1	LMM	10/23/17	10153	10/25/17	14:00	MA VPH
benzene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10153	10/25/17	14:00	MA VPH
toluene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10153	10/25/17	14:00	MA VPH
ethylbenzene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10153	10/25/17	14:00	MA VPH
m&p-xylenes	< 0.1	0.1	ug/g	1	LMM	10/23/17	10153	10/25/17	14:00	MA VPH
o-xylene	< 0.1	0.1	ug/g	1	LMM	10/23/17	10153	10/25/17	14:00	MA VPH
naphthalene	< 0.2	0.2	ug/g	1	LMM	10/23/17	10153	10/25/17	14:00	MA VPH
C5-C8 Aliphatics	< 3	3	ug/g	1	LMM	10/23/17	10153	10/25/17	14:00	MA VPH
C9-C12 Aliphatics	< 3	3	ug/g	1	LMM	10/23/17	10153	10/25/17	14:00	MA VPH
C9-C10 Aromatics	< 3	3	ug/g	1	LMM	10/23/17	10153	10/25/17	14:00	MA VPH
Surrogate Recovery		**Limits**								
2,5-dibromotoluene as Aromatic SUR	**105**	70-130	%	1	LMM	10/23/17	10153	10/25/17	14:00	MA VPH
2,5-dibromotoluene as Aliphatic SUR	**102**	70-130	%	1	LMM	10/23/17	10153	10/25/17	14:00	MA VPH
a,a,a-trifluorotoluene SUR	**92**	70-130	%	1	LMM	10/23/17	10153	10/25/17	14:00	MA VPH

Hydrocarbon Range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range.
C5-C8 Aliphatic Hydrocarbons exclude the concentration of target analytes eluting in that range.
C9-C12 Aliphatic Hydrocarbons exclude concentration of target analytes eluting in that range AND C9-C10 Aromatics.

Project ID: 56 Parris Street 229649
Job ID: 42288
Sample#: 42288-011
Sample ID: WC-1
Matrix: Solid Percent Dry: 86.1% Results expressed on a dry weight basis.
Sampled: 10/17/17 16:40

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
N-nitrosodimethylamine	< 0.22	0.22	ug/g	1	CL	10/23/17	10149	10/24/17	12:09	SW3546/8270D
pyridine	< 0.22	0.22	ug/g	1	CL	10/23/17	10149	10/24/17	12:09	SW3546/8270D
aniline	< 0.22	0.22	ug/g	1	CL	10/23/17	10149	10/24/17	12:09	SW3546/8270D
phenol	< 0.22	0.22	ug/g	1	CL	10/23/17	10149	10/24/17	12:09	SW3546/8270D
2-chlorophenol	< 0.56	0.56	ug/g	1	CL	10/23/17	10149	10/24/17	12:09	SW3546/8270D
bis(2-chloroethyl)ether	< 0.22	0.22	ug/g	1	CL	10/23/17	10149	10/24/17	12:09	SW3546/8270D
1,3-dichlorobenzene	< 0.22	0.22	ug/g	1	CL	10/23/17	10149	10/24/17	12:09	SW3546/8270D
1,4-dichlorobenzene	< 0.22	0.22	ug/g	1	CL	10/23/17	10149	10/24/17	12:09	SW3546/8270D
1,2-dichlorobenzene	< 0.22	0.22	ug/g	1	CL	10/23/17	10149	10/24/17	12:09	SW3546/8270D
benzyl alcohol	< 0.22	0.22	ug/g	1	CL	10/23/17	10149	10/24/17	12:09	SW3546/8270D
2-methylphenol	< 0.22	0.22	ug/g	1	CL	10/23/17	10149	10/24/17	12:09	SW3546/8270D
2,2'-oxybis(1-chloropropane)	< 0.22	0.22	ug/g	1	CL	10/23/17	10149	10/24/17	12:09	SW3546/8270D
hexachloroethane	< 0.22	0.22	ug/g	1	CL	10/23/17	10149	10/24/17	12:09	SW3546/8270D
N-nitroso-di-N-propylamine	< 0.22	0.22	ug/g	1	CL	10/23/17	10149	10/24/17	12:09	SW3546/8270D
4-methylphenol	< 0.22	0.22	ug/g	1	CL	10/23/17	10149	10/24/17	12:09	SW3546/8270D
nitrobenzene	< 0.22	0.22	ug/g	1	CL	10/23/17	10149	10/24/17	12:09	SW3546/8270D
isophorone	< 0.56	0.56	ug/g	1	CL	10/23/17	10149	10/24/17	12:09	SW3546/8270D
2-nitrophenol	< 0.22	0.22	ug/g	1	CL	10/23/17	10149	10/24/17	12:09	SW3546/8270D
2,4-dimethylphenol	< 0.22	0.22	ug/g	1	CL	10/23/17	10149	10/24/17	12:09	SW3546/8270D
bis(2-chloroethoxy)methane	< 0.22	0.22	ug/g	1	CL	10/23/17	10149	10/24/17	12:09	SW3546/8270D
2,4-dichlorophenol	< 0.56	0.56	ug/g	1	CL	10/23/17	10149	10/24/17	12:09	SW3546/8270D
1,2,4-trichlorobenzene	< 0.56	0.56	ug/g	1	CL	10/23/17	10149	10/24/17	12:09	SW3546/8270D
naphthalene	< 0.056	0.056	ug/g	1	CL	10/23/17	10149	10/24/17	12:09	SW3546/8270D
benzoic acid	< 5.6	5.6	ug/g	1	CL	10/23/17	10149	10/24/17	12:09	SW3546/8270D
4-chloroaniline	< 0.22	0.22	ug/g	1	CL	10/23/17	10149	10/24/17	12:09	SW3546/8270D
hexachlorobutadiene	< 0.22	0.22	ug/g	1	CL	10/23/17	10149	10/24/17	12:09	SW3546/8270D
4-chloro-3-methylphenol	< 0.22	0.22	ug/g	1	CL	10/23/17	10149	10/24/17	12:09	SW3546/8270D
2-methylnaphthalene	< 0.056	0.056	ug/g	1	CL	10/23/17	10149	10/24/17	12:09	SW3546/8270D
hexachlorocyclopentadiene	< 1.1	1.1	ug/g	1	CL	10/23/17	10149	10/24/17	12:09	SW3546/8270D
2,4,6-trichlorophenol	< 0.22	0.22	ug/g	1	CL	10/23/17	10149	10/24/17	12:09	SW3546/8270D
2,4,5-trichlorophenol	< 0.22	0.22	ug/g	1	CL	10/23/17	10149	10/24/17	12:09	SW3546/8270D
2-chloronaphthalene	< 0.56	0.56	ug/g	1	CL	10/23/17	10149	10/24/17	12:09	SW3546/8270D
2-nitroaniline	< 0.22	0.22	ug/g	1	CL	10/23/17	10149	10/24/17	12:09	SW3546/8270D
acenaphthylene	< 0.056	0.056	ug/g	1	CL	10/23/17	10149	10/24/17	12:09	SW3546/8270D
dimethylphthalate	< 0.56	0.56	ug/g	1	CL	10/23/17	10149	10/24/17	12:09	SW3546/8270D
2,6-dinitrotoluene	< 0.22	0.22	ug/g	1	CL	10/23/17	10149	10/24/17	12:09	SW3546/8270D
2,4-dinitrotoluene	< 0.22	0.22	ug/g	1	CL	10/23/17	10149	10/24/17	12:09	SW3546/8270D
acenaphthene	< 0.056	0.056	ug/g	1	CL	10/23/17	10149	10/24/17	12:09	SW3546/8270D
3-nitroaniline	< 0.22	0.22	ug/g	1	CL	10/23/17	10149	10/24/17	12:09	SW3546/8270D
2,4-dinitrophenol	< 5.6	5.6	ug/g	1	CL	10/23/17	10149	10/24/17	12:09	SW3546/8270D
dibenzofuran	< 0.056	0.056	ug/g	1	CL	10/23/17	10149	10/24/17	12:09	SW3546/8270D
4-nitrophenol	< 1.1	1.1	ug/g	1	CL	10/23/17	10149	10/24/17	12:09	SW3546/8270D
fluorene	< 0.056	0.056	ug/g	1	CL	10/23/17	10149	10/24/17	12:09	SW3546/8270D

Project ID: 56 Parris Street 229649
Job ID: 42288
Sample#: 42288-011
Sample ID: WC-1
Matrix: Solid Percent Dry: 86.1% Results expressed on a dry weight basis.
Sampled: 10/17/17 16:40

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
diethyl phthalate	< 0.56	0.56	ug/g	1	CL	10/23/17	10149	10/24/17	12:09	SW3546/8270D
4-chlorophenyl phenyl ether	< 0.56	0.56	ug/g	1	CL	10/23/17	10149	10/24/17	12:09	SW3546/8270D
4-nitroaniline	< 0.56	0.56	ug/g	1	CL	10/23/17	10149	10/24/17	12:09	SW3546/8270D
4,6-dinitro-2-methylphenol	< 2.2	2.2	ug/g	1	CL	10/23/17	10149	10/24/17	12:09	SW3546/8270D
azobenzene	< 0.22	0.22	ug/g	1	CL	10/23/17	10149	10/24/17	12:09	SW3546/8270D
N-nitrosodiphenylamine	< 0.22	0.22	ug/g	1	CL	10/23/17	10149	10/24/17	12:09	SW3546/8270D
4-bromophenyl phenyl ether	< 0.22	0.22	ug/g	1	CL	10/23/17	10149	10/24/17	12:09	SW3546/8270D
hexachlorobenzene	< 0.22	0.22	ug/g	1	CL	10/23/17	10149	10/24/17	12:09	SW3546/8270D
pentachlorophenol	< 1.1	1.1	ug/g	1	CL	10/23/17	10149	10/24/17	12:09	SW3546/8270D
phenanthrene	**0.11**	0.056	ug/g	1	CL	10/23/17	10149	10/24/17	12:09	SW3546/8270D
anthracene	< 0.056	0.056	ug/g	1	CL	10/23/17	10149	10/24/17	12:09	SW3546/8270D
carbazole	< 0.22	0.22	ug/g	1	CL	10/23/17	10149	10/24/17	12:09	SW3546/8270D
di-n-butylphthalate	< 0.56	0.56	ug/g	1	CL	10/23/17	10149	10/24/17	12:09	SW3546/8270D
fluoranthene	**0.13**	0.056	ug/g	1	CL	10/23/17	10149	10/24/17	12:09	SW3546/8270D
benzidine	< 3.4	3.4	ug/g	1	CL	10/23/17	10149	10/24/17	12:09	SW3546/8270D
pyrene	**0.14**	0.056	ug/g	1	CL	10/23/17	10149	10/24/17	12:09	SW3546/8270D
butyl benzyl phthalate	< 0.56	0.56	ug/g	1	CL	10/23/17	10149	10/24/17	12:09	SW3546/8270D
benzo(a)anthracene	< 0.056	0.056	ug/g	1	CL	10/23/17	10149	10/24/17	12:09	SW3546/8270D
chrysene	**0.091**	0.056	ug/g	1	CL	10/23/17	10149	10/24/17	12:09	SW3546/8270D
3,3'-dichlorobenzidine	< 3.4	3.4	ug/g	1	CL	10/23/17	10149	10/24/17	12:09	SW3546/8270D
bis(2-ethylhexyl)phthalate	< 0.56	0.56	ug/g	1	CL	10/23/17	10149	10/24/17	12:09	SW3546/8270D
di-n-octyl phthalate	< 0.56	0.56	ug/g	1	CL	10/23/17	10149	10/24/17	12:09	SW3546/8270D
benzo(b)fluoranthene	**0.082**	0.056	ug/g	1	CL	10/23/17	10149	10/24/17	12:09	SW3546/8270D
benzo(k)fluoranthene	< 0.056	0.056	ug/g	1	CL	10/23/17	10149	10/24/17	12:09	SW3546/8270D
benzo(a)pyrene	**0.056**	0.056	ug/g	1	CL	10/23/17	10149	10/24/17	12:09	SW3546/8270D
indeno(1,2,3-cd)pyrene	< 0.056	0.056	ug/g	1	CL	10/23/17	10149	10/24/17	12:09	SW3546/8270D
dibenzo(a,h)anthracene	< 0.056	0.056	ug/g	1	CL	10/23/17	10149	10/24/17	12:09	SW3546/8270D
benzo(g,h,i)perylene	< 0.056	0.056	ug/g	1	CL	10/23/17	10149	10/24/17	12:09	SW3546/8270D
Surrogate Recovery		**Limits**								
2-fluorophenol SUR	**63**	21-100	%	1	CL	10/23/17	10149	10/24/17	12:09	SW3546/8270D
phenol-D5 SUR	**66**	10-102	%	1	CL	10/23/17	10149	10/24/17	12:09	SW3546/8270D
2,4,6-tribromophenol SUR	**63**	10-123	%	1	CL	10/23/17	10149	10/24/17	12:09	SW3546/8270D
nitrobenzene-D5 SUR	**59**	35-114	%	1	CL	10/23/17	10149	10/24/17	12:09	SW3546/8270D
2-fluorobiphenyl SUR	**62**	43-116	%	1	CL	10/23/17	10149	10/24/17	12:09	SW3546/8270D
p-terphenyl-D14 SUR	**77**	33-141	%	1	CL	10/23/17	10149	10/24/17	12:09	SW3546/8270D

Project ID: 56 Parris Street 229649
Job ID: 42288
Sample#: 42288-012
Sample ID: WC-2
Matrix: Solid Percent Dry: 90.5% Results expressed on a dry weight basis.
Sampled: 10/17/17 16:55

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
N-nitrosodimethylamine	< 0.21	0.21	ug/g	1	CL	10/23/17	10149	10/24/17	12:47	SW3546/8270D
pyridine	< 0.21	0.21	ug/g	1	CL	10/23/17	10149	10/24/17	12:47	SW3546/8270D
aniline	< 0.21	0.21	ug/g	1	CL	10/23/17	10149	10/24/17	12:47	SW3546/8270D
phenol	< 0.21	0.21	ug/g	1	CL	10/23/17	10149	10/24/17	12:47	SW3546/8270D
2-chlorophenol	< 0.53	0.53	ug/g	1	CL	10/23/17	10149	10/24/17	12:47	SW3546/8270D
bis(2-chloroethyl)ether	< 0.21	0.21	ug/g	1	CL	10/23/17	10149	10/24/17	12:47	SW3546/8270D
1,3-dichlorobenzene	< 0.21	0.21	ug/g	1	CL	10/23/17	10149	10/24/17	12:47	SW3546/8270D
1,4-dichlorobenzene	< 0.21	0.21	ug/g	1	CL	10/23/17	10149	10/24/17	12:47	SW3546/8270D
1,2-dichlorobenzene	< 0.21	0.21	ug/g	1	CL	10/23/17	10149	10/24/17	12:47	SW3546/8270D
benzyl alcohol	< 0.21	0.21	ug/g	1	CL	10/23/17	10149	10/24/17	12:47	SW3546/8270D
2-methylphenol	< 0.21	0.21	ug/g	1	CL	10/23/17	10149	10/24/17	12:47	SW3546/8270D
2,2'-oxybis(1-chloropropane)	< 0.21	0.21	ug/g	1	CL	10/23/17	10149	10/24/17	12:47	SW3546/8270D
hexachloroethane	< 0.21	0.21	ug/g	1	CL	10/23/17	10149	10/24/17	12:47	SW3546/8270D
N-nitroso-di-N-propylamine	< 0.21	0.21	ug/g	1	CL	10/23/17	10149	10/24/17	12:47	SW3546/8270D
4-methylphenol	< 0.21	0.21	ug/g	1	CL	10/23/17	10149	10/24/17	12:47	SW3546/8270D
nitrobenzene	< 0.21	0.21	ug/g	1	CL	10/23/17	10149	10/24/17	12:47	SW3546/8270D
isophorone	< 0.53	0.53	ug/g	1	CL	10/23/17	10149	10/24/17	12:47	SW3546/8270D
2-nitrophenol	< 0.21	0.21	ug/g	1	CL	10/23/17	10149	10/24/17	12:47	SW3546/8270D
2,4-dimethylphenol	< 0.21	0.21	ug/g	1	CL	10/23/17	10149	10/24/17	12:47	SW3546/8270D
bis(2-chloroethoxy)methane	< 0.21	0.21	ug/g	1	CL	10/23/17	10149	10/24/17	12:47	SW3546/8270D
2,4-dichlorophenol	< 0.53	0.53	ug/g	1	CL	10/23/17	10149	10/24/17	12:47	SW3546/8270D
1,2,4-trichlorobenzene	< 0.53	0.53	ug/g	1	CL	10/23/17	10149	10/24/17	12:47	SW3546/8270D
naphthalene	< 0.053	0.053	ug/g	1	CL	10/23/17	10149	10/24/17	12:47	SW3546/8270D
benzoic acid	< 5.3	5.3	ug/g	1	CL	10/23/17	10149	10/24/17	12:47	SW3546/8270D
4-chloroaniline	< 0.21	0.21	ug/g	1	CL	10/23/17	10149	10/24/17	12:47	SW3546/8270D
hexachlorobutadiene	< 0.21	0.21	ug/g	1	CL	10/23/17	10149	10/24/17	12:47	SW3546/8270D
4-chloro-3-methylphenol	< 0.21	0.21	ug/g	1	CL	10/23/17	10149	10/24/17	12:47	SW3546/8270D
2-methylnaphthalene	< 0.053	0.053	ug/g	1	CL	10/23/17	10149	10/24/17	12:47	SW3546/8270D
hexachlorocyclopentadiene	< 1.1	1.1	ug/g	1	CL	10/23/17	10149	10/24/17	12:47	SW3546/8270D
2,4,6-trichlorophenol	< 0.21	0.21	ug/g	1	CL	10/23/17	10149	10/24/17	12:47	SW3546/8270D
2,4,5-trichlorophenol	< 0.21	0.21	ug/g	1	CL	10/23/17	10149	10/24/17	12:47	SW3546/8270D
2-chloronaphthalene	< 0.53	0.53	ug/g	1	CL	10/23/17	10149	10/24/17	12:47	SW3546/8270D
2-nitroaniline	< 0.21	0.21	ug/g	1	CL	10/23/17	10149	10/24/17	12:47	SW3546/8270D
acenaphthylene	**0.10**	0.053	ug/g	1	CL	10/23/17	10149	10/24/17	12:47	SW3546/8270D
dimethylphthalate	< 0.53	0.53	ug/g	1	CL	10/23/17	10149	10/24/17	12:47	SW3546/8270D
2,6-dinitrotoluene	< 0.21	0.21	ug/g	1	CL	10/23/17	10149	10/24/17	12:47	SW3546/8270D
2,4-dinitrotoluene	< 0.21	0.21	ug/g	1	CL	10/23/17	10149	10/24/17	12:47	SW3546/8270D
acenaphthene	< 0.053	0.053	ug/g	1	CL	10/23/17	10149	10/24/17	12:47	SW3546/8270D
3-nitroaniline	< 0.21	0.21	ug/g	1	CL	10/23/17	10149	10/24/17	12:47	SW3546/8270D
2,4-dinitrophenol	< 5.3	5.3	ug/g	1	CL	10/23/17	10149	10/24/17	12:47	SW3546/8270D
dibenzofuran	< 0.053	0.053	ug/g	1	CL	10/23/17	10149	10/24/17	12:47	SW3546/8270D
4-nitrophenol	< 1.1	1.1	ug/g	1	CL	10/23/17	10149	10/24/17	12:47	SW3546/8270D
fluorene	< 0.053	0.053	ug/g	1	CL	10/23/17	10149	10/24/17	12:47	SW3546/8270D

Project ID: 56 Parris Street 229649
Job ID: 42288
Sample#: 42288-012
Sample ID: WC-2
Matrix: Solid Percent Dry: 90.5% Results expressed on a dry weight basis.
Sampled: 10/17/17 16:55

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
diethyl phthalate	< 0.53	0.53	ug/g	1	CL	10/23/17	10149	10/24/17	12:47	SW3546/8270D
4-chlorophenyl phenyl ether	< 0.53	0.53	ug/g	1	CL	10/23/17	10149	10/24/17	12:47	SW3546/8270D
4-nitroaniline	< 0.53	0.53	ug/g	1	CL	10/23/17	10149	10/24/17	12:47	SW3546/8270D
4,6-dinitro-2-methylphenol	< 2.1	2.1	ug/g	1	CL	10/23/17	10149	10/24/17	12:47	SW3546/8270D
azobenzene	< 0.21	0.21	ug/g	1	CL	10/23/17	10149	10/24/17	12:47	SW3546/8270D
N-nitrosodiphenylamine	< 0.21	0.21	ug/g	1	CL	10/23/17	10149	10/24/17	12:47	SW3546/8270D
4-bromophenyl phenyl ether	< 0.21	0.21	ug/g	1	CL	10/23/17	10149	10/24/17	12:47	SW3546/8270D
hexachlorobenzene	< 0.21	0.21	ug/g	1	CL	10/23/17	10149	10/24/17	12:47	SW3546/8270D
pentachlorophenol	< 1.1	1.1	ug/g	1	CL	10/23/17	10149	10/24/17	12:47	SW3546/8270D
phenanthrene	**0.21**	0.053	ug/g	1	CL	10/23/17	10149	10/24/17	12:47	SW3546/8270D
anthracene	**0.069**	0.053	ug/g	1	CL	10/23/17	10149	10/24/17	12:47	SW3546/8270D
carbazole	< 0.21	0.21	ug/g	1	CL	10/23/17	10149	10/24/17	12:47	SW3546/8270D
di-n-butylphthalate	< 0.53	0.53	ug/g	1	CL	10/23/17	10149	10/24/17	12:47	SW3546/8270D
fluoranthene	**1.1**	0.053	ug/g	1	CL	10/23/17	10149	10/24/17	12:47	SW3546/8270D
benzidine	< 3.2	3.2	ug/g	1	CL	10/23/17	10149	10/24/17	12:47	SW3546/8270D
pyrene	**1.1**	0.053	ug/g	1	CL	10/23/17	10149	10/24/17	12:47	SW3546/8270D
butyl benzyl phthalate	< 0.53	0.53	ug/g	1	CL	10/23/17	10149	10/24/17	12:47	SW3546/8270D
benzo(a)anthracene	**0.74**	0.053	ug/g	1	CL	10/23/17	10149	10/24/17	12:47	SW3546/8270D
chrysene	**0.62**	0.053	ug/g	1	CL	10/23/17	10149	10/24/17	12:47	SW3546/8270D
3,3'-dichlorobenzidine	< 3.2	3.2	ug/g	1	CL	10/23/17	10149	10/24/17	12:47	SW3546/8270D
bis(2-ethylhexyl)phthalate	< 0.53	0.53	ug/g	1	CL	10/23/17	10149	10/24/17	12:47	SW3546/8270D
di-n-octyl phthalate	< 0.53	0.53	ug/g	1	CL	10/23/17	10149	10/24/17	12:47	SW3546/8270D
benzo(b)fluoranthene	**0.65**	0.053	ug/g	1	CL	10/23/17	10149	10/24/17	12:47	SW3546/8270D
benzo(k)fluoranthene	**0.64**	0.053	ug/g	1	CL	10/23/17	10149	10/24/17	12:47	SW3546/8270D
benzo(a)pyrene	**0.67**	0.053	ug/g	1	CL	10/23/17	10149	10/24/17	12:47	SW3546/8270D
indeno(1,2,3-cd)pyrene	**0.14**	0.053	ug/g	1	CL	10/23/17	10149	10/24/17	12:47	SW3546/8270D
dibenzo(a,h)anthracene	**0.071**	0.053	ug/g	1	CL	10/23/17	10149	10/24/17	12:47	SW3546/8270D
benzo(g,h,i)perylene	**0.13**	0.053	ug/g	1	CL	10/23/17	10149	10/24/17	12:47	SW3546/8270D
Surrogate Recovery		**Limits**								
2-fluorophenol SUR	**65**	21-100	%	1	CL	10/23/17	10149	10/24/17	12:47	SW3546/8270D
phenol-D5 SUR	**66**	10-102	%	1	CL	10/23/17	10149	10/24/17	12:47	SW3546/8270D
2,4,6-tribromophenol SUR	**59**	10-123	%	1	CL	10/23/17	10149	10/24/17	12:47	SW3546/8270D
nitrobenzene-D5 SUR	**62**	35-114	%	1	CL	10/23/17	10149	10/24/17	12:47	SW3546/8270D
2-fluorobiphenyl SUR	**63**	43-116	%	1	CL	10/23/17	10149	10/24/17	12:47	SW3546/8270D
p-terphenyl-D14 SUR	**79**	33-141	%	1	CL	10/23/17	10149	10/24/17	12:47	SW3546/8270D

Project ID: 56 Parris Street 229649
Job ID: 42288
Sample#: 42288-011
Sample ID: WC-1
Matrix: Solid Percent Dry: 86.1% Results expressed on a dry weight basis.
Sampled: 10/17/17 16:40

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
alpha-BHC	< 0.045	0.045	ug/g	1	JZL	10/23/17	10151	10/24/17	14:12	SW3546/8081B
beta-BHC	< 0.045	0.045	ug/g	1	JZL	10/23/17	10151	10/24/17	14:12	SW3546/8081B
delta-BHC	< 0.045	0.045	ug/g	1	JZL	10/23/17	10151	10/24/17	14:12	SW3546/8081B
gamma-BHC (Lindane)	< 0.045	0.045	ug/g	1	JZL	10/23/17	10151	10/24/17	14:12	SW3546/8081B
Heptachlor	< 0.045	0.045	ug/g	1	JZL	10/23/17	10151	10/24/17	14:12	SW3546/8081B
Aldrin	< 0.045	0.045	ug/g	1	JZL	10/23/17	10151	10/24/17	14:12	SW3546/8081B
Heptachlor Epoxide	< 0.045	0.045	ug/g	1	JZL	10/23/17	10151	10/24/17	14:12	SW3546/8081B
Endosulfan I	< 0.045	0.045	ug/g	1	JZL	10/23/17	10151	10/24/17	14:12	SW3546/8081B
Dieldrin	< 0.045	0.045	ug/g	1	JZL	10/23/17	10151	10/24/17	14:12	SW3546/8081B
4,4'-DDE	< 0.045	0.045	ug/g	1	JZL	10/23/17	10151	10/24/17	14:12	SW3546/8081B
Endrin	< 0.045	0.045	ug/g	1	JZL	10/23/17	10151	10/24/17	14:12	SW3546/8081B
Endosulfan II	< 0.045	0.045	ug/g	1	JZL	10/23/17	10151	10/24/17	14:12	SW3546/8081B
4,4'-DDD	< 0.045	0.045	ug/g	1	JZL	10/23/17	10151	10/24/17	14:12	SW3546/8081B
Endosulfan Sulfate	< 0.045	0.045	ug/g	1	JZL	10/23/17	10151	10/24/17	14:12	SW3546/8081B
4,4'-DDT	< 0.045	0.045	ug/g	1	JZL	10/23/17	10151	10/24/17	14:12	SW3546/8081B
Methoxychlor	< 0.045	0.045	ug/g	1	JZL	10/23/17	10151	10/24/17	14:12	SW3546/8081B
Endrin Ketone	< 0.045	0.045	ug/g	1	JZL	10/23/17	10151	10/24/17	14:12	SW3546/8081B
Endrin Aldehyde	< 0.045 J	0.045	ug/g	1	JZL	10/23/17	10151	10/24/17	14:12	SW3546/8081B
J = The recovery of the LCS was 35%. The acceptance limits are 40-140%. The reported result is an estimate.										
alpha-Chlordane	< 0.045	0.045	ug/g	1	JZL	10/23/17	10151	10/24/17	14:12	SW3546/8081B
gamma-Chlordane	< 0.045	0.045	ug/g	1	JZL	10/23/17	10151	10/24/17	14:12	SW3546/8081B
Toxaphene	< 0.22	0.22	ug/g	1	JZL	10/23/17	10151	10/24/17	14:12	SW3546/8081B
Surrogate Recovery		**Limits**								
tetrachloro-m-xylene SUR	**104**	30-150	%	1	JZL	10/23/17	10151	10/24/17	14:12	SW3546/8081B
decachlorobiphenyl SUR	**84**	30-150	%	1	JZL	10/23/17	10151	10/24/17	14:12	SW3546/8081B

Project ID: 56 Parris Street 229649
Job ID: 42288
Sample#: 42288-012
Sample ID: WC-2
Matrix: Solid Percent Dry: 90.5% Results expressed on a dry weight basis.
Sampled: 10/17/17 16:55

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
alpha-BHC	< 0.039	0.039	ug/g	1	JZL	10/23/17	10151	10/24/17	14:41	SW3546/8081B
beta-BHC	< 0.039	0.039	ug/g	1	JZL	10/23/17	10151	10/24/17	14:41	SW3546/8081B
delta-BHC	< 0.039	0.039	ug/g	1	JZL	10/23/17	10151	10/24/17	14:41	SW3546/8081B
gamma-BHC (Lindane)	< 0.039	0.039	ug/g	1	JZL	10/23/17	10151	10/24/17	14:41	SW3546/8081B
Heptachlor	< 0.039	0.039	ug/g	1	JZL	10/23/17	10151	10/24/17	14:41	SW3546/8081B
Aldrin	< 0.039	0.039	ug/g	1	JZL	10/23/17	10151	10/24/17	14:41	SW3546/8081B
Heptachlor Epoxide	< 0.039	0.039	ug/g	1	JZL	10/23/17	10151	10/24/17	14:41	SW3546/8081B
Endosulfan I	< 0.039	0.039	ug/g	1	JZL	10/23/17	10151	10/24/17	14:41	SW3546/8081B
Dieldrin	< 0.039	0.039	ug/g	1	JZL	10/23/17	10151	10/24/17	14:41	SW3546/8081B
4,4'-DDE	< 0.039	0.039	ug/g	1	JZL	10/23/17	10151	10/24/17	14:41	SW3546/8081B
Endrin	< 0.039	0.039	ug/g	1	JZL	10/23/17	10151	10/24/17	14:41	SW3546/8081B
Endosulfan II	< 0.039	0.039	ug/g	1	JZL	10/23/17	10151	10/24/17	14:41	SW3546/8081B
4,4'-DDD	< 0.039	0.039	ug/g	1	JZL	10/23/17	10151	10/24/17	14:41	SW3546/8081B
Endosulfan Sulfate	< 0.039	0.039	ug/g	1	JZL	10/23/17	10151	10/24/17	14:41	SW3546/8081B
4,4'-DDT	< 0.039	0.039	ug/g	1	JZL	10/23/17	10151	10/24/17	14:41	SW3546/8081B
Methoxychlor	< 0.039	0.039	ug/g	1	JZL	10/23/17	10151	10/24/17	14:41	SW3546/8081B
Endrin Ketone	< 0.039	0.039	ug/g	1	JZL	10/23/17	10151	10/24/17	14:41	SW3546/8081B
Endrin Aldehyde	< 0.039 J	0.039	ug/g	1	JZL	10/23/17	10151	10/24/17	14:41	SW3546/8081B
J = The recovery of the LCS was 35%. The acceptance limits are 40-140%. The reported result is an estimate.										
alpha-Chlordane	< 0.039	0.039	ug/g	1	JZL	10/23/17	10151	10/24/17	14:41	SW3546/8081B
gamma-Chlordane	< 0.039	0.039	ug/g	1	JZL	10/23/17	10151	10/24/17	14:41	SW3546/8081B
Toxaphene	< 0.20	0.20	ug/g	1	JZL	10/23/17	10151	10/24/17	14:41	SW3546/8081B
Surrogate Recovery		**Limits**								
tetrachloro-m-xylene SUR	**102**	30-150	%	1	JZL	10/23/17	10151	10/24/17	14:41	SW3546/8081B
decachlorobiphenyl SUR	**76**	30-150	%	1	JZL	10/23/17	10151	10/24/17	14:41	SW3546/8081B

Project ID: 56 Parris Street 229649
Job ID: 42288

Sample#: 42288-011
Sample ID: WC-1
Matrix: Solid Percent Dry: 86.1% Results expressed on a dry weight basis.
Sampled: 10/17/17 16:40

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
PCB-1016	< 0.2	0.2	ug/g	1	AAG	10/23/17	10150	10/25/17	19:08	SW3546/8082A
PCB-1221	< 0.2	0.2	ug/g	1	AAG	10/23/17	10150	10/25/17	19:08	SW3546/8082A
PCB-1232	< 0.2	0.2	ug/g	1	AAG	10/23/17	10150	10/25/17	19:08	SW3546/8082A
PCB-1242	< 0.2	0.2	ug/g	1	AAG	10/23/17	10150	10/25/17	19:08	SW3546/8082A
PCB-1248	< 0.2	0.2	ug/g	1	AAG	10/23/17	10150	10/25/17	19:08	SW3546/8082A
PCB-1254	< 0.2	0.2	ug/g	1	AAG	10/23/17	10150	10/25/17	19:08	SW3546/8082A
PCB-1260	< 0.2	0.2	ug/g	1	AAG	10/23/17	10150	10/25/17	19:08	SW3546/8082A
Surrogate Recovery		**Limits**								
tetrachloro-m-xylene SUR	**126**	30-150	%	1	AAG	10/23/17	10150	10/25/17	19:08	SW3546/8082A
decachlorobiphenyl SUR	**108**	30-150	%	1	AAG	10/23/17	10150	10/25/17	19:08	SW3546/8082A

Sample#: 42288-012
Sample ID: WC-2
Matrix: Solid Percent Dry: 90.5% Results expressed on a dry weight basis.
Sampled: 10/17/17 16:55

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
PCB-1016	< 0.2	0.2	ug/g	1	AAG	10/23/17	10150	10/25/17	19:23	SW3546/8082A
PCB-1221	< 0.2	0.2	ug/g	1	AAG	10/23/17	10150	10/25/17	19:23	SW3546/8082A
PCB-1232	< 0.2	0.2	ug/g	1	AAG	10/23/17	10150	10/25/17	19:23	SW3546/8082A
PCB-1242	< 0.2	0.2	ug/g	1	AAG	10/23/17	10150	10/25/17	19:23	SW3546/8082A
PCB-1248	< 0.2	0.2	ug/g	1	AAG	10/23/17	10150	10/25/17	19:23	SW3546/8082A
PCB-1254	< 0.2	0.2	ug/g	1	AAG	10/23/17	10150	10/25/17	19:23	SW3546/8082A
PCB-1260	< 0.2	0.2	ug/g	1	AAG	10/23/17	10150	10/25/17	19:23	SW3546/8082A
Surrogate Recovery		**Limits**								
tetrachloro-m-xylene SUR	**122**	30-150	%	1	AAG	10/23/17	10150	10/25/17	19:23	SW3546/8082A
decachlorobiphenyl SUR	**116**	30-150	%	1	AAG	10/23/17	10150	10/25/17	19:23	SW3546/8082A

Project ID: 56 Parris Street 229649
Job ID: 42288
Sample#: 42288-001
Sample ID: B1 (0.5-2.5')
Matrix: Solid Percent Dry: 81.6% Results expressed on a dry weight basis.
Sampled: 10/17/17 8:25

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
naphthalene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	22:10	MA EPH
2-methylnaphthalene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	22:10	MA EPH
phenanthrene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	22:10	MA EPH
acenaphthene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	22:10	MA EPH
acenaphthylene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	22:10	MA EPH
fluorene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	22:10	MA EPH
anthracene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	22:10	MA EPH
fluoranthene	**0.2**	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	22:10	MA EPH
pyrene	**0.2**	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	22:10	MA EPH
benzo(a)anthracene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	22:10	MA EPH
chrysene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	22:10	MA EPH
benzo(b)fluoranthene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	22:10	MA EPH
benzo(k)fluoranthene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	22:10	MA EPH
benzo(a)pyrene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	22:10	MA EPH
indeno(1,2,3-cd)pyrene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	22:10	MA EPH
dibenzo(a,h)anthracene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	22:10	MA EPH
benzo(g,h,i)perylene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	22:10	MA EPH
Unadjusted C11-C22 Aromatics	< 23	23	ug/g	1	AAG	10/23/17	10148	10/24/17	21:42	MA EPH
C9-C18 Aliphatics	< 23	23	ug/g	1	AAG	10/23/17	10148	10/25/17	0:05	MA EPH
C19-C36 Aliphatics	**29**	23	ug/g	1	AAG	10/23/17	10148	10/25/17	0:05	MA EPH
C11-C22 Aromatics	< 23	23	ug/g	1	AAG	10/23/17	10148	10/24/17	21:42	MA EPH
Surrogate Recovery		**Limits**								
1-chloro-octadecane SUR	**45**	40-140	%	1	AAG	10/23/17	10148	10/25/17	0:05	MA EPH
o-terphenyl SUR	**48**	40-140	%	1	AAG	10/23/17	10148	10/24/17	21:42	MA EPH
2-fluorobiphenyl SUR	**68**	40-140	%	1	AAG	10/23/17	10148	10/24/17	21:42	MA EPH
2-bromonaphthalene SUR	**68**	40-140	%	1	AAG	10/23/17	10148	10/24/17	21:42	MA EPH

Project ID: 56 Parris Street 229649
Job ID: 42288
Sample#: 42288-002
Sample ID: B1 (2.5-6.0')
Matrix: Solid Percent Dry: 85.2% Results expressed on a dry weight basis.
Sampled: 10/17/17 9:05

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
naphthalene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	22:48	MA EPH
2-methylnaphthalene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	22:48	MA EPH
phenanthrene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	22:48	MA EPH
acenaphthene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	22:48	MA EPH
acenaphthylene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	22:48	MA EPH
fluorene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	22:48	MA EPH
anthracene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	22:48	MA EPH
fluoranthene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	22:48	MA EPH
pyrene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	22:48	MA EPH
benzo(a)anthracene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	22:48	MA EPH
chrysene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	22:48	MA EPH
benzo(b)fluoranthene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	22:48	MA EPH
benzo(k)fluoranthene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	22:48	MA EPH
benzo(a)pyrene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	22:48	MA EPH
indeno(1,2,3-cd)pyrene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	22:48	MA EPH
dibenzo(a,h)anthracene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	22:48	MA EPH
benzo(g,h,i)perylene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	22:48	MA EPH
Unadjusted C11-C22 Aromatics	**110**	22	ug/g	1	AAG	10/23/17	10148	10/24/17	22:11	MA EPH
C9-C18 Aliphatics	< 22	22	ug/g	1	AAG	10/23/17	10148	10/25/17	0:33	MA EPH
C19-C36 Aliphatics	**180**	22	ug/g	1	AAG	10/23/17	10148	10/25/17	0:33	MA EPH
C11-C22 Aromatics	**110**	22	ug/g	1	AAG	10/23/17	10148	10/24/17	22:11	MA EPH
Surrogate Recovery		**Limits**								
1-chloro-octadecane SUR	**63**	40-140	%	1	AAG	10/23/17	10148	10/25/17	0:33	MA EPH
o-terphenyl SUR	**66**	40-140	%	1	AAG	10/23/17	10148	10/24/17	22:11	MA EPH
2-fluorobiphenyl SUR	**75**	40-140	%	1	AAG	10/23/17	10148	10/24/17	22:11	MA EPH
2-bromonaphthalene SUR	**75**	40-140	%	1	AAG	10/23/17	10148	10/24/17	22:11	MA EPH

Project ID: 56 Parris Street 229649
Job ID: 42288
Sample#: 42288-003
Sample ID: B3 (0-2')
Matrix: Solid Percent Dry: 93.2% Results expressed on a dry weight basis.
Sampled: 10/17/17 14:10

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
naphthalene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	23:26	MA EPH
2-methylnaphthalene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	23:26	MA EPH
phenanthrene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	23:26	MA EPH
acenaphthene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	23:26	MA EPH
acenaphthylene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	23:26	MA EPH
fluorene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	23:26	MA EPH
anthracene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	23:26	MA EPH
fluoranthene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	23:26	MA EPH
pyrene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	23:26	MA EPH
benzo(a)anthracene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	23:26	MA EPH
chrysene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	23:26	MA EPH
benzo(b)fluoranthene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	23:26	MA EPH
benzo(k)fluoranthene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	23:26	MA EPH
benzo(a)pyrene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	23:26	MA EPH
indeno(1,2,3-cd)pyrene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	23:26	MA EPH
dibenzo(a,h)anthracene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	23:26	MA EPH
benzo(g,h,i)perylene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	23:26	MA EPH
Unadjusted C11-C22 Aromatics	**75**	20	ug/g	1	AAG	10/23/17	10148	10/24/17	22:39	MA EPH
C9-C18 Aliphatics	< 20	20	ug/g	1	AAG	10/23/17	10148	10/25/17	1:02	MA EPH
C19-C36 Aliphatics	**130**	20	ug/g	1	AAG	10/23/17	10148	10/25/17	1:02	MA EPH
C11-C22 Aromatics	**75**	20	ug/g	1	AAG	10/23/17	10148	10/24/17	22:39	MA EPH
Surrogate Recovery		**Limits**								
1-chloro-octadecane SUR	**75**	40-140	%	1	AAG	10/23/17	10148	10/25/17	1:02	MA EPH
o-terphenyl SUR	**67**	40-140	%	1	AAG	10/23/17	10148	10/24/17	22:39	MA EPH
2-fluorobiphenyl SUR	**69**	40-140	%	1	AAG	10/23/17	10148	10/24/17	22:39	MA EPH
2-bromonaphthalene SUR	**70**	40-140	%	1	AAG	10/23/17	10148	10/24/17	22:39	MA EPH

Project ID: 56 Parris Street 229649
Job ID: 42288
Sample#: 42288-004
Sample ID: B3 (2-6')
Matrix: Solid Percent Dry: 88.3% Results expressed on a dry weight basis.
Sampled: 10/17/17 14:30

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
naphthalene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	0:05	MA EPH
2-methylnaphthalene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	0:05	MA EPH
phenanthrene	**0.3**	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	0:05	MA EPH
acenaphthene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	0:05	MA EPH
acenaphthylene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	0:05	MA EPH
fluorene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	0:05	MA EPH
anthracene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	0:05	MA EPH
fluoranthene	**2.8**	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	0:05	MA EPH
pyrene	**2.6**	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	0:05	MA EPH
benzo(a)anthracene	**1.8**	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	0:05	MA EPH
chrysene	**1.5**	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	0:05	MA EPH
benzo(b)fluoranthene	**1.3**	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	0:05	MA EPH
benzo(k)fluoranthene	**1.3**	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	0:05	MA EPH
benzo(a)pyrene	**1.6**	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	0:05	MA EPH
indeno(1,2,3-cd)pyrene	**0.6**	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	0:05	MA EPH
dibenzo(a,h)anthracene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	0:05	MA EPH
benzo(g,h,i)perylene	**0.6**	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	0:05	MA EPH
Unadjusted C11-C22 Aromatics	**130**	21	ug/g	1	AAG	10/23/17	10148	10/24/17	23:08	MA EPH
C9-C18 Aliphatics	< 21	21	ug/g	1	AAG	10/23/17	10148	10/25/17	1:30	MA EPH
C19-C36 Aliphatics	**92**	21	ug/g	1	AAG	10/23/17	10148	10/25/17	1:30	MA EPH
C11-C22 Aromatics	**110**	21	ug/g	1	AAG	10/23/17	10148	10/24/17	23:08	MA EPH
Surrogate Recovery		**Limits**								
1-chloro-octadecane SUR	**71**	40-140	%	1	AAG	10/23/17	10148	10/25/17	1:30	MA EPH
o-terphenyl SUR	**62**	40-140	%	1	AAG	10/23/17	10148	10/24/17	23:08	MA EPH
2-fluorobiphenyl SUR	**69**	40-140	%	1	AAG	10/23/17	10148	10/24/17	23:08	MA EPH
2-bromonaphthalene SUR	**70**	40-140	%	1	AAG	10/23/17	10148	10/24/17	23:08	MA EPH

Project ID: 56 Parris Street 229649
Job ID: 42288
Sample#: 42288-005
Sample ID: B4 (0-2')
Matrix: Solid Percent Dry: 91.5% Results expressed on a dry weight basis.
Sampled: 10/17/17 15:05

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
naphthalene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	20:54	MA EPH
2-methylnaphthalene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	20:54	MA EPH
phenanthrene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	20:54	MA EPH
acenaphthene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	20:54	MA EPH
acenaphthylene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	20:54	MA EPH
fluorene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	20:54	MA EPH
anthracene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	20:54	MA EPH
fluoranthene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	20:54	MA EPH
pyrene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	20:54	MA EPH
benzo(a)anthracene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	20:54	MA EPH
chrysene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	20:54	MA EPH
benzo(b)fluoranthene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	20:54	MA EPH
benzo(k)fluoranthene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	20:54	MA EPH
benzo(a)pyrene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	20:54	MA EPH
indeno(1,2,3-cd)pyrene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	20:54	MA EPH
dibenzo(a,h)anthracene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	20:54	MA EPH
benzo(g,h,i)perylene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	20:54	MA EPH
Unadjusted C11-C22 Aromatics	< 21	21	ug/g	1	AAG	10/23/17	10148	10/25/17	19:19	MA EPH
C9-C18 Aliphatics	< 21	21	ug/g	1	AAG	10/23/17	10148	10/25/17	20:16	MA EPH
C19-C36 Aliphatics	< 21	21	ug/g	1	AAG	10/23/17	10148	10/25/17	20:16	MA EPH
C11-C22 Aromatics	< 21	21	ug/g	1	AAG	10/23/17	10148	10/25/17	19:19	MA EPH
Surrogate Recovery		**Limits**								
1-chloro-octadecane SUR	**69**	40-140	%	1	AAG	10/23/17	10148	10/25/17	20:16	MA EPH
o-terphenyl SUR	**63**	40-140	%	1	AAG	10/23/17	10148	10/25/17	19:19	MA EPH
2-fluorobiphenyl SUR	**69**	40-140	%	1	AAG	10/23/17	10148	10/25/17	19:19	MA EPH
2-bromonaphthalene SUR	**69**	40-140	%	1	AAG	10/23/17	10148	10/25/17	19:19	MA EPH

Project ID: 56 Parris Street 229649
Job ID: 42288
Sample#: 42288-006
Sample ID: B4 (2-6')
Matrix: Solid Percent Dry: 85.9% Results expressed on a dry weight basis.
Sampled: 10/17/17 15:40

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
naphthalene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	7:03	MA EPH
2-methylnaphthalene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	7:03	MA EPH
phenanthrene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	7:03	MA EPH
acenaphthene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	7:03	MA EPH
acenaphthylene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	7:03	MA EPH
fluorene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	7:03	MA EPH
anthracene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	7:03	MA EPH
fluoranthene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	7:03	MA EPH
pyrene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	7:03	MA EPH
benzo(a)anthracene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	7:03	MA EPH
chrysene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	7:03	MA EPH
benzo(b)fluoranthene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	7:03	MA EPH
benzo(k)fluoranthene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	7:03	MA EPH
benzo(a)pyrene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	7:03	MA EPH
indeno(1,2,3-cd)pyrene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	7:03	MA EPH
dibenzo(a,h)anthracene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	7:03	MA EPH
benzo(g,h,i)perylene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	7:03	MA EPH
Unadjusted C11-C22 Aromatics	**120**	23	ug/g	1	AAG	10/23/17	10148	10/25/17	4:21	MA EPH
C9-C18 Aliphatics	< 23	23	ug/g	1	AAG	10/23/17	10148	10/25/17	6:43	MA EPH
C19-C36 Aliphatics	**270**	23	ug/g	1	AAG	10/23/17	10148	10/25/17	6:43	MA EPH
C11-C22 Aromatics	**120**	23	ug/g	1	AAG	10/23/17	10148	10/25/17	4:21	MA EPH
Surrogate Recovery		**Limits**								
1-chloro-octadecane SUR	**62**	40-140	%	1	AAG	10/23/17	10148	10/25/17	6:43	MA EPH
o-terphenyl SUR	**60**	40-140	%	1	AAG	10/23/17	10148	10/25/17	4:21	MA EPH
2-fluorobiphenyl SUR	**69**	40-140	%	1	AAG	10/23/17	10148	10/25/17	4:21	MA EPH
2-bromonaphthalene SUR	**71**	40-140	%	1	AAG	10/23/17	10148	10/25/17	4:21	MA EPH

Project ID: 56 Parris Street 229649
Job ID: 42288
Sample#: 42288-007
Sample ID: B2 (0-2')
Matrix: Solid Percent Dry: 85.8% Results expressed on a dry weight basis.
Sampled: 10/17/17 16:05

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
naphthalene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	21:32	MA EPH
2-methylnaphthalene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	21:32	MA EPH
phenanthrene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	21:32	MA EPH
acenaphthene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	21:32	MA EPH
acenaphthylene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	21:32	MA EPH
fluorene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	21:32	MA EPH
anthracene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	21:32	MA EPH
fluoranthene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	21:32	MA EPH
pyrene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	21:32	MA EPH
benzo(a)anthracene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	21:32	MA EPH
chrysene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	21:32	MA EPH
benzo(b)fluoranthene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	21:32	MA EPH
benzo(k)fluoranthene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	21:32	MA EPH
benzo(a)pyrene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	21:32	MA EPH
indeno(1,2,3-cd)pyrene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	21:32	MA EPH
dibenzo(a,h)anthracene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	21:32	MA EPH
benzo(g,h,i)perylene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/24/17	21:32	MA EPH
Unadjusted C11-C22 Aromatics	< 22	22	ug/g	1	AAG	10/23/17	10148	10/25/17	19:47	MA EPH
C9-C18 Aliphatics	< 22	22	ug/g	1	AAG	10/23/17	10148	10/25/17	20:45	MA EPH
C19-C36 Aliphatics	< 22	22	ug/g	1	AAG	10/23/17	10148	10/25/17	20:45	MA EPH
C11-C22 Aromatics	< 22	22	ug/g	1	AAG	10/23/17	10148	10/25/17	19:47	MA EPH
Surrogate Recovery		**Limits**								
1-chloro-octadecane SUR	**63**	40-140	%	1	AAG	10/23/17	10148	10/25/17	20:45	MA EPH
o-terphenyl SUR	**67**	40-140	%	1	AAG	10/23/17	10148	10/25/17	19:47	MA EPH
2-fluorobiphenyl SUR	**69**	40-140	%	1	AAG	10/23/17	10148	10/25/17	19:47	MA EPH
2-bromonaphthalene SUR	**70**	40-140	%	1	AAG	10/23/17	10148	10/25/17	19:47	MA EPH

Project ID: 56 Parris Street 229649
Job ID: 42288
Sample#: 42288-008
Sample ID: B2 (2-6')
Matrix: Solid Percent Dry: 88.2% Results expressed on a dry weight basis.
Sampled: 10/17/17 16:25

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
naphthalene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	0:43	MA EPH
2-methylnaphthalene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	0:43	MA EPH
phenanthrene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	0:43	MA EPH
acenaphthene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	0:43	MA EPH
acenaphthylene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	0:43	MA EPH
fluorene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	0:43	MA EPH
anthracene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	0:43	MA EPH
fluoranthene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	0:43	MA EPH
pyrene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	0:43	MA EPH
benzo(a)anthracene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	0:43	MA EPH
chrysene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	0:43	MA EPH
benzo(b)fluoranthene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	0:43	MA EPH
benzo(k)fluoranthene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	0:43	MA EPH
benzo(a)pyrene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	0:43	MA EPH
indeno(1,2,3-cd)pyrene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	0:43	MA EPH
dibenzo(a,h)anthracene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	0:43	MA EPH
benzo(g,h,i)perylene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	0:43	MA EPH
Unadjusted C11-C22 Aromatics	**77**	22	ug/g	1	AAG	10/23/17	10148	10/25/17	5:18	MA EPH
C9-C18 Aliphatics	< 22	22	ug/g	1	AAG	10/23/17	10148	10/25/17	7:40	MA EPH
C19-C36 Aliphatics	**110**	22	ug/g	1	AAG	10/23/17	10148	10/25/17	7:40	MA EPH
C11-C22 Aromatics	**76**	22	ug/g	1	AAG	10/23/17	10148	10/25/17	5:18	MA EPH
Surrogate Recovery		**Limits**								
1-chloro-octadecane SUR	**81**	40-140	%	1	AAG	10/23/17	10148	10/25/17	7:40	MA EPH
o-terphenyl SUR	**77**	40-140	%	1	AAG	10/23/17	10148	10/25/17	5:18	MA EPH
2-fluorobiphenyl SUR	**72**	40-140	%	1	AAG	10/23/17	10148	10/25/17	5:18	MA EPH
2-bromonaphthalene SUR	**73**	40-140	%	1	AAG	10/23/17	10148	10/25/17	5:18	MA EPH

Project ID: 56 Parris Street 229649
Job ID: 42288
Sample#: 42288-009
Sample ID: EQUIP BLANK
Matrix: Water
Sampled: 10/17/17 11:20

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
naphthalene	< 1.0	1.0	ug/L	1	CL	10/23/17	10156	10/24/17	20:16	MA EPH
2-methylnaphthalene	< 1.0	1.0	ug/L	1	CL	10/23/17	10156	10/24/17	20:16	MA EPH
phenanthrene	< 1.0	1.0	ug/L	1	CL	10/23/17	10156	10/24/17	20:16	MA EPH
acenaphthene	< 1.0	1.0	ug/L	1	CL	10/23/17	10156	10/24/17	20:16	MA EPH
acenaphthylene	< 1.0	1.0	ug/L	1	CL	10/23/17	10156	10/24/17	20:16	MA EPH
fluorene	< 1.0	1.0	ug/L	1	CL	10/23/17	10156	10/24/17	20:16	MA EPH
anthracene	< 1.0	1.0	ug/L	1	CL	10/23/17	10156	10/24/17	20:16	MA EPH
fluoranthene	< 1.0	1.0	ug/L	1	CL	10/23/17	10156	10/24/17	20:16	MA EPH
pyrene	< 1.0	1.0	ug/L	1	CL	10/23/17	10156	10/24/17	20:16	MA EPH
benzo(a)anthracene	< 1.0	1.0	ug/L	1	CL	10/23/17	10156	10/24/17	20:16	MA EPH
chrysene	< 1.0	1.0	ug/L	1	CL	10/23/17	10156	10/24/17	20:16	MA EPH
benzo(b)fluoranthene	< 1.0	1.0	ug/L	1	CL	10/23/17	10156	10/24/17	20:16	MA EPH
benzo(k)fluoranthene	< 1.0	1.0	ug/L	1	CL	10/23/17	10156	10/24/17	20:16	MA EPH
benzo(a)pyrene	< 0.4	0.4	ug/L	1	CL	10/23/17	10156	10/24/17	20:16	MA EPH
indeno(1,2,3-cd)pyrene	< 1.0	1.0	ug/L	1	CL	10/23/17	10156	10/24/17	20:16	MA EPH
dibenzo(a,h)anthracene	< 1.0	1.0	ug/L	1	CL	10/23/17	10156	10/24/17	20:16	MA EPH
benzo(g,h,i)perylene	< 1.0	1.0	ug/L	1	CL	10/23/17	10156	10/24/17	20:16	MA EPH
Unadjusted C11-C22 Aromatics	< 100	100	ug/L	1	AAG	10/23/17	10156	10/25/17	21:13	MA EPH
C9-C18 Aliphatics	< 100 J	100	ug/L	1	AAG	10/23/17	10156	10/25/17	21:42	MA EPH
C19-C36 Aliphatics	< 100	100	ug/L	1	AAG	10/23/17	10156	10/25/17	21:42	MA EPH
C11-C22 Aromatics	< 100	100	ug/L	1	AAG	10/23/17	10156	10/25/17	21:13	MA EPH
Surrogate Recovery		**Limits**								
1-chloro-octadecane SUR	**60**	40-140	%	1	AAG	10/23/17	10156	10/25/17	21:42	MA EPH
o-terphenyl SUR	**54**	40-140	%	1	AAG	10/23/17	10156	10/25/17	21:13	MA EPH
2-fluorobiphenyl SUR	**61**	40-140	%	1	AAG	10/23/17	10156	10/25/17	21:13	MA EPH
2-bromonaphthalene SUR	**62**	40-140	%	1	AAG	10/23/17	10156	10/25/17	21:13	MA EPH

J = Result is an estimate. See case narrative.

Project ID: 56 Parris Street 229649
Job ID: 42288
Sample#: 42288-010
Sample ID: FD-1
Matrix: Solid Percent Dry: 86.7% Results expressed on a dry weight basis.
Sampled: 10/17/17 0:00

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
naphthalene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	7:41	MA EPH
2-methylnaphthalene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	7:41	MA EPH
phenanthrene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	7:41	MA EPH
acenaphthene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	7:41	MA EPH
acenaphthylene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	7:41	MA EPH
fluorene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	7:41	MA EPH
anthracene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	7:41	MA EPH
fluoranthene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	7:41	MA EPH
pyrene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	7:41	MA EPH
benzo(a)anthracene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	7:41	MA EPH
chrysene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	7:41	MA EPH
benzo(b)fluoranthene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	7:41	MA EPH
benzo(k)fluoranthene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	7:41	MA EPH
benzo(a)pyrene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	7:41	MA EPH
indeno(1,2,3-cd)pyrene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	7:41	MA EPH
dibenzo(a,h)anthracene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	7:41	MA EPH
benzo(g,h,i)perylene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	7:41	MA EPH
Unadjusted C11-C22 Aromatics	**160**	23	ug/g	1	AAG	10/23/17	10148	10/25/17	5:46	MA EPH
C9-C18 Aliphatics	< 23	23	ug/g	1	AAG	10/23/17	10148	10/25/17	8:08	MA EPH
C19-C36 Aliphatics	**300**	23	ug/g	1	AAG	10/23/17	10148	10/25/17	8:08	MA EPH
C11-C22 Aromatics	**150**	23	ug/g	1	AAG	10/23/17	10148	10/25/17	5:46	MA EPH
Surrogate Recovery		**Limits**								
1-chloro-octadecane SUR	**64**	40-140	%	1	AAG	10/23/17	10148	10/25/17	8:08	MA EPH
o-terphenyl SUR	**68**	40-140	%	1	AAG	10/23/17	10148	10/25/17	5:46	MA EPH
2-fluorobiphenyl SUR	**78**	40-140	%	1	AAG	10/23/17	10148	10/25/17	5:46	MA EPH
2-bromonaphthalene SUR	**80**	40-140	%	1	AAG	10/23/17	10148	10/25/17	5:46	MA EPH

Project ID: 56 Parris Street 229649
Job ID: 42288
Sample#: 42288-011
Sample ID: WC-1
Matrix: Solid Percent Dry: 86.1% Results expressed on a dry weight basis.
Sampled: 10/17/17 16:40

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
naphthalene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	5:47	MA EPH
2-methylnaphthalene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	5:47	MA EPH
phenanthrene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	5:47	MA EPH
acenaphthene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	5:47	MA EPH
acenaphthylene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	5:47	MA EPH
fluorene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	5:47	MA EPH
anthracene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	5:47	MA EPH
fluoranthene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	5:47	MA EPH
pyrene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	5:47	MA EPH
benzo(a)anthracene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	5:47	MA EPH
chrysene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	5:47	MA EPH
benzo(b)fluoranthene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	5:47	MA EPH
benzo(k)fluoranthene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	5:47	MA EPH
benzo(a)pyrene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	5:47	MA EPH
indeno(1,2,3-cd)pyrene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	5:47	MA EPH
dibenzo(a,h)anthracene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	5:47	MA EPH
benzo(g,h,i)perylene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	5:47	MA EPH
Unadjusted C11-C22 Aromatics	**140**	22	ug/g	1	AAG	10/23/17	10148	10/25/17	6:15	MA EPH
C9-C18 Aliphatics	< 22	22	ug/g	1	AAG	10/23/17	10148	10/25/17	8:37	MA EPH
C19-C36 Aliphatics	**210**	22	ug/g	1	AAG	10/23/17	10148	10/25/17	8:37	MA EPH
C11-C22 Aromatics	**140**	22	ug/g	1	AAG	10/23/17	10148	10/25/17	6:15	MA EPH
Surrogate Recovery		**Limits**								
1-chloro-octadecane SUR	**72**	40-140	%	1	AAG	10/23/17	10148	10/25/17	8:37	MA EPH
o-terphenyl SUR	**72**	40-140	%	1	AAG	10/23/17	10148	10/25/17	6:15	MA EPH
2-fluorobiphenyl SUR	**72**	40-140	%	1	AAG	10/23/17	10148	10/25/17	6:15	MA EPH
2-bromonaphthalene SUR	**74**	40-140	%	1	AAG	10/23/17	10148	10/25/17	6:15	MA EPH

Project ID: 56 Parris Street 229649
Job ID: 42288
Sample#: 42288-012
Sample ID: WC-2
Matrix: Solid Percent Dry: 90.5% Results expressed on a dry weight basis.
Sampled: 10/17/17 16:55

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
naphthalene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	6:25	MA EPH
2-methylnaphthalene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	6:25	MA EPH
phenanthrene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	6:25	MA EPH
acenaphthene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	6:25	MA EPH
acenaphthylene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	6:25	MA EPH
fluorene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	6:25	MA EPH
anthracene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	6:25	MA EPH
fluoranthene	**0.9**	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	6:25	MA EPH
pyrene	**0.9**	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	6:25	MA EPH
benzo(a)anthracene	**0.5**	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	6:25	MA EPH
chrysene	**0.5**	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	6:25	MA EPH
benzo(b)fluoranthene	**0.5**	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	6:25	MA EPH
benzo(k)fluoranthene	**0.3**	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	6:25	MA EPH
benzo(a)pyrene	**0.5**	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	6:25	MA EPH
indeno(1,2,3-cd)pyrene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	6:25	MA EPH
dibenzo(a,h)anthracene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	6:25	MA EPH
benzo(g,h,i)perylene	< 0.2	0.2	ug/g	1	CL	10/23/17	10148	10/25/17	6:25	MA EPH
Unadjusted C11-C22 Aromatics	**70**	22	ug/g	1	AAG	10/23/17	10148	10/25/17	22:10	MA EPH
C9-C18 Aliphatics	< 22	22	ug/g	1	AAG	10/23/17	10148	10/25/17	22:39	MA EPH
C19-C36 Aliphatics	**89**	22	ug/g	1	AAG	10/23/17	10148	10/25/17	22:39	MA EPH
C11-C22 Aromatics	**65**	22	ug/g	1	AAG	10/23/17	10148	10/25/17	22:10	MA EPH
Surrogate Recovery		**Limits**								
1-chloro-octadecane SUR	**68**	40-140	%	1	AAG	10/23/17	10148	10/25/17	22:39	MA EPH
o-terphenyl SUR	**62**	40-140	%	1	AAG	10/23/17	10148	10/25/17	22:10	MA EPH
2-fluorobiphenyl SUR	**68**	40-140	%	1	AAG	10/23/17	10148	10/25/17	22:10	MA EPH
2-bromonaphthalene SUR	**68**	40-140	%	1	AAG	10/23/17	10148	10/25/17	22:10	MA EPH

Project ID: 56 Parris Street 229649
Job ID: 42288

Sample#: 42288-001
Sample ID: B1 (0.5-2.5')
Matrix: Solid Percent Dry: 81.6% Results expressed on a dry weight basis.
Sampled: 10/17/17 8:25

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Arsenic	**11**	2.4	ug/g	5	AGN	10/20/17	10146	10/23/17	15:57	SW3051A6020A
Lead	**1800**	2.4	ug/g	5	AGN	10/20/17	10146	10/23/17	15:57	SW3051A6020A

Sample#: 42288-002
Sample ID: B1 (2.5-6.0')
Matrix: Solid Percent Dry: 85.2% Results expressed on a dry weight basis.
Sampled: 10/17/17 9:05

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Arsenic	**25**	2.3	ug/g	5	AGN	10/20/17	10146	10/23/17	16:04	SW3051A6020A
Lead	**650**	2.3	ug/g	5	AGN	10/20/17	10146	10/23/17	16:04	SW3051A6020A

Sample#: 42288-003
Sample ID: B3 (0-2')
Matrix: Solid Percent Dry: 93.2% Results expressed on a dry weight basis.
Sampled: 10/17/17 14:10

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Arsenic	**6.3**	1.9	ug/g	5	AGN	10/20/17	10146	10/23/17	16:11	SW3051A6020A
Lead	**91**	1.9	ug/g	5	AGN	10/20/17	10146	10/23/17	16:11	SW3051A6020A

Sample#: 42288-004
Sample ID: B3 (2-6')
Matrix: Solid Percent Dry: 88.3% Results expressed on a dry weight basis.
Sampled: 10/17/17 14:30

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Arsenic	**18** D	2.1	ug/g	5	AGN	10/20/17	10146	10/23/17	16:38	SW3051A6020A

Note: The percent recovery for the matrix spike was outside the acceptance criteria.

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Lead	**340** D	2.1	ug/g	5	AGN	10/20/17	10146	10/23/17	16:38	SW3051A6020A

Note: The percent recovery for the matrix spike was outside the acceptance criteria.
D = The RPD for the sample duplicate, run as internal QC, was outside the 20% acceptance range.

Sample#: 42288-005
Sample ID: B4 (0-2')
Matrix: Solid Percent Dry: 91.5% Results expressed on a dry weight basis.
Sampled: 10/17/17 15:05

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Arsenic	**5.9**	1.8	ug/g	5	AGN	10/20/17	10146	10/23/17	16:58	SW3051A6020A
Lead	**23**	1.8	ug/g	5	AGN	10/20/17	10146	10/24/17	19:24	SW3051A6020A

Project ID: 56 Parris Street 229649
Job ID: 42288

Sample#: 42288-006
Sample ID: B4 (2-6')
Matrix: Solid Percent Dry: 85.9% Results expressed on a dry weight basis.
Sampled: 10/17/17 15:40

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Arsenic	**14**	2.3	ug/g	5	AGN	10/20/17	10146	10/23/17	17:04	SW3051A6020A
Lead	**590**	2.3	ug/g	5	AGN	10/20/17	10146	10/23/17	17:04	SW3051A6020A

Sample#: 42288-007
Sample ID: B2 (0-2')
Matrix: Solid Percent Dry: 85.8% Results expressed on a dry weight basis.
Sampled: 10/17/17 16:05

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Arsenic	**11**	2.5	ug/g	5	AGN	10/20/17	10146	10/23/17	17:11	SW3051A6020A
Lead	**300**	2.5	ug/g	5	AGN	10/20/17	10146	10/23/17	17:11	SW3051A6020A

Sample#: 42288-008
Sample ID: B2 (2-6')
Matrix: Solid Percent Dry: 88.2% Results expressed on a dry weight basis.
Sampled: 10/17/17 16:25

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Arsenic	**12**	2.1	ug/g	5	AGN	10/20/17	10146	10/23/17	17:18	SW3051A6020A
Lead	**110**	2.1	ug/g	5	AGN	10/20/17	10146	10/24/17	19:31	SW3051A6020A

Sample#: 42288-009
Sample ID: EQUIP BLANK
Matrix: Water
Sampled: 10/17/17 11:20

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Arsenic	< 0.005	0.005	mg/L	1	AGN	10/23/17	10154	10/23/17	18:52	SW3005A6020A
Lead	< 0.005	0.005	mg/L	1	AGN	10/23/17	10154	10/23/17	18:52	SW3005A6020A

Sample#: 42288-010
Sample ID: FD-1
Matrix: Solid Percent Dry: 86.7% Results expressed on a dry weight basis.
Sampled: 10/17/17 0:00

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Arsenic	**14**	1.8	ug/g	5	AGN	10/20/17	10146	10/23/17	17:25	SW3051A6020A
Lead	**630**	1.8	ug/g	5	AGN	10/20/17	10146	10/23/17	17:25	SW3051A6020A

Project ID: 56 Parris Street 229649
Job ID: 42288

Sample#: 42288-011
Sample ID: WC-1
Matrix: Solid Percent Dry: 86.1% Results expressed on a dry weight basis.
Sampled: 10/17/17 16:40

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Arsenic	**14**	2.0	ug/g	5	AGN	10/20/17	10146	10/23/17	17:31	SW3051A6020A
Barium	**88**	4	ug/g	5	AGN	10/20/17	10146	10/23/17	17:31	SW3051A6020A
Cadmium	**0.4**	0.4	ug/g	5	AGN	10/20/17	10146	10/23/17	17:31	SW3051A6020A
Chromium	**25**	4	ug/g	5	AGN	10/20/17	10146	10/23/17	17:31	SW3051A6020A
Lead	**210**	2.0	ug/g	5	AGN	10/20/17	10146	10/24/17	19:37	SW3051A6020A
Mercury	**0.23**	0.16	ug/g	1	AJD	10/26/17	10161	10/26/17	16:46	SW7471B
Selenium	< 4	4	ug/g	5	AGN	10/20/17	10146	10/23/17	17:31	SW3051A6020A
Silver	< 2.0	2.0	ug/g	5	AGN	10/20/17	10146	10/23/17	17:31	SW3051A6020A

Sample#: 42288-012
Sample ID: WC-2
Matrix: Solid Percent Dry: 90.5% Results expressed on a dry weight basis.
Sampled: 10/17/17 16:55

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Arsenic	**9.3**	2.2	ug/g	5	AGN	10/20/17	10146	10/23/17	17:38	SW3051A6020A
Barium	**51**	4	ug/g	5	AGN	10/20/17	10146	10/23/17	17:38	SW3051A6020A
Cadmium	**1.0**	0.4	ug/g	5	AGN	10/20/17	10146	10/23/17	17:38	SW3051A6020A
Chromium	**16**	4	ug/g	5	AGN	10/20/17	10146	10/23/17	17:38	SW3051A6020A
Lead	**220**	2.2	ug/g	5	AGN	10/20/17	10146	10/23/17	17:38	SW3051A6020A
Mercury	**0.30**	0.15	ug/g	1	AJD	10/26/17	10161	10/26/17	16:48	SW7471B
Selenium	< 4	4	ug/g	5	AGN	10/20/17	10146	10/23/17	17:38	SW3051A6020A
Silver	< 2.2	2.2	ug/g	5	AGN	10/20/17	10146	10/23/17	17:38	SW3051A6020A

Project ID: 56 Parris Street 229649
Job ID: 42288

Sample#: 42288-011
Sample ID: WC-1
Matrix: Solid Percent Dry: 86.1% Results expressed on a dry weight basis.
Sampled: 10/17/17 16:40

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Cyanide, total	< 0.6	0.6	ug/g	1	APA		1703148	10/23/17		E9014
Percent Solids	**86.1**	1.0	%	1	AMK		1703196	10/23/17		SM2540B,G
Sulfide-soluble	< 0.5	0.5	ug/g	1	APA		1703167	10/24/17		SM4500-S2 D+F
Ignitability	**>140**		deg F	1	AJD		1703250	10/30/17		SW1010
pH	**8.8**		pH	1	APA		1703145	10/23/17	3:10	SW9045C

Sample#: 42288-012
Sample ID: WC-2
Matrix: Solid Percent Dry: 90.5% Results expressed on a dry weight basis.
Sampled: 10/17/17 16:55

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Cyanide, total	< 0.6	0.6	ug/g	1	APA		1703148	10/23/17		E9014
Percent Solids	**90.5**	1.0	%	1	AMK		1703196	10/23/17		SM2540B,G
Sulfide-soluble	< 0.4	0.4	ug/g	1	APA		1703167	10/24/17		SM4500-S2 D+F
Ignitability	**>140**		deg F	1	AJD		1703250	10/30/17		SW1010
pH	**9.0**		pH	1	APA		1703145	10/23/17	3:15	SW9045C

Project ID: 229649 56 Parris Street
Job ID: 42288
Sample #: 42288-014
Sample ID: B1 (0.5-2.5')
Matrix: TCLP Extract
Sampled: 10/17/17 8:25
TCLP: 10/31/17

Parameter	Result	Reporting Limit	TCLP Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Lead	**1.9**	0.050	5	mg/L	1	AGN	11/1/17	10172	11/1/17	19:50	SW1311 SW3005A6020A

Sample #: 42288-015
Sample ID: B1 (2.5-6.0')
Matrix: TCLP Extract
Sampled: 10/17/17 9:05
TCLP: 10/31/17

Parameter	Result	Reporting Limit	TCLP Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Lead	**20**	0.050	5	mg/L	1	AGN	11/1/17	10172	11/1/17	19:58	SW1311 SW3005A6020A

Sample #: 42288-016
Sample ID: B3 (2-6')
Matrix: TCLP Extract
Sampled: 10/17/17 14:30
TCLP: 10/31/17

Parameter	Result	Reporting Limit	TCLP Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Lead	**0.21**	0.050	5	mg/L	1	AGN	11/1/17	10172	11/1/17	20:05	SW1311 SW3005A6020A

Sample #: 42288-017
Sample ID: B4 (2-6')
Matrix: TCLP Extract
Sampled: 10/17/17 15:40
TCLP: 10/31/17

Parameter	Result	Reporting Limit	TCLP Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Lead	**0.31**	0.050	5	mg/L	1	AGN	11/1/17	10172	11/1/17	20:52	SW1311 SW3005A6020A

Sample #: 42288-018
Sample ID: B2 (0-2')
Matrix: TCLP Extract
Sampled: 10/17/17 16:05
TCLP: 10/31/17

Parameter	Result	Reporting Limit	TCLP Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Lead	**0.40**	0.050	5	mg/L	1	AGN	11/1/17	10172	11/1/17	20:59	SW1311 SW3005A6020A

Sample #: 42288-019
Sample ID: B2 (2-6')
Matrix: TCLP Extract
Sampled: 10/17/17 16:25
TCLP: 10/31/17

Parameter	Result	Reporting Limit	TCLP Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Lead	**0.35**	0.050	5	mg/L	1	AGN	11/1/17	10172	11/1/17	21:07	SW1311 SW3005A6020A

Project ID: 229649 56 Parris Street
Job ID: 42288
Sample #: 42288-020
Sample ID: FD-1
Matrix: TCLP Extract
Sampled: 10/17/17 0:00
TCLP: 10/31/17

Parameter	Result	Reporting Limit	TCLP Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Lead	**0.39**	0.050	5	mg/L	1	AGN	11/1/17	10172	11/1/17	21:15	SW1311 SW3005A6020A

Sample #: 42288-021
Sample ID: WC-1
Matrix: TCLP Extract
Sampled: 10/17/17 16:40
TCLP: 10/31/17

Parameter	Result	Reporting Limit	TCLP Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Lead	**0.22**	0.050	5	mg/L	1	AGN	11/1/17	10172	11/1/17	21:22	SW1311 SW3005A6020A

Sample #: 42288-022
Sample ID: WC-2
Matrix: TCLP Extract
Sampled: 10/17/17 16:55
TCLP: 10/31/17

Parameter	Result	Reporting Limit	TCLP Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Lead	**1.4**	0.050	5	mg/L	1	AGN	11/1/17	10172	11/1/17	21:30	SW1311 SW3005A6020A

Quality Control Report

124 Heritage Avenue Unit 16
Portsmouth, NH 03801
www.absoluteresourceassociates.com

Case Narrative
Lab # 42288

Sample Receiving and Chain of Custody Discrepancies

Samples were received in acceptable condition, in three coolers, at 2, 3, and 4 degrees C, on ice, and in accordance with sample handling, preservation and integrity guidelines.

Calibration

No exceptions noted.

Method Blank

No exceptions noted.

Surrogate Recoveries

No exceptions noted.

Laboratory Control Sample Results

VOC: The MLCS/D10152 did not meet the acceptance criteria for vinyl chloride. Since <10% of the compounds were outside of the acceptance criteria, reanalysis is not required.
SVOC: The LCS10149 did not meet the acceptance criteria for hexachlorocyclopentadiene, 4-nitrophenol, and pentachlorophenol. Since <10% of the compounds were outside of the acceptance criteria, reanalysis is not required.
Pesticides: The LCS10151 did not meet the acceptance criteria for Endrin Aldehyde. The reported results are estimates. The results have been qualified accordingly.
EPH: The LCS10148 did not meet the acceptance criteria for naphthalene. Since <10% of the compounds were outside of the acceptance criteria, reanalysis is not required. The relative percent difference between the LCS and LCSD10148 was outside the acceptance criteria for benzo(k)fluoranthene. The percent recovery for this analyte in each QC parameter was within the acceptance criteria. No impact to the data suspected.

EPH: The LCSD10156 did not meet the acceptance criteria for naphthalene. Since <10% of the compounds were outside of the acceptance criteria, reanalysis is not required. The relative percent difference between the LCS and LCSD10156 was outside the acceptance criteria for C19-C36 Aliphatics. The percent recovery for this analyte in each QC parameter was within the acceptance criteria. No impact to the data suspected.

EPH: Two of the components (C9 and C10) that make up the range, C9-C18 Aliphatics, for the LCS/D10156 were below the acceptance criteria. The overall range concentration is acceptable. The results have been qualified accordingly.

Matrix Spike/Matrix Spike Duplicate/Duplicate Results

Metals: The percent recovery for arsenic and lead in the matrix spike (42288-004) was outside the acceptance criteria. All other batch QC was within acceptance. The relative percent differene between the sample and sample duplicate (42288-004) was outside the acceptance criteria for arsenic and lead. Matrix interference is suspected.

Other

Reporting Limits: Dilutions performed during the analysis are noted on the result pages.

No other exceptions noted.

GLOSSARY

%R	Percent Recovery
BLK	Blank (Method Blank, Preparation Blank)
CCB	Continuing Calibration Blank
CCV	Continuing Calibration Verification
Dil'n	Dilution
DL	Detection Limit
DUP	Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection
LOQ	Limit of Quantitation
MB	Methanol Blank (associated with solid VOC samples)
MLCS	Methanol Laboratory Control Sample (associated with solid VOC samples)
MLCSD	Methanol Laboratory Control Sample Duplicate (associated with solid VOC samples)
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PB	Preparation Blank
QC	Quality Control
RL	Reporting Limit
RPD	Relative Percent Difference
SUR	Surrogate

Method	QC ID	Parameter	Associated Sample		Result	Units	Amt Added	%R	Limits		RPD	RPD Limit
MA VPH	MB10153	Unadjusted C5-C8 Aliphatics		<	5	ug/g						
		Unadjusted C9-C12 Aliphatics		<	5	ug/g						
		methyl t-butyl ether (MTBE)		<	0.1	ug/g						
		benzene		<	0.1	ug/g						
		toluene		<	0.1	ug/g						
		ethylbenzene		<	0.1	ug/g						
		m&p-xylenes		<	0.1	ug/g						
		o-xylene		<	0.1	ug/g						
		naphthalene		<	0.2	ug/g						
		C5-C8 Aliphatics		<	5	ug/g						
		C9-C12 Aliphatics		<	5	ug/g						
		C9-C10 Aromatics		<	5	ug/g						
		2,5-dibromotoluene as Aromatic SUR			103	%			70	130		
		2,5-dibromotoluene as Aliphatic SUR			102	%			70	130		
		a,a,a-trifluorotoluene SUR			88	%			70	130		
MA VPH	MLCS10153	Unadjusted C5-C8 Aliphatics			32.8	ug/g	30	109	70	130		
		Unadjusted C9-C12 Aliphatics			45.9	ug/g	40	115	70	130		
		methyl t-butyl ether (MTBE)			5.5	ug/g	5	110	70	130		
		benzene			5.2	ug/g	5	104	70	130		
		toluene			5.2	ug/g	5	104	70	130		
		ethylbenzene			5.2	ug/g	5	105	70	130		
		m&p-xylenes			11	ug/g	10	106	70	130		
		o-xylene			5.2	ug/g	5	104	70	130		
		naphthalene			5.2	ug/g	5	105	70	130		
		C5-C8 Aliphatics			15	ug/g	15	100	70	130		
		C9-C12 Aliphatics			16	ug/g	15	109	70	130		
		C9-C10 Aromatics			5.5	ug/g	5	111	70	130		
		2,5-dibromotoluene as Aromatic SUR			107	%			70	130		
		2,5-dibromotoluene as Aliphatic SUR			104	%			70	130		
		a,a,a-trifluorotoluene SUR			103	%			70	130		
MA VPH	MLCSD10153	Unadjusted C5-C8 Aliphatics			31.8	ug/g	30	106	70	130	3	25
		Unadjusted C9-C12 Aliphatics			44.7	ug/g	40	112	70	130	3	25
		methyl t-butyl ether (MTBE)			5.3	ug/g	5	106	70	130	3	25
		benzene			5.2	ug/g	5	103	70	130	1	25
		toluene			5.1	ug/g	5	103	70	130	1	25
		ethylbenzene			5.2	ug/g	5	103	70	130	1	25
		m&p-xylenes			10	ug/g	10	105	70	130	1	25
		o-xylene			5.1	ug/g	5	103	70	130	1	25
		naphthalene			5.0	ug/g	5	100	70	130	4	25
		C5-C8 Aliphatics			14	ug/g	15	95	70	130	6	25
		C9-C12 Aliphatics			15	ug/g	15	103	70	130	6	25
		C9-C10 Aromatics			5.5	ug/g	5	111	70	130	0	25
		2,5-dibromotoluene as Aromatic SUR			103	%			70	130		
		2,5-dibromotoluene as Aliphatic SUR			100	%			70	130		
		a,a,a-trifluorotoluene SUR			91	%			70	130		

Method	QC ID	Parameter	Associated Sample		Result	Units	Amt Added	%R	Limits	RPD	RPD Limit
SW5035A8260C	MB10152	dichlorodifluoromethane		<	0.1	ug/g					
		chloromethane		<	0.1	ug/g					
		vinyl chloride		<	0.1	ug/g					
		bromomethane		<	0.2	ug/g					
		chloroethane		<	0.1	ug/g					
		trichlorofluoromethane		<	0.1	ug/g					
		diethyl ether		<	0.5	ug/g					
		acetone		<	2.5	ug/g					
		1,1-dichloroethene		<	0.1	ug/g					
		methylene chloride		<	0.2	ug/g					
		carbon disulfide		<	0.1	ug/g					
		methyl t-butyl ether (MTBE)		<	0.1	ug/g					
		trans-1,2-dichloroethene		<	0.1	ug/g					
		isopropyl ether (DIPE)		<	0.1	ug/g					
		ethyl t-butyl ether (ETBE)		<	0.1	ug/g					
		1,1-dichloroethane		<	0.1	ug/g					
		t-butanol (TBA)		<	2.5	ug/g					
		2-butanone (MEK)		<	0.3	ug/g					
		2,2-dichloropropane		<	0.1	ug/g					
		cis-1,2-dichloroethene		<	0.1	ug/g					
		chloroform		<	0.1	ug/g					
		bromochloromethane		<	0.1	ug/g					
		tetrahydrofuran (THF)		<	0.5	ug/g					
		1,1,1-trichloroethane		<	0.1	ug/g					
		1,1-dichloropropene		<	0.1	ug/g					
		t-amyl-methyl ether (TAME)		<	0.1	ug/g					
		carbon tetrachloride		<	0.1	ug/g					
		1,2-dichloroethane		<	0.1	ug/g					
		benzene		<	0.1	ug/g					
		trichloroethene		<	0.1	ug/g					
		1,2-dichloropropane		<	0.1	ug/g					
		bromodichloromethane		<	0.1	ug/g					
		1,4-dioxane		<	2.5	ug/g					
		dibromomethane		<	0.1	ug/g					
		4-methyl-2-pentanone (MIBK)		<	0.4	ug/g					
		cis-1,3-dichloropropene		<	0.1	ug/g					
		toluene		<	0.1	ug/g					
		trans-1,3-dichloropropene		<	0.1	ug/g					
		2-hexanone		<	0.5	ug/g					
		1,1,2-trichloroethane		<	0.1	ug/g					
		1,3-dichloropropane		<	0.1	ug/g					
		tetrachloroethene		<	0.1	ug/g					
		dibromochloromethane		<	0.1	ug/g					
		1,2-dibromoethane (EDB)		<	0.1	ug/g					
		chlorobenzene		<	0.1	ug/g					
		1,1,1,2-tetrachloroethane		<	0.1	ug/g					
		ethylbenzene		<	0.1	ug/g					
		m&p-xylenes		<	0.1	ug/g					
		o-xylene		<	0.1	ug/g					
		styrene		<	0.1	ug/g					
		bromoform		<	0.1	ug/g					

Method	QC ID	Parameter	Associated Sample		Result	Units	Amt Added	%R	Limits		RPD	RPD Limit
SW5035A8260C	MB10152	isopropylbenzene		<	0.1	ug/g						
		1,1,2,2-tetrachloroethane		<	0.1	ug/g						
		1,2,3-trichloropropane		<	0.1	ug/g						
		n-propylbenzene		<	0.1	ug/g						
		bromobenzene		<	0.1	ug/g						
		1,3,5-trimethylbenzene		<	0.1	ug/g						
		2-chlorotoluene		<	0.1	ug/g						
		4-chlorotoluene		<	0.1	ug/g						
		tert-butylbenzene		<	0.1	ug/g						
		1,2,4-trimethylbenzene		<	0.1	ug/g						
		sec-butylbenzene		<	0.1	ug/g						
		1,3-dichlorobenzene		<	0.1	ug/g						
		4-isopropyltoluene		<	0.1	ug/g						
		1,4-dichlorobenzene		<	0.1	ug/g						
		1,2-dichlorobenzene		<	0.1	ug/g						
		n-butylbenzene		<	0.1	ug/g						
		1,2-dibromo-3-chloropropane (DBCP)		<	0.1	ug/g						
		1,2,4-trichlorobenzene		<	0.1	ug/g						
		1,3,5-trichlorobenzene		<	0.1	ug/g						
		hexachlorobutadiene		<	0.1	ug/g						
		naphthalene		<	0.2	ug/g						
		1,2,3-trichlorobenzene		<	0.1	ug/g						
		dibromofluoromethane SUR			89	%			78	114		
		toluene-D8 SUR			98	%			88	110		
		4-bromofluorobenzene SUR			95	%			86	115		
		a,a,a-trifluorotoluene SUR			89	%			70	130		

Method	QC ID	Parameter	Associated Sample		Result	Units	Amt Added	%R		Limits		RPD	RPD Limit
SW5035A8260C	MLCS10152	dichlorodifluoromethane			0.7	ug/g	1	75		70	130		
		chloromethane			0.8	ug/g	1	78		70	130		
		vinyl chloride			0.7	ug/g	1	67	*	70	130		
		bromomethane			0.9	ug/g	1	86		70	130		
		chloroethane			1.1	ug/g	1	106		70	130		
		trichlorofluoromethane			0.9	ug/g	1	94		70	130		
		diethyl ether			1.0	ug/g	1	105		70	130		
		acetone		<	2.5	ug/g	1	123					
		1,1-dichloroethene			1.0	ug/g	1	96		70	130		
		methylene chloride			1.0	ug/g	1	99		70	130		
		carbon disulfide			0.7	ug/g	1	70		70	130		
		methyl t-butyl ether (MTBE)			0.9	ug/g	1	95		70	130		
		trans-1,2-dichloroethene			0.9	ug/g	1	93		70	130		
		isopropyl ether (DIPE)			0.9	ug/g	1	91		70	130		
		ethyl t-butyl ether (ETBE)			0.9	ug/g	1	86		70	130		
		1,1-dichloroethane			1.0	ug/g	1	97		70	130		
		t-butanol (TBA)			5.8	ug/g	5	116		70	130		
		2-butanone (MEK)			1.3	ug/g	1	128		70	130		
		2,2-dichloropropane			0.9	ug/g	1	90		70	130		
		cis-1,2-dichloroethene			0.9	ug/g	1	89		70	130		
		chloroform			0.9	ug/g	1	90		70	130		
		bromochloromethane			0.9	ug/g	1	91		70	130		
		tetrahydrofuran (THF)			1.2	ug/g	1	119		70	130		
		1,1,1-trichloroethane			0.9	ug/g	1	87		70	130		
		1,1-dichloropropene			1.0	ug/g	1	96		70	130		
		t-amyl-methyl ether (TAME)			0.9	ug/g	1	88		70	130		
		carbon tetrachloride			0.9	ug/g	1	88		70	130		
		1,2-dichloroethane			1.0	ug/g	1	98		70	130		
		benzene			0.9	ug/g	1	93		70	130		
		trichloroethene			0.9	ug/g	1	88		70	130		
		1,2-dichloropropane			1.0	ug/g	1	103		70	130		
		bromodichloromethane			0.8	ug/g	1	83		70	130		
		1,4-dioxane		<	2.5	ug/g	2	109		70	130		
		dibromomethane			0.9	ug/g	1	95		70	130		
		4-methyl-2-pentanone (MIBK)			1.1	ug/g	1	107		70	130		
		cis-1,3-dichloropropene			1.0	ug/g	1	97		70	130		
		toluene			0.8	ug/g	1	85		70	130		
		trans-1,3-dichloropropene			1.0	ug/g	1	98		70	130		
		2-hexanone			1.1	ug/g	1	114		70	130		
		1,1,2-trichloroethane			1.0	ug/g	1	100		70	130		
		1,3-dichloropropane			1.1	ug/g	1	107		70	130		
		tetrachloroethene			1.0	ug/g	1	98		70	130		
		dibromochloromethane			0.8	ug/g	1	81		70	130		
		1,2-dibromoethane (EDB)			1.0	ug/g	1	102		70	130		
		chlorobenzene			1.0	ug/g	1	97		70	130		
		1,1,1,2-tetrachloroethane			0.9	ug/g	1	93		70	130		
		ethylbenzene			0.9	ug/g	1	93		70	130		
		m&p-xylenes			1.9	ug/g	2	93		70	130		
		o-xylene			1.0	ug/g	1	98		70	130		
		styrene			1.0	ug/g	1	99		70	130		
		bromoform			0.9	ug/g	1	86		70	130		

Method	QC ID	Parameter	Associated Sample	Result	Units	Amt Added	%R	Limits		RPD	RPD Limit
SW5035A8260C	MLCS10152	isopropylbenzene		1.0	ug/g	1	96	70	130		
		1,1,2,2-tetrachloroethane		1.0	ug/g	1	105	70	130		
		1,2,3-trichloropropane		1.2	ug/g	1	119	70	130		
		n-propylbenzene		1.0	ug/g	1	97	70	130		
		bromobenzene		1.0	ug/g	1	104	70	130		
		1,3,5-trimethylbenzene		1.0	ug/g	1	98	70	130		
		2-chlorotoluene		1.0	ug/g	1	98	70	130		
		4-chlorotoluene		1.0	ug/g	1	99	70	130		
		tert-butylbenzene		0.9	ug/g	1	92	70	130		
		1,2,4-trimethylbenzene		1.0	ug/g	1	100	70	130		
		sec-butylbenzene		0.9	ug/g	1	93	70	130		
		1,3-dichlorobenzene		1.0	ug/g	1	103	70	130		
		4-isopropyltoluene		1.0	ug/g	1	103	70	130		
		1,4-dichlorobenzene		1.1	ug/g	1	106	70	130		
		1,2-dichlorobenzene		1.1	ug/g	1	108	70	130		
		n-butylbenzene		1.0	ug/g	1	102	70	130		
		1,2-dibromo-3-chloropropane (DBCP)		0.9	ug/g	1	95	70	130		
		1,2,4-trichlorobenzene		1.2	ug/g	1	120	70	130		
		1,3,5-trichlorobenzene		1.1	ug/g	1	108	70	130		
		hexachlorobutadiene		1.2	ug/g	1	119	70	130		
		naphthalene		1.2	ug/g	1	118	70	130		
		1,2,3-trichlorobenzene		1.2	ug/g	1	120	70	130		
		dibromofluoromethane SUR		91	%			78	114		
		toluene-D8 SUR		97	%			88	110		
		4-bromofluorobenzene SUR		105	%			86	115		
		a,a,a-trifluorotoluene SUR		92	%			70	130		

Method	QC ID	Parameter	Associated Sample		Result	Units	Amt Added	%R		Limits		RPD	RPD Limit
SW5035A8260C	MLCSD10152	dichlorodifluoromethane			0.7	ug/g	1	73		70	130	2	30
		chloromethane			0.8	ug/g	1	81		70	130	4	30
		vinyl chloride			0.7	ug/g	1	66	*	70	130	1	30
		bromomethane			1.0	ug/g	1	96		70	130	11	30
		chloroethane			1.1	ug/g	1	106		70	130	0	30
		trichlorofluoromethane			0.9	ug/g	1	93		70	130	0	30
		diethyl ether			1.0	ug/g	1	103		70	130	2	30
		acetone		<	2.5	ug/g	1	119				4	30
		1,1-dichloroethene			1.0	ug/g	1	96		70	130	1	30
		methylene chloride			1.0	ug/g	1	97		70	130	2	30
		carbon disulfide			0.7	ug/g	1	70		70	130	1	30
		methyl t-butyl ether (MTBE)			0.9	ug/g	1	94		70	130	1	30
		trans-1,2-dichloroethene			1.0	ug/g	1	96		70	130	3	30
		isopropyl ether (DIPE)			0.9	ug/g	1	92		70	130	1	30
		ethyl t-butyl ether (ETBE)			0.9	ug/g	1	87		70	130	1	30
		1,1-dichloroethane			1.0	ug/g	1	98		70	130	1	30
		t-butanol (TBA)			6.1	ug/g	5	121		70	130	4	30
		2-butanone (MEK)			1.2	ug/g	1	122		70	130	5	30
		2,2-dichloropropane			0.9	ug/g	1	90		70	130	1	30
		cis-1,2-dichloroethene			0.9	ug/g	1	93		70	130	4	30
		chloroform			0.9	ug/g	1	90		70	130	1	30
		bromochloromethane			0.9	ug/g	1	87		70	130	4	30
		tetrahydrofuran (THF)			1.2	ug/g	1	121		70	130	1	30
		1,1,1-trichloroethane			0.9	ug/g	1	87		70	130	0	30
		1,1-dichloropropene			1.0	ug/g	1	96		70	130	0	30
		t-amyl-methyl ether (TAME)			0.9	ug/g	1	88		70	130	0	30
		carbon tetrachloride			0.9	ug/g	1	88		70	130	0	30
		1,2-dichloroethane			0.9	ug/g	1	94		70	130	4	30
		benzene			1.0	ug/g	1	97		70	130	3	30
		trichloroethene			0.9	ug/g	1	91		70	130	2	30
		1,2-dichloropropane			1.0	ug/g	1	101		70	130	1	30
		bromodichloromethane			0.8	ug/g	1	81		70	130	2	30
		1,4-dioxane		<	2.5	ug/g	2	105		70	130	3	30
		dibromomethane			0.9	ug/g	1	90		70	130	4	30
		4-methyl-2-pentanone (MIBK)			1.1	ug/g	1	106		70	130	1	30
		cis-1,3-dichloropropene			0.9	ug/g	1	93		70	130	4	30
		toluene			0.9	ug/g	1	87		70	130	2	30
		trans-1,3-dichloropropene			0.9	ug/g	1	92		70	130	6	30
		2-hexanone			1.1	ug/g	1	113		70	130	1	30
		1,1,2-trichloroethane			1.0	ug/g	1	97		70	130	3	30
		1,3-dichloropropane			1.1	ug/g	1	108		70	130	1	30
		tetrachloroethene			1.1	ug/g	1	105		70	130	7	30
		dibromochloromethane			0.8	ug/g	1	78		70	130	4	30
		1,2-dibromoethane (EDB)			1.0	ug/g	1	100		70	130	2	30
		chlorobenzene			1.0	ug/g	1	104		70	130	6	30
		1,1,1,2-tetrachloroethane			0.9	ug/g	1	92		70	130	1	30
		ethylbenzene			1.0	ug/g	1	102		70	130	9	30
		m&p-xylenes			2.0	ug/g	2	102		70	130	8	30
		o-xylene			1.0	ug/g	1	103		70	130	5	30
		styrene			1.0	ug/g	1	104		70	130	5	30
		bromoform			0.8	ug/g	1	83		70	130	4	30

Method	QC ID	Parameter	Associated Sample	Result	Units	Amt Added	%R	Limits		RPD	RPD Limit
SW5035A8260C	MLCSD10152	isopropylbenzene		1.1	ug/g	1	106	70	130	10	30
		1,1,2,2-tetrachloroethane		1.0	ug/g	1	99	70	130	6	30
		1,2,3-trichloropropane		1.1	ug/g	1	111	70	130	7	30
		n-propylbenzene		1.0	ug/g	1	103	70	130	6	30
		bromobenzene		1.0	ug/g	1	101	70	130	2	30
		1,3,5-trimethylbenzene		1.0	ug/g	1	103	70	130	5	30
		2-chlorotoluene		1.0	ug/g	1	101	70	130	3	30
		4-chlorotoluene		1.0	ug/g	1	99	70	130	0	30
		tert-butylbenzene		1.0	ug/g	1	102	70	130	11	30
		1,2,4-trimethylbenzene		1.0	ug/g	1	102	70	130	2	30
		sec-butylbenzene		1.0	ug/g	1	100	70	130	7	30
		1,3-dichlorobenzene		1.0	ug/g	1	101	70	130	1	30
		4-isopropyltoluene		1.1	ug/g	1	109	70	130	6	30
		1,4-dichlorobenzene		1.0	ug/g	1	102	70	130	3	30
		1,2-dichlorobenzene		1.0	ug/g	1	102	70	130	6	30
		n-butylbenzene		1.1	ug/g	1	109	70	130	6	30
		1,2-dibromo-3-chloropropane (DBCP)		0.9	ug/g	1	90	70	130	6	30
		1,2,4-trichlorobenzene		1.2	ug/g	1	116	70	130	4	30
		1,3,5-trichlorobenzene		1.1	ug/g	1	108	70	130	1	30
		hexachlorobutadiene		1.2	ug/g	1	119	70	130	0	30
		naphthalene		1.2	ug/g	1	116	70	130	2	30
		1,2,3-trichlorobenzene		1.2	ug/g	1	120	70	130	0	30
		dibromofluoromethane SUR		90	%			78	114		
		toluene-D8 SUR		95	%			88	110		
		4-bromofluorobenzene SUR		108	%			86	115		
		a,a,a-trifluorotoluene SUR		97	%			70	130		

Method	QC ID	Parameter	Associated Sample		Result	Units	Amt Added	%R		Limits		RPD	RPD Limit
MA EPH	BLK10148	naphthalene		<	0.2	ug/g							
		2-methylnaphthalene		<	0.2	ug/g							
		phenanthrene		<	0.2	ug/g							
		acenaphthene		<	0.2	ug/g							
		acenaphthylene		<	0.2	ug/g							
		fluorene		<	0.2	ug/g							
		anthracene		<	0.2	ug/g							
		fluoranthene		<	0.2	ug/g							
		pyrene		<	0.2	ug/g							
		benzo(a)anthracene		<	0.2	ug/g							
		chrysene		<	0.2	ug/g							
		benzo(b)fluoranthene		<	0.2	ug/g							
		benzo(k)fluoranthene		<	0.2	ug/g							
		benzo(a)pyrene		<	0.2	ug/g							
		indeno(1,2,3-cd)pyrene		<	0.2	ug/g							
		dibenzo(a,h)anthracene		<	0.2	ug/g							
		benzo(g,h,i)perylene		<	0.2	ug/g							
		Unadjusted C11-C22 Aromatics		<	20	ug/g							
		C9-C18 Aliphatics		<	20	ug/g							
		C19-C36 Aliphatics		<	20	ug/g							
		C11-C22 Aromatics		<	20	ug/g							
		1-chloro-octadecane SUR			56	%				40	140		
		o-terphenyl SUR			56	%				40	140		
		2-fluorobiphenyl SUR			65	%				40	140		
		2-bromonaphthalene SUR			65	%				40	140		
MA EPH	LCS10148	naphthalene			2.3	ug/g	6	39	*	40	140		
		2-methylnaphthalene			2.6	ug/g	6	43		40	140		
		phenanthrene			2.9	ug/g	6	48		40	140		
		acenaphthene			2.4	ug/g	6	40		40	140		
		acenaphthylene			2.6	ug/g	6	43		40	140		
		fluorene			2.9	ug/g	6	48		40	140		
		anthracene			2.9	ug/g	6	49		40	140		
		fluoranthene			3.1	ug/g	6	52		40	140		
		pyrene			3.2	ug/g	6	54		40	140		
		benzo(a)anthracene			3.7	ug/g	6	62		40	140		
		chrysene			3.7	ug/g	6	62		40	140		
		benzo(b)fluoranthene			3.7	ug/g	6	62		40	140		
		benzo(k)fluoranthene			3.1	ug/g	6	51		40	140		
		benzo(a)pyrene			3.5	ug/g	6	59		40	140		
		indeno(1,2,3-cd)pyrene			3.2	ug/g	6	54		40	140		
		dibenzo(a,h)anthracene			3.2	ug/g	6	54		40	140		
		benzo(g,h,i)perylene			3.3	ug/g	6	55		40	140		
		Unadjusted C11-C22 Aromatics			68	ug/g	102	67		40	140		
		C9-C18 Aliphatics			21	ug/g	36	60		40	140		
		C19-C36 Aliphatics			42	ug/g	48	87		40	140		
		C11-C22 Aromatics		<	20	ug/g							
		1-chloro-octadecane SUR			66	%				40	140		
		o-terphenyl SUR			57	%				40	140		
		2-fluorobiphenyl SUR			61	%				40	140		
		2-bromonaphthalene SUR			61	%				40	140		

Method	QC ID	Parameter	Associated Sample	Result	Units	Amt Added	%R	Limits		RPD		RPD Limit
MA EPH	LCSD10148	naphthalene		2.9	ug/g	6	49	40	140	23		25
		2-methylnaphthalene		3.2	ug/g	6	53	40	140	20		25
		phenanthrene		3.6	ug/g	6	60	40	140	21		25
		acenaphthene		2.9	ug/g	6	48	40	140	18		25
		acenaphthylene		3.1	ug/g	6	51	40	140	17		25
		fluorene		3.5	ug/g	6	58	40	140	18		25
		anthracene		3.4	ug/g	6	57	40	140	16		25
		fluoranthene		3.8	ug/g	6	64	40	140	20		25
		pyrene		3.8	ug/g	6	63	40	140	15		25
		benzo(a)anthracene		4.3	ug/g	6	72	40	140	15		25
		chrysene		4.3	ug/g	6	72	40	140	15		25
		benzo(b)fluoranthene		4.0	ug/g	6	66	40	140	7		25
		benzo(k)fluoranthene		4.1	ug/g	6	68	40	140	28	*	25
		benzo(a)pyrene		4.2	ug/g	6	70	40	140	17		25
		indeno(1,2,3-cd)pyrene		3.9	ug/g	6	65	40	140	18		25
		dibenzo(a,h)anthracene		3.7	ug/g	6	62	40	140	14		25
		benzo(g,h,i)perylene		4.0	ug/g	6	66	40	140	18		25
		Unadjusted C11-C22 Aromatics		83	ug/g	102	81	40	140	20		25
		C9-C18 Aliphatics		22	ug/g	36	61	40	140	2		25
		C19-C36 Aliphatics		43	ug/g	48	91	40	140	4		25
		C11-C22 Aromatics		20	ug/g							
		1-chloro-octadecane SUR		64	%			40	140			
		o-terphenyl SUR		66	%			40	140			
		2-fluorobiphenyl SUR		68	%			40	140			
		2-bromonaphthalene SUR		68	%			40	140			

Method	QC ID	Parameter	Associated Sample		Result	Units	Amt Added	%R	Limits		RPD	RPD Limit
MA EPH	BLK10156	naphthalene		<	1.0	ug/L						
		2-methylnaphthalene		<	1.0	ug/L						
		phenanthrene		<	1.0	ug/L						
		acenaphthene		<	1.0	ug/L						
		acenaphthylene		<	1.0	ug/L						
		fluorene		<	1.0	ug/L						
		anthracene		<	1.0	ug/L						
		fluoranthene		<	1.0	ug/L						
		pyrene		<	1.0	ug/L						
		benzo(a)anthracene		<	1.0	ug/L						
		chrysene		<	1.0	ug/L						
		benzo(b)fluoranthene		<	1.0	ug/L						
		benzo(k)fluoranthene		<	1.0	ug/L						
		benzo(a)pyrene		<	0.4	ug/L						
		indeno(1,2,3-cd)pyrene		<	1.0	ug/L						
		dibenzo(a,h)anthracene		<	1.0	ug/L						
		benzo(g,h,i)perylene		<	1.0	ug/L						
		Unadjusted C11-C22 Aromatics		<	100	ug/L						
		C9-C18 Aliphatics		<	100	ug/L						
		C19-C36 Aliphatics		<	100	ug/L						
		C11-C22 Aromatics		<	100	ug/L						
		1-chloro-octadecane SUR			67	%			40	140		
		o-terphenyl SUR			64	%			40	140		
		2-fluorobiphenyl SUR			65	%			40	140		
		2-bromonaphthalene SUR			65	%			40	140		
MA EPH	LCS10156	naphthalene			28	ug/L	60	46	40	140		
		2-methylnaphthalene			30	ug/L	60	50	40	140		
		phenanthrene			36	ug/L	60	61	40	140		
		acenaphthene			28	ug/L	60	47	40	140		
		acenaphthylene			30	ug/L	60	50	40	140		
		fluorene			35	ug/L	60	59	40	140		
		anthracene			36	ug/L	60	60	40	140		
		fluoranthene			39	ug/L	60	65	40	140		
		pyrene			39	ug/L	60	65	40	140		
		benzo(a)anthracene			45	ug/L	60	74	40	140		
		chrysene			44	ug/L	60	74	40	140		
		benzo(b)fluoranthene			42	ug/L	60	70	40	140		
		benzo(k)fluoranthene			41	ug/L	60	69	40	140		
		benzo(a)pyrene			43	ug/L	60	72	40	140		
		indeno(1,2,3-cd)pyrene			41	ug/L	60	68	40	140		
		dibenzo(a,h)anthracene			39	ug/L	60	64	40	140		
		benzo(g,h,i)perylene			41	ug/L	60	69	40	140		
		Unadjusted C11-C22 Aromatics			830	ug/L	1020	81	40	140		
		C9-C18 Aliphatics			210	ug/L	360	59	40	140		
		C19-C36 Aliphatics			460	ug/L	480	96	40	140		
		C11-C22 Aromatics			190	ug/L						
		1-chloro-octadecane SUR			73	%			40	140		
		o-terphenyl SUR			69	%			40	140		
		2-fluorobiphenyl SUR			66	%			40	140		
		2-bromonaphthalene SUR			67	%			40	140		

Method	QC ID	Parameter	Associated Sample	Result	Units	Amt Added	%R		Limits		RPD		RPD Limit
MA EPH	LCSD10156	naphthalene		23	ug/L	60	38	*	40	140	19		25
		2-methylnaphthalene		26	ug/L	60	43		40	140	16		25
		phenanthrene		30	ug/L	60	50		40	140	19		25
		acenaphthene		24	ug/L	60	40		40	140	16		25
		acenaphthylene		25	ug/L	60	42		40	140	18		25
		fluorene		29	ug/L	60	48		40	140	20		25
		anthracene		29	ug/L	60	49		40	140	21		25
		fluoranthene		32	ug/L	60	54		40	140	20		25
		pyrene		32	ug/L	60	53		40	140	22		25
		benzo(a)anthracene		36	ug/L	60	60		40	140	21		25
		chrysene		38	ug/L	60	63		40	140	16		25
		benzo(b)fluoranthene		33	ug/L	60	55		40	140	23		25
		benzo(k)fluoranthene		36	ug/L	60	59		40	140	14		25
		benzo(a)pyrene		36	ug/L	60	61		40	140	17		25
		indeno(1,2,3-cd)pyrene		33	ug/L	60	55		40	140	21		25
		dibenzo(a,h)anthracene		33	ug/L	60	55		40	140	16		25
		benzo(g,h,i)perylene		33	ug/L	60	55		40	140	23		25
		Unadjusted C11-C22 Aromatics		710	ug/L	1020	69		40	140	16		25
		C9-C18 Aliphatics		170	ug/L	360	47		40	140	22		25
		C19-C36 Aliphatics		350	ug/L	480	73		40	140	27	*	25
		C11-C22 Aromatics		180	ug/L								
		1-chloro-octadecane SUR		54	%				40	140			
		o-terphenyl SUR		58	%				40	140			
		2-fluorobiphenyl SUR		66	%				40	140			
		2-bromonaphthalene SUR		66	%				40	140			

Method	QC ID	Parameter	Associated Sample		Result	Units	Amt Added	%R		Limits		RPD	RPD Limit
SW3546/8081B	BLK10151	alpha-BHC		<	0.040	ug/g							
		beta-BHC		<	0.040	ug/g							
		delta-BHC		<	0.040	ug/g							
		gamma-BHC (Lindane)		<	0.040	ug/g							
		Heptachlor		<	0.040	ug/g							
		Aldrin		<	0.040	ug/g							
		Heptachlor Epoxide		<	0.040	ug/g							
		Endosulfan I		<	0.040	ug/g							
		Dieldrin		<	0.040	ug/g							
		4,4'-DDE		<	0.040	ug/g							
		Endrin		<	0.040	ug/g							
		Endosulfan II		<	0.040	ug/g							
		4,4'-DDD		<	0.040	ug/g							
		Endosulfan Sulfate		<	0.040	ug/g							
		4,4'-DDT		<	0.040	ug/g							
		Methoxychlor		<	0.040	ug/g							
		Endrin Ketone		<	0.040	ug/g							
		Endrin Aldehyde		<	0.040	ug/g							
		alpha-Chlordane		<	0.040	ug/g							
		gamma-Chlordane		<	0.040	ug/g							
		Toxaphene		<	0.40	ug/g							
		tetrachloro-m-xylene SUR			58	%				30	150		
		decachlorobiphenyl SUR			68	%				30	150		
SW3546/8081B	LCS10151	alpha-BHC			0.26	ug/g	0.4	66		40	140		
		beta-BHC			0.26	ug/g	0.4	65		40	140		
		delta-BHC			0.21	ug/g	0.4	53		40	140		
		gamma-BHC (Lindane)			0.24	ug/g	0.4	60		40	140		
		Heptachlor			0.21	ug/g	0.4	54		40	140		
		Aldrin			0.26	ug/g	0.4	64		40	140		
		Heptachlor Epoxide			0.27	ug/g	0.4	68		40	140		
		Endosulfan I			0.19	ug/g	0.4	47		40	140		
		Dieldrin			0.27	ug/g	0.4	67		40	140		
		4,4'-DDE			0.22	ug/g	0.4	54		40	140		
		Endrin			0.18	ug/g	0.4	46		40	140		
		Endosulfan II			0.23	ug/g	0.4	57		40	140		
		4,4'-DDD			0.23	ug/g	0.4	57		40	140		
		Endosulfan Sulfate			0.21	ug/g	0.4	52		40	140		
		4,4'-DDT			0.25	ug/g	0.4	63		40	140		
		Methoxychlor			0.29	ug/g	0.4	74		40	140		
		Endrin Ketone			0.27	ug/g	0.4	67		40	140		
		Endrin Aldehyde			0.14	ug/g	0.4	35	*	40	140		
		alpha-Chlordane			0.20	ug/g	0.4	49		40	140		
		gamma-Chlordane			0.20	ug/g	0.4	50		40	140		
		Toxaphene		<	0.40	ug/g							
		tetrachloro-m-xylene SUR			92	%				30	150		
		decachlorobiphenyl SUR			102	%				30	150		

Method	QC ID	Parameter	Associated Sample		Result	Units	Amt Added	%R	Limits		RPD	RPD Limit
SW3546/8082A	BLK10150	PCB-1016		<	0.1	ug/g						
		PCB-1221		<	0.1	ug/g						
		PCB-1232		<	0.1	ug/g						
		PCB-1242		<	0.1	ug/g						
		PCB-1248		<	0.1	ug/g						
		PCB-1254		<	0.1	ug/g						
		PCB-1260		<	0.1	ug/g						
		tetrachloro-m-xylene SUR			97	%			30	150		
		decachlorobiphenyl SUR			95	%			30	150		
SW3546/8082A	LCS10150	PCB-1016			2.0	ug/g	2	101	40	140		
		PCB-1221		<	0.1	ug/g						
		PCB-1232		<	0.1	ug/g						
		PCB-1242		<	0.1	ug/g						
		PCB-1248		<	0.1	ug/g						
		PCB-1254		<	0.1	ug/g						
		PCB-1260			2.0	ug/g	2	101	40	140		
		tetrachloro-m-xylene SUR			110	%			30	150		
		decachlorobiphenyl SUR			112	%			30	150		
SW3546/8082A	LCSD10150	PCB-1016			2.2	ug/g	2	109	40	140	7	30
		PCB-1221		<	0.1	ug/g						
		PCB-1232		<	0.1	ug/g						
		PCB-1242		<	0.1	ug/g						
		PCB-1248		<	0.1	ug/g						
		PCB-1254		<	0.1	ug/g						
		PCB-1260			2.1	ug/g	2	106	40	140	5	30
		tetrachloro-m-xylene SUR			115	%			30	150		
		decachlorobiphenyl SUR			110	%			30	150		

Method	QC ID	Parameter	Associated Sample		Result	Units	Amt Added	%R	Limits	RPD	RPD Limit
SW3546/8270D	BLK10149	pyridine		<	0.19	ug/g					
		N-nitrosodimethylamine		<	0.19	ug/g					
		aniline		<	0.19	ug/g					
		phenol		<	0.19	ug/g					
		2-chlorophenol		<	0.49	ug/g					
		bis(2-chloroethyl)ether		<	0.19	ug/g					
		1,3-dichlorobenzene		<	0.19	ug/g					
		1,4-dichlorobenzene		<	0.19	ug/g					
		1,2-dichlorobenzene		<	0.19	ug/g					
		benzyl alcohol		<	0.19	ug/g					
		2-methylphenol		<	0.19	ug/g					
		2,2'-oxybis(1-chloropropane)		<	0.19	ug/g					
		hexachloroethane		<	0.19	ug/g					
		N-nitroso-di-N-propylamine		<	0.19	ug/g					
		4-methylphenol		<	0.19	ug/g					
		nitrobenzene		<	0.19	ug/g					
		isophorone		<	0.49	ug/g					
		2-nitrophenol		<	0.19	ug/g					
		2,4-dimethylphenol		<	0.19	ug/g					
		bis(2-chloroethoxy)methane		<	0.19	ug/g					
		2,4-dichlorophenol		<	0.49	ug/g					
		1,2,4-trichlorobenzene		<	0.49	ug/g					
		naphthalene		<	0.049	ug/g					
		benzoic acid		<	4.9	ug/g					
		4-chloroaniline		<	0.19	ug/g					
		hexachlorobutadiene		<	0.19	ug/g					
		4-chloro-3-methylphenol		<	0.19	ug/g					
		2-methylnaphthalene		<	0.049	ug/g					
		hexachlorocyclopentadiene		<	0.97	ug/g					
		2,4,6-trichlorophenol		<	0.19	ug/g					
		2,4,5-trichlorophenol		<	0.19	ug/g					
		2-chloronaphthalene		<	0.49	ug/g					
		2-nitroaniline		<	0.19	ug/g					
		acenaphthylene		<	0.049	ug/g					
		dimethylphthalate		<	0.49	ug/g					
		2,6-dinitrotoluene		<	0.19	ug/g					
		2,4-dinitrotoluene		<	0.19	ug/g					
		acenaphthene		<	0.049	ug/g					
		3-nitroaniline		<	0.19	ug/g					
		2,4-dinitrophenol		<	4.9	ug/g					
		dibenzofuran		<	0.049	ug/g					
		4-nitrophenol		<	0.97	ug/g					
		fluorene		<	0.049	ug/g					
		diethyl phthalate		<	0.49	ug/g					
		4-chlorophenyl phenyl ether		<	0.49	ug/g					
		4-nitroaniline		<	0.49	ug/g					
		4,6-dinitro-2-methylphenol		<	1.9	ug/g					
		azobenzene		<	0.19	ug/g					
		N-nitrosodiphenylamine		<	0.19	ug/g					
		4-bromophenyl phenyl ether		<	0.19	ug/g					
		hexachlorobenzene		<	0.19	ug/g					

Method	QC ID	Parameter	Associated Sample		Result	Units	Amt Added	%R	Limits		RPD	RPD Limit
SW3546/8270D	BLK10149	pentachlorophenol		<	0.97	ug/g						
		phenanthrene		<	0.049	ug/g						
		anthracene		<	0.049	ug/g						
		carbazole		<	0.19	ug/g						
		di-n-butylphthalate		<	0.49	ug/g						
		fluoranthene		<	0.049	ug/g						
		benzidine		<	2.9	ug/g						
		pyrene		<	0.049	ug/g						
		butyl benzyl phthalate		<	0.49	ug/g						
		benzo(a)anthracene		<	0.049	ug/g						
		chrysene		<	0.049	ug/g						
		3,3'-dichlorobenzidine		<	2.9	ug/g						
		bis(2-ethylhexyl)phthalate		<	0.49	ug/g						
		di-n-octyl phthalate		<	0.49	ug/g						
		benzo(b)fluoranthene		<	0.049	ug/g						
		benzo(k)fluoranthene		<	0.049	ug/g						
		benzo(a)pyrene		<	0.049	ug/g						
		indeno(1,2,3-cd)pyrene		<	0.049	ug/g						
		dibenzo(a,h)anthracene		<	0.049	ug/g						
		benzo(g,h,i)perylene		<	0.049	ug/g						
		2-fluorophenol SUR			56	%			21	100		
		phenol-D5 SUR			58	%			10	102		
		2,4,6-tribromophenol SUR			55	%			10	123		
		nitrobenzene-D5 SUR			53	%			35	114		
		2-fluorobiphenyl SUR			54	%			43	116		
		p-terphenyl-D14 SUR			75	%			33	141		

Method	QC ID	Parameter	Associated Sample		Result	Units	Amt Added	%R		Limits		RPD	RPD Limit
SW3546/8270D	LCS10149	pyridine			1.6	ug/g	3.88	42		30	130		
		N-nitrosodimethylamine			2.3	ug/g	3.88	60		40	140		
		aniline			2.4	ug/g	3.88	62		40	140		
		phenol			2.9	ug/g	3.88	74		30	130		
		2-chlorophenol			2.7	ug/g	3.88	70		30	130		
		bis(2-chloroethyl)ether			2.6	ug/g	3.88	67		40	140		
		1,3-dichlorobenzene			2.4	ug/g	3.88	61		40	140		
		1,4-dichlorobenzene			2.1	ug/g	3.88	54		40	140		
		1,2-dichlorobenzene			2.2	ug/g	3.88	57		40	140		
		benzyl alcohol			3.1	ug/g	3.88	79		30	130		
		2-methylphenol			3.0	ug/g	3.88	78		30	130		
		2,2'-oxybis(1-chloropropane)			3.0	ug/g	3.88	78		40	140		
		hexachloroethane			2.3	ug/g	3.88	60		40	140		
		N-nitroso-di-N-propylamine			2.9	ug/g	3.88	75		40	140		
		4-methylphenol			3.0	ug/g	3.88	76		30	130		
		nitrobenzene			2.4	ug/g	3.88	63		40	140		
		isophorone			2.7	ug/g	3.88	70		40	140		
		2-nitrophenol			2.3	ug/g	3.88	60		30	130		
		2,4-dimethylphenol			2.5	ug/g	3.88	64		30	130		
		bis(2-chloroethoxy)methane			2.7	ug/g	3.88	69		40	140		
		2,4-dichlorophenol			2.7	ug/g	3.88	71		30	130		
		1,2,4-trichlorobenzene			2.2	ug/g	3.88	56		40	140		
		naphthalene			2.4	ug/g	3.88	61		40	140		
		benzoic acid		<	4.8	ug/g							
		4-chloroaniline			2.3	ug/g	3.88	58		40	140		
		hexachlorobutadiene			2.3	ug/g	3.88	60		40	140		
		4-chloro-3-methylphenol			2.9	ug/g	3.88	75		30	130		
		2-methylnaphthalene			2.6	ug/g	3.88	68		40	140		
		hexachlorocyclopentadiene		<	0.97	ug/g	3.88	25	*	40	140		
		2,4,6-trichlorophenol			2.4	ug/g	3.88	62		30	130		
		2,4,5-trichlorophenol			2.3	ug/g	3.88	60		30	130		
		2-chloronaphthalene			2.4	ug/g	3.88	61		40	140		
		2-nitroaniline			2.7	ug/g	3.88	70		40	140		
		acenaphthylene			2.2	ug/g	3.88	58		40	140		
		dimethylphthalate			2.9	ug/g	3.88	75		40	140		
		2,6-dinitrotoluene			2.8	ug/g	3.88	73		40	140		
		2,4-dinitrotoluene			2.6	ug/g	3.88	67		40	140		
		acenaphthene			2.1	ug/g	3.88	54		40	140		
		3-nitroaniline			2.8	ug/g	3.88	73		40	140		
		2,4-dinitrophenol		<	4.8	ug/g							
		dibenzofuran			2.6	ug/g	3.88	67		40	140		
		4-nitrophenol			1.1	ug/g	3.88	27	*	30	130		
		fluorene			2.6	ug/g	3.88	67		40	140		
		diethyl phthalate			2.7	ug/g	3.88	69		40	140		
		4-chlorophenyl phenyl ether			2.5	ug/g	3.88	65		40	140		
		4-nitroaniline			2.5	ug/g	3.88	66		40	140		
		4,6-dinitro-2-methylphenol		<	1.9	ug/g							
		azobenzene			2.7	ug/g	3.88	71		40	140		
		N-nitrosodiphenylamine			3.0	ug/g	3.88	78		40	140		
		4-bromophenyl phenyl ether			2.6	ug/g	3.88	67		40	140		
		hexachlorobenzene			2.9	ug/g	3.88	76		40	140		

Method	QC ID	Parameter	Associated Sample		Result	Units	Amt Added	%R		Limits		RPD	RPD Limit
SW3546/8270D	LCS10149	pentachlorophenol		<	0.97	ug/g	3.88	24	*	30	130		
		phenanthrene			2.8	ug/g	3.88	72		40	140		
		anthracene			2.7	ug/g	3.88	68		40	140		
		carbazole			3.2	ug/g	3.88	82		40	140		
		di-n-butylphthalate			2.7	ug/g	3.88	69		40	140		
		fluoranthene			2.8	ug/g	3.88	73		40	140		
		benzidine		<	2.9	ug/g							
		pyrene			2.8	ug/g	3.88	72		40	140		
		butyl benzyl phthalate			3.0	ug/g	3.88	78		40	140		
		benzo(a)anthracene			3.2	ug/g	3.88	83		40	140		
		chrysene			3.1	ug/g	3.88	80		40	140		
		3,3'-dichlorobenzidine		<	2.9	ug/g							
		bis(2-ethylhexyl)phthalate			3.5	ug/g	3.88	89		40	140		
		di-n-octyl phthalate			3.3	ug/g	3.88	85		40	140		
		benzo(b)fluoranthene			2.6	ug/g	3.88	67		40	140		
		benzo(k)fluoranthene			3.1	ug/g	3.88	79		40	140		
		benzo(a)pyrene			3.2	ug/g	3.88	82		40	140		
		indeno(1,2,3-cd)pyrene			2.9	ug/g	3.88	74		40	140		
		dibenzo(a,h)anthracene			2.8	ug/g	3.88	72		40	140		
		benzo(g,h,i)perylene			3.0	ug/g	3.88	78		40	140		
		2-fluorophenol SUR			67	%				21	100		
		phenol-D5 SUR			69	%				10	102		
		2,4,6-tribromophenol SUR			68	%				10	123		
		nitrobenzene-D5 SUR			63	%				35	114		
		2-fluorobiphenyl SUR			65	%				43	116		
		p-terphenyl-D14 SUR			81	%				33	141		

Method	QC ID	Parameter	Associated Sample		Result	Units	Amt Added	%R	Limits		RPD	RPD Limit
SW3005A6020A	BLK10154	Arsenic		<	0.005	mg/L						
		Lead		<	0.005	mg/L						
SW3005A6020A	LCS10154	Arsenic			0.48	mg/L	0.5	96	80	120		
		Lead			0.50	mg/L	0.5	100	80	120		
SW3005A6020A	LCSD10154	Arsenic			0.51	mg/L	0.5	101	80	120	5	20
		Lead			0.52	mg/L	0.5	104	80	120	4	20
SW3005A6020A	MS10154	Arsenic	42298-005		0.49	mg/L	0.5	97	75	125		
		Lead	42298-005		0.53	mg/L	0.5	106	75	125		
SW3005A6020A	MSD10154	Arsenic	42298-005		0.51	mg/L	0.5	101	75	125	4	20
		Lead	42298-005		0.54	mg/L	0.5	108	75	125	2	20
SW3005A6020A	BLK10172	Lead		<	0.005	mg/L						
SW3005A6020A	DUP10172	Lead	42288-016		0.22	mg/L					1	20
SW3005A6020A	LCS10172	Lead			0.47	mg/L	0.5	93	80	120		
SW3005A6020A	LCSD10172	Lead			0.46	mg/L	0.5	92	80	120	2	20
SW3005A6020A	MS10172	Lead	42288-016		4.3	mg/L	5	82	75	125		

Method	QC ID	Parameter	Associated Sample		Result	Units	Amt Added	%R		Limits		RPD		RPD Limit
SW3051A6020A	BLK10146	Silver		<	2.5	ug/g								
		Arsenic		<	2.5	ug/g								
		Barium		<	5.0	ug/g								
		Cadmium		<	0.50	ug/g								
		Chromium		<	5.0	ug/g								
		Lead		<	2.5	ug/g								
		Selenium		<	5.0	ug/g								
SW3051A6020A	CRM10146	Silver			48.4	ug/g	53.1			30.3	61.1			
		Arsenic			232	ug/g	317			200	360			
		Barium			132	ug/g	175			101	193			
		Cadmium			132	ug/g	155			98.5	171			
		Chromium			261	ug/g	272			203	368			
		Lead			58.0	ug/g	64.1			38.8	79.1			
		Selenium			226	ug/g	323			196	369			
SW3051A6020A	CRMD10146	Silver			49.4	ug/g	53.1			30.3	61.1		2	35
		Arsenic			236	ug/g	317			200	360		2	35
		Barium			126	ug/g	175			101	193		5	35
		Cadmium			131	ug/g	155			98.5	171		0	35
		Chromium			260	ug/g	272			203	368		0	35
		Lead			57.9	ug/g	64.1			38.8	79.1		0	35
		Selenium			230	ug/g	323			196	369		2	35
SW3051A6020A	DUP10146	Arsenic	42288-004		15	ug/g						22 *		20
		Lead	42288-004		140	ug/g						85 *		20
SW3051A6020A	MS10146	Arsenic	42288-004		130	ug/g	164	65	*	75	125			
		Lead	42288-004		250	ug/g	164	-55	*	75	125			
SW7471B	BLK10161	Mercury		<	0.14	ug/g								
SW7471B	CRM10161	Mercury			0.16	ug/g	0.22			0.0908	0.351			
SW7471B	CRMD10161	Mercury		<	0.15	ug/g	0.22			0.0908	0.351		11	35
SW7471B	MS10161	Mercury	42305-002		0.51	ug/g	0.357	104		80	120			

Method	QC ID	Parameter	Associated Sample		Result	Units	Amt Added	%R	Limits		RPD	RPD Limit
E9014	LCS1703148	Cyanide, total			13	ug/g	12	101	75	125		
E9014	LCSD1703148	Cyanide, total			12	ug/g	12	98	75	125	3	20
E9014	PB1703148	Cyanide, total		<	0.5	ug/g						
SM4500-S2 D+F	LCS1703167	Sulfide-soluble			0.91	mg/L	1	91	75	125		
SM4500-S2 D+F	LCSD1703167	Sulfide-soluble			0.91	mg/L	1	91	75	125	1	20
SM4500-S2 D+F	MS1703167	Sulfide-soluble	42320-003		100	mg/L	50	81	75	125		
SM4500-S2 D+F	MSD1703167	Sulfide-soluble	42320-003		100	mg/L	50	81	75	125	0	20
SM4500-S2 D+F	PB1703167	Sulfide-soluble		<	0.04	mg/L						
SW9045C	DUP1703145	pH	42288-012		9.0	pH						

Absolute Resource associates
124 Heritage Avenue #16
Portsmouth, NH 03801
603-436-2001
absoluteresourceassociates.com

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

42288

Company Name: Woodard & Curran
Company Address: 41 Hutchins Dr., Portland, ME
Report To: Jedd Steinglass
Phone #: (207) 756-2319
Invoice to:
Email: jsteinglass@woodardcurran.com
PO #:

Project Name: 56 Parris Street
Project #: 229649
Project Location: NH MA (ME) VT
Accreditation Required? N/Y:
Protocol: RCRA SDWA NPDES MCP NHDES DOD
Reporting Limits: QAPP GW-1 S-1 EPA DW Other
Quote #
☐ NH Reimbursement Pricing

ANALYSIS REQUEST

☐ VOC 8260 ☐ VOC 8260 NHDES ☐ VOC 8260 MADEP ☐ VOC BTEX MtBE, only ☐ VOC 8021VT ☐ VPH MADEP ☐ GRO 8015 ☐ 1,4-Dioxane ☐ VOC 524.2 ☐ VOC 524.2 NH List ☐ Gases-List: ☐ TPH ☐ DRO 8015 ☐ EPH MADEP ☐ TPH Fingerprint ☐ 8270PAH ☐ 8270ABN ☐ 625 ☐ EDB ☐ 8082 PCB ☐ 8081 Pesticides ☐ 608 Pest/PCB ☐ O&G 1664 ☐ Mineral O&G SM5520F ☐ pH ☐ BOD ☐ Conductivity ☐ Turbidity ☐ Apparent Color ☐ TSS ☐ TDS ☐ TS ☐ TVS ☐ Alkalinity ☐ Acidity ☐ RCRA Metals ☐ Priority Pollutant Metals ☐ TAL Metals ☐ Hardness ☐ Total Metals-list: ☐ Dissolved Metals-list: ☐ Ammonia ☐ COD ☐ TKN ☐ TN ☐ TON ☐ TOC ☐ T-Phosphorus ☐ Phenols ☐ Bacteria P/A ☐ Bacteria MPN ☐ Cyanide ☐ Sulfide ☐ Nitrate + Nitrite ☐ Ortho P ☐ Nitrate ☐ Nitrite ☐ Chloride ☐ Sulfate ☐ Bromide ☐ Fluoride ☐ Corrosivity ☐ Reactive CN ☐ Reactive S- ☐ Ignitibility/FP ☐ TCLP Metals ☐ TCLP VOC ☐ TCLP SVOC ☐ TCLP Pesticide Subcontract: ☐ Grain Size ☐ Herbicides ☐ Formaldehyde ☐ PFC

Lab Sample ID (Lab Use Only)	Field ID	# CONTAINERS	Matrix: WATER	SOLID	OTHER	Preservation Method: HCl	HNO_3	H_2SO_4	NaOH	MeOH	Sampling: DATE	TIME	SAMPLER	As, Pb	Grab (G) or Composite (C)
42288-01	B1(0.5-2.5)	2		X							10/17/17	0825	DD	X	G
-02	B1(2.5-6.0')	2		X							10/17/17	0905	DD	X	C
-03	B3(0-2')	2		X							10/17/17	1410	DD	X	G
-04	B3(2-6')	2		X							10/17/17	1430	DD	X	C
-05	B4(0-2')	2		X							10/17/17	1505	DD	X	G
-06	B4(2-6')	2		X							10/17/17	1540	DD	X	C
-07	B2(0-2')	2		X							10/17/17	1605	DD	X	G
-08	B2(2-6')	2		X							10/17/17	1625	DD	X	C
-09	EQUIP BLANK	2	X								10/17/17	1120	DD	X	G
-10	FD-1	2		X							10/17/17		DD	X	C

TAT REQUESTED
Priority (24 hr)* ☐
Expedited (48 hr)* ☐
Standard ☐
(10 Business Days)
*Date Needed 5-day

See absoluteresourceassociates.com for sample acceptance policy and current accreditation lists.

SPECIAL INSTRUCTIONS
Please run TCLP for any single metal that exceeds 20x rule following As + Pb analysis.

REPORTING INSTRUCTIONS ☒ PDF (e-mail address) jsteinglass@woodardcurran.com.
☐ HARD COPY REQUIRED ☒ EDD

RECEIVED ON ICE ☒ YES ☐ NO
TEMPERATURE 2.4.3 °C

CUSTODY RECORD
QSD-01 Revision 10/04/17

	Date	Time		Date	Time
Relinquished by Sampler:	10/17/17	1920	Received by:	10/18/17	1120
Relinquished by:	10/18/17	1540	Received by:		
Relinquished by:			Received by Laboratory:	10/18/17	1540

Absolute Resource associates
124 Heritage Avenue #16
Portsmouth, NH 03801
603-436-2001
absoluteresourceassociates.com

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

42288

Company Name: Woodard & Curran
Company Address: 41 Hutchins Dr., Portland, ME
Report To: Jedd Steinglass
Phone #: (207) 756-2319
Invoice to:
Email: jsteinglass@woodardcurran.com
PO #:

Project Name: 56 Parris Street
Project #: 229649
Project Location: NH MA (ME) VT
Accreditation Required? N/Y:
Protocol: RCRA MCP SDWA NHDES NPDES DOD
Reporting Limits: QAPP EPA DW GW-1 Other S-1
Quote #
☐ NH Reimbursement Pricing

ANALYSIS REQUEST

Lab Sample ID (Lab Use Only)	Field ID	# CONTAINERS	Matrix: WATER	Matrix: SOLID	Matrix: OTHER	Preservation Method: HCl	Preservation Method: HNO_3	Preservation Method: H_2SO_4	Preservation Method: NaOH	Preservation Method: MeOH	Sampling: DATE	Sampling: TIME	Sampling: SAMPLER	☒ VOC 8260 ☐ VOC 8260 NHDES ☐ VOC 8260 MADEP	☐ VOC 624 ☐ VOC BTEX MtBE only ☐ VOC 8021VT	☒ VPH MADEP ☐ GRO 8015 ☐ 1,4-Dioxane	☐ VOC 524.2 ☐ VOC 524.2 NH List ☐ Gases-List:	☐ TPH ☐ DRO 8015 ☒ EPH MADEP ☐ TPH Fingerprint	☐ 8270PAH ☒ 8270ABN ☐ 625 ☐ EDB	☐ 8082 PCB ☒ 8081 Pesticides ☐ 608 Pest/PCB	☐ O&G 1664 ☐ Mineral O&G SM5520F	☐ pH ☐ BOD ☐ Conductivity ☐ Turbidity ☐ Apparent Color	☐ TSS ☐ TDS ☐ TS ☐ TVS ☐ Alkalinity ☐ Acidity	☒ RCRA Metals ☐ Priority Pollutant Metals ☐ TAL Metals ☐ Hardness	☐ Total Metals-list:	☐ Dissolved Metals-list:	☐ Ammonia ☐ COD ☐ TKN ☐ TN ☐ TON ☐ TOC	☐ T-Phosphorus ☐ Phenols ☐ Bacteria P/A ☐ Bacteria MPN	☐ Cyanide ☐ Sulfide ☐ Nitrate + Nitrite ☐ Ortho P	☐ Nitrate ☐ Nitrite ☐ Chloride ☐ Sulfate ☐ Bromide ☐ Fluoride	☒ Corrosivity ☒ Reactive CN ☒ Reactive S- ☒ Ignitibility/FP	☐ TCLP Metals ☐ TCLP VOC ☐ TCLP SVOC ☐ TCLP Pesticide	Subcontract: ☐ Grain Size ☐ Herbicides ☐ Formaldehyde ☐ PFC	% Solids	Herbicides	EOX	Grab (G) or Composite (C)
42288-11	WC-1	6		X							10/17/17	1640	DD	X		X		X	X	X					X								X			X	X	X	C
-12	WC-2	7		X							10/17/17	1655	DD	X		X		X	X	X					X								X			X	X	X	C
-13	TRIP BLANK	1	X							X	-	-		X																									

TAT REQUESTED
Priority (24 hr)* ☐
Expedited (48 hr)* ☐
Standard ☐ (10 Business Days)
*Date Needed 5-day

See absoluteresourceassociates.com for sample acceptance policy and current accreditation lists.

SPECIAL INSTRUCTIONS
Please run TCLP for any single metal that exceeds 20x rule following metals analysis.

REPORTING INSTRUCTIONS ☒ PDF (e-mail address) jsteinglass@woodardcurran.com
☐ HARD COPY REQUIRED ☒ EDD

RECEIVED ON ICE ☒ YES ☐ NO
TEMPERATURE 2.4, 3 °C

CUSTODY RECORD
QSD-01 Revision 10/04/17

	Date	Time		Date	Time
Relinquished by Sampler:	10/17/17	1920	Received by:	10/18/17	1120
Relinquished by:	10/18/17	1540	Received by:		
Relinquished by:			Received by Laboratory:	10/18/17	1540

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING



ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Pittsburgh
301 Alpha Drive
RIDC Park
Pittsburgh, PA 15238
Tel: (412)963-7058

TestAmerica Job ID: 180-71626-1
Client Project/Site: 42288

For:
Absolute Resource Associates
124 Heritage Ave
Unit 16
Portsmouth, New Hampshire 03801

Attn: Mr. Aaron DeWees

Authorized for release by:
10/28/2017 1:39:27 PM

Debra Bowen, Project Manager I
(412)963-2445
debra.bowen@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Cover Page 1
Table of Contents 2
Case Narrative 3
Definitions/Glossary 4
Certification Summary 5
Sample Summary 6
Method Summary 7
Lab Chronicle 8
Client Sample Results 9
QC Sample Results 10
QC Association Summary 12
Chain of Custody 13
Receipt Checklists 15

Job ID: 180-71626-1

Laboratory: TestAmerica Pittsburgh

Narrative

Job Narrative
180-71626-1

Receipt
The samples were received on 10/21/2017 9:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.8º C.

GC Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Accreditation/Certification Summary

Client: Absolute Resource Associates
Project/Site: 42288

TestAmerica Job ID: 180-71626-1

Laboratory: TestAmerica Pittsburgh

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
New Hampshire	NELAP	1	2030	04-04-18

The following analytes are included in this report, but are not accredited/certified under this accreditation/certification:

Analysis Method	Prep Method	Matrix	Analyte
2540G		Solid	Percent Moisture
2540G		Solid	Percent Solids

Sample Summary

Client: Absolute Resource Associates
Project/Site: 42288

TestAmerica Job ID: 180-71626-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
180-71626-1	WC-1	Solid	10/17/17 16:40	10/21/17 09:00
180-71626-2	WC-2	Solid	10/17/17 16:55	10/21/17 09:00

Method Summary

Client: Absolute Resource Associates
Project/Site: 42288

TestAmerica Job ID: 180-71626-1

Method	Method Description	Protocol	Laboratory
8151A	Herbicides (GC)	SW846	TAL PIT
2540G	SM 2540G	SM22	TAL PIT

Protocol References:

SM22 = SM22

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL PIT = TestAmerica Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Lab Chronicle

Client: Absolute Resource Associates
Project/Site: 42288

TestAmerica Job ID: 180-71626-1

Client Sample ID: WC-1
Date Collected: 10/17/17 16:40
Date Received: 10/21/17 09:00

Lab Sample ID: 180-71626-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	2540G		1			226716	10/23/17 15:56	RMA	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: WC-1
Date Collected: 10/17/17 16:40
Date Received: 10/21/17 09:00

Lab Sample ID: 180-71626-1
Matrix: Solid
Percent Solids: 88.4

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8151A			50.0 g	10.0 mL	226938	10/25/17 12:32	BJT	TAL PIT
Total/NA	Analysis	8151A		20			227198	10/27/17 12:29	JMO	TAL PIT
	Instrument ID: CGC1									

Client Sample ID: WC-2
Date Collected: 10/17/17 16:55
Date Received: 10/21/17 09:00

Lab Sample ID: 180-71626-2
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	2540G		1			226716	10/23/17 15:56	RMA	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: WC-2
Date Collected: 10/17/17 16:55
Date Received: 10/21/17 09:00

Lab Sample ID: 180-71626-2
Matrix: Solid
Percent Solids: 91.5

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8151A			50.0 g	10.0 mL	226938	10/25/17 12:32	BJT	TAL PIT
Total/NA	Analysis	8151A		20			227198	10/27/17 12:54	JMO	TAL PIT
	Instrument ID: CGC1									

Laboratory References:

TAL PIT = TestAmerica Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Analyst References:

Lab: TAL PIT

Batch Type: Prep

BJT = Bill Trout

Batch Type: Analysis

JMO = John Oravec

RMA = Rachel Aguiar

Client Sample ID: WC-1

Lab Sample ID: 180-71626-1

Date Collected: 10/17/17 16:40
Matrix: Solid
Date Received: 10/21/17 09:00
Percent Solids: 88.4

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,5-T	ND		23	7.1	ug/Kg	☼	10/25/17 12:32	10/27/17 12:29	20
2,4-D	ND		90	30	ug/Kg	☼	10/25/17 12:32	10/27/17 12:29	20
2,4-DB	ND		90	52	ug/Kg	☼	10/25/17 12:32	10/27/17 12:29	20
Dalapon	ND		100	58	ug/Kg	☼	10/25/17 12:32	10/27/17 12:29	20
Dicamba	ND		45	19	ug/Kg	☼	10/25/17 12:32	10/27/17 12:29	20
Dichlorprop	ND		90	31	ug/Kg	☼	10/25/17 12:32	10/27/17 12:29	20
MCPA	ND		9000	2900	ug/Kg	☼	10/25/17 12:32	10/27/17 12:29	20
MCPP	ND		9000	3500	ug/Kg	☼	10/25/17 12:32	10/27/17 12:29	20
Pentachlorophenol	ND		12	6.8	ug/Kg	☼	10/25/17 12:32	10/27/17 12:29	20
Silvex (2,4,5-TP)	ND		23	7.5	ug/Kg	☼	10/25/17 12:32	10/27/17 12:29	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4-Dichlorophenylacetic acid	*76*		*29 - 100*	*10/25/17 12:32*	*10/27/17 12:29*	*20*
2,4-Dichlorophenylacetic acid	*82*		*29 - 100*	*10/25/17 12:32*	*10/27/17 12:29*	*20*

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	11.6		0.1	0.1	%			10/23/17 15:56	1
Percent Solids	88.4		0.1	0.1	%			10/23/17 15:56	1

Client Sample ID: WC-2

Lab Sample ID: 180-71626-2

Date Collected: 10/17/17 16:55
Matrix: Solid
Date Received: 10/21/17 09:00
Percent Solids: 91.5

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,5-T	ND		22	6.9	ug/Kg	☼	10/25/17 12:32	10/27/17 12:54	20
2,4-D	ND		87	29	ug/Kg	☼	10/25/17 12:32	10/27/17 12:54	20
2,4-DB	ND		87	51	ug/Kg	☼	10/25/17 12:32	10/27/17 12:54	20
Dalapon	ND		98	56	ug/Kg	☼	10/25/17 12:32	10/27/17 12:54	20
Dicamba	ND		44	18	ug/Kg	☼	10/25/17 12:32	10/27/17 12:54	20
Dichlorprop	ND		87	30	ug/Kg	☼	10/25/17 12:32	10/27/17 12:54	20
MCPA	ND		8700	2800	ug/Kg	☼	10/25/17 12:32	10/27/17 12:54	20
MCPP	ND		8700	3300	ug/Kg	☼	10/25/17 12:32	10/27/17 12:54	20
Pentachlorophenol	ND		12	6.6	ug/Kg	☼	10/25/17 12:32	10/27/17 12:54	20
Silvex (2,4,5-TP)	ND		22	7.2	ug/Kg	☼	10/25/17 12:32	10/27/17 12:54	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4-Dichlorophenylacetic acid	*48*		*29 - 100*	*10/25/17 12:32*	*10/27/17 12:54*	*20*
2,4-Dichlorophenylacetic acid	*50*		*29 - 100*	*10/25/17 12:32*	*10/27/17 12:54*	*20*

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	8.5		0.1	0.1	%			10/23/17 15:56	1
Percent Solids	91.5		0.1	0.1	%			10/23/17 15:56	1

Method: 8151A - Herbicides (GC)

Lab Sample ID: MB 180-226938/1-A
Matrix: Solid
Analysis Batch: 227198

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 226938

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,5-T	ND		20	6.3	ug/Kg		10/25/17 12:32	10/27/17 10:50	20
2,4-D	ND		80	26	ug/Kg		10/25/17 12:32	10/27/17 10:50	20
2,4-DB	ND		80	46	ug/Kg		10/25/17 12:32	10/27/17 10:50	20
Dalapon	ND		90	52	ug/Kg		10/25/17 12:32	10/27/17 10:50	20
Dicamba	ND		40	17	ug/Kg		10/25/17 12:32	10/27/17 10:50	20
Dichlorprop	ND		80	27	ug/Kg		10/25/17 12:32	10/27/17 10:50	20
MCPA	ND		8000	2500	ug/Kg		10/25/17 12:32	10/27/17 10:50	20
MCPP	ND		8000	3100	ug/Kg		10/25/17 12:32	10/27/17 10:50	20
Pentachlorophenol	ND		11	6.1	ug/Kg		10/25/17 12:32	10/27/17 10:50	20
Silvex (2,4,5-TP)	ND		20	6.6	ug/Kg		10/25/17 12:32	10/27/17 10:50	20

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4-Dichlorophenylacetic acid	*69*		*29 - 100*	*10/25/17 12:32*	*10/27/17 10:50*	*20*
2,4-Dichlorophenylacetic acid	*74*		*29 - 100*	*10/25/17 12:32*	*10/27/17 10:50*	*20*

Lab Sample ID: LCS 180-226938/2-A
Matrix: Solid
Analysis Batch: 227198

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 226938

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
2,4,5-T			100	69.4		ug/Kg		69	24 - 100		
2,4-D			400	381		ug/Kg		95	17 - 100		
2,4-DB			400	247		ug/Kg		62	18 - 100		
Dalapon			400	219		ug/Kg		55	10 - 100		
Dicamba			200	178		ug/Kg		89	23 - 111		
Dichlorprop			400	310		ug/Kg		78	29 - 100		
MCPA			40000	26100		ug/Kg		65	10 - 123		
MCPP			40000	31400		ug/Kg		78	30 - 102		
Pentachlorophenol			100	108		ug/Kg		108	40 - 140		
Silvex (2,4,5-TP)			100	79.1		ug/Kg		79	36 - 109		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2,4-Dichlorophenylacetic acid	*80*		*29 - 100*
2,4-Dichlorophenylacetic acid	*89*		*29 - 100*

Lab Sample ID: LCSD 180-226938/3-A
Matrix: Solid
Analysis Batch: 227198

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 226938

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
2,4,5-T			100	79.2		ug/Kg		79	24 - 100	13	40
2,4-D			400	292		ug/Kg		73	17 - 100	11	40
2,4-DB			400	293		ug/Kg		73	18 - 100	17	40
Dalapon			400	216		ug/Kg		54	10 - 100	14	40
Dicamba			200	195		ug/Kg		97	23 - 111	9	40
Dichlorprop			400	352		ug/Kg		88	29 - 100	13	40
MCPA			40000	29800		ug/Kg		74	10 - 123	13	40

Method: 8151A - Herbicides (GC) (Continued)

Lab Sample ID: LCSD 180-226938/3-A
Matrix: Solid
Analysis Batch: 227198

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 226938

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
MCPP			40000	35600		ug/Kg		89	30 - 102	13	40
Pentachlorophenol			100	128		ug/Kg		128	40 - 140	17	38
Silvex (2,4,5-TP)			100	94.5		ug/Kg		94	36 - 109	18	40

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2,4-Dichlorophenylacetic acid	*88*		*29 - 100*
2,4-Dichlorophenylacetic acid	*93*		*29 - 100*

Method: 2540G - SM 2540G

Lab Sample ID: 180-71626-1 DU
Matrix: Solid
Analysis Batch: 226716

Client Sample ID: WC-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Percent Moisture	11.6			10.7		%				7	20
Percent Solids	88.4			89.3		%				0.9	20

QC Association Summary

Client: Absolute Resource Associates
Project/Site: 42288

TestAmerica Job ID: 180-71626-1

GC Semi VOA

Prep Batch: 226938

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-71626-1	WC-1	Total/NA	Solid	8151A	
180-71626-2	WC-2	Total/NA	Solid	8151A	
MB 180-226938/1-A	Method Blank	Total/NA	Solid	8151A	
LCS 180-226938/2-A	Lab Control Sample	Total/NA	Solid	8151A	
LCSD 180-226938/3-A	Lab Control Sample Dup	Total/NA	Solid	8151A	

Analysis Batch: 227198

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-71626-1	WC-1	Total/NA	Solid	8151A	226938
180-71626-2	WC-2	Total/NA	Solid	8151A	226938
MB 180-226938/1-A	Method Blank	Total/NA	Solid	8151A	226938
LCS 180-226938/2-A	Lab Control Sample	Total/NA	Solid	8151A	226938
LCSD 180-226938/3-A	Lab Control Sample Dup	Total/NA	Solid	8151A	226938

General Chemistry

Analysis Batch: 226716

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-71626-1	WC-1	Total/NA	Solid	2540G	
180-71626-2	WC-2	Total/NA	Solid	2540G	
180-71626-1 DU	WC-1	Total/NA	Solid	2540G	

Absolute Resource associates

SUBCONTRACT CHAIN OF CUSTODY DOCUMENTATION

Client:	Absolute Resource Associates	Contact:	Aaron DeWees	Phone: 603-436-2001 Fax:	Page 1 of 1
Report to:	Aaron DeWees/Jane Stratton	Address:	124 Heritage Ave, #16	Project Name/Number: 42288	
Invoice to:	cathyd@absoluteresourceassociates.com		Portsmouth, NH 03801	Project State: NH MA (ME) VT	
PO#: 42288	Quote #:			Protocol: RCRA SDWA NPDES MCP NHDES Other	

Lab Number: (assigned by laboratory)	Field ID: (must agree with container)	Date Sampled	Time Sampled	Sampled By	Container Size (mL)	Container Type (P/G/T)	Field Preservation	Matrix S=Soil W=Water	Analyses Requested: Special Instructions:
	WC-1	10/17/17	1640	—	—	G	—	S	Herbicides
	WC-2	"	1655	—	—	G	—	S	"

180-71626 Chain of Custody

Subcontract Laboratory: Pittsburg

Relinquished by: M Almond (ARA)	Date: 10/20/17	Time: 1140	Received by:	Date: 10-20-17	Time: 1700
Relinquished by:	Date: 10-20-17	Time: 1800	Received by: Pauline Watson TAP	Date: 10/21/17	Time: 9:00
Relinquished by:	Date:	Time:	Received by:	Date:	Time:

Reporting Instructions: PDF (Email Address: aarond@absoluteresourceassociates.com; janes@absoluteresourceassociates.com)

Received on ice? (Y) N

Temp:

Excel File: Y / N

TAT Requested: ~~Priority (24hr)~~ ~~Expedited (48hr)~~ ~~10 Business days~~ → Date needed: 5day TAT / ASAP w/out surcharge. Thanks!

Comments:

QSD-21 4/15/16 Rev0 ajd (pg 1/1)



N ID:BXCA (781) 466-6900
HOBART
MERICA
EAR HILL ROAD
104
AM, MA 02451
D STATES US

SHIP DATE: 20OCT17
ACTWGT: 10.70 LB
CAD: 590687/CAFE3108

BILL RECIPIENT

546C4/94FC/53C1

AMPLE RECEIVING
ESTAMERICA PITTSBURGH
1 ALPHA DRIVE
DC PARK
TTSBURGH PA 15238
83-7068 REF:
DEPT:

FedEx
Express

J171016102001uv

180-71626 Waybill

SATURDAY 12:00P
4258 8392 3260 PRIORITY OVERNIGHT

) AGCA 15238

rrected temp 1.8 °C
mometer ID 13
0 Initials TB

SR-001 effective 7/26/13

Temperature Controlled

THIS SHIPMENT DELAYED IN ANSIT, STORE INDICATED.

- [ ] Healthcare
- [ ] Room Temperature 15° to 25° C / 59° to 77° F
- [x] Refrigerated 2° to 8° C / 36° to 47° F
- [ ] Frozen -25° to -10° C / -13° to 14° F

167078 REV 9/15

Login Sample Receipt Checklist

Client: Absolute Resource Associates

Job Number: 180-71626-1

Login Number: 71626
List Number: 1
Creator: Watson, Debbie

List Source: TestAmerica Pittsburgh

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING



ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Nashville
2960 Foster Creighton Drive
Nashville, TN 37204
Tel: (615)726-0177

TestAmerica Job ID: 490-139239-1
Client Project/Site: 42288

For:
Absolute Resource Associates
124 Heritage Ave
Unit 16
Portsmouth, New Hampshire 03801

Attn: Mr. Aaron DeWees

Authorized for release by:
11/6/2017 3:16:29 PM

Ken Hayes, Project Manager II
(615)301-5035
ken.hayes@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Cover Page 1
Table of Contents 2
Sample Summary 3
Case Narrative 4
Definitions 5
Client Sample Results 6
QC Sample Results 8
QC Association 9
Chronicle 10
Method Summary 11
Certification Summary 12
Chain of Custody 13
Receipt Checklists 15

Sample Summary

Client: Absolute Resource Associates
Project/Site: 42288

TestAmerica Job ID: 490-139239-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
490-139239-1	WC-1	Solid	10/17/17 16:40	10/21/17 10:25
490-139239-2	WC-2	Solid	10/17/17 16:55	10/21/17 10:25

Case Narrative

Client: Absolute Resource Associates
Project/Site: 42288

TestAmerica Job ID: 490-139239-1

Job ID: 490-139239-1

Laboratory: TestAmerica Nashville

Narrative

Job Narrative
490-139239-1

Comments
No additional comments.

Receipt
The samples were received on 10/21/2017 10:25 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.2º C.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client: Absolute Resource Associates
Project/Site: 42288

TestAmerica Job ID: 490-139239-1

Client Sample ID: WC-1
Date Collected: 10/17/17 16:40
Date Received: 10/21/17 10:25

Lab Sample ID: 490-139239-1
Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Halogens, Extractable Organic	ND		49.0		mg/Kg		11/01/17 08:15	11/02/17 11:56	1

Client: Absolute Resource Associates
Project/Site: 42288

TestAmerica Job ID: 490-139239-1

Client Sample ID: WC-2
Date Collected: 10/17/17 16:55
Date Received: 10/21/17 10:25

Lab Sample ID: 490-139239-2
Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Halogens, Extractable Organic	ND		46.7		mg/Kg		11/01/17 08:15	11/02/17 11:56	1

Method: 9023 - Organic Halides, Extractable (EOX)

Lab Sample ID: MB 490-472712/1-A
Matrix: Solid
Analysis Batch: 472860

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 472712

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Halogens, Extractable Organic	ND		50.0		mg/Kg		11/01/17 08:15	11/02/17 11:56	1

Lab Sample ID: LCS 490-472712/2-A
Matrix: Solid
Analysis Batch: 472860

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 472712

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Halogens, Extractable Organic	1240	1073		mg/Kg		86	80 - 120

Lab Sample ID: LCSD 490-472712/3-A
Matrix: Solid
Analysis Batch: 472860

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 472712

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Halogens, Extractable Organic	1240	1100		mg/Kg		88	80 - 120	3	20

Lab Sample ID: 490-139239-2 MS
Matrix: Solid
Analysis Batch: 472860

Client Sample ID: WC-2
Prep Type: Total/NA
Prep Batch: 472712

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Halogens, Extractable Organic	ND		1240	1046		mg/Kg		84	70 - 130

Lab Sample ID: 490-139239-2 MSD
Matrix: Solid
Analysis Batch: 472860

Client Sample ID: WC-2
Prep Type: Total/NA
Prep Batch: 472712

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Halogens, Extractable Organic	ND		1130	857.3		mg/Kg		76	70 - 130	20	20

QC Association Summary

Client: Absolute Resource Associates
Project/Site: 42288

TestAmerica Job ID: 490-139239-1

General Chemistry

Prep Batch: 472712

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-139239-1	WC-1	Total/NA	Solid	9023	
490-139239-2	WC-2	Total/NA	Solid	9023	
MB 490-472712/1-A	Method Blank	Total/NA	Solid	9023	
LCS 490-472712/2-A	Lab Control Sample	Total/NA	Solid	9023	
LCSD 490-472712/3-A	Lab Control Sample Dup	Total/NA	Solid	9023	
490-139239-2 MS	WC-2	Total/NA	Solid	9023	
490-139239-2 MSD	WC-2	Total/NA	Solid	9023	

Analysis Batch: 472860

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-139239-1	WC-1	Total/NA	Solid	9023	472712
490-139239-2	WC-2	Total/NA	Solid	9023	472712
MB 490-472712/1-A	Method Blank	Total/NA	Solid	9023	472712
LCS 490-472712/2-A	Lab Control Sample	Total/NA	Solid	9023	472712
LCSD 490-472712/3-A	Lab Control Sample Dup	Total/NA	Solid	9023	472712
490-139239-2 MS	WC-2	Total/NA	Solid	9023	472712
490-139239-2 MSD	WC-2	Total/NA	Solid	9023	472712

Lab Chronicle

Client: Absolute Resource Associates
Project/Site: 42288

TestAmerica Job ID: 490-139239-1

Client Sample ID: WC-1

Lab Sample ID: 490-139239-1

Date Collected: 10/17/17 16:40

Matrix: Solid

Date Received: 10/21/17 10:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	9023			1.02 g	1.0 mL	472712	11/01/17 08:15	CLJ	TAL NSH
Total/NA	Analysis	9023		1	1.0 g	1.0 mL	472860	11/02/17 11:56	CLJ	TAL NSH

Client Sample ID: WC-2

Lab Sample ID: 490-139239-2

Date Collected: 10/17/17 16:55

Matrix: Solid

Date Received: 10/21/17 10:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	9023			1.07 g	1.0 mL	472712	11/01/17 08:15	CLJ	TAL NSH
Total/NA	Analysis	9023		1	1.0 g	1.0 mL	472860	11/02/17 11:56	CLJ	TAL NSH

Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

Method Summary

Client: Absolute Resource Associates
Project/Site: 42288

TestAmerica Job ID: 490-139239-1

Method	Method Description	Protocol	Laboratory
9023	Organic Halides, Extractable (EOX)	SW846	TAL NSH

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

Accreditation/Certification Summary

Client: Absolute Resource Associates
Project/Site: 42288

TestAmerica Job ID: 490-139239-1

Laboratory: TestAmerica Nashville

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
New Hampshire	NELAP	1	2963	10-09-18

Analysis Method	Prep Method	Matrix	Analyte

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

490-139239 Chain of Custody

COOLER RECEIPT FORM

Cooler Received/Opened On 10-21-2017 @ 10:25

Time Samples Removed From Cooler 2038 10-21-17 Time Samples Placed In Storage 2020 (2 Hour Window)

1. Tracking # 3259 (last 4 digits, FedEx) Courier: FedEx

IR Gun ID 31470366 pH Strip Lot N/A Chlorine Strip Lot N/A

2. Temperature of rep. sample or temp blank when opened: 3.2 Degrees Celsius

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO NA

4. Were custody seals on outside of cooler? YES NO NA

If yes, how many and where:

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

I certify that I opened the cooler and answered questions 1-6 (intial)

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

Were these signed and dated correctly? YES...NO...NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13a. Were VOA vials received? YES...NO...NA

b. Was there any observable headspace present in any VOA vial? YES...NO...NA

● Larger than this.

14. Was there a Trip Blank in this cooler? YES...NO...NA If multiple coolers, sequence #

I certify that I unloaded the cooler and answered questions 7-14 (intial)

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO...NA

b. Did the bottle labels indicate that the correct preservatives were used YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (intial)

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (intial)

I certify that I attached a label with the unique LIMS number to each container (intial)

21. Were there Non-Conformance issues at login? YES...NO Was a NCM generated? YES...NO ..#

BIS = Broken in shipment
Cooler Receipt Form.doc

LF-1
End of Form

Revised 8/23/17

Absolute Resource associates

SUBCONTRACT CHAIN OF CUSTODY DOCUMENTATION

Client:	Absolute Resource Associates	Contact:	Aaron DeWees	Phone: 603-436-2001 Fax:	Page 1 of 1
Report to:	Aaron DeWees/Jane Stratton	Address:	124 Heritage Ave, #16	Project Name/Number: 42288	
Invoice to:	cathyd@absoluteresourceassociates.com		Portsmouth, NH 03801	Project State: NH MA (ME) VT	
PO#: 42288	Quote #:			Protocol: RCRA SDWA NPDES MCP NHDES Other	

Lab Number: (assigned by laboratory)	Field ID: (must agree with container)	Date Sampled	Time Sampled	Sampled By	Container Size (mL)	Container Type (P/G/T)	Field Preservation	Matrix S=Soil W=Water	Analyses Requested: Special Instructions:
	WC-1	10/19/17	1640	—	—	G	—	S	EOX
	WC-2	1	1655	—	—	G	—	S	1

Loc: 490
139239

Subcontract Laboratory: Nashville

Relinquished by: (AND)	Date: 10-20-17 Time: 1140	Received by:	Date: 10-20-17 Time: 1400
Relinquished by:	Date: 10-20-17 Time: 1700	Received by:	Date: 10-21-17 Time: 1025
Relinquished by:	Date: Time:	Received by:	Date: Time:

Reporting Instructions: PDF (Email Address: aarond@absoluteresourceassociates.com; janes@absoluteresourceassociates.com)

Received on ice? (Y) N

Temp:

Excel File: Y / N

TAT Requested: ~~Priority (24hr)~~ ~~Expedited (48hr)~~ ~~10 Business days~~ → Date needed: 5 day TAT / ASAP w/out surcharge. Thanks!

Comments:

Login Sample Receipt Checklist

Client: Absolute Resource Associates

Job Number: 490-139239-1

Login Number: 139239
List Number: 1
Creator: West, Derrick D

List Source: TestAmerica Nashville

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Laboratory Report

Absolute Resource associates
124 Heritage Avenue Portsmouth NH 03801

Jedd Steinglass
Woodard & Curran
41 Hutchins Drive
Portland, ME 04102

PO Number: None
Job ID: 42587
Date Received: 11/14/17

Project: 56 Parris Street 229649

Attached please find results for the analysis of the samples received on the date referenced above.

Unless otherwise noted in the attached report, the analyses performed met the requirements of Absolute Resource Associates' Quality Assurance Plan. The Standard Operating Procedures are based upon USEPA SW-846, USEPA Methods for Chemical Analysis of Water and Wastewater, Standard Methods for the Examination of Water and Wastewater and other recognized methodologies. The results contained in this report pertain only to the samples as indicated on the chain of custody.

Absolute Resource Associates maintains certification with the agencies listed below.

We appreciate the opportunity to provide laboratory services. If you have any questions regarding the enclosed report, please contact the laboratory and we will be glad to assist you.

Sincerely,
Absolute Resource Associates

(for)

Sue Sylvester
Principal, General Manager

Date of Approval: 11/21/2017
Total number of pages: 8

Absolute Resource Associates Certifications

New Hampshire	1732	Massachusetts	M-NH902
Maine	NH903		

Project ID: 56 Parris Street 229649

Lab ID: 42587

Sample Association Table

Field ID	Matrix	Date-Time Sampled	Lab#	Analysis
B1 (6-8')	TCLP	11/13/2017 8:40	42587-001	
				Water Digestion for ICPMS Analysis
				TCLP Extraction
				Lead in water by 6020
B101A (2.5-6')	TCLP	11/13/2017 8:25	42587-002	
				Water Digestion for ICPMS Analysis
				TCLP Extraction
				Lead in water by 6020
B101B (2.5-6')	TCLP	11/13/2017 9:40	42587-003	
				Water Digestion for ICPMS Analysis
				TCLP Extraction
				Lead in water by 6020
B101C (2.5-6')	TCLP	11/13/2017 8:50	42587-004	
				Water Digestion for ICPMS Analysis
				TCLP Extraction
				Lead in water by 6020
B101D (2.5-6')	TCLP	11/13/2017 10:05	42587-005	
				Water Digestion for ICPMS Analysis
				TCLP Extraction
				Lead in water by 6020

Project ID: 229649 56 Parris Street
Job ID: 42587
Sample #: 42587-001
Sample ID: B1 (6-8')
Matrix: TCLP Extract
Sampled: 11/13/17 8:40
TCLP: 11/15/17

Parameter	Result	Reporting Limit	TCLP Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Lead	**0.18**	0.050	5	mg/L	1	AGN	11/16/17	10210	11/17/17	13:49	SW1311 SW3005A6020A

Sample #: 42587-002
Sample ID: B101A (2.5-6')
Matrix: TCLP Extract
Sampled: 11/13/17 8:25
TCLP: 11/15/17

Parameter	Result	Reporting Limit	TCLP Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Lead	**0.12**	0.050	5	mg/L	1	AGN	11/16/17	10210	11/17/17	13:55	SW1311 SW3005A6020A

Sample #: 42587-003
Sample ID: B101B (2.5-6')
Matrix: TCLP Extract
Sampled: 11/13/17 9:40
TCLP: 11/15/17

Parameter	Result	Reporting Limit	TCLP Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Lead	**0.086**	0.050	5	mg/L	1	AGN	11/16/17	10210	11/17/17	14:02	SW1311 SW3005A6020A

Sample #: 42587-004
Sample ID: B101C (2.5-6')
Matrix: TCLP Extract
Sampled: 11/13/17 8:50
TCLP: 11/15/17

Parameter	Result	Reporting Limit	TCLP Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Lead	**0.30**	0.050	5	mg/L	1	AGN	11/16/17	10210	11/17/17	14:09	SW1311 SW3005A6020A

Sample #: 42587-005
Sample ID: B101D (2.5-6')
Matrix: TCLP Extract
Sampled: 11/13/17 10:05
TCLP: 11/15/17

Parameter	Result	Reporting Limit	TCLP Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Lead	**0.43**	0.050	5	mg/L	1	AGN	11/16/17	10210	11/17/17	14:16	SW1311 SW3005A6020A

Quality Control Report



124 Heritage Avenue Unit 16
Portsmouth, NH 03801
www.absoluteresourceassociates.com

Case Narrative
Lab # 42587

Sample Receiving and Chain of Custody Discrepancies

Samples were received in acceptable condition, at 1 degrees C, on ice, and in accordance with sample handling, preservation and integrity guidelines.

Calibration

No exceptions noted.

Method Blank

No exceptions noted.

Surrogate Recoveries

Not applicable.

Laboratory Control Sample Results

No exceptions noted.

Matrix Spike/Matrix Spike Duplicate/Duplicate Results

Not requested for this project.

Other

Reporting Limits: Dilutions performed during the analysis are noted on the result pages.

No other exceptions noted.

GLOSSARY

%R	Percent Recovery
BLK	Blank (Method Blank, Preparation Blank)
CCB	Continuing Calibration Blank
CCV	Continuing Calibration Verification
Dil'n	Dilution
DL	Detection Limit
DUP	Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection
LOQ	Limit of Quantitation
MB	Methanol Blank (associated with solid VOC samples)
MLCS	Methanol Laboratory Control Sample (associated with solid VOC samples)
MLCSD	Methanol Laboratory Control Sample Duplicate (associated with solid VOC samples)
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PB	Preparation Blank
QC	Quality Control
RL	Reporting Limit
RPD	Relative Percent Difference
SUR	Surrogate

- QC Report -

Method	QC ID	Parameter	Associated Sample		Result	Units	Amt Added	%R	Limits		RPD	RPD Limit
SW3005A6020A	BLK10210	Lead		<	0.005	mg/L						
SW3005A6020A	DUP10210	Lead	42551-001	<	0.005	mg/L						20
SW3005A6020A	LCS10210	Lead			0.44	mg/L	0.5	88	80	120		
SW3005A6020A	LCSD10210	Lead			0.47	mg/L	0.5	93	80	120	5	20
SW3005A6020A	MS10210	Lead	42551-001		0.44	mg/L	0.5	82	75	125		

Absolute Resource associates
124 Heritage Avenue #16
Portsmouth, NH 03801
603-436-2001
absoluteresourceassociates.com

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST 42587

Company Name: WOODARD + CURRAN
Company Address: 41 HUTCHINS DRIVE, PORTLAND ME
Report To: JEDD STEINGLASS
Phone #: 207-756-2319
Invoice to: SAME
Email: JSTEINGLASS@WOODARDCURRAN.COM
PO #:

Project Name: 56 PARRIS STREET
Project #: 229649
Project Location: NH MA (ME) VT
Accreditation Required? N/Y:
Protocol: RCRA SDWA NPDES MCP NHDES DOD
Reporting Limits: (QAPP) GW-1 S-1 EPA DW Other
Quote #
☐ NH Reimbursement Pricing

ANALYSIS REQUEST

☐ VOC 8260 ☐ VOC 8260 NHDES ☐ VOC 8260 MADEP
☐ VOC 624 ☐ VOC BTEX MtBE only ☐ VOC 8021VT
☐ VPH MADEP ☐ GRO 8015 ☐ 1,4-Dioxane
☐ VOC 524.2 ☐ VOC 524.2 NH List ☐ Gases-List:
☐ TPH ☐ DRO 8015 ☐ EPH MADEP ☐ TPH Fingerprint
☐ 8270PAH ☐ 8270ABN ☐ 625 ☐ EDB
☐ 8082 PCB ☐ 8081 Pesticides ☐ 608 Pest/PCB
☐ O&G 1664 ☐ Mineral O&G SM5520F
☐ pH ☐ BOD ☐ Conductivity ☐ Turbidity ☐ Apparent Color
☐ TSS ☐ TDS ☐ TS ☐ TVS ☐ Alkalinity ☐ Acidity
☐ RCRA Metals ☐ Priority Pollutant Metals ☐ TAL Metals ☐ Hardness
☐ Total Metals-list:
☐ Dissolved Metals-list:
☐ Ammonia ☐ COD ☐ TKN ☐ TN ☐ TON ☐ TOC
☐ T-Phosphorus ☐ Phenols ☐ Bacteria P/A ☐ Bacteria MPN
☐ Cyanide ☐ Sulfide ☐ Nitrate + Nitrite ☐ Ortho P
☐ Nitrate ☐ Nitrite ☐ Chloride ☐ Sulfate ☐ Bromide ☐ Fluoride
☐ Corrosivity ☐ Reactive CN ☐ Reactive S- ☐ Ignitibility/FP
☐ TCLP Metals ☐ TCLP VOC ☐ TCLP SVOC ☐ TCLP Pesticide
Subcontract: ☐ Grain Size ☐ Herbicides ☐ Formaldehyde ☐ PFC
TCLP LEAD
Grab (G) or Composite (C)

Lab Sample ID (Lab Use Only)	Field ID	# CONTAINERS	Matrix: WATER	SOLID	OTHER	Preservation Method: HCl	HNO_3	H_2SO_4	NaOH	MeOH	Sampling: DATE	TIME	SAMPLER	TCLP LEAD	Grab (G) or Composite (C)
	~~B1 (2.5-6')~~	JS												* JS	
42587-01	B1 (6-8')	1		X							11/13/17	8:40	JS	X	G
-02	B101A (2.5-6')	1		X								8:25		X	G
-03	B101B (2.5-6')	1		X								9:40		X	G
-04	B101C (2.5-6')	1		X								8:50		X	G
-05	B101D (2.5-6')	1		X								10:05		X	G

TAT REQUESTED
Priority (24 hr)* ☐
Expedited (48 hr)* ☐
Standard ☐ (10 Business Days)
*Date Needed 11/17

See absoluteresourceassociates.com for sample acceptance policy and current accreditation lists.

SPECIAL INSTRUCTIONS

REPORTING INSTRUCTIONS ☒PDF (e-mail address) JSTEINGLASS@WOODARDCURRAN.COM
☐ HARD COPY REQUIRED ☒EDD ME EQAD

RECEIVED ON ICE ☒YES ☐NO
TEMPERATURE 1 °C

CUSTODY RECORD
QSD-01 Revision 10/04/17

	Date	Time		Date	Time
Relinquished by Sampler:	11/14/17	11:00	Received by:	11/14/17	11:00
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	11/14/17	19:55	Received by Laboratory:	11/14/17	1455

APPENDIX C: SOIL VAPOR LABORATORY ANALYTICAL REPORT

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

October 26, 2017

Jedd Steinglass
Woodard & Curran - Portland, ME
41 Hutchins Drive
Portland, ME 04102

Project Location: 56 Parris St., Portland, ME
Client Job Number:
Project Number: 229649
Laboratory Work Order Number: 17J1101

Enclosed are results of analyses for samples received by the laboratory on October 19, 2017. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Meghan E. Kelley
Project Manager

Table of Contents

Sample Summary 3

Case Narrative 4

Sample Results 6

Sample Preparation Information 12

QC Data 13

Air Toxics by EPA Compendium Methods 13

B189540 13

Flag/Qualifier Summary 16

Internal standard Area & RT Summary 17

Continuing Calibration Check 18

Certifications 20

Chain of Custody/Sample Receipt 22

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Woodard & Curran - Portland, ME
41 Hutchins Drive
Portland, ME 04102
ATTN: Jedd Steinglass

REPORT DATE: 10/26/2017

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 229649

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 17J1101

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: 56 Parris St., Portland, ME

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
SV-1/Air	17J1101-01	Soil Gas		EPA TO-15	
SV-2/Air	17J1101-02	Soil Gas		EPA TO-15	
Duplicate/Air	17J1101-03	Soil Gas		EPA TO-15	

con-test® ANALYTICAL LABORATORY

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

EPA TO-15

Qualifications:

L-01

Laboratory fortified blank /laboratory control sample recovery outside of control limits. Data validation is not affected since all results are "not detected" for all samples in this batch for this compound and bias is on the high side.

Analyte & Samples(s) Qualified:

1,2,4-Trichlorobenzene
B189540-BS1

Hexachlorobutadiene
B189540-BS1

L-03

Laboratory fortified blank/laboratory control sample recovery is outside of control limits. Reported value for this compound is likely to be biased on the low side.

Analyte & Samples(s) Qualified:

Styrene
17J1101-01[SV-1/Air], 17J1101-02[SV-2/Air], 17J1101-03[Duplicate/Air], B189540-BLK1, B189540-BS1

RL-13

Elevated reporting limit due to high concentration of non-target compounds.

Analyte & Samples(s) Qualified:

17J1101-01[SV-1/Air], 17J1101-02[SV-2/Air], 17J1101-03[Duplicate/Air]

V-34

Initial calibration verification (ICV) did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.

Analyte & Samples(s) Qualified:

Styrene
17J1101-01[SV-1/Air], 17J1101-02[SV-2/Air], 17J1101-03[Duplicate/Air], B189540-BLK1, B189540-BS1, S016869-CCV1

V-36

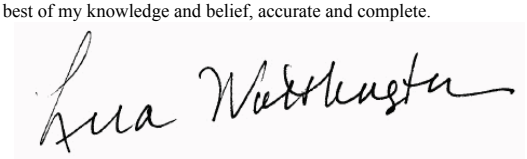
Initial calibration verification (ICV) did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

Analyte & Samples(s) Qualified:

1,2,4-Trichlorobenzene
B189540-BS1

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.
I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.



Lisa A. Worthington
Project Manager

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

ANALYTICAL RESULTS

Project Location: 56 Parris St., Portland, ME
Date Received: 10/19/2017
Field Sample #: SV-1/Air
Sample ID: 17J1101-01
Sample Matrix: Soil Gas
Sampled: 10/17/2017 11:21

Sample Description/Location:
Sub Description/Location:
Canister ID: 1936
Canister Size: 6 liter
Flow Controller ID: 4101
Sample Type: 30 min

Work Order: 17J1101
Initial Vacuum(in Hg): -28
Final Vacuum(in Hg): -2
Receipt Vacuum(in Hg): -4.1
Flow Controller Type: Fixed-Orifice
Flow Controller Calibration
RPD Pre and Post-Sampling:

EPA TO-15

Sample Flags: RL-13

Analyte	ppbv Results	ppbv RL	Flag/Qual	ug/m3 Results	ug/m3 RL	Dilution	Date/Time Analyzed	Analyst
Acetone	130	20		320	48	10	10/26/17 1:23	CMR
Benzene	0.69	0.50		2.2	1.6	10	10/26/17 1:23	CMR
Benzyl chloride	ND	0.50		ND	2.6	10	10/26/17 1:23	CMR
Bromodichloromethane	ND	0.50		ND	3.4	10	10/26/17 1:23	CMR
Bromoform	ND	0.50		ND	5.2	10	10/26/17 1:23	CMR
Bromomethane	ND	0.50		ND	1.9	10	10/26/17 1:23	CMR
1,3-Butadiene	ND	0.50		ND	1.1	10	10/26/17 1:23	CMR
2-Butanone (MEK)	ND	20		ND	59	10	10/26/17 1:23	CMR
Carbon Disulfide	ND	5.0		ND	16	10	10/26/17 1:23	CMR
Carbon Tetrachloride	ND	0.50		ND	3.1	10	10/26/17 1:23	CMR
Chlorobenzene	ND	0.50		ND	2.3	10	10/26/17 1:23	CMR
Chloroethane	ND	0.50		ND	1.3	10	10/26/17 1:23	CMR
Chloroform	ND	0.50		ND	2.4	10	10/26/17 1:23	CMR
Chloromethane	ND	1.0		ND	2.1	10	10/26/17 1:23	CMR
Cyclohexane	ND	0.50		ND	1.7	10	10/26/17 1:23	CMR
Dibromochloromethane	ND	0.50		ND	4.3	10	10/26/17 1:23	CMR
1,2-Dibromoethane (EDB)	ND	0.50		ND	3.8	10	10/26/17 1:23	CMR
1,2-Dichlorobenzene	ND	0.50		ND	3.0	10	10/26/17 1:23	CMR
1,3-Dichlorobenzene	ND	0.50		ND	3.0	10	10/26/17 1:23	CMR
1,4-Dichlorobenzene	3.0	0.50		18	3.0	10	10/26/17 1:23	CMR
Dichlorodifluoromethane (Freon 12)	ND	0.50		ND	2.5	10	10/26/17 1:23	CMR
1,1-Dichloroethane	ND	0.50		ND	2.0	10	10/26/17 1:23	CMR
1,2-Dichloroethane	ND	0.50		ND	2.0	10	10/26/17 1:23	CMR
1,1-Dichloroethylene	ND	0.50		ND	2.0	10	10/26/17 1:23	CMR
cis-1,2-Dichloroethylene	ND	0.50		ND	2.0	10	10/26/17 1:23	CMR
trans-1,2-Dichloroethylene	ND	0.50		ND	2.0	10	10/26/17 1:23	CMR
1,2-Dichloropropane	ND	0.50		ND	2.3	10	10/26/17 1:23	CMR
cis-1,3-Dichloropropene	ND	0.50		ND	2.3	10	10/26/17 1:23	CMR
trans-1,3-Dichloropropene	ND	0.50		ND	2.3	10	10/26/17 1:23	CMR
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	ND	0.50		ND	3.5	10	10/26/17 1:23	CMR
1,4-Dioxane	ND	5.0		ND	18	10	10/26/17 1:23	CMR
Ethanol	ND	20		ND	38	10	10/26/17 1:23	CMR
Ethyl Acetate	ND	0.50		ND	1.8	10	10/26/17 1:23	CMR
Ethylbenzene	1.2	0.50		5.3	2.2	10	10/26/17 1:23	CMR
4-Ethyltoluene	0.75	0.50		3.7	2.5	10	10/26/17 1:23	CMR
Heptane	0.54	0.50		2.2	2.0	10	10/26/17 1:23	CMR
Hexachlorobutadiene	ND	0.50		ND	5.3	10	10/26/17 1:23	CMR

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

ANALYTICAL RESULTS

Project Location: 56 Parris St., Portland, ME
Date Received: 10/19/2017
Field Sample #: SV-1/Air
Sample ID: 17J1101-01
Sample Matrix: Soil Gas
Sampled: 10/17/2017 11:21

Sample Description/Location:
Sub Description/Location:
Canister ID: 1936
Canister Size: 6 liter
Flow Controller ID: 4101
Sample Type: 30 min

Work Order: 17J1101
Initial Vacuum(in Hg): -28
Final Vacuum(in Hg): -2
Receipt Vacuum(in Hg): -4.1
Flow Controller Type: Fixed-Orifice
Flow Controller Calibration
RPD Pre and Post-Sampling:

EPA TO-15

Sample Flags: RL-13

Analyte	ppbv Results	ppbv RL	Flag/Qual	ug/m3 Results	ug/m3 RL	Dilution	Date/Time Analyzed	Analyst
Hexane	ND	20		ND	70	10	10/26/17 1:23	CMR
2-Hexanone (MBK)	0.62	0.50		2.5	2.0	10	10/26/17 1:23	CMR
Isopropanol	ND	20		ND	49	10	10/26/17 1:23	CMR
Methyl tert-Butyl Ether (MTBE)	ND	0.50		ND	1.8	10	10/26/17 1:23	CMR
Methylene Chloride	ND	5.0		ND	17	10	10/26/17 1:23	CMR
4-Methyl-2-pentanone (MIBK)	6.0	0.50		25	2.0	10	10/26/17 1:23	CMR
Naphthalene	ND	0.50		ND	2.6	10	10/26/17 1:23	CMR
Propene	ND	20		ND	34	10	10/26/17 1:23	CMR
Styrene	ND	0.50	L-03, V-34	ND	2.1	10	10/26/17 1:23	CMR
1,1,2,2-Tetrachloroethane	ND	0.50		ND	3.4	10	10/26/17 1:23	CMR
Tetrachloroethylene	0.52	0.50		3.5	3.4	10	10/26/17 1:23	CMR
Tetrahydrofuran	ND	0.50		ND	1.5	10	10/26/17 1:23	CMR
Toluene	3.1	0.50		12	1.9	10	10/26/17 1:23	CMR
1,2,4-Trichlorobenzene	ND	0.50		ND	3.7	10	10/26/17 1:23	CMR
1,1,1-Trichloroethane	ND	0.50		ND	2.7	10	10/26/17 1:23	CMR
1,1,2-Trichloroethane	ND	0.50		ND	2.7	10	10/26/17 1:23	CMR
Trichloroethylene	ND	0.50		ND	2.7	10	10/26/17 1:23	CMR
Trichlorofluoromethane (Freon 11)	ND	2.0		ND	11	10	10/26/17 1:23	CMR
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	2.0		ND	15	10	10/26/17 1:23	CMR
1,2,4-Trimethylbenzene	2.7	0.50		13	2.5	10	10/26/17 1:23	CMR
1,3,5-Trimethylbenzene	0.69	0.50		3.4	2.5	10	10/26/17 1:23	CMR
Vinyl Acetate	ND	10		ND	35	10	10/26/17 1:23	CMR
Vinyl Chloride	ND	0.50		ND	1.3	10	10/26/17 1:23	CMR
m&p-Xylene	5.4	1.0		24	4.3	10	10/26/17 1:23	CMR
o-Xylene	2.1	0.50		9.2	2.2	10	10/26/17 1:23	CMR

Surrogates	% Recovery	% REC Limits	
4-Bromofluorobenzene (1)	98.7	70-130	10/26/17 1:23

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

ANALYTICAL RESULTS

Project Location: 56 Parris St., Portland, ME
Date Received: 10/19/2017
Field Sample #: SV-2/Air
Sample ID: 17J1101-02
Sample Matrix: Soil Gas
Sampled: 10/17/2017 13:25

Sample Description/Location:
Sub Description/Location:
Canister ID: 1926
Canister Size: 6 liter
Flow Controller ID: 4027
Sample Type: 30 min

Work Order: 17J1101
Initial Vacuum(in Hg): -30
Final Vacuum(in Hg): -2
Receipt Vacuum(in Hg): -2.4
Flow Controller Type: Fixed-Orifice
Flow Controller Calibration
RPD Pre and Post-Sampling:

EPA TO-15

Sample Flags: RL-13

Analyte	ppbv Results	ppbv RL	Flag/Qual	ug/m3 Results	ug/m3 RL	Dilution	Date/Time Analyzed	Analyst
Acetone	340	20		810	48	10	10/26/17 2:00	CMR
Benzene	1.9	0.50		5.9	1.6	10	10/26/17 2:00	CMR
Benzyl chloride	ND	0.50		ND	2.6	10	10/26/17 2:00	CMR
Bromodichloromethane	ND	0.50		ND	3.4	10	10/26/17 2:00	CMR
Bromoform	ND	0.50		ND	5.2	10	10/26/17 2:00	CMR
Bromomethane	ND	0.50		ND	1.9	10	10/26/17 2:00	CMR
1,3-Butadiene	ND	0.50		ND	1.1	10	10/26/17 2:00	CMR
2-Butanone (MEK)	21	20		61	59	10	10/26/17 2:00	CMR
Carbon Disulfide	100	5.0		330	16	10	10/26/17 2:00	CMR
Carbon Tetrachloride	ND	0.50		ND	3.1	10	10/26/17 2:00	CMR
Chlorobenzene	ND	0.50		ND	2.3	10	10/26/17 2:00	CMR
Chloroethane	ND	0.50		ND	1.3	10	10/26/17 2:00	CMR
Chloroform	ND	0.50		ND	2.4	10	10/26/17 2:00	CMR
Chloromethane	ND	1.0		ND	2.1	10	10/26/17 2:00	CMR
Cyclohexane	1.3	0.50		4.5	1.7	10	10/26/17 2:00	CMR
Dibromochloromethane	ND	0.50		ND	4.3	10	10/26/17 2:00	CMR
1,2-Dibromoethane (EDB)	ND	0.50		ND	3.8	10	10/26/17 2:00	CMR
1,2-Dichlorobenzene	ND	0.50		ND	3.0	10	10/26/17 2:00	CMR
1,3-Dichlorobenzene	ND	0.50		ND	3.0	10	10/26/17 2:00	CMR
1,4-Dichlorobenzene	2.7	0.50		16	3.0	10	10/26/17 2:00	CMR
Dichlorodifluoromethane (Freon 12)	ND	0.50		ND	2.5	10	10/26/17 2:00	CMR
1,1-Dichloroethane	ND	0.50		ND	2.0	10	10/26/17 2:00	CMR
1,2-Dichloroethane	ND	0.50		ND	2.0	10	10/26/17 2:00	CMR
1,1-Dichloroethylene	ND	0.50		ND	2.0	10	10/26/17 2:00	CMR
cis-1,2-Dichloroethylene	ND	0.50		ND	2.0	10	10/26/17 2:00	CMR
trans-1,2-Dichloroethylene	ND	0.50		ND	2.0	10	10/26/17 2:00	CMR
1,2-Dichloropropane	ND	0.50		ND	2.3	10	10/26/17 2:00	CMR
cis-1,3-Dichloropropene	ND	0.50		ND	2.3	10	10/26/17 2:00	CMR
trans-1,3-Dichloropropene	ND	0.50		ND	2.3	10	10/26/17 2:00	CMR
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	ND	0.50		ND	3.5	10	10/26/17 2:00	CMR
1,4-Dioxane	ND	5.0		ND	18	10	10/26/17 2:00	CMR
Ethanol	30	20		57	38	10	10/26/17 2:00	CMR
Ethyl Acetate	0.77	0.50		2.8	1.8	10	10/26/17 2:00	CMR
Ethylbenzene	2.0	0.50		8.9	2.2	10	10/26/17 2:00	CMR
4-Ethyltoluene	2.2	0.50		11	2.5	10	10/26/17 2:00	CMR
Heptane	3.1	0.50		13	2.0	10	10/26/17 2:00	CMR
Hexachlorobutadiene	ND	0.50		ND	5.3	10	10/26/17 2:00	CMR

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

ANALYTICAL RESULTS

Project Location: 56 Parris St., Portland, ME
Date Received: 10/19/2017
Field Sample #: SV-2/Air
Sample ID: 17J1101-02
Sample Matrix: Soil Gas
Sampled: 10/17/2017 13:25

Sample Description/Location:
Sub Description/Location:
Canister ID: 1926
Canister Size: 6 liter
Flow Controller ID: 4027
Sample Type: 30 min

Work Order: 17J1101
Initial Vacuum(in Hg): -30
Final Vacuum(in Hg): -2
Receipt Vacuum(in Hg): -2.4
Flow Controller Type: Fixed-Orifice
Flow Controller Calibration
RPD Pre and Post-Sampling:

EPA TO-15

Sample Flags: RL-13

Analyte	ppbv Results	ppbv RL	Flag/Qual	ug/m3 Results	ug/m3 RL	Dilution	Date/Time Analyzed	Analyst
Hexane	ND	20		ND	70	10	10/26/17 2:00	CMR
2-Hexanone (MBK)	1.3	0.50		5.3	2.0	10	10/26/17 2:00	CMR
Isopropanol	ND	20		ND	49	10	10/26/17 2:00	CMR
Methyl tert-Butyl Ether (MTBE)	ND	0.50		ND	1.8	10	10/26/17 2:00	CMR
Methylene Chloride	ND	5.0		ND	17	10	10/26/17 2:00	CMR
4-Methyl-2-pentanone (MIBK)	9.9	0.50		40	2.0	10	10/26/17 2:00	CMR
Naphthalene	ND	0.50		ND	2.6	10	10/26/17 2:00	CMR
Propene	ND	20		ND	34	10	10/26/17 2:00	CMR
Styrene	ND	0.50	L-03, V-34	ND	2.1	10	10/26/17 2:00	CMR
1,1,2,2-Tetrachloroethane	ND	0.50		ND	3.4	10	10/26/17 2:00	CMR
Tetrachloroethylene	ND	0.50		ND	3.4	10	10/26/17 2:00	CMR
Tetrahydrofuran	ND	0.50		ND	1.5	10	10/26/17 2:00	CMR
Toluene	6.7	0.50		25	1.9	10	10/26/17 2:00	CMR
1,2,4-Trichlorobenzene	ND	0.50		ND	3.7	10	10/26/17 2:00	CMR
1,1,1-Trichloroethane	ND	0.50		ND	2.7	10	10/26/17 2:00	CMR
1,1,2-Trichloroethane	ND	0.50		ND	2.7	10	10/26/17 2:00	CMR
Trichloroethylene	ND	0.50		ND	2.7	10	10/26/17 2:00	CMR
Trichlorofluoromethane (Freon 11)	ND	2.0		ND	11	10	10/26/17 2:00	CMR
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	2.0		ND	15	10	10/26/17 2:00	CMR
1,2,4-Trimethylbenzene	6.4	0.50		32	2.5	10	10/26/17 2:00	CMR
1,3,5-Trimethylbenzene	1.8	0.50		8.7	2.5	10	10/26/17 2:00	CMR
Vinyl Acetate	ND	10		ND	35	10	10/26/17 2:00	CMR
Vinyl Chloride	ND	0.50		ND	1.3	10	10/26/17 2:00	CMR
m&p-Xylene	7.9	1.0		34	4.3	10	10/26/17 2:00	CMR
o-Xylene	4.0	0.50		17	2.2	10	10/26/17 2:00	CMR

Surrogates	% Recovery	% REC Limits	
4-Bromofluorobenzene (1)	98.5	70-130	10/26/17 2:00

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

ANALYTICAL RESULTS

Project Location: 56 Parris St., Portland, ME
Date Received: 10/19/2017
Field Sample #: Duplicate/Air
Sample ID: 17J1101-03
Sample Matrix: Soil Gas
Sampled: 10/17/2017 00:00

Sample Description/Location:
Sub Description/Location:
Canister ID: 1951
Canister Size: 6 liter
Flow Controller ID: 4027
Sample Type: 30 min

Work Order: 17J1101
Initial Vacuum(in Hg): -30
Final Vacuum(in Hg): -2
Receipt Vacuum(in Hg): -2.4
Flow Controller Type: Fixed-Orifice
Flow Controller Calibration
RPD Pre and Post-Sampling:

EPA TO-15

Sample Flags: RL-13

Analyte	ppbv Results	ppbv RL	Flag/Qual	ug/m3 Results	ug/m3 RL	Dilution	Date/Time Analyzed	Analyst
Acetone	350	20		830	48	10	10/26/17 2:37	CMR
Benzene	1.9	0.50		6.0	1.6	10	10/26/17 2:37	CMR
Benzyl chloride	ND	0.50		ND	2.6	10	10/26/17 2:37	CMR
Bromodichloromethane	ND	0.50		ND	3.4	10	10/26/17 2:37	CMR
Bromoform	ND	0.50		ND	5.2	10	10/26/17 2:37	CMR
Bromomethane	ND	0.50		ND	1.9	10	10/26/17 2:37	CMR
1,3-Butadiene	ND	0.50		ND	1.1	10	10/26/17 2:37	CMR
2-Butanone (MEK)	21	20		62	59	10	10/26/17 2:37	CMR
Carbon Disulfide	110	5.0		330	16	10	10/26/17 2:37	CMR
Carbon Tetrachloride	ND	0.50		ND	3.1	10	10/26/17 2:37	CMR
Chlorobenzene	ND	0.50		ND	2.3	10	10/26/17 2:37	CMR
Chloroethane	ND	0.50		ND	1.3	10	10/26/17 2:37	CMR
Chloroform	ND	0.50		ND	2.4	10	10/26/17 2:37	CMR
Chloromethane	ND	1.0		ND	2.1	10	10/26/17 2:37	CMR
Cyclohexane	1.3	0.50		4.4	1.7	10	10/26/17 2:37	CMR
Dibromochloromethane	ND	0.50		ND	4.3	10	10/26/17 2:37	CMR
1,2-Dibromoethane (EDB)	ND	0.50		ND	3.8	10	10/26/17 2:37	CMR
1,2-Dichlorobenzene	ND	0.50		ND	3.0	10	10/26/17 2:37	CMR
1,3-Dichlorobenzene	ND	0.50		ND	3.0	10	10/26/17 2:37	CMR
1,4-Dichlorobenzene	2.8	0.50		17	3.0	10	10/26/17 2:37	CMR
Dichlorodifluoromethane (Freon 12)	ND	0.50		ND	2.5	10	10/26/17 2:37	CMR
1,1-Dichloroethane	ND	0.50		ND	2.0	10	10/26/17 2:37	CMR
1,2-Dichloroethane	ND	0.50		ND	2.0	10	10/26/17 2:37	CMR
1,1-Dichloroethylene	ND	0.50		ND	2.0	10	10/26/17 2:37	CMR
cis-1,2-Dichloroethylene	ND	0.50		ND	2.0	10	10/26/17 2:37	CMR
trans-1,2-Dichloroethylene	ND	0.50		ND	2.0	10	10/26/17 2:37	CMR
1,2-Dichloropropane	ND	0.50		ND	2.3	10	10/26/17 2:37	CMR
cis-1,3-Dichloropropene	ND	0.50		ND	2.3	10	10/26/17 2:37	CMR
trans-1,3-Dichloropropene	ND	0.50		ND	2.3	10	10/26/17 2:37	CMR
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	ND	0.50		ND	3.5	10	10/26/17 2:37	CMR
1,4-Dioxane	ND	5.0		ND	18	10	10/26/17 2:37	CMR
Ethanol	32	20		61	38	10	10/26/17 2:37	CMR
Ethyl Acetate	ND	0.50		ND	1.8	10	10/26/17 2:37	CMR
Ethylbenzene	2.0	0.50		8.8	2.2	10	10/26/17 2:37	CMR
4-Ethyltoluene	2.2	0.50		11	2.5	10	10/26/17 2:37	CMR
Heptane	3.1	0.50		13	2.0	10	10/26/17 2:37	CMR
Hexachlorobutadiene	ND	0.50		ND	5.3	10	10/26/17 2:37	CMR

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

ANALYTICAL RESULTS

Project Location: 56 Parris St., Portland, ME
Date Received: 10/19/2017
Field Sample #: Duplicate/Air
Sample ID: 17J1101-03
Sample Matrix: Soil Gas
Sampled: 10/17/2017 00:00

Sample Description/Location:
Sub Description/Location:
Canister ID: 1951
Canister Size: 6 liter
Flow Controller ID: 4027
Sample Type: 30 min

Work Order: 17J1101
Initial Vacuum(in Hg): -30
Final Vacuum(in Hg): -2
Receipt Vacuum(in Hg): -2.4
Flow Controller Type: Fixed-Orifice
Flow Controller Calibration
RPD Pre and Post-Sampling:

EPA TO-15

Sample Flags: RL-13

Analyte	ppbv Results	ppbv RL	Flag/Qual	ug/m3 Results	ug/m3 RL	Dilution	Date/Time Analyzed	Analyst
Hexane	ND	20		ND	70	10	10/26/17 2:37	CMR
2-Hexanone (MBK)	1.2	0.50		5.0	2.0	10	10/26/17 2:37	CMR
Isopropanol	ND	20		ND	49	10	10/26/17 2:37	CMR
Methyl tert-Butyl Ether (MTBE)	ND	0.50		ND	1.8	10	10/26/17 2:37	CMR
Methylene Chloride	ND	5.0		ND	17	10	10/26/17 2:37	CMR
4-Methyl-2-pentanone (MIBK)	10	0.50		42	2.0	10	10/26/17 2:37	CMR
Naphthalene	ND	0.50		ND	2.6	10	10/26/17 2:37	CMR
Propene	ND	20		ND	34	10	10/26/17 2:37	CMR
Styrene	ND	0.50	L-03, V-34	ND	2.1	10	10/26/17 2:37	CMR
1,1,2,2-Tetrachloroethane	ND	0.50		ND	3.4	10	10/26/17 2:37	CMR
Tetrachloroethylene	ND	0.50		ND	3.4	10	10/26/17 2:37	CMR
Tetrahydrofuran	ND	0.50		ND	1.5	10	10/26/17 2:37	CMR
Toluene	6.7	0.50		25	1.9	10	10/26/17 2:37	CMR
1,2,4-Trichlorobenzene	ND	0.50		ND	3.7	10	10/26/17 2:37	CMR
1,1,1-Trichloroethane	ND	0.50		ND	2.7	10	10/26/17 2:37	CMR
1,1,2-Trichloroethane	ND	0.50		ND	2.7	10	10/26/17 2:37	CMR
Trichloroethylene	ND	0.50		ND	2.7	10	10/26/17 2:37	CMR
Trichlorofluoromethane (Freon 11)	ND	2.0		ND	11	10	10/26/17 2:37	CMR
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	2.0		ND	15	10	10/26/17 2:37	CMR
1,2,4-Trimethylbenzene	6.7	0.50		33	2.5	10	10/26/17 2:37	CMR
1,3,5-Trimethylbenzene	1.8	0.50		8.7	2.5	10	10/26/17 2:37	CMR
Vinyl Acetate	ND	10		ND	35	10	10/26/17 2:37	CMR
Vinyl Chloride	ND	0.50		ND	1.3	10	10/26/17 2:37	CMR
m&p-Xylene	7.7	1.0		34	4.3	10	10/26/17 2:37	CMR
o-Xylene	4.0	0.50		18	2.2	10	10/26/17 2:37	CMR

Surrogates	% Recovery	% REC Limits	
4-Bromofluorobenzene (1)	96.6	70-130	10/26/17 2:37

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Sample Extraction Data

Prep Method: TO-15 Prep-EPA TO-15

Lab Number [Field ID]	Batch	Pressure Dilution	Pre Dilution	Pre-Dil Initial mL	Pre-Dil Final mL	Default Injection mL	Actual Injection mL	Date
17J1101-01 [SV-1/Air]	B189540	1.5	1	N/A	1000	400	60	10/25/17
17J1101-02 [SV-2/Air]	B189540	1.5	1	N/A	1000	400	60	10/25/17
17J1101-03 [Duplicate/Air]	B189540	1.5	1	N/A	1000	400	60	10/25/17

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

QUALITY CONTROL

Air Toxics by EPA Compendium Methods - Quality Control

Analyte	ppbv Results	ppbv RL	ug/m3 Results	ug/m3 RL	Spike Level ppbv	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag/Qual
Batch B189540 - TO-15 Prep											
Blank (B189540-BLK1)					Prepared & Analyzed: 10/25/17						
Acetone	ND	0.80									
Benzene	ND	0.020									
Benzyl chloride	ND	0.020									
Bromodichloromethane	ND	0.020									
Bromoform	ND	0.020									
Bromomethane	ND	0.020									
1,3-Butadiene	ND	0.020									
2-Butanone (MEK)	ND	0.80									
Carbon Disulfide	ND	0.20									
Carbon Tetrachloride	ND	0.020									
Chlorobenzene	ND	0.020									
Chloroethane	ND	0.020									
Chloroform	ND	0.020									
Chloromethane	ND	0.040									
Cyclohexane	ND	0.020									
Dibromochloromethane	ND	0.020									
1,2-Dibromoethane (EDB)	ND	0.020									
1,2-Dichlorobenzene	ND	0.020									
1,3-Dichlorobenzene	ND	0.020									
1,4-Dichlorobenzene	ND	0.020									
Dichlorodifluoromethane (Freon 12)	ND	0.020									
1,1-Dichloroethane	ND	0.020									
1,2-Dichloroethane	ND	0.020									
1,1-Dichloroethylene	ND	0.020									
cis-1,2-Dichloroethylene	ND	0.020									
trans-1,2-Dichloroethylene	ND	0.020									
1,2-Dichloropropane	ND	0.020									
cis-1,3-Dichloropropene	ND	0.020									
trans-1,3-Dichloropropene	ND	0.020									
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	ND	0.020									
1,4-Dioxane	ND	0.20									
Ethanol	ND	0.80									
Ethyl Acetate	ND	0.020									
Ethylbenzene	ND	0.020									
4-Ethyltoluene	ND	0.020									
Heptane	ND	0.020									
Hexachlorobutadiene	ND	0.020									
Hexane	ND	0.80									
2-Hexanone (MBK)	ND	0.020									
Isopropanol	ND	0.80									
Methyl tert-Butyl Ether (MTBE)	ND	0.020									
Methylene Chloride	ND	0.20									
4-Methyl-2-pentanone (MIBK)	ND	0.020									
Naphthalene	ND	0.020									
Propene	ND	0.80									
Styrene	ND	0.020									

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

QUALITY CONTROL

Air Toxics by EPA Compendium Methods - Quality Control

Analyte	ppbv Results	ppbv RL	ug/m3 Results	ug/m3 RL	Spike Level ppbv	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag/Qual
Batch B189540 - TO-15 Prep											
Blank (B189540-BLK1)					Prepared & Analyzed: 10/25/17						
1,1,2,2-Tetrachloroethane	ND	0.020									
Tetrachloroethylene	ND	0.020									
Tetrahydrofuran	ND	0.020									
Toluene	ND	0.020									
1,2,4-Trichlorobenzene	ND	0.020									
1,1,1-Trichloroethane	ND	0.020									
1,1,2-Trichloroethane	ND	0.020									
Trichloroethylene	ND	0.020									
Trichlorofluoromethane (Freon 11)	ND	0.080									
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.080									
1,2,4-Trimethylbenzene	ND	0.020									
1,3,5-Trimethylbenzene	ND	0.020									
Vinyl Acetate	ND	0.40									
Vinyl Chloride	ND	0.020									
m&p-Xylene	ND	0.040									
o-Xylene	ND	0.020									
Surrogate: 4-Bromofluorobenzene (1)	*7.78*				*8.00*		*97.3*	*70-130*			
LCS (B189540-BS1)					Prepared & Analyzed: 10/25/17						
Acetone	5.93				5.00		119	70-130			
Benzene	4.79				5.00		95.8	70-130			
Benzyl chloride	6.13				5.00		123	70-130			
Bromodichloromethane	4.82				5.00		96.5	70-130			
Bromoform	4.86				5.00		97.2	70-130			
Bromomethane	4.43				5.00		88.6	70-130			
1,3-Butadiene	4.79				5.00		95.9	70-130			
2-Butanone (MEK)	4.62				5.00		92.4	70-130			
Carbon Disulfide	5.24				5.00		105	70-130			
Carbon Tetrachloride	4.79				5.00		95.9	70-130			
Chlorobenzene	4.94				5.00		98.8	70-130			
Chloroethane	5.06				5.00		101	70-130			
Chloroform	4.82				5.00		96.3	70-130			
Chloromethane	4.70				5.00		94.0	70-130			
Cyclohexane	4.40				5.00		88.0	70-130			
Dibromochloromethane	4.87				5.00		97.3	70-130			
1,2-Dibromoethane (EDB)	5.13				5.00		103	70-130			
1,2-Dichlorobenzene	4.77				5.00		95.3	70-130			
1,3-Dichlorobenzene	4.46				5.00		89.2	70-130			
1,4-Dichlorobenzene	4.73				5.00		94.5	70-130			
Dichlorodifluoromethane (Freon 12)	4.83				5.00		96.5	70-130			
1,1-Dichloroethane	4.84				5.00		96.9	70-130			
1,2-Dichloroethane	5.02				5.00		100	70-130			
1,1-Dichloroethylene	5.18				5.00		104	70-130			
cis-1,2-Dichloroethylene	5.05				5.00		101	70-130			
trans-1,2-Dichloroethylene	4.79				5.00		95.9	70-130			
1,2-Dichloropropane	4.67				5.00		93.4	70-130			

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

QUALITY CONTROL

Air Toxics by EPA Compendium Methods - Quality Control

Analyte	ppbv Results	ppbv RL	ug/m3 Results	ug/m3 RL	Spike Level ppbv	Source Result	%REC		%REC Limits	RPD	RPD Limit	Flag/Qual
Batch B189540 - TO-15 Prep												
LCS (B189540-BS1)					Prepared & Analyzed: 10/25/17							
cis-1,3-Dichloropropene	5.34				5.00		107		70-130			
trans-1,3-Dichloropropene	5.48				5.00		110		70-130			
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	4.62				5.00		92.5		70-130			
1,4-Dioxane	4.40				5.00		87.9		70-130			
Ethanol	5.81				5.00		116		70-130			
Ethyl Acetate	4.91				5.00		98.2		70-130			
Ethylbenzene	5.06				5.00		101		70-130			
4-Ethyltoluene	4.79				5.00		95.8		70-130			
Heptane	4.97				5.00		99.4		70-130			
Hexachlorobutadiene	6.65				5.00		**133**	*	70-130			L-01
Hexane	4.63				5.00		92.6		70-130			
2-Hexanone (MBK)	4.38				5.00		87.6		70-130			
Isopropanol	3.94				5.00		78.9		70-130			
Methyl tert-Butyl Ether (MTBE)	4.64				5.00		92.9		70-130			
Methylene Chloride	4.50				5.00		90.1		70-130			
4-Methyl-2-pentanone (MIBK)	4.53				5.00		90.6		70-130			
Naphthalene	5.25				5.00		105		70-130			
Propene	4.27				5.00		85.5		70-130			
Styrene	2.97				5.00		**59.5**	*	70-130			L-03, V-34
1,1,2,2-Tetrachloroethane	4.96				5.00		99.3		70-130			
Tetrachloroethylene	5.09				5.00		102		70-130			
Tetrahydrofuran	4.81				5.00		96.2		70-130			
Toluene	5.41				5.00		108		70-130			
1,2,4-Trichlorobenzene	9.55				5.00		**191**	*	70-130			L-01, V-36
1,1,1-Trichloroethane	4.48				5.00		89.6		70-130			
1,1,2-Trichloroethane	4.86				5.00		97.1		70-130			
Trichloroethylene	4.94				5.00		98.7		70-130			
Trichlorofluoromethane (Freon 11)	4.85				5.00		96.9		70-130			
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	5.12				5.00		102		70-130			
1,2,4-Trimethylbenzene	4.77				5.00		95.4		70-130			
1,3,5-Trimethylbenzene	4.14				5.00		82.9		70-130			
Vinyl Acetate	4.27				5.00		85.3		70-130			
Vinyl Chloride	4.95				5.00		99.0		70-130			
m&p-Xylene	10.2				10.0		102		70-130			
o-Xylene	5.08				5.00		102		70-130			
Surrogate: 4-Bromofluorobenzene (1)	*7.74*				*8.00*		*96.7*		*70-130*			

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
ND	Not Detected
RL	Reporting Limit
DL	Method Detection Limit
MCL	Maximum Contaminant Level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
	No results have been blank subtracted unless specified in the case narrative section.
L-01	Laboratory fortified blank /laboratory control sample recovery outside of control limits. Data validation is not affected since all results are "not detected" for all samples in this batch for this compound and bias is on the high side.
L-03	Laboratory fortified blank/laboratory control sample recovery is outside of control limits. Reported value for this compound is likely to be biased on the low side.
RL-13	Elevated reporting limit due to high concentration of non-target compounds.
V-34	Initial calibration verification (ICV) did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
V-36	Initial calibration verification (ICV) did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

INTERNAL STANDARD AREA AND RT SUMMARY

EPA TO-15

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Calibration Check (S016869-CCV1)			Lab File ID: G102504.D			Analyzed: 10/25/17 13:43			
Bromochloromethane (1)	248049	8.883	253830	8.883	98	60 - 140	0.0000	+/-0.50	
1,4-Difluorobenzene (1)	617602	10.803	628476	10.799	98	60 - 140	0.0040	+/-0.50	
Chlorobenzene-d5 (1)	454356	15.603	451262	15.603	101	60 - 140	0.0000	+/-0.50	
LCS (B189540-BS1)			Lab File ID: G102505.D			Analyzed: 10/25/17 14:20			
Bromochloromethane (1)	249746	8.886	248049	8.883	101	60 - 140	0.0030	+/-0.50	
1,4-Difluorobenzene (1)	622125	10.799	617602	10.803	101	60 - 140	-0.0040	+/-0.50	
Chlorobenzene-d5 (1)	450951	15.6	454356	15.603	99	60 - 140	-0.0030	+/-0.50	
Blank (B189540-BLK1)			Lab File ID: G102508.D			Analyzed: 10/25/17 16:26			
Bromochloromethane (1)	232718	8.886	248049	8.883	94	60 - 140	0.0030	+/-0.50	
1,4-Difluorobenzene (1)	589624	10.802	617602	10.803	95	60 - 140	-0.0010	+/-0.50	
Chlorobenzene-d5 (1)	427271	15.603	454356	15.603	94	60 - 140	0.0000	+/-0.50	
SV-1/Air (17J1101-01)			Lab File ID: G102522.D			Analyzed: 10/26/17 01:23			
Bromochloromethane (1)	246387	8.889	248049	8.883	99	60 - 140	0.0060	+/-0.50	
1,4-Difluorobenzene (1)	631774	10.802	617602	10.803	102	60 - 140	-0.0010	+/-0.50	
Chlorobenzene-d5 (1)	458686	15.603	454356	15.603	101	60 - 140	0.0000	+/-0.50	
SV-2/Air (17J1101-02)			Lab File ID: G102523.D			Analyzed: 10/26/17 02:00			
Bromochloromethane (1)	249784	8.883	248049	8.883	101	60 - 140	0.0000	+/-0.50	
1,4-Difluorobenzene (1)	638601	10.796	617602	10.803	103	60 - 140	-0.0070	+/-0.50	
Chlorobenzene-d5 (1)	472179	15.603	454356	15.603	104	60 - 140	0.0000	+/-0.50	
Duplicate/Air (17J1101-03)			Lab File ID: G102524.D			Analyzed: 10/26/17 02:37			
Bromochloromethane (1)	245925	8.883	248049	8.883	99	60 - 140	0.0000	+/-0.50	
1,4-Difluorobenzene (1)	629692	10.796	617602	10.803	102	60 - 140	-0.0070	+/-0.50	
Chlorobenzene-d5 (1)	472249	15.6	454356	15.603	104	60 - 140	-0.0030	+/-0.50	

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

CONTINUING CALIBRATION CHECK

EPA TO-15

S016869-CCV1

COMPOUND	TYPE	CONC. (ppbv)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Acetone	A	5.00	4.56	1.141806	1.040865		-8.8	30
Benzene	A	5.00	4.83	0.736527	0.7110055		-3.5	30
Benzyl chloride	A	5.00	4.94	0.7573292	0.7483225		-1.2	30
Bromodichloromethane	A	5.00	4.87	0.5244062	0.5106253		-2.6	30
Bromoform	A	5.00	4.50	0.5043215	0.4533432		-10.1	30
Bromomethane	A	5.00	4.42	0.5690739	0.5029264		-11.6	30
1,3-Butadiene	A	5.00	4.96	0.510035	0.5054356		-0.9	30
2-Butanone (MEK)	A	5.00	4.70	1.380183	1.298666		-5.9	30
Carbon Disulfide	A	5.00	4.85	1.658526	1.608527		-3.0	30
Carbon Tetrachloride	A	5.00	4.89	0.4778707	0.4669544		-2.3	30
Chlorobenzene	A	5.00	4.87	0.7389673	0.7203796		-2.5	30
Chloroethane	A	5.00	5.01	0.3160854	0.3167052		0.2	30
Chloroform	A	5.00	4.85	1.258566	1.220862		-3.0	30
Chloromethane	A	5.00	4.89	0.6013452	0.5878322		-2.2	30
Cyclohexane	A	5.00	4.64	0.3417774	0.3173668		-7.1	30
Dibromochloromethane	A	5.00	4.91	0.5941501	0.5829367		-1.9	30
1,2-Dibromoethane (EDB)	A	5.00	4.95	0.5181333	0.5128842		-1.0	30
1,2-Dichlorobenzene	A	5.00	3.97	0.6286405	0.4994075		-20.6	30
1,3-Dichlorobenzene	A	5.00	3.88	0.6916038	0.5366048		-22.4	30
1,4-Dichlorobenzene	A	5.00	3.90	0.6372528	0.4976573		-21.9	30
Dichlorodifluoromethane (Freon 12)	A	5.00	4.89	1.344116	1.31376		-2.3	30
1,1-Dichloroethane	A	5.00	4.77	1.150584	1.096932		-4.7	30
1,2-Dichloroethane	A	5.00	5.02	0.8068148	0.8106721		0.5	30
1,1-Dichloroethylene	A	5.00	4.98	0.9593929	0.9545404		-0.5	30
cis-1,2-Dichloroethylene	A	5.00	5.01	0.815431	0.8167677		0.2	30
trans-1,2-Dichloroethylene	A	5.00	4.89	0.8505019	0.8312745		-2.3	30
1,2-Dichloropropane	A	5.00	4.75	0.2870549	0.2727763		-5.0	30
cis-1,3-Dichloropropene	A	5.00	5.25	0.3955991	0.4153225		5.0	30
trans-1,3-Dichloropropene	A	5.00	5.19	0.346108	0.3594082		3.8	30
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 1	A	5.00	4.97	1.491772	1.481791		-0.7	30
1,4-Dioxane	A	5.00	4.85	0.1361536	0.1320877		-3.0	30
Ethanol	A	5.00	4.46	0.2062834	0.1838411		-10.9	30
Ethyl Acetate	A	5.00	5.13	0.2087982	0.2143383		2.7	30
Ethylbenzene	A	5.00	5.03	1.186639	1.194549		0.7	30
4-Ethyltoluene	A	5.00	4.79	1.200788	1.15109		-4.1	30
Heptane	A	5.00	5.24	0.2413577	0.25288		4.8	30
Hexachlorobutadiene	A	5.00	4.07	0.5587028	0.4544525		-18.7	30
Hexane	A	5.00	4.83	0.8048719	0.7769433		-3.5	30

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

CONTINUING CALIBRATION CHECK

EPA TO-15

S016869-CCV1

COMPOUND	TYPE	CONC. (ppbv)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
2-Hexanone (MBK)	A	5.00	5.45	0.7641202	0.8335314		9.1	30
Isopropanol	A	5.00	4.44	1.22674	1.090327		-11.1	30
Methyl tert-Butyl Ether (MTBE)	A	5.00	4.98	1.580035	1.572334		-0.5	30
Methylene Chloride	A	5.00	4.59	0.8110537	0.7438659		-8.3	30
4-Methyl-2-pentanone (MIBK)	A	5.00	5.29	0.6452233	0.6832025		5.9	30
Naphthalene	A	5.00	5.46	0.7389186	0.8071486		9.2	30
Propene	A	5.00	4.38	0.5620263	0.492651		-12.3	30
Styrene	A	5.00	5.01	0.6179096	0.6196304		0.3	30
1,1,2,2-Tetrachloroethane	A	5.00	4.40	0.8300535	0.7310004		-11.9	30
Tetrachloroethylene	A	5.00	4.97	0.4638343	0.4608369		-0.6	30
Tetrahydrofuran	A	5.00	5.25	0.2632765	0.2764486		5.0	30
Toluene	A	5.00	5.34	0.9748682	1.041277		6.8	30
1,2,4-Trichlorobenzene	A	5.00	5.06	0.3678427	0.3725502		1.3	30
1,1,1-Trichloroethane	A	5.00	4.83	0.4723775	0.4559778		-3.5	30
1,1,2-Trichloroethane	A	5.00	4.94	0.357931	0.3535765		-1.2	30
Trichloroethylene	A	5.00	4.95	0.3126047	0.3093695		-1.0	30
Trichlorofluoromethane (Freon 11)	A	5.00	4.90	1.351622	1.324422		-2.0	30
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113	A	5.00	4.95	1.036382	1.025817		-1.0	30
1,2,4-Trimethylbenzene	A	5.00	4.79	0.9908656	0.9497222		-4.2	30
1,3,5-Trimethylbenzene	A	5.00	4.71	1.09603	1.032163		-5.8	30
Vinyl Acetate	A	5.00	4.50	1.925804	1.732716		-10.0	30
Vinyl Chloride	A	5.00	4.97	0.6454766	0.6416603		-0.6	30
m&p-Xylene	A	10.0	9.98	0.9298856	0.9284297		-0.2	30
o-Xylene	A	5.00	4.93	0.9069142	0.8940232		-1.4	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
EPA TO-15 in Air	
Acetone	AIHA,NY,ME
Benzene	AIHA,FL,NJ,NY,VA,ME
Benzyl chloride	AIHA,FL,NJ,NY,VA,ME
Bromodichloromethane	AIHA,NJ,NY,VA,ME
Bromoform	AIHA,NJ,NY,VA,ME
Bromomethane	AIHA,FL,NJ,NY,ME
1,3-Butadiene	AIHA,NJ,NY,VA,ME
2-Butanone (MEK)	AIHA,FL,NJ,NY,VA,ME
Carbon Disulfide	AIHA,NJ,NY,VA,ME
Carbon Tetrachloride	AIHA,FL,NJ,NY,VA,ME
Chlorobenzene	AIHA,FL,NJ,NY,VA,ME
Chloroethane	AIHA,FL,NJ,NY,VA,ME
Chloroform	AIHA,FL,NJ,NY,VA,ME
Chloromethane	AIHA,FL,NJ,NY,VA,ME
Cyclohexane	AIHA,NJ,NY,VA,ME
Dibromochloromethane	AIHA,NY,ME
1,2-Dibromoethane (EDB)	AIHA,NJ,NY,ME
1,2-Dichlorobenzene	AIHA,FL,NJ,NY,VA,ME
1,3-Dichlorobenzene	AIHA,NJ,NY,ME
1,4-Dichlorobenzene	AIHA,FL,NJ,NY,VA,ME
Dichlorodifluoromethane (Freon 12)	AIHA,NY,ME
1,1-Dichloroethane	AIHA,FL,NJ,NY,VA,ME
1,2-Dichloroethane	AIHA,FL,NJ,NY,VA,ME
1,1-Dichloroethylene	AIHA,FL,NJ,NY,VA,ME
cis-1,2-Dichloroethylene	AIHA,FL,NY,VA,ME
trans-1,2-Dichloroethylene	AIHA,NJ,NY,VA,ME
1,2-Dichloropropane	AIHA,FL,NJ,NY,VA,ME
cis-1,3-Dichloropropene	AIHA,FL,NJ,NY,VA,ME
trans-1,3-Dichloropropene	AIHA,NY,ME
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	AIHA,NJ,NY,VA,ME
1,4-Dioxane	AIHA,NJ,NY,VA,ME
Ethanol	AIHA
Ethyl Acetate	AIHA
Ethylbenzene	AIHA,FL,NJ,NY,VA,ME
4-Ethyltoluene	AIHA,NJ
Heptane	AIHA,NJ,NY,VA,ME
Hexachlorobutadiene	AIHA,NJ,NY,VA,ME
Hexane	AIHA,FL,NJ,NY,VA,ME
2-Hexanone (MBK)	AIHA
Isopropanol	AIHA,NY,ME
Methyl tert-Butyl Ether (MTBE)	AIHA,FL,NJ,NY,VA,ME
Methylene Chloride	AIHA,FL,NJ,NY,VA,ME
4-Methyl-2-pentanone (MIBK)	AIHA,FL,NJ,NY,ME
Naphthalene	NY,ME
Propene	AIHA
Styrene	AIHA,FL,NJ,NY,VA,ME
1,1,2,2-Tetrachloroethane	AIHA,FL,NJ,NY,VA,ME

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
EPA TO-15 in Air	
Tetrachloroethylene	AIHA,FL,NJ,NY,VA,ME
Tetrahydrofuran	AIHA
Toluene	AIHA,FL,NJ,NY,VA,ME
1,2,4-Trichlorobenzene	AIHA,NJ,NY,VA,ME
1,1,1-Trichloroethane	AIHA,FL,NJ,NY,VA,ME
1,1,2-Trichloroethane	AIHA,FL,NJ,NY,VA,ME
Trichloroethylene	AIHA,FL,NJ,NY,VA,ME
Trichlorofluoromethane (Freon 11)	AIHA,NY,ME
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	AIHA,NJ,NY,VA,ME
1,2,4-Trimethylbenzene	AIHA,NJ,NY,ME
1,3,5-Trimethylbenzene	AIHA,NJ,NY,ME
Vinyl Acetate	AIHA,FL,NJ,NY,VA,ME
Vinyl Chloride	AIHA,FL,NJ,NY,VA,ME
m&p-Xylene	AIHA,FL,NJ,NY,VA,ME
o-Xylene	AIHA,FL,NJ,NY,VA,ME

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2005	100033	02/1/2018
MA	Massachusetts DEP	M-MA100	06/30/2018
CT	Connecticut Department of Publilc Health	PH-0567	09/30/2019
NY	New York State Department of Health	10899 NELAP	04/1/2018
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2018
RI	Rhode Island Department of Health	LAO00112	12/30/2017
NC	North Carolina Div. of Water Quality	652	12/31/2017
NJ	New Jersey DEP	MA007 NELAP	06/30/2018
FL	Florida Department of Health	E871027 NELAP	06/30/2018
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2018
ME	State of Maine	2011028	06/9/2019
VA	Commonwealth of Virginia	460217	12/14/2017
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2018
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2018
NC-DW	North Carolina Department of Health	25703	07/31/2018

17J1101

con-test ANALYTICAL LABORATORY

Phone: 413-525-2332
Fax: 413-525-6405
Email: info@contestlabs.com

http://www.contestlabs.com

CHAIN OF CUSTODY RECORD (AIR)

Doc #378 Rev 1_03242017

39 Spruce Street
East Longmeadow, MA 01028

Page 1 of 1

Company Name:	Woodard & Curran
Address:	41 Hutchins Dr., Portland, ME
Phone:	(207) 774-2112
Project Name:	56 Parris St.
Project Location:	Portland, ME
Project Number:	229649
Project Manager:	Jedd Steinglass
Con-Test Quote Name/Number:	
Invoice Recipient:	
Sampled By:	Dan Shore

Requested Turnaround Time
7-Day ☐ 10-Day ☐
Due Date:

Rush Approval Required
1-Day ☐ 3-Day ☐
2-Day ☐ 4-Day ☐

Data Delivery
Format: PDF ☐ EXCEL ☐
Other:
CLP Like Data Pkg Required: ☐
Email To:
Fax To #:

ANALYSIS REQUESTED

Lab Use	Client Use	Collection Data		Duration	Flow Rate	Matrix	Volume	TO-15				" Hg			Please fill out completely, sign, date and retain the yellow copy for your records. Summa canisters and flow controllers must be returned within 15 days of receipt or rental fees will apply. For summa canister and flow controller information please refer to Con-Test's Air Media Agreement	
Con-Test Work Order#	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	Total Minutes Sampled	☐ m³/min ☐ L/min	Code	☒ Liters ☐ m³					Initial Pressure	Final Pressure	Lab Receipt Pressure	Summa Can ID	Flow Controller ID
01	SV-1/Air	10/17/17 1001	10/17/17 1121	50		SG	6	X				-28	-2"	4.1	1936	4101
02	SV-2/Air	10/17/17 ~~1205~~ 1235	10/17/17 1325	50		SG	6	X				-30	-2"	2.1	1926	4027
03	DUPLICATE/AIR	10/17/17	10/17/17	50		SG	6	X				-30	-2	2.1	1951	4027

Comments:

Please use the following codes to indicate possible sample concentration within the Conc Code column above:
H - High; M - Medium; L - Low; C - Clean; U - Unknown

Matrix Codes:
SG = SOIL GAS
IA = INDOOR AIR
AMB = AMBIENT
SS = SUB SLAB
D = DUP
BL = BLANK
O = Other_____

Relinquished by: (signature)	Date/Time: 10/18/17 1520		
Received by: (signature)	Date/Time: 10.19.17 12.53		
Relinquished by: (signature)	Date/Time:		
Received by: (signature)	Date/Time:		
Relinquished by: (signature)	Date/Time:		
Received by: (signature)	Date/Time:		

Detection Limit Requirements
MA
CT
Other:

Special Requirements
☐ MA MCP Required
MCP Certification Form Required
☐ CT RCP Required
RCP Certification Form Required
☐ Other

con-test ANALYTICAL LABORATORY www.contestlabs.com

NELAC and AIHA-LAP, LLC Accredited

Project Entity
☐ Government ☐ Municipality ☐ MWRA ☐ WRTA
☐ Federal ☐ 21 J ☐ School
☐ City ☐ Brownfield ☐ MBTA

Other
☐ Chromatogram
☐ *AIHA-LAP, LLC*

PCB ONLY
☐ Soxhlet
☐ Non Soxhlet

Table of Contents

IMPORTANT!
The wildfires are causing hazardous conditions in California. Learn More

FedEx® Tracking

770531491059

Ship date:		Actual delivery:
Wed 10/18/2017	**Delivered**	**Thu 10/19/2017 12:53 pm**
PORTLAND, ME US	*Signed for by: RFAUST*	EAST LONGMEADOW, MA US

2 Piece shipment

Travel History

Date/Time	Activity	Location
10/19/2017 - Thursday		
12:53 pm	Delivered	East Longmeadow, MA
6:22 am	On FedEx vehicle for delivery	CHICOPEE, MA
6:12 am	At local FedEx facility	CHICOPEE, MA
4:17 am	Departed FedEx location	WILLINGTON, CT
1:26 am	Arrived at FedEx location	WILLINGTON, CT
10/18/2017 - Wednesday		
9:21 pm	Left FedEx origin facility	SACO, ME
6:28 pm	Arrived at FedEx location	SACO, ME
4:39 pm	Picked up	SACO, ME
4:04 pm	Shipment information sent to FedEx	

Shipment Facts

Tracking Number	770531491059	**Service**	FedEx Ground
Master tracking number	770531491129	**Weight**	32 lbs / 14.51 kgs
Dimensions	22x19x14 in.	**Signature services**	Direct signature required
Total pieces	2	**Total shipment weight**	40 lbs / 18.14 kgs
Terms	Recipient	**Packaging**	Package
Special handling section	Direct Signature Required	**Standard transit**	10/19/2017

OUR COMPANY

About FedEx

Our Portfolio

Investor Relations

Careers

FedEx Blog

Corporate Responsibility

Newsroom

Contact Us

Ask FedEx

39 Spruce St.
East Longmeadow, MA. 01028
P: 413-525-2332
F: 413-525-6405
www.contestlabs.com

con-test® ANALYTICAL LABORATORY

Doc# 278 Rev 6 2017

Air Media Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client Woodard & Curran

Received By PB | Date 10.19.17 | Time 12:53

How were the samples received? In Cooler | On Ice | No Ice
In Box T | Ambient | Melted Ice

Were samples within Temperature Compliance? 2-6°C NA | By Gun # | Actual Temp -
By Blank # | Actual Temp -

Was Custody Seal Intact? NA | Were Samples Tampered with? NA

Was COC Relinquished ? T | Does Chain Agree With Samples? T

Are there any loose caps/valves on any samples? F

Is COC in ink/ Legible? T

Did COC Include all Pertinent Information? Client T | Analysis T | Sampler Name T
Project T | ID's T | Collection Dates/Times T

Are Sample Labels filled out and legible? T

Are there Rushes? F | Who was notified?

Samples are received within holding time? T

Proper Media Used? T | Individually Certified Cans? F

Are there Trip Blanks? F | Is there enough Volume? T

Containers:	#	Size	Regulator	Duration	Accessories:			
Summa Cans	5	6Lit	4	30 min	Nut/Ferrule		IC Train	
Tedlar Bags					Tubing			
TO-17 Tubes					T-Connector		Shipping Charges	
Radiello					Syringe			
Pufs/TO-11s					Tedlar			

Can #'s					Reg #'s				
	1936					4027			
	1926					4101			
	1951					4104			
	1012					4103			
	1309								
Unused Media		1012	4027	-30	**Pufs/TO-17's**				
		1309	4104	-29.8					

Comments:

ARCEOS™
ARS SERIES
SURFACE/CEILING/GARAGE

Cat.#

Job

Type

HUBBELL Outdoor Lighting

Approvals

SPECIFICATIONS

Intended Use:
Ceiling applications from eight to eighteen feet for surface, box or pendant mount. Applications include parking garage, walkway or building canopies, corridors, tunnels, large stairwells and other interior applications with ambient 40˚C. A wide range of lumen packages and optical distributions are available making the ARS Series luminaire both versatile and functional.

Construction:
- Die cast aluminum housing features vertical fins for two directional air flow that maximizes heat dissipation and ensures long electrical component life and luminaire performance
- LED light engines and electrical compartment are thermally isolated with an air gap for optimum component performance and long life
- One piece molded silicone gasket ensures weather proof seal around each individual LED; Stamped stainless steel bezel provides mechanical compression to seal the optical assembly; 18L and 24L luminaires include finish (color) matching blanking bezel
- IP65 luminaire rating
- Vandal resistant polycarbonate and low bright-ness acrylic shield accessories available

LED/Optics:
- Light engine is hexagonal LED module containing 6 high output LEDs with PMMA acrylic lenses that create precise photometric performance
- Choice of multiple light outputs based on quantity of hexagonal LED arrays: 3 = 18 LEDs, 4 = 24 LEDs or 6 = 36 LEDs hexagonal LED modules, lumen range 4,000-9,700
- Four distribution types: Type V Square (5M), Type V Rectangular (5R), Type V Wide (5W) or Type IV (4)
- Type V Rectangular (5R) lenses provides low brightness "drive aisle optics" solution for low mounting height applications when the lens is oriented perpendicular to the flow of traffic
- Variety of color temperatures offered: 3000K (70CRI), 4000K (70CRI) or 5000K (70 CRI) CCT
- Each hexagonal light engine comes with a connector for easy replacement

Electrical:
- 120V-277V 50/60Hz, 42-86 Watts 700mA configurations. Drivers RoHS compliant and IP66
- 0-10V dimming drivers. Up to 113 lumens per watt. Designed and certified for 40˚C ambient temperatures
- Thermal management protection device shuts driver/LED systems off when temperatures are too high. Operating temperature range -30˚C/-22˚F –40˚C/104˚F
- Surge protection – 20KA; Turns fixture off at end of life; Includes LED for end of life indication (see surge suppressor page 3)

Controls/Options:
- Occupancy Sensors, photocells controls available for on/off or dimming operation
- wiSCAPE in fixture wireless control module, features dimming, switching motion sensor
- Up light o ption available in 24L and 36L configurations

Installation:
Quick disconnect plate mounts over standard junction box and allows for simplified fixture installation. A 3/4" hub provides pendant stem mounting making the fixture adaptable to a variety of applications. Each mounting can be accomplished while maintaining a watertight seal. Four ½" conduit hubs allow side access as required. A pattern indicator on the mounting plate allows the installer to properly orient the fixture without energizing the light engines.

Listings:
Listed to UL 1598 for use in wet locations, 40˚ C ambient environments; Meets DesignLights Consortium (DLC) qualifications 4K & 5K models only, Consult DLC website for more details: http://www.designlights.org/QPL; IP65

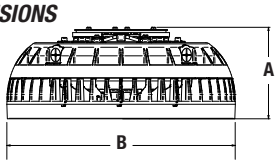
Warranty:
Five year limited warranty (for more information visit: http://www.hubbelllighting.com/resources/warranty/

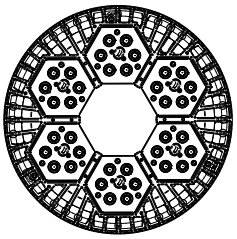
PRODUCT IMAGE(S)



Shown with motion control option

DIMENSIONS





A	B	Weight:
5.68" (144.22 mm)	14.00" (355.6 mm)	18 lbs 8.16 kg

CARTON DIMENSIONS

Length	Width	Height
15.88"	15.88"	7.5"

CERTIFICATIONS/LISTINGS

C SP US

IP65

DLC QPL LISTED

ida

*3000K and warmer CCTs only

ORDERING INFORMATION

ORDERING EXAMPLE: ARS-36L5K-070-5M-1-DB-PC

ARS - [ ] [ ] - [ ] - [ ] - [ ] - [ ] - [ ] - [ ]

SERIES	NUMBER OF LEDS	LED COLOR	DRIVE CURRENT	IES DISTRIBUTION	VOLTAGE[2]
ARS Arceos™ surface/ceiling/garage luminaire	**18L** 18 LEDs	**3K** 3000K	**070** 700mA	**5M** Type V Square	**U** 120V-277V
	24L 24 LEDs	**4K** 4000K	**083**[1] 833mA	**5R** Type V Rectangle	**1** 120V
	36L 36 LEDs	**5K** 5000K	**105**[1] 1050mA	**5W** Type V Wide	**2** 208V
				4 Type IV	**3** 240V
					4 277V
					F[6] 347V
					5[6] 480V

FINISH	FINISH
DB Bronze	**FG** Forest Green (premium color)
BL Black	**RD** Red (premium color)
WH White	**CC** Custom Colors (Consult factory)
PS Platinum Silver	
GR Gray	

OPTIONS	
F[2]	Fusing (voltage specified and determined by voltage field)
UD	Up light option, available in 24L and 36L only 700mA configuration only
LMB	Less moutning bracket (must order mounting bracket accessory)

CONTROL OPTIONS	
PC[2]	Photocontrol (must specify voltage not available in 480V)
SCP[2,3,5]	High/low control - for up to 20' mounting heights user programmable settings
SCPW[2,3,5]	High/low control - wide lens for up to 8' mounting heights

CONTROL OPTIONS	
WIR	wiSCAPE, In-fixture wireless control module
WIRSC	wiSCAPE, In-fixture wireless control module w/ occupancy sensor

[1] 833mA only available in 18L, 1050mA only available with 24L, 120-277V only
[2] Specify voltage for voltage specific options
[3] 0-10V fully adjustable dimming with automatic daylight calibration and different time delay settings; Must order minimum of one SCP-REMOTE to program dimming settings
[4] One per LED module e.g. 3 – 18L, 4 – 24L, and 6 – 36L luminaires (see page 3)
[5] PC option not applicable, included in sensor. For SCP, PC function turns on to lower setting until motion is detected
[6] 24L and 36L 700mA configuration only, not available with UD option

See page 2 and 3 for Accessories.

© 2018 HUBBELL OUTDOOR LIGHTING, All Rights Reserved • For more information visit our website: **www.hubbelloutdoor.com** • Printed in USA

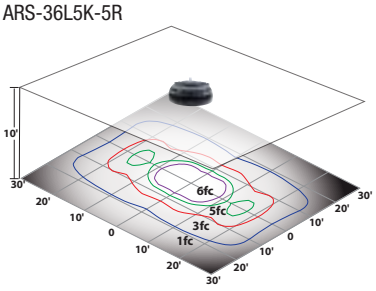
ACCESSORIES/REPLACEMENT PARTS - Order Separately

Catalog Number	Description
ARS-SPC[4]	Vandal shield (1 per LED module)
ARS-BS-XX*	Bird shield
ARS-CS[4]	Comfort shield - Reduces source brightness and imagining P95 acrylic with nominal 10% lumen reduction (1 per LED module)
ARS-MB-XX*	ARS mounting bracket for pre-installation of mounting bracket (accessory for LMB option)
SCP-REMOTE[3]	Remote control for SCP option; order at least on per project to program and control (not applicable for 347/480V)
SWUSB* **	SiteSync interface software loaded on USB flash drive for use with owner supplied PC (Windows based only). Includes SiteSync license, software and USB radio bridge node.
SWTAB* **	Windows tablet and SiteSync interface software. Includes tablet with preloaded software, SiteSync license and USB radio bridge node.
SWBRG+	SiteSync USB radio bridge node only. Order if a replacement is required or if an extra bridge node is requested.
93052458	20KA surge protection with an end of life LED indicator

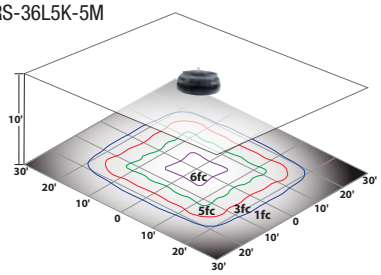
*XX = Color Options: DB, BL, WH, PS and GR
** When ordering with SiteSync, one of the following interface options must be chosen an ordered separately. Each option contains the SiteSync License, GUI and Bridge Node.
*** When ordering SiteSync at least one of these two interface options must be ordered per project.
+ If needed, an additional Bridge Node can be ordered.

PHOTOMETRICS

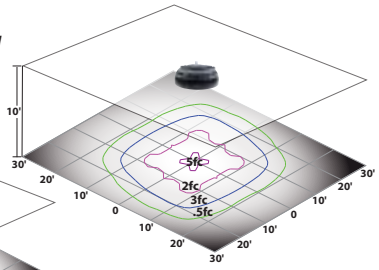
Type V Rectangle
Drive Aisle Optic
ARS-36L5K-5R



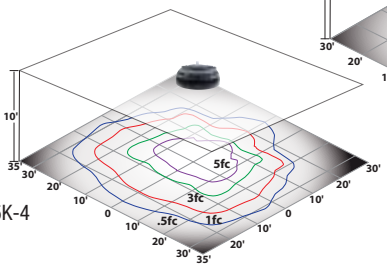
Type V Square – ARS-36L5K-5M



Type V Wide – ARS-36L5K-5W



Type IV – ARS-36L5K-4



PERFORMANCE DATA

				5K (5000K nominal, 70 CRI)					4K (4000K nominal, 70 CRI)					3K (3000K nominal, 70 CRI)				
# LED'S	DRIVE CURRENT (MILLIAMPS)	SYSTEM WATTS	DISTRIBUTION TYPE	LUMENS	LPW[1]	B	U	G	LUMENS	LPW[1]	B	U	G	LUMENS	LPW[1]	B	U	G
18	700mA	42	5M	4551	109	2	0	1	4376	105	2	0	1	4026	97	2	0	0
			5R	4727	113	2	0	2	4511	108	2	0	2	4150	100	2	0	2
			5W	4517	108	3	0	1	4182	100	3	0	2	3847	92	3	0	1
	833mA	54	5M	5401	100	2	0	1	5024	93	2	0	1	4622	85	2	0	1
			5R	5541	102	3	0	3	5179	96	2	0	2	4765	88	2	0	2
			5W	5171	95	3	0	1	4881	90	3	0	2	4491	83	3	0	2
24	700mA	56	5M	6068	109	2	0	1	5835	105	3	0	1	5368	97	2	0	1
			5R	6303	113	3	0	3	6015	108	3	0	3	5534	100	3	0	3
			5W	6022	108	3	0	2	5576	100	3	2	3	5130	92	3	0	1
	1050mA	85	5M	7888	93	3	0	1	7586	89	3	0	1	6979	82	3	0	1
			5R	8194	97	3	0	3	7820	92	3	0	3	7194	85	3	0	3
			5W	7829	92	3	0	2	7249	85	3	0	2	6669	79	3	0	2
36	700mA	86	5M	9391	109	3	0	1	8695	101	3	0	1	7999	93	3	0	1
			5R	9741	113	3	0	3	8962	104	3	0	3	8245	96	3	0	3
			5W	9100	105	4	0	2	8427	98	3	0	2	7753	90	3	0	2

[1]Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown. Actual performance may differ as a result of end-user environment and application.

ELECTRICAL DATA

# OF LEDS	NUMBER OF DRIVERS	DRIVE CURRENT (mA)	INPUT VOLTAGE (V)	SYSTEM POWER (w)	CURRENT (Amps)
18	1	700	120	41.7	0.35
			277		0.15
	1	833	120	54.2	0.45
			277		0.20
24	2	700	120	55.6	0.46
			277		0.20
			347		0.16
			480		0.12
	1	1050	120	84.8	0.71
			277		0.31
36	3	700	120	86.3	0.72
			277		0.31
			347		0.25
			480		0.18

LUMINAIRE AMBIENT TEMPERATURE FACTOR (LATF)

AMBIENT TEMPERATURE		LUMEN MULTIPLIER
0˚ C	32˚ F	1.02
10˚ C	50˚ F	1.01
20˚ C	68˚ F	1.00
25˚ C	77˚ F	1.00
30˚ C	86˚ F	1.00
40˚ C	104˚ F	0.99

Use these factors to determine relative lumen output for average ambient temperatures from 0-50°C (32-122°F).

© 2018 HUBBELL OUTDOOR LIGHTING, All Rights Reserved • For more information visit our website: **www.hubbelloutdoor.com** • Printed in USA

PROJECTED LUMEN MAINTENANCE

AMBIENT TEMP.	0	25,000	50,000	[1]TM-21-11 60,000	100,000	Calculated L70 (HOURS)
10°C / 50°F	1.01	1.00	0.99	0.99	0.97	>1,085,000
25°C / 77°F	1.00	0.99	0.98	0.98	0.96	>1,085,000
40°C / 104°F	0.97	0.96	0.96	0.95	0.94	>782,000

[1] Projected per IESNA TM-21-11 Data references the extrapolated performance projections for the **ARS-36LU-5K** base model in a 40°C ambient, based on 10,000 hours of LED testing per IESNA LM-80-08.

VERSATILE CONFIGURATIONS



ARS-18LU



ARS-24LU



ARS-36LU

MOUNTING OPTIONS & ACCESSORIES



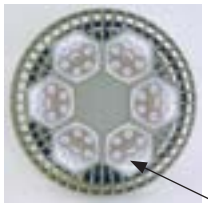
Specially designed internal hook and hinge allows easy access to wiring and internal components for easy installation



Pendant mount with ¾" wiring hub; Bird shield accessory available; J-Box mounting slots and wire way accommodate 3 ½" and 4" J-Box designs

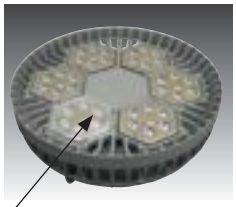


Four – ½" wiring hubs for surface conduit wiring and photocell option



ARS-SPC - Clear vandal shield installs over each hexagonal LED bezel with 3 provided screws, specify quantity when ordering:

- 3 for 18L
- 4 for 24L
- 6 for 36L



ARS-CS - Frosted comfort shield installs over each hexagonal LED bezel with 3 provided screws, improved uniformity and reduced LED brightness, specify quantity when ordering:

- 3 for 18L
- 4 for 24L
- 6 for 36L



Optional up light feature provides approximately 300 lumens of ambient light reducing the "cave effect" in parking garage applications (available in 24L and 36L, 700mA versions only)

SURGE PROTECTION

- Field replaceable surge protection device (SPD) provides 20KA and 10KV protection meeting ANSI/IEEE C62.41.2 Category C High and Surge Location Category C3
- The SPD is designed with a clamping voltage of 1600V at 20KA using industry standard 8/20μs waveform
- Max surge current = 20,000 Amps (see table)
- LED Indicator – Green LED is unlit at end of life

Pulse Rating (8 x 20 μSec)	
Strikes	Surge
1	20,000 A
2	15,000 A
15	10,000 A
120	3,000 A

	cRUus	CE
I_n	10KA	5KA

© 2018 HUBBELL OUTDOOR LIGHTING, All Rights Reserved • For more information visit our website: **www.hubbelloutdoor.com** • Printed in USA

GEOPAK SERIES SIZE 1 LED

Architectural Wallpack

TRP1/RDI1/QSP1

NEW

Cat.#	
Job	Type

HUBBELL Outdoor Lighting

Approvals

SPECIFICATIONS

APPLICATIONS

- Small sized architectural wallpacks in three stylish shapes with molded contours to accentuate building architecture. Provides excellent illumination in energy-saving LED systems.
- Back box accessory available for surface conduit application.

Construction:

- Housing is made from die-cast aluminum with a hinged back-plate for ease of installation and maintenance.
- The LED bezel and trim-plate are made of stainless steel.
- Five powder coat standard finishes, plus custom color options.
- Wet Location Listed to UL924 and UL1598 Standard.

LED:

- 12 high power LEDs delivering up to 3,000 lumens.
- Up to 118 lumens per watt
- Type II, III and IV distributions for a wide variety of applications.
- Zero uplight (UO), dark sky, neighbor friendly

Electrical:

- 120-277 operation, 50/60Hz
- 0-10V dimming driver standard
- 10kA surge protector
- Photocell and occupancy sensor options available for complete on/off and dimming control

Battery Backup:

- Intergral Battery Backup provides emergency lighting for the required 90 minute path of egress.
- Includes a long-life Lithium Iron Phosphate battery with optional battery heater for cold temperature application.
- Utilizes 4 LEDs in emergency mode with 657 lumens. Each of the 4 LEDs in emergency are designed to function independently in the unlikely event of a single LED malfunction
- Spectron® self-testing/self-diagnostic electronics are included standard
- Independent dedicated driver and LED array for battery/emergency mode operation.

Installation:

- Universal plate for mounting to standard 3 1/2" and 4" square electrical boxes. All connections are made from connections at the rear of the unit.
- Optional back-box accessory available for surface conduit application. See BB-Geo accessories.

Listings:

- UL 1598 listed for use in wet locations
- Drivers IP66 and RoHS compliant
- DesignLights Consortium® (DLC) qualified. Please refer to the DLC website for specific product qualifications at www.designlights.org

Warranty:

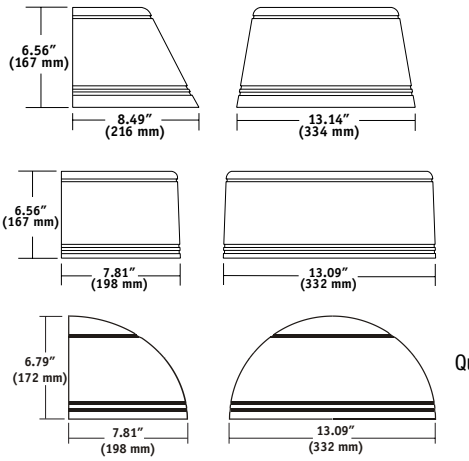
- For more information visit:

http://www.hubbelloutdoor.com/resources/warranty/

PRODUCT IMAGE(S)



DIMENSIONS



SHIPPING INFORMATION

Catalog Number	Weight (lbs)	Carton Dimensions		
		Length Inch (cm)	Width Inch (cm)	Height Inch (cm)
TRP1	11.5	17.0	9.9	10.0
RDI1	11.5	18.0	11.0	9.25
QSP1	10.5	17.0	9.6	10.5

CERTIFICATIONS/LISTINGS

C SA US

*3000K and warmer CCTs only

DLC QPL LISTED

ORDERING INFORMATION

ORDERING EXAMPLE: TRP-12L-20-4K-3-1-BL-SCP-EH

[ ] - [ ] - [ ] - [ ] - [ ] - [ ] - [ ] - [ ] - [ ] - [ ]

HOUSING	VERSION	WATTAGE	CCT/CRI	DISTRIBUTION	VOLTAGE	FINISH	CONTROL OPTIONS	OPTIONS
TRP1 Trapeziod	12L 12 LEDS	15 15 watts	3K7 3000K, 70CRI	2 Type II	U 120-277	BL Black	PCU Button Photocell	F[4] Fusing (only available with STD fixture configuration, 120-277V only)
RDI1 Radius		20 20 watts	4K7 4000K, 70CRI	3 Type III	1 120	DB Bronze	SCP[2,3] Programmable Motion Sensor	E[1] Battery Pack (0˚C)
QSP1 Quartersphere		30 30 watts	5K7 5000K, 70CRI	4 Type IV	2 208	GR Gray	SPECIFY SCP HEIGHT	EH[1] Battery Pack (-30˚C) with heater
					3 240	PS Platinum	8F Up to 8ft mount height	
					4 277	WH White	20F Up to 20ft mount height	
						CC Custom		

[1] Voltage specific (120 or 277V only)
[2] Must order minimum of one remote control to program dimming settings, 0-10V fully adjustable dimming with automatic daylight calibration and different time delay settings, 120-277V only
[3] PCU option not applicable, included in sensor
[4] Must specify input voltage (120, 208, 240 or 277)

© 2016 HUBBELL OUTDOOR LIGHTING, All Rights Reserved • For more information visit our website: **www.hubbelloutdoor.com** • Printed in USA

ACCESSORIES - Order separately

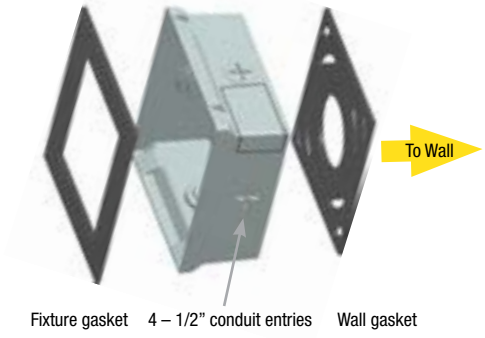
Catalog Number	Description
SCP-REMOTE[2]	Remote control for SCP option. Order at least one per project to program and control.
BB-GEO-XX	Back box with 4 - 1/2" threaded conduit holes, specify finish by replacing "XX" with finish selection, eg. Dark Bronze "DB"

[2] Must order minimum of one remote control to program dimming settings, 0-10V fully adjustable dimming with automatic daylight calibration and different time delay settings, 120V-277V only



BB-GEO-XX – Mounted to luminaire

BB-GEO-XX



PERFORMANCE DATA (AC/Standard Configurations)

				5K (5000K nominal, 70 CRI)					4K (4000K nominal, 70 CRI)					3K (3000K nominal, 70 CRI)				
# OF LEDS	DRIVE CURRENT	SYSTEM WATTS	DIST. TYPE	LUMENS	LPW[1]	B	U	G	LUMENS	LPW[1]	B	U	G	LUMENS	LPW[1]	B	U	G
12	350mA	13.9	2	1635	118	1	1	1	1577	113	1	1	1	1497	108	1	1	1
			3	1613	116	1	0	1	1556	112	1	0	1	1477	106	1	0	1
			4	1607	116	0	0	1	1550	111	0	0	1	1471	106	0	0	1
	500mA	19.9	2	2268	114	1	1	1	2176	109	1	1	1	2077	104	1	1	1
			3	2245	113	1	0	1	2140	108	1	0	1	2049	103	1	0	1
			4	2229	112	0	0	1	2150	108	0	0	1	2041	103	0	0	1
	700mA	28.2	2	2942	104	1	1	1	2885	102	1	1	2	2721	96	1	1	1
			3	2912	103	1	0	1	2836	101	1	0	1	2685	95	1	0	1
			4	2892	103	1	0	1	2789	99	1	0	1	2674	95	1	0	1

Electrical Data

Input Power Consumption

Drive Current (mA)	Input Voltage (V)	System Power (w)	Current (Amps)
350mA	120	13.9	0.12
	277		0.05
500mA	120	19.9	0.17
	277		0.07
700mA	120	28.2	0.24
	277		0.10

Battery backup units consume additional power during charging (maximum 32.2 watts for E, 50.7 watts for EH)

Projected Lumen Maintenance

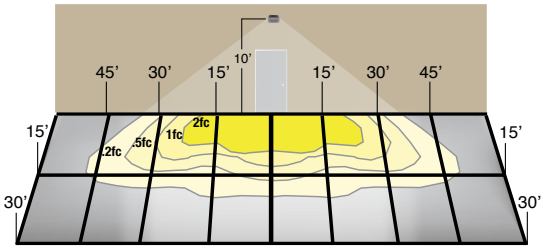
Ambient Temp.	Operating Hours 0	25,000	50,000	TM-21-11[1] 60,000	100,000	L70 (hours)
25°C/77°F	1.00	0.98	0.97	0.95	0.91	>345,000
40°C/104°F	1.00	0.96	0.95	0.92	0.87	>268,000

LUMINAIRE AMBIENT TEMPERATURE FACTOR (LATF)

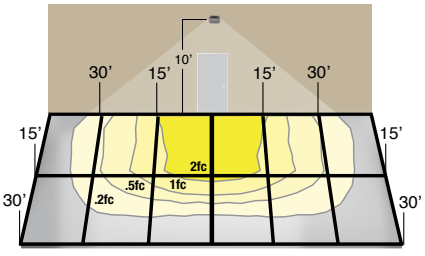
AMBIENT TEMPERATURE		LUMEN MULTIPLIER
0° C	32° F	1.02
10° C	50° F	1.01
20° C	68° F	1.00
25° C	77° F	1.00
30° C	86° F	1.00
40° C	104° F	0.99
50° C	122° F	0.98

Use these factors to determine relative lumen output for average ambient temperatures from 0-40°C (32-104°F).

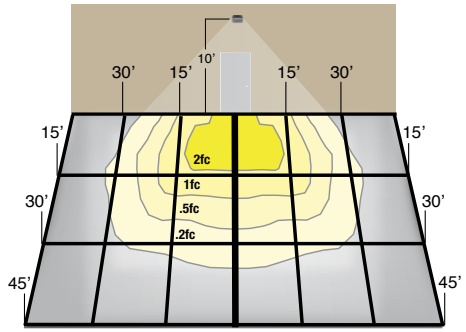
PHOTOMETRIC REPORTS
(30w, 4000K shown)



TYPE II



TYPE III



TYPE IV (Forward throw)

© 2016 HUBBELL OUTDOOR LIGHTING, All Rights Reserved • For more information visit our website: **www.hubbelloutdoor.com** • Printed in USA

GeoPak - Battery Back Up

Functional Circuitry: Transient surge protection device on AC input. Upon failure of the normal utility power, an LED driver is automatically activated to power the emergency LEDs. Upon resumption of normal utility power, the LED driver is turned off, and the battery is recharged through a micro-controller based 3-stage charger. The battery is a maintenance-free Lithium Iron Phosphate (LiFePo) type. A low voltage battery disconnect (LVD) feature protects the battery from severe damage during prolonged power failures. Manual testing is available at any time using the push-to-test button. The optional heater features a heating wrap and thermostat to maintain optimal battery temperature during charge or discharge. The GeoPak includes the following features:

- Battery re-charge within 24 hours
- AC Lock-out circuit
- Self-diagnostics monitors LED status, LED driver circuit, battery capacity and charger function and displays any fault detection by means of a flashing code.
- Self-Test feature runs a 1 minute test once a month and an alternating 30 or 60 minute test once every 6 months. Multi-color LED indicator provides visible fault detection and charging status.
- User initiated 1, or 90-minute system test feature
- 15 minute re-transfer delay
- Automatic unit transfer in brown-out conditions (below 80% of nominal AC input voltage).

Emergency Photometric Performance (1 fc average .1 fc minimum)

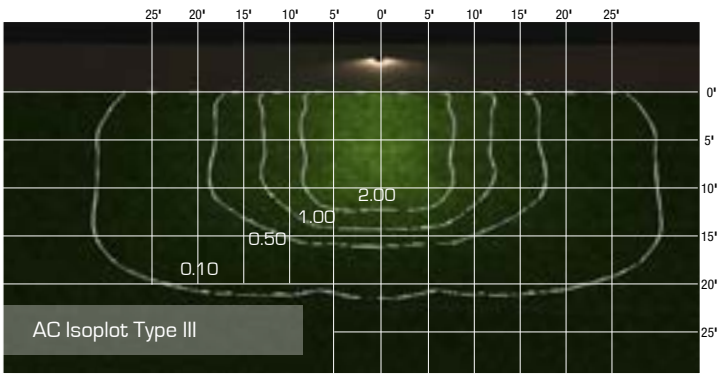
28’ multi-unit spacing at 10’ MH with 0/30/10 reflectances on a 6’ path

26’ x 10’ single unit coverage at 10’ MH with 0/30/10 reflectances

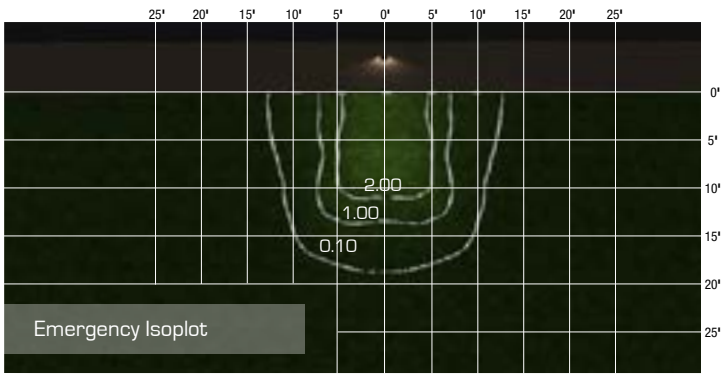
6’ x 19’ forward throw coverage at 10’ MH with 0/30/10 reflectances



Normal Mode



Emergency Mode



Provides Life Safety Code average illuminance of 1.0 fc. Assumes open space with no obstructions.

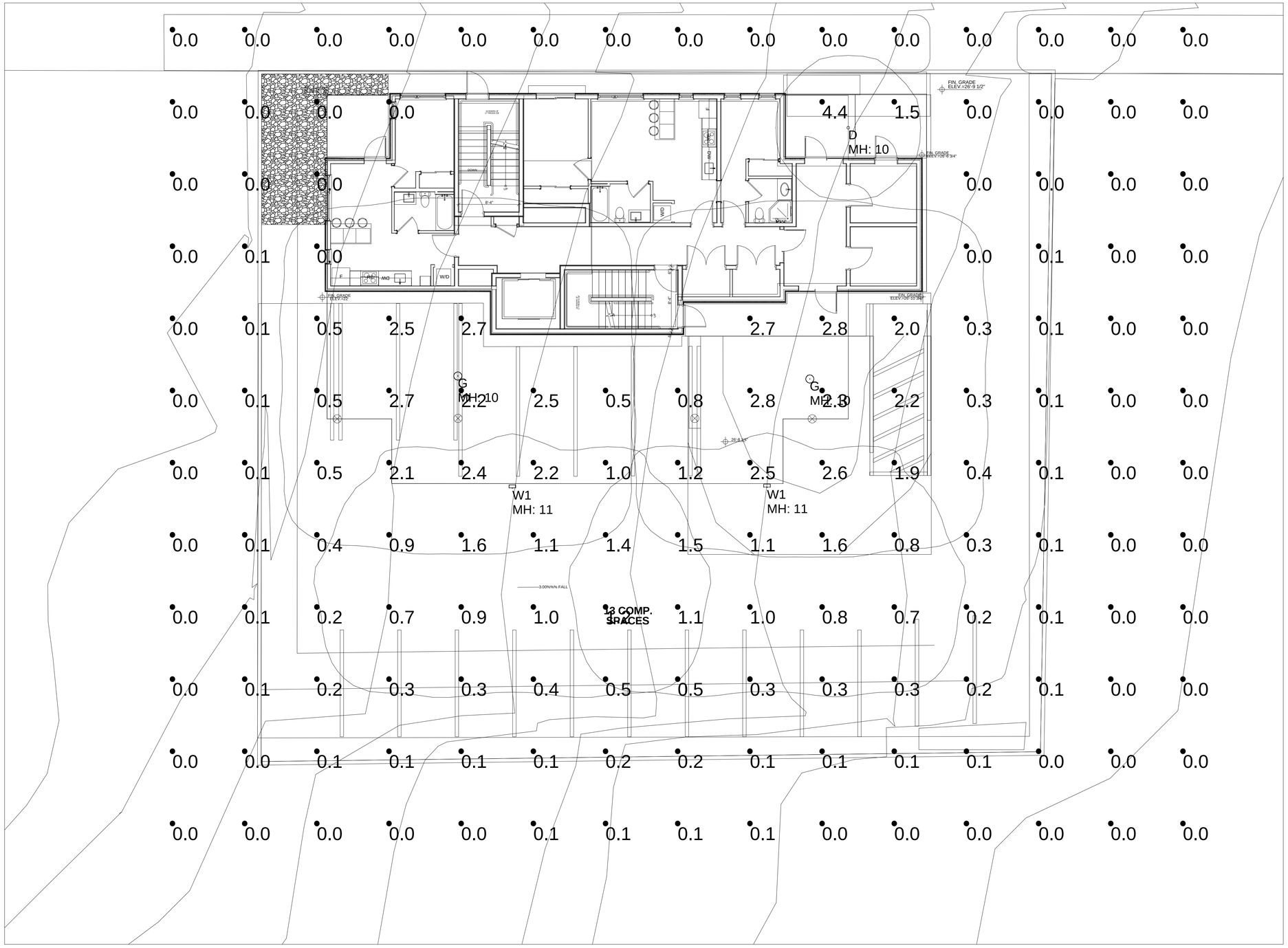
Diagrams for illustration purposes only, please consult factory for application layout.

© 2016 HUBBELL OUTDOOR LIGHTING, All Rights Reserved • For more information visit our website: **www.hubbelloutdoor.com** • Printed in USA

Luminaire Schedule (note fixture catalogue numbers are not complete)						
Type	**Symbol**	**Qty**	**Lum. Lumens**	**LLF**	**Lum. Watts**	**Description**
G		2	3391	0.900	41.7	ARS-18L3K-070-5M-CS
D		1	998	0.900	13.68	FLC4D-RO-1000L-120-L11-T
W1		2	1471	0.900	13.9	TRP1-12L15-3K7-4

Calculation Summary					
Label	**Avg**	**Max**	**Min**	**Avg/Min**	**Max/Min**
SITE	0.50	4.4	0.0	N.A.	N.A.

NOTES:
1) EXACT MOUNTING DETAILS TO BE DETERMINED AT JOBSITE BY OTHERS.
2) CALCULATIONS DO NOT SHOW THE EFFECT OF SHADOWING CAUSED BY BUILDINGS AND OBJECTS WITHIN THE CALCULATED SPACE OR IN THE SITE AREA.
3) READINGS SHOWN ARE INITIAL HORIZONTAL FOOTCANDLES ON A FLAT SITE WITHOUT REFLECTIONS OR OBSTRUCTIONS UNLESS OTHERWISE INDICATED.
4) THIS CALCULATION IS BASED ON LIMITED INFORMATION SUPPLIED BY OTHERS TO SWANEY LIGHTING ASSOCIATES AND STANDARD ASSUMPTIONS OF THE SPACE AND/OR SITE.
5) CONFORMANCE TO CODES AND OTHER LOCAL REQUIREMENTS AS DETERMINED BY THE AHJ ARE THE RESPONSIBILITY OF THE OWNER AND/OR THE OWNER'S REPRESENTATIVE.
6) THIS LAYOUT DRAWING MUST BE COORDINATED WITH THE SITE LOCATION FOR CORRECT FIXTURE ORIENTATION.
7) DOCUMENTS PRINTED OR PLOTTED FROM ELECTRONIC FILES MAY APPEAR AT OTHER THAN THE DESIRED OR ASSUMED GRAPHIC SCALES. IT IS THE RESPONSIBILITY OF THE RECIPIENT TO VERIFY THAT THE PRINTED OR PLOTTED-TO-SCALE DRAWING IS PRINTED TO SCALE.



PLAN VIEW





HUBBELL GARAGE LED



HUBBELL WALL PACK

SITE 37662 - 3-9-18.AGI

PARRIS ST
PORTLAND, ME
SITE LIGHTING LAYOUT

TITLE

GENERATED FOR:
KAPLAN THOMPSON ARCHITECTS

SCALE NOT TO SCALE

Page 1 of 1

Date:3/8/2018

GENERATED BY SWANEY LIGHTING, SCARBOROUGH ME - 207-883-7100 - swaneylighting.com

SWANEY LIGHTING ASSOCIATES, INC.

NOTICE: THIS DRAWING IS THE EXCLUSIVE PROPERTY OF SWANEY LIGHTING ASSOCIATES. ITS ACCEPTANCE CONSTITUTES AN AGREEMENT THAT THE DRAWING WILL BE TREATED AS CONFIDENTIAL. THIS DRAWING IS TO BE USED FOR NO PURPOSE OTHER THAN AS DETAILED HEREIN AND IS NOT TO BE REPRODUCED, PUBLISHED OR DISCLOSED TO OTHERS NOR RETURNED UPON REQUEST AND IS NOT TO BE COMMUNICATED, DISCLOSED OR COPIED; EXCEPT AS EXPRESSLY PERMITTED BY LAW WITHOUT SWANEY LIGHTING'S WRITTEN CONSENT. ALL IDEAS, DESIGNS, ARRANGEMENTS OR PLANS INDICATED OR REPRESENTED BY THIS DRAWING ARE AND SHALL REMAIN THE PROPERTY OF SWANEY LIGHTING ASSOCIATES. NO RIGHTS TO THE USE OF ANY OF THE FOREGOING ARE CONVEYED OR SHALL BE ACQUIRED BY ANY PERSON OR ENTITY. THIS LAYOUT IS A SUGGESTION OF LIGHTING FIXTURES INCLUDED IN THIS DRAWING. IT IS PROVIDED USING FIXTURE PHOTOMETRICS SUPPLIED BY THE MANUFACTURER. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THAT THE PERFORMANCE SHOWN IN THIS FILE IS NOT THE RESPONSIBILITY OF THE MANUFACTURER. IT'S USE FOR ANY OTHER PURPOSE IS NOT AUTHORIZED BY SWANEY LIGHTING ASSOCIATES.

RANSOM Consulting, Inc.

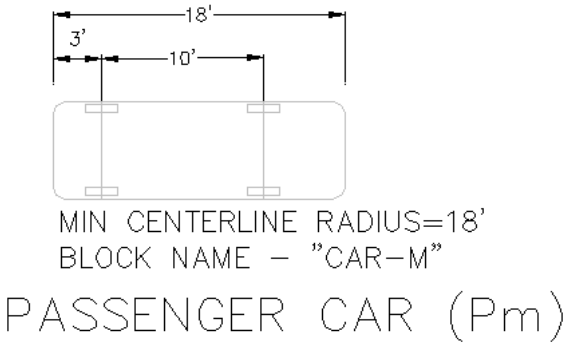
Consulting Engineers and Scientists

Parris Street Parking Dimensions MEMO

Date:	March 13, 2018
To:	City of Portland
From:	Thomas Nosal, E.I.
Peer Review:	John Mahoney, P.E.
Location:	60 Parris Street, Portland, Maine

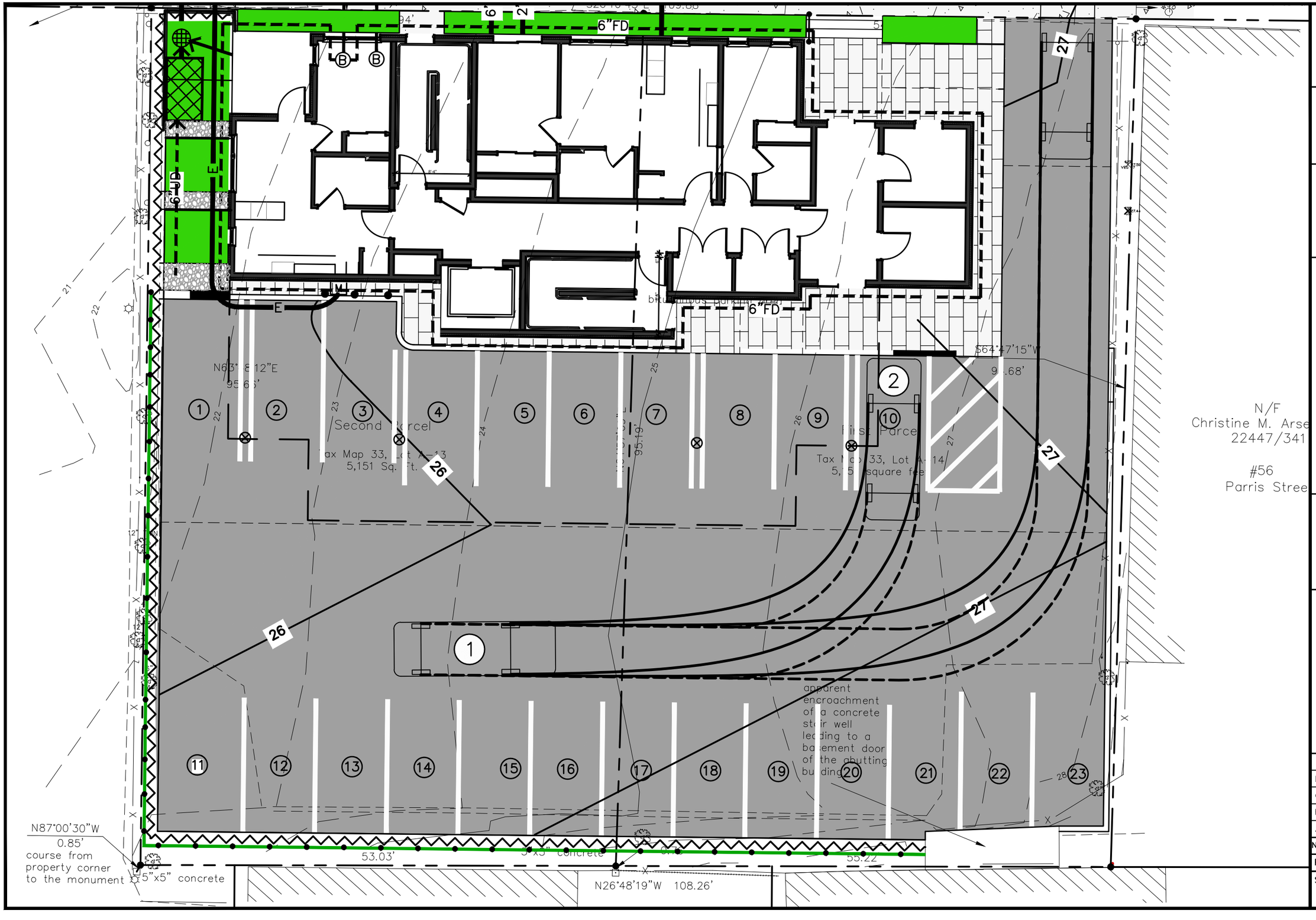
In order to demonstrate the functionality of the proposed parking lot design for 60 Parris Street, Ransom Consulting, Inc. has prepared a turning movement analysis showing entry and exit maneuvers for what will be the two most challenging parking spaces in the lot (see attached Figures 1 – 4). By demonstrating the ability to enter and exit these two spaces, we are confident that all spaces are accessible in a similar and generally less constrained manner.

The vehicle template used in this analysis is a modified version of the standard passenger car block (see figure below). While this template is more maneuverable than the standard passenger car block, it is still comparable to the dimensions of a full-size pickup truck or SUV. It is more representative than the standard passenger car dimensions, but we expect it is still larger than the average vehicle likely to be owned by people purchasing 350 – 500 SF condominiums.



Figures 1 and 2 depict potential entry and exit maneuvers, respectively, for space #10, the accessible space. Figure 1 depicts a vehicle pulling forward into the lot and reversing into the space; Figure 2 depicts a vehicle pulling forward out of the space and executing a three-point turn into order to pull forward out of the driveway. Note that a similar maneuver could be executed in order to pull forward into the lot and forward into space #10.

Figures 3 and 4 depict entry and exit maneuvers, respectively, for space #1 at the far end of the lot from the entrance. This maneuver is challenging because of the lack of a turnaround area; however, as demonstrated in Figure 4, it is possibly with a multi-point turn and will be easier for smaller, more maneuverable vehicles.



Site:

PARRIS TERRACES
TURNING
MOVEMENTS

Prepared for:

City of Portland
389 Congress Street
Portland, Maine

ACCESSIBLE
SPACE - ENTRY

STATE OF MAINE
John
I.
Mahoney
#12340
LICENSED
PROFESSIONAL ENGINEER

0 5' 10'

SCALE: 1"=10'

RANSOM
Consulting
Engineers
and Scientists

400 Commercial Street
Suite 404
Portland, Maine 04101
Tel (207) 772-2891
Fax (207) 772-3248
www.ransomenv.com

No.	Revision/Issue	Date
D		
C		
B		
A	City Review	3/8/18

Project: 171.06098

Sheet No:
1

Site:

PARRIS TERRACES
TURNING
MOVEMENTS

Prepared for:

City of Portland
389 Congress Street
Portland, Maine

ACCESSIBLE
SPACE - EXIT

STATE OF MAINE
John
I.
Mahoney
#12340
LICENSED
PROFESSIONAL ENGINEER

0 5’ 10’

SCALE: 1”=10’

RANSOM
Consulting
Engineers
and Scientists
400 Commercial Street
Suite 404
Portland, Maine 04101
Tel (207) 772-2891
Fax (207) 772-3248
www.ransomenv.com

No.	Revision/Issue	Date
D		
C		
B		
A	City Review	3/8/18

Project: 171.06098

Sheet No:
2



Site:

PARRIS TERRACES TURNING MOVEMENTS

Prepared for:

City of Portland
389 Congress Street
Portland, Maine

SPACE 1 ENTRY

STATE OF MAINE
John I. Mahoney
#12340
LICENSED
PROFESSIONAL ENGINEER

0 5' 10'

SCALE: 1"=10'

RANSOM
Consulting Engineers and Scientists
400 Commercial Street
Suite 404
Portland, Maine 04101
Tel (207) 772-2891
Fax (207) 772-3248
www.ransomenv.com

No.	Revision/Issue	Date
D		
C		
B		
A	City Review	3/8/18

Project: 171.06098

Sheet No: 3

6"FD

6"FD

N/F
Christine M. Arse
22447/341

#56
Parris Stree

Second Parcel
Tax Map 33, Lot A-13
5,151 Sq. Ft.

First Parcel
Tax Map 33, Lot A-14
5,[illegible] square fee

S64°47'15"W
9[illegible].68'

N03° 8'12"E
95.6[illegible]'

apparent encroachment of a concrete stair well leading to a basement door of the abutting building

N87°00'30"W
0.85'
course from property corner to the monument

5"x5" concrete

53.03'

5"x5" concrete

55.22'

N26°48'19"W 108.26'

Site:
PARRIS TERRACES
TURNING
MOVEMENTS

Prepared for:

City of Portland
389 Congress Street
Portland, Maine

SPACE 1
EXIT

STATE OF MAINE
John I. Mahoney
#12340
LICENSED PROFESSIONAL ENGINEER

0 5' 10'
SCALE: 1"=10'

RANSOM
Consulting Engineers and Scientists
400 Commercial Street
Suite 404
Portland, Maine 04101
Tel (207) 772-2891
Fax (207) 772-3248
www.ransomenv.com

No.	Revision/Issue	Date
D		
C		
B		
A	City Review	3/8/18

Project: 171.06098

Sheet No:
4

RANSOM Consulting, Inc.

Consulting Engineers and Scientists

Parris Terraces Stormwater Management Narrative

Date:	March 13, 2018
To:	City of Portland
From:	John Mahoney, P.E.
Peer Review:	Stephen J. Bradstreet, P.E.
Location:	60 Parris Street, Portland, Maine

Existing Conditions:

The site is a 10,302 SF (0.23 acre) lot located on 60 Parris Street in Bayside. The site is primarily a paved surface parking area with strips of grass along the edges and back.

The site drains from south to the north along the slope of Parris Street. At the northern property boundary, a bituminous curb directs runoff to an existing catch basin in the northeast corner of the site. The catch basin is piped into the 15" combined sewer main that runs along Parris Street.

Based on the Cumberland County USDA soil survey data, the existing soils on this site consist of hydrological group A (well drained). However, the geotechnical report indicates primarily silt soils.

Proposed Development:

The applicant, Horton LLC., proposes to construct a 4-story apartment building with 23 residential units and an approximate building footprint of 3,830 SF. This footprint incudes the upper floors, which overhang the parking area. The site will have a parking lot with 23 parking stalls, walkways and rain gardens. The proposed development will increase the site's impervious area from 8,996 SF to 9,253 SF. Therefore, the change in impervious area will be approximately 257 SF.

Stormwater Management – Basic Standards:

Erosion and sedimentation control measures are described on Sheet C-1 with detsils on Sheet C-4. Good housekeeping practices shall be in accordance with Maine DEP Best Management Practices. A post construction stormwater management plan and a stormwater BMP inspection and maintenance log are included with this submission.

Stormwater Management - Quality:

Treatment of stormwater of the parking area will be accomplished as the stormwater infiltrates through a FocalPoint system located between the proposed building and the southern property boundary. The 32 SF FocalPoint system has been sized to treat 1" of rainfall from almost the entire parking area (4,879 SF) and

all of the roof runoff (3,830 sf) for a total treatment area of 8,709 SF. In order to facilitate ADA compliant grading and adequate drainage, a small portion of the access drive (250 SF) will drain to Parris Street. Based on our calculations and the above numbers, the stormwater system will provide treatment for 94% of the site's impervious area.

The parking lot has been graded to a spillway in the northeast corner. Stormwater will flow over this spill way into a sediment forebay, and then cascade through a series of two ornamental rain (each with its own spillway and stone energy dissipation), and then into the FocalPoint system. Roof runoff will be discharged into a sediment forebay at the upper end of the stormwater management area and drain to the FocalPoint system.

As indicated in the attached HydroCAD report, the elevation of the water ponding in the focal point area will remain below the elevation of the field inlet during a 1" storm. For larger storm events, a 24" bee hive inlet grate is provided as an overflow.

The R-Tanks will contain a maintenance row. The maintenance plate row is proposed as an "approved equal" for the Maine DEP's "Isolator Row" requirement for FocalPoint.

Stormwater Management - Quantity:

The proposed development will increase the total impervious area of the site by less than 300 SF. This increase will likely be mitigated by increased infiltration in the proposed rain garden.

60 Parris Street: Stormwater BMP Inspection Log

The City of Portland, ME requires ongoing annual inspections to ensure the proper maintenance and operation of stormwater management facilities. Inspections must be conducted by third parties qualified by the City.

A. General Information

Use only one Cover Sheet per site with as many specific structural BMP Inspection Report attachments as needed. Attach required color digital photos of site, structures and devices as applicable with captions.

Project Name:	**Parris Parris Tarraces Apartments**	**Inspection Date:**	
Parcel Map, Block and Lot:	**MAP 33, BLK A, LOT 13/14**	**Current Weather:**	
BMP Owner:	**Horton, LLC**	**Date / Amount Last Precip:**	
Owner Mailing Address:	**Box 411, 100 Commercial Street, Suite 306, Portland, Maine**	**3PI Company:**	
		3PI Mailing Address:	
Owner Phone #:	**207-808-4714**		
Owner Email:	**jsoley@eastbrowncow.com**	**Inspector Name:**	
		Inspector Phone #:	
		Inspector Email:	

B. Inspection Report Attachments

Please document the number of each structural BMP type found at this site in the blank spaces provided below. Use additional Attachments if / as needed and submit all Attachments together with the Cover Sheet as a single report.

BMP Type	Number BMPs at site
Vegetated Areas	-
Parking Lot	1
FocalPoint High Flow Biofiltration Unit	1
R-Tank Subsurface Detention-Infiltration System	1
Filed Inlet	1

Other (describe)	

C. Inspection Results

FAIL** ☐

** If any one item on an Inspection Report attachment is coded as "Work Needed" then entire BMP fails inspection.

** If a site has multiple BMPs and one fails inspection, mark as "Fail" until all BMPs pass inspection.

Note: Applicable BMP Inspection Reports and confirmatory color digital photos summarizing required repairs must be submitted to the City following completion of the preliminary inspection. A re-inspection and certification must be completed within 60 days of the failed preliminary report. It is recommended that the inspector be part of the repair / maintenance process to ensure that repairs are performed properly.

PASS ☐

Note: a qualified professional (as determined by the City) must sign below and include all applicable Inspection Report attachments and confirmatory digital color photos with captions.

D. Professional Certification (as qualified by City of Portland Stormwater Program Coordinator)

To be completed only when all BMPs at this site are functioning as designed with no outstanding maintenance issues.

I, _____, as a duly qualified third party inspector attest that a thorough inspection has been completed for ALL applicable BMPs that are associated with this particular site. All inspected structural BMPs are performing as designed and intended and are in compliance with the provisions of the City Portland's Standards

Signature: _____

Date: _____

Owner: Horton, LLC	**Operator:**
Location & Parcel Id: MAP 33, BLK A, LOT 13/14	**Inspector:**
	Date:

General Information	**Observations**
Inspection duration (hours)	
Days since last precipitation	
Quantity of last precipitation (in)	
Type of inspection	
Storm event	
Current weather	
Photos taken	☐ Yes ☐ No ☐ NA
Nearby natural resources	☐ Yes ☐ No ☐ NA
Copy of ESC plan	☐ Yes ☐ No ☐ NA
MEDEP Permit # (*if applicable*)	
General info notes	

Vegetated Areas	**Observations**
Condition of slopes and embankment is good	☐ Yes ☐ No ☐ NA
No bare areas (< 90% covered) with sparse growth	☐ Yes ☐ No ☐ NA
Armored areas have no rill erosion, or the flow diverted to onsite areas can withstand concentrated flows	☐ Yes ☐ No ☐ NA
Vegetated area notes	

Parking Lot	**Observations**
Accumulated winter sand has been cleared	☐ Yes ☐ No ☐ NA
Pavement swept to help remove sediment	☐ Yes ☐ No ☐ NA
No stormwater is impeded by accumulations of material	☐ Yes ☐ No ☐ NA
Parking lot notes:	

Field Inlet (Require inspection TWICE per year)	**Observations**
Accumulated sediments from inflow channels, pipes and sumps between basins have been removed and legally disposed of.	☐ Yes ☐ No ☐ NA
Floating debris and floating oils have been removed.	☐ Yes ☐ No ☐ NA
Debris and Sediment Removed from Harco Stormsack	☐ Yes ☐ No ☐ NA
Stormdrain Structure system notes The Harco Stormsack and the overflow drain shall be inspected every three months for the first year and twice annually after that. It is CRITICAL THAT THE STORMSACK BE MAINTAINED IN ORDER TO PREVENT DEBRIS AND SEDIMENT FROM ENTERING THE R-TANKs.	

FocalPoint High Flow Biofiltration and R-Tank System	**Observations**
Bark Mulch Layer Removed Replaced Annually	☐ Yes ☐ No ☐ NA
Accumulated sediments and debris (trash) within the surrounding ponding (rain garden) area have been removed and legally disposed of	☐ Yes ☐ No ☐ NA
Water level observed in inspection in inspection ports to ensure that the infiltration area is draining adequately and excessive sediment has not built up.	☐ Yes ☐ No ☐ NA
Eroded areas have been repaired.	☐ Yes ☐ No ☐ NA
Remove sediment from forebay	☐ Yes ☐ No ☐ NA

FocalPoint/R-Tank notes

If sediment accumulates beyond an acceptable level in the R-Tank storage system, it will be necessary to flush the underdrain. This can be done by pumping water into the Observation/Maintenance Port or adjacent overflow structure, allowing the turbulent flows through the underdrain to re- suspend the fine sediments. The proposed R-Tanks include a maintenance plate row to facilitate this process. Measures shall be taken to capture sediment before discharge to the City's combined sewer.

Remove sediment from sediment forebay annually or more frequently if needed

Other Comments	**Observations**
Corrective action needed	☐ Yes ☐ No ☐ NA

If corrective action in needed, please explain detail

Verbal notification provided to responsible party	☐ Yes ☐ No
Verbal notification contact	
Follow up required	☐ Yes ☐ No

Final comment notes

Photos (*use additional pages as needed*)

Review Notes

Date Reviewed:
Reviewed by:
Date entered:
Date edited:
Edited by:

60 Parris Street: Post-Construction Stormwater Compliance Requirements

The Applicant shall maintain the BMPs in accordance with the approved plan and shall demonstrate compliance with the plan as follows:

(a) *Inspections.* The owner or operator of a BMP shall hire a qualified post-construction stormwater inspector to at least annually, inspect the BMPs, including but not limited to any parking areas, catch basins, drainage swales, detention basins and ponds, rain gardens, pervious pavers, pipes and related structures, in accordance with all municipal and state inspection, cleaning and maintenance requirements of the approved post- construction stormwater management plan.

(b) *Maintenance and repair.* If the BMP requires maintenance, repair or replacement to function as intended by the approved post-construction stormwater management plan, the owner or operator of the BMP shall take corrective action(s) to address the deficiency or deficiencies as soon as possible after the deficiency is discovered and shall provide a record of the deficiency and corrective action(s) to the department of public services (“DPS”) in the annual report.

(c) *Annual report.* The owner or operator of a BMP or a qualified post-construction stormwater inspector hired by that person, shall, on or by June 30 of each year, provide a completed and signed certification to DPS in a form provided by DPS, certifying that the person has inspected the BMP(s) and that they are adequately maintained and functioning as intended by the approved post-construction stormwater management plan, or that they require maintenance or repair, including the record of the deficiency and corrective action(s) taken.

(d) *Filing fee.* Any persons required to file and annual certification under this section shall include with the annual certification a filing fee established by DPS to pay the administrative and technical costs of review of the annual certification.

(e) *Right of entry.* In order to determine compliance with this article and with the post-construction stormwater management plan, DPS may enter upon property at reasonable hours with the consent of the owner, occupant or agent to inspect the BMPs.

60 Parris Street, Portland, Maine

STORMWATER DRAINAGE SYSTEM
MAINTENANCE AGREEMENT AND
RELEASE FROM LIABILITY

IN CONSIDERATION OF the site plan and subdivision approval granted by the Planning Board of the City of Portland to a plan entitled **Parris Terraces: C-1.0 Site Plan and C-2.0 Grading Drainage and Stormwater Plan** prepared for **Horton, LLC,** by **Ransom Consulting, Inc**. dated **March 13, 2017** recorded in the Cumberland County Registry of Deeds in Plan Book _____, Page _____ (the "Plan") and pursuant to a condition thereof, **Horton LLC,** (owner) having a mailing address of **Box 411, 100 Commercial Street, Suite 306, Portland, Maine**, the owner of the subject premises, does hereby agree, for itself, its successors and assigns (the "Owner"), as follows:

Maintenance Agreement

That it will, at its own cost and expense and at all times in perpetuity, maintain in good repair and in proper working order the stormwater drainage system, as shown on said plan, including but not limited to the **FocalPoint system, R-Tanks and field inlet and sediment forebay** in strict compliance with the Maintenance of Facilities as described in **60 Parris Street Stormwater Management Narrative and the 60 Parris Street Stormwater Inspection and Maintenance Log** (Stormwater Management Plan) dated **March 13, 2017** and Chapter 32 of the Portland City Code. Owner of the subject premises further agrees to keep a Stormwater Maintenance Log that will be made available for inspection by the City of Portland upon reasonable notice and request.

This Agreement is for the benefit of the said City of Portland and all persons in lawful possession of the property; further, that the said City of Portland may enforce this Agreement by an action at law or in equity in any court of competent jurisdiction; further, that after giving the Owner written notice as described in this Agreement, and a stated time to perform, that the said City of Portland, by its authorized agents or representatives, may, but is not obligated to, enter upon the property in question to maintain, repair, or replace said stormwater drainage system, including but not limited to the **FocalPoint system, R-Tanks and field inlet and sediment forebay** thereon in the event of any failure or neglect thereof, the cost and expense thereof to be reimbursed in full to the said City of Portland by the Owner upon written demand. Any funds owed to the City under this paragraph shall be secured by a lien on the property.

This Agreement shall bind the undersigned only so long as it retains any interest in said premises, and shall run with the land and be binding upon the Owner's successors and assigns as their interests may from time to time appear. The Owner agrees to provide a copy of this Agreement to any successor or assign and to forward to the City an Addendum signed by any successor or assign in which the successor or assign states that the successor or assign has read the Agreement, agrees to all its terms and conditions.

For the purpose of this Agreement the real estate shown by chart, block and lot number in the records on file in the City Assessor's office shall constitute "the property" that may be entered by the City and liened if the City is not paid all of its costs and charges following the mailing of a written demand for payment to the Owner pursuant to the process and with the same force and effect as that established by 36 M.R.S.A. §§ 942 and 943 for real estate tax liens.

Any written notices or demands required by this Agreement shall be complete on the date the notice is mailed to the owner of record as shown on the tax roles on file in the City Assessor's Office. If the property has more than one owner on said tax rolls, service shall be complete by mailing it to only the first listed owner. The failure to receive any written notice required by this Agreement shall not prevent the City from entering the property and performing maintenance or repairs on the stormwater system, or any component thereof, or liening it or create a cause of action against the City.

Dated at Portland, Maine this_____day of _____, 20__.

_____
By:_____
Its: _____

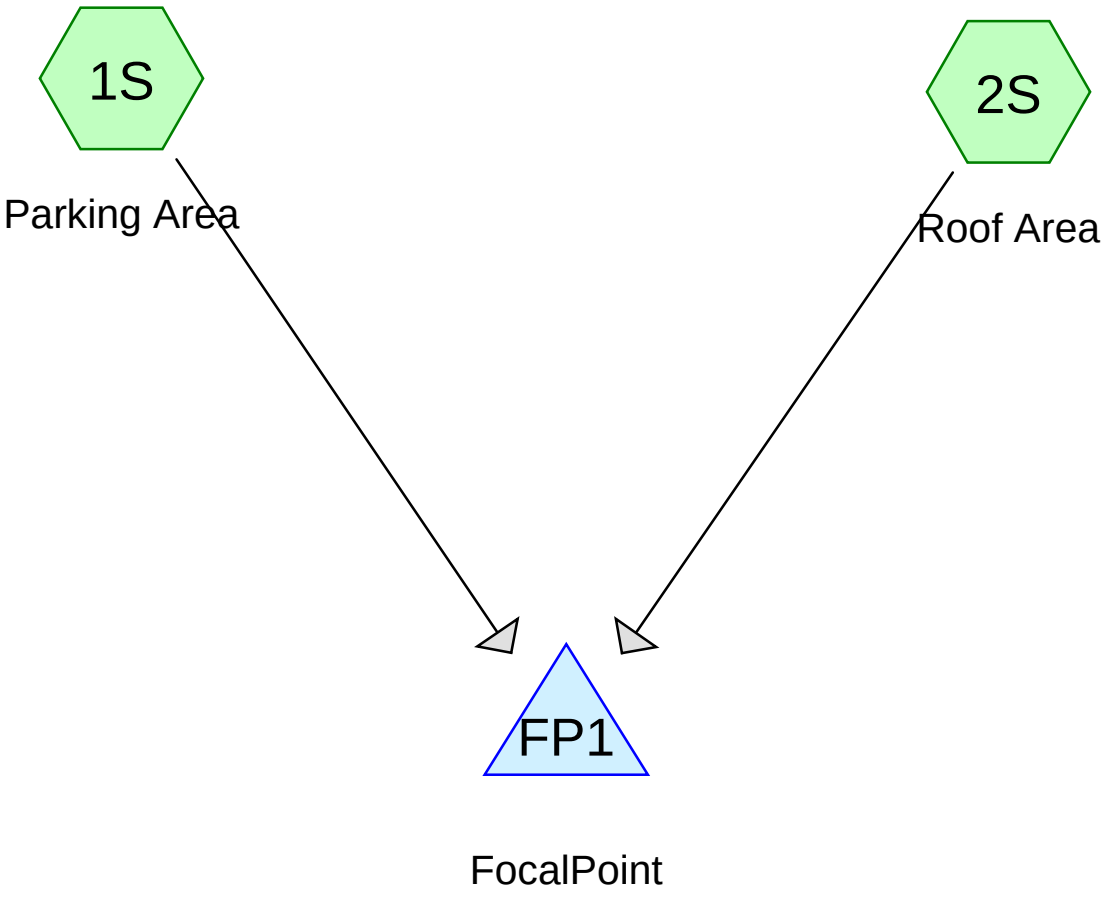
STATE OF MAINE
CUMBERLAND, ss. Date: _____

Personally appeared the above-named_____, and acknowledged the foregoing instrument to be his/his free act and deed in his/her said capacity, and the free act and deed of said_____.

Before me,

_____
Notary Public/Attorney at Law

Print name: _____



Subcat Reach Pond Link

Routing Diagram for 60 Parris St REV-2
Prepared by Ransom Consulting, Printed 3/14/2018
HydroCAD® 10.00-12 s/n 05121 © 2014 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
4,879	98	Paved parking, HSG A (1S)
3,830	98	Unconnected roofs, HSG A (2S)
8,709	**98**	**TOTAL AREA**

Time span=1.00-48.00 hrs, dt=0.01 hrs, 4701 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Parking Area Runoff Area=4,879 sf 100.00% Impervious Runoff Depth=0.79"
Tc=6.0 min CN=98 Runoff=0.10 cfs 322 cf

Subcatchment2S: Roof Area Runoff Area=3,830 sf 100.00% Impervious Runoff Depth=0.79"
Tc=6.0 min CN=98 Runoff=0.08 cfs 252 cf

Pond FP1: FocalPoint Peak Elev=21.51' Storage=59 cf Inflow=0.18 cfs 574 cf
Primary=0.07 cfs 574 cf Secondary=0.00 cfs 0 cf Outflow=0.07 cfs 574 cf

Total Runoff Area = 8,709 sf Runoff Volume = 574 cf Average Runoff Depth = 0.79"
0.00% Pervious = 0 sf 100.00% Impervious = 8,709 sf

Summary for Subcatchment 1S: Parking Area

Runoff = 0.10 cfs @ 12.08 hrs, Volume= 322 cf, Depth= 0.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 1 inch Rainfall=1.00"

Area (sf)	CN	Description
4,879	98	Paved parking, HSG A
4,879		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment 2S: Roof Area

Runoff = 0.08 cfs @ 12.08 hrs, Volume= 252 cf, Depth= 0.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 1 inch Rainfall=1.00"

Area (sf)	CN	Description
3,830	98	Unconnected roofs, HSG A
3,830		100.00% Impervious Area
3,830		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Roof**

Summary for Pond FP1: FocalPoint

Inflow Area = 8,709 sf,100.00% Impervious, Inflow Depth = 0.79" for 1 inch event
Inflow = 0.18 cfs @ 12.08 hrs, Volume= 574 cf
Outflow = 0.07 cfs @ 11.95 hrs, Volume= 574 cf, Atten= 58%, Lag= 0.0 min
Primary = 0.07 cfs @ 11.95 hrs, Volume= 574 cf
Secondary = 0.00 cfs @ 1.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 1.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 21.51' @ 12.29 hrs Surf.Area= 32 sf Storage= 59 cf

Plug-Flow detention time= 3.1 min calculated for 574 cf (100% of inflow)
Center-of-Mass det. time= 3.1 min (791.0 - 787.9)

Volume	Invert	Avail.Storage	Storage Description
#1	18.75’	14 cf	**4.00'W x 8.00'L x 2.25'H FocalPoint** 72 cf Overall x 20.0% Voids
#2	21.00’	132 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) -Impervious
		146 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
21.00	88	0	0
21.50	88	44	44
22.50	88	88	132

Device	Routing	Invert	Outlet Devices
#1	Primary	18.75’	**100.000 in/hr Exfiltration over Surface area** Phase-In= 0.10’
#2	Secondary	21.60’	**24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.07 cfs @ 11.95 hrs HW=18.86’ (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.07 cfs)

Secondary OutFlow Max=0.00 cfs @ 1.00 hrs HW=18.75’ (Free Discharge)
└**2=Orifice/Grate** (Controls 0.00 cfs)

Design Review Comments*:* *(questions and unmet standards in red)*

· Please provide a rendering showing project in context.

DONE

· Planning Board requested more information/depiction of the natural cedar material.

REVISED ELEVATION WITH SAMPLE MATERIALS ISSUED

(d) B-2b Commercial Business Zones *Standard (1) a. Urban Street Wall* – Building placement is near the property line with a setback to accommodate landscape buffer, stoops, and some privacy. *Standard (1) b. Mixed Uses* – Not applicable *Standard (1) c. Building Entrances* – Main building entrance faces and is directly accessible from the street. For legibility of primary entrance, staff prefer the trash room door be relocated to the side of the building to not compete with residential entrance.

TRASH ROOM DOOR NOW PAINTED TO PATCH SIDING AND RECEDE VISUALLY. UNABLE TO MOVE TRASH ROOM DOOR TO DRIVE AISLE SIDE DUE TO HAULER BLOCKING FIRE LANE AND DOOR SWING ISSUES.

To respond to the concerns about emphasis of the main entry, the design now includes a material and color change – staff support this direction. However, how will the material transition from the vertical siding? Is more than one color really needed to achieve the effect? Could any more be done to add emphasis to this entry – canopy or similar gesture?

CLAPBOARDS WILL HAVE A DECORATIVE METAL ACCENT STRIP SEPARATING UPPER MATERIAL FROM LOWER WOOD SIDING. ENTRANCE IS EMPHASISED WITH LIGHTING UNDER CANOPY & DECORATIVE SIGNAGE AND COLOR PANELS. SEE ELEVATIONS FOR MORE DETAIL ON ENTRANCE EMPHASIS.

Standard (1) d. Windows –Windows are provided along street frontage as required. VT of .7 or greater is required. Window

height is raised due to private nature of program.

WINDOWS WILL HAVE APPROPRIATE VT.

Standard (1) e. Façade Character – Building is private residences with no commercial/public program but front door/lobby oriented to the street and includes some transparency.

Standard (1) f. Building Design – See multi-family comments below.

Standard (1) g. Building Materials – **Primary material was revised to fiber cement clapboard with vertical cedar board. Staff support the scale, orientation, and type of materials as proposed, however,** we question whether natural cedar finish on the ground floor is contextually appropriate. Though natural cedar has been approved for accent materials like fences and railings, as a prominent siding material, it is more rural in character. Planning Board also asked to better understand how that material will age/patina.

REVISED RENDERINGS, ELEVATIONS AND MATERIAL DETAIL SWATCHES PROVIDED TO ALLOW THE PLANNING BOARD TO EVALUATE THE CHOICE OF MAINE WHITE CEDAR AS AN APPROPRIATE BASE MATERIAL. WE THINK IT WILL BE A BEAUTIFUL AND ATTRACTIVE ADDITION TO THE NEIGHBORHOOD.

Standard (1) h. Building Scale – Not applicable

Standard (1) i. Landscaping and Buffers – Parking is to the rear of the property and is screened from view by the building (except for parking space 1).

(i) Two-Family, . . . Multiple-Family . . . :

Standard (1) . Exterior Design – Context currently does not include multi-family buildings of this scale. The project successfully incorporates industrial and residential references. This context is appropriate for more contemporary design and more flexibility of

forms, scale, and patterns. The project includes interesting forms and massing as well as articulation elements such as balconies to provide a visually interesting, contemporary design. Staff observe that though building type, scale, and placement vary throughout the neighborhood, there is a consistent use of material, trim, roof overhangs, and other articulation elements to add texture, fine-grain scale, and visual interest to the buildings, even if in a vernacular way. **This design was revised to use clapboard with a varying reveal on the upper floors, cedar balconies, and vertical board with natural cedar. Staff finds these changes to be responsive to review comment and gives some articulation and texture to the building in a way that is contextual.** There remains some question as to whether natural cedar is a contextually appropriate siding material, especially on the ground floor.

WHITE CEDAR IS A VISUALLY WARM, ECOLOGICALLY SUSTAINABLE & LOCALLY PRODUCED MATERIAL WITH A HISTORIC ARCHITECTURAL TRADITION IN MAINE THAT ADDS A NATURAL TOUCH TO A TOUGH URBAN NEIGHBORHOOD. IT HAS BEEN SUCCESSFULLY USED ON OTHER KAPLAN THOMPSON ARCHITECTS PROJECTS, MOST NOTABLY AT THE 75 YORK ST TOWNHOUSES.

Standard (2). Relationship to Street – Existing neighborhood is a mix of small-scale residential and industrial building types. In addition, there are many undeveloped lots. There is not, therefore, a consistent street wall or building relationship to the street. That being said, the building placement of the proposal is consistent with the residential buildings adjacent – close to the street with a small setback buffer. Building is oriented to the street as desired by the B- 2b standards.

Standard (3). Open Space – Open spaces provided through balconies. *Standard (4). Light and Air* – All units provided with ample windows and some storage space.

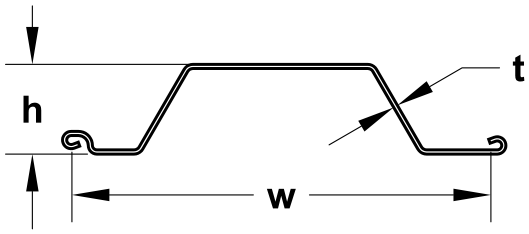
Standard (5). Parking – Parking is to the rear of the property behind

the building.

Standard (6). Not applicable

SKL/SKS

SKL/SKS Cold Formed Steel Sheet Pile



SECTION	Width (w) in (mm)	Height (h) in (mm)	Thickness (t) in (mm)	Cross Sectional Area in²/ft (cm²/m)	WEIGHT		SECTION MODULUS		Moment of Inertia in⁴/ft (cm⁴/m)	COATING AREA	
					Pile lb/ft (kg/m)	Wall lb/ft² (kg/m²)	Elastic in³/ft (cm³/m)	Plastic in³/ft (cm³/m)		Both Sides ft²/ft (m²/m)	Coating Area ft²/ft² (m²/m²)
SKL 9	21.65 550	3.54 90	0.157 4.0	2.53 53.50	15.52 23.10	8.60 42.00	2.55 137	3.28 176.43	4.50 615	4.23 1.29	1.17 1.17
SKL 10	21.65 550	3.54 90	0.177 4.5	2.83 59.90	17.40 25.90	9.63 47.00	2.88 155	3.67 197.23	5.09 695	4.23 1.29	1.17 1.17
SKL 12	21.65 550	3.54 90	0.217 5.5	3.43 72.60	21.10 31.40	11.67 57.00	3.53 190	4.42 237.66	6.22 850	4.23 1.29	1.17 1.17
SKS 11	27.56 700	5.91 150	0.197 5.0	3.29 69.60	25.69 38.23	11.26 55.00	6.34 341	7.54 405.36	18.67 2550	5.87 1.79	1.28 1.28
SKS 13	27.56 700	5.91 150	0.217 5.5	3.61 76.40	28.22 42.00	12.29 60.00	6.98 375	8.44 454.03	20.48 2810	5.87 1.79	1.28 1.28
SKS 14	27.56 700	5.91 150	0.250 6.4	4.17 88.20	32.58 48.49	14.19 69.27	8.05 433	9.48 509.87	23.78 3247	5.87 1.79	1.28 1.28
SKS 16	27.56 700	5.91 150	0.276 7.0	4.57 96.70	35.61 53.00	15.57 76.00	8.89 478	10.40 559.20	26.25 3585	5.87 1.79	1.28 1.28

Interlock Compatibility

	SKL 9	SKL 10	SKL 12	SKS 11	SKS 13	SKS 14	SKS 16
SKL 9	●	●	●	●	●	●	●
SKL 10	●	●	●	●	●	●	●
SKL 12	●	●	●	●	●	●	●
SKS 11	●	●	●	●	●	●	●
SKS 13	●	●	●	●	●	●	●
SKS 14	●	●	●	●	●	●	●
SKS 16	●	●	●	●	●	●	●

● Interlock compatible ○ Interlock not compatible

SKL/SKS

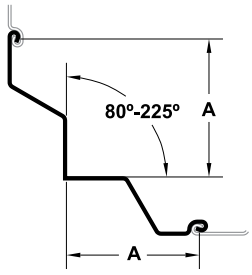
SKL/SKS Cold Formed Steel Sheet Pile

Available Steel Grades					
ASTM	YIELD STRENGTH		ASTM	YIELD STRENGTH	
	(ksi)	(MPa)		(ksi)	(MPa)
A 572 Grade 50	50	345	A 588	50	345
A 572 Grade 55	55	380	A 690	50	345
A 572 Grade 60	60	415			
A 572 Grade 65*	65	450			

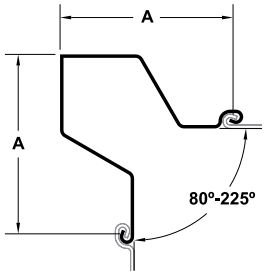
Highlighted fields represent the most commonly used and readily available steel grades.

Corner Piles

D1 Corner Piles

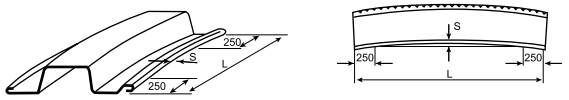
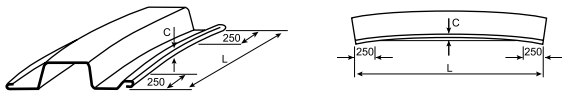
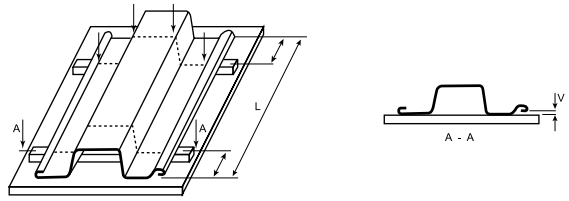


D3 Corner Piles



SKL 9-12: A = 10.8 inches (275.0 mm)
SKS 11-16: A = 13.8 inches (350.0 mm)

Delivery Conditions & Tolerances

	ASTM A6		EN 10249-2	
Mass	± 2.5%		± 7%	
Length	+ 5 inches	– 0 inches	± 50 mm	
Straightness				
Bending (S)			0.25% of the length	
Curving (C)			0.25% of the length	
Twisting (V)			2% of the length	

Standard Rolled Lengths*

SKL, SKS	70 feet	(21.3 m)

* Longer lengths may be possible upon request.

Parris Terraces
60 Parris Street
Portland ME

SOLID WASTE REMOVAL PLAN

Vendor Providing Services

GENE A. CAREY
RUBBISH REMOVAL
1645 BROADWAY
SOUTH PORTLAND, ME

Services to be provided are based on the following assumptions:

23 / 1 Bedroom Units with an average size of ~400 sq. ft. / unit

Average unit waste generated per Month is typically ~2 yards per unit.
Due to smaller than average unit size, assume ~1.5 yards per unit per month.

Total Project Waste per month ~34.5 Yards per month

Service to be twice weekly or 8 pick-ups per Month of ~4.3 yds per pickup.
Pick-up days either Monday+Thursday or Tuesday+Friday / TBD

Assume onsite storage to be in 8 (1/2 yd) Containers located in the Trash Room
Waste to be separated between single stream recycling and trash disposal.

Parris Terraces
60 Parris Street
Portland ME

SNOW REMOVAL PLAN

Vendor Providing Services

GREENCARE LANDSCAPING
125 Pleasant Hill Road
Scarborough, ME

Services to be provided

Snowstorms up to 1.0”

Plow+store snow to the rear of the 13 car parking lot row
(ie in front of parked cars)

Remove from temporary storage location as required.

Snowstorms above 1.0”

Plow and Remove snow from the premises

All Snowstorms

Remove snow from sidewalks+pedestrian walkways
Sand/salt as necessary

Parris Terraces
60 Parris Street
Portland ME

CONSTRUCTION MANAGEMENT PLAN

Prepared by the Construction Manager:

Timothy Hebert
Hebert Construction, LLC
Lewiston ME

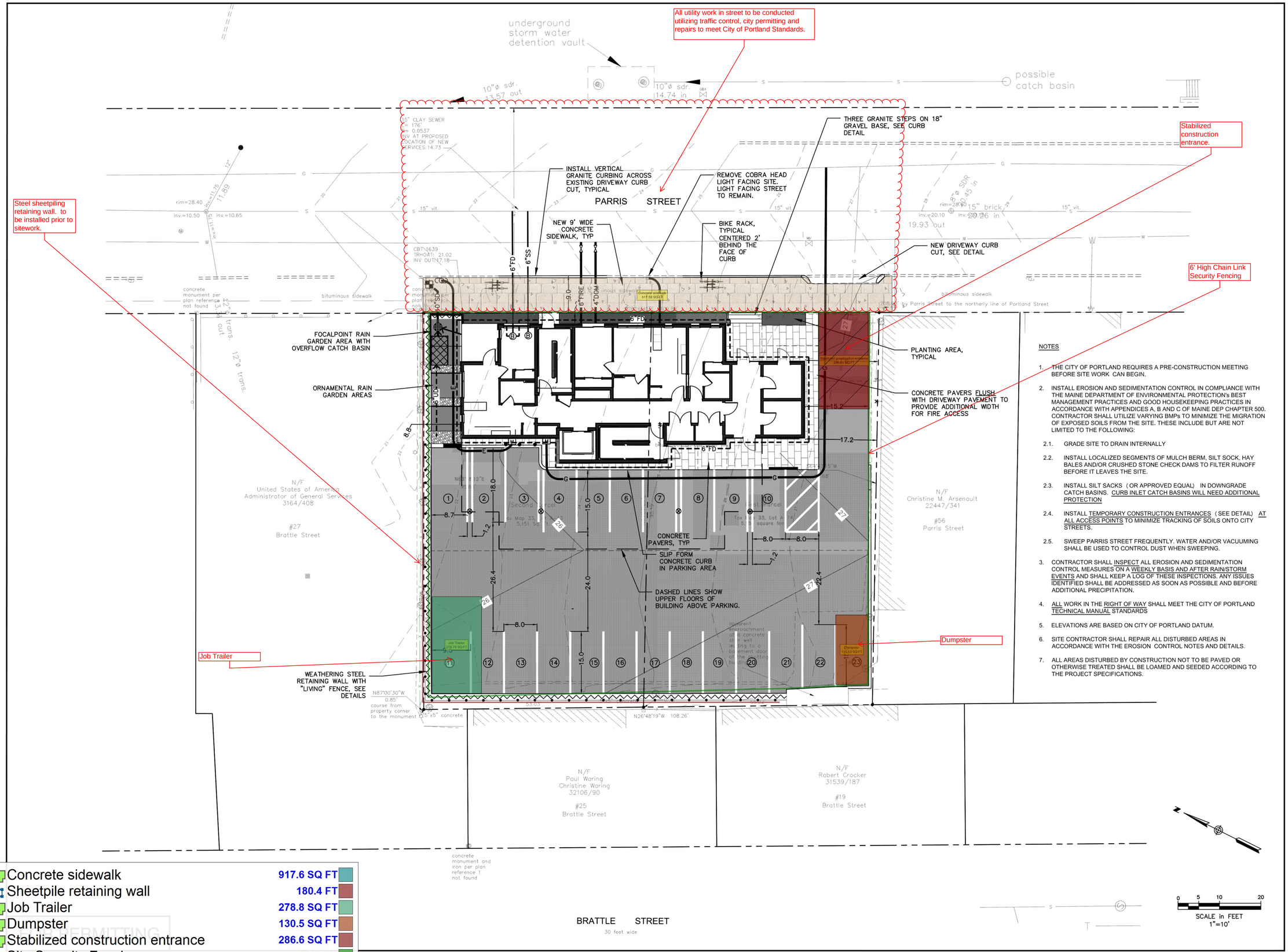
See attached site plan.

Lay down area will be in the parking lot under the first floor once it is built.

The plan is to work the site in the following manner to control space:

HB Fleming to install weathering steel retaining wall
Site contractor to remove pavement and excavate for basement
Foundation installation
Street work - bring in utilities to site and foundation
Perimeter drainage
Backfill foundation, inside and out
Sub-grade parking area
Fine grade parking
Pave parking - Binder only
Panelized - wood framing (using paved area as lay-down and space for crane & lull
Windows to be installed in panels prior to standing up - reduce the amount of noise around construction by reducing backup beepers from telescopic boom lifts
Install most of siding utilizing pump jacks to reduce the amount of noise from lifts

All work to begin at 7:00am and end by 5:00pm daily
No work is expected to take place on Sundays



- Concrete sidewalk — 917.6 SQ FT
- Sheetpile retaining wall — 180.4 FT
- Job Trailer — 278.8 SQ FT
- Dumpster — 130.5 SQ FT
- Stabilized construction entrance — 286.6 SQ FT
- Site Security Fencing — 396.7 FT

NOTES

1. THE CITY OF PORTLAND REQUIRES A PRE-CONSTRUCTION MEETING BEFORE SITE WORK CAN BEGIN.
2. INSTALL EROSION AND SEDIMENTATION CONTROL IN COMPLIANCE WITH THE MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION's BEST MANAGEMENT PRACTICES AND GOOD HOUSEKEEPING PRACTICES IN ACCORDANCE WITH APPENDICES A, B AND C OF MAINE DEP CHAPTER 500. CONTRACTOR SHALL UTILIZE VARYING BMPs TO MINIMIZE THE MIGRATION OF EXPOSED SOILS FROM THE SITE. THESE INCLUDE BUT ARE NOT LIMITED TO THE FOLLOWING:
   - 2.1. GRADE SITE TO DRAIN INTERNALLY
   - 2.2. INSTALL LOCALIZED SEGMENTS OF MULCH BERM, SILT SOCK, HAY BALES AND/OR CRUSHED STONE CHECK DAMS TO FILTER RUNOFF BEFORE IT LEAVES THE SITE.
   - 2.3. INSTALL SILT SACKS (OR APPROVED EQUAL) IN DOWNGRADE CATCH BASINS. CURB INLET CATCH BASINS WILL NEED ADDITIONAL PROTECTION
   - 2.4. INSTALL TEMPORARY CONSTRUCTION ENTRANCES (SEE DETAIL) AT ALL ACCESS POINTS TO MINIMIZE TRACKING OF SOILS ONTO CITY STREETS.
   - 2.5. SWEEP PARRIS STREET FREQUENTLY. WATER AND/OR VACUUMING SHALL BE USED TO CONTROL DUST WHEN SWEEPING.
3. CONTRACTOR SHALL INSPECT ALL EROSION AND SEDIMENTATION CONTROL MEASURES ON A WEEKLY BASIS AND AFTER RAIN/STORM EVENTS AND SHALL KEEP A LOG OF THESE INSPECTIONS. ANY ISSUES IDENTIFIED SHALL BE ADDRESSED AS SOON AS POSSIBLE AND BEFORE ADDITIONAL PRECIPITATION.
4. ALL WORK IN THE RIGHT OF WAY SHALL MEET THE CITY OF PORTLAND TECHNICAL MANUAL STANDARDS
5. ELEVATIONS ARE BASED ON CITY OF PORTLAND DATUM.
6. SITE CONTRACTOR SHALL REPAIR ALL DISTURBED AREAS IN ACCORDANCE WITH THE EROSION CONTROL NOTES AND DETAILS.
7. ALL AREAS DISTURBED BY CONSTRUCTION NOT TO BE PAVED OR OTHERWISE TREATED SHALL BE LOAMED AND SEEDED ACCORDING TO THE PROJECT SPECIFICATIONS.

Parris Terraces Development

60 Parris Street
Portland , Maine

Applicant:

Jack Soley; Horton, LLC
PO Box 411
100 Commercial Street, Suite 306
Portland, Maine
207-775-2252
jsoley@eastbrowncow.com

KAPLAN THOMPSON ARCHITECTS
102 EXCHANGE STREET
PORTLAND, ME 04101
207-842-2888
KAPLANTHOMPSON.COM

MRLD Landscape Architecture + Urbanism

RANSOM Consulting, Inc.
Civil Engineer
Ransom Consulting, Inc.
400 Commercial Street, Suite 404
Portland, Maine 04101
207-772-2891

STATE OF MAINE — John I. Mahoney #12340 — LICENSED PROFESSIONAL ENGINEER

SITE PLAN

No.	Revision/Issue	Date
B	PERMITTING/PRICING	2/8/18
A	PERMITTING	12/13/17

Design by:	Checked by:
JIM	SJB
Drawn by:	Approved by:
TGN	SJB
Project: 171.06098	2017-11-17

Sheet No: C-1

PARRIS TERRACES





DRAWING INDEX

		COVER SHEET
		BOUNDARY SURVEY
		SUBVIVISION PLAT
LANDSCAPE		
	L-1	LANDSCAPE PLAN
	L-2	LANDSCAPE DETAILS
CIVIL		
	C-1	SITE PLAN
	C-2	GRADING, STORMWATER AND DRAINAGE
	C-3	UTILITIES
	C-4	CIVIL DETAILS
	C-5	CIVIL DETAILS
ARCHITECTURAL		
	A-0.1	CODE SUMMARY
	A-1.1	GROUND FLOOR PLAN
	A-1.2	SECOND FLOOR PLAN
	A-1.3	THIRD FLOOR PLAN
	A-1.4	FOURTH FLOOR PLAN
	A-1.5	ROOF PLAN
	A-2.1	EAST ELEVATION
	A-2.2	NORTH & SOUTH ELEVATIONS
	A-2.3	WEST ELEVATION

KAPLAN THOMPSON ARCHITECTS

102 EXCHANGE STREET
PORTLAND, ME 04101
207-842-2888
KAPLANTHOMPSON.COM

PROJECT:
PARRIS TERRACES

60 PARRIS ST.
PORTLAND, ME 04101

OWNER REP :
Donald M Peterson, Inc.
1 Avon Road
Cape Elizabeth, ME 04107
p: 207-415-0707

STRUCTURAL :
Structural Integrity
46 Forrest Avenue
Portland, ME 04101
p: 207-774-4614
f: 866-793-7835

CIVIL :
Ransom Consulting Engineers and Scientists
400 Commercial Street, Suite 404
Portland, ME 04101
p: 207 772-2891

LANDSCAPE :
MRLD Landscape Architecture + Urbanism
87 Main Street
Yarmouth, ME 04096
p: 207 846-4966

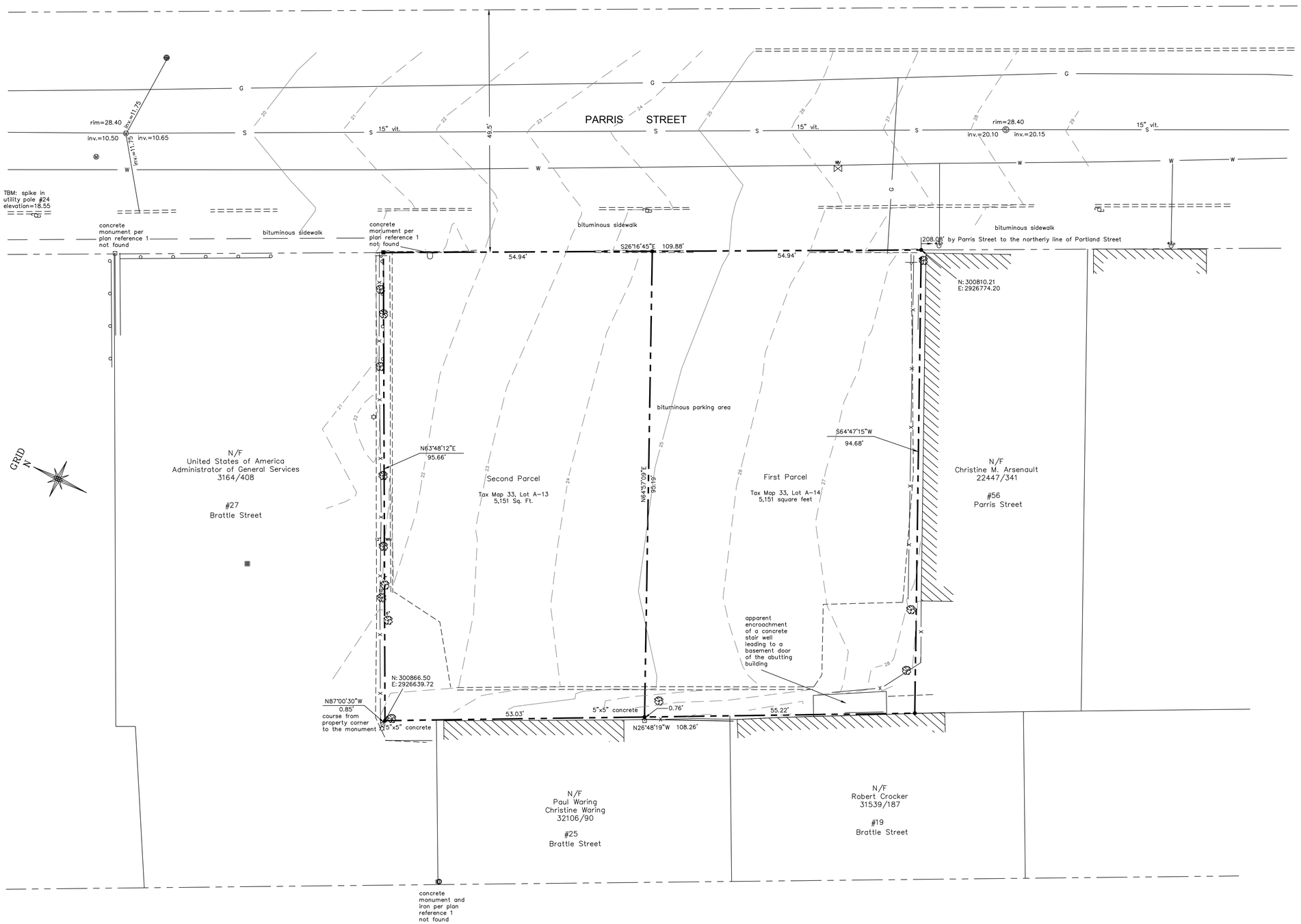
MECHANICAL :
Ripcord Engineering
PO Box 4175
Portland, ME 04101
p: 207 835-4060

ELECTRICAL :
Swiftcurrent Engineering
10 Forest Falls Drive, Unit 4B
Yarmouth, ME 04096
p: 207 847-9280

NOT FOR CONSTRUCTION

PROJECT NO:	PRS
DATE:	03/13/2018
REVISED 1:	
REVISED 2:	
DRAWN BY:	JT/AW
PHASE:	DESIGN DEVELOPMENT

COVER SHEET



LEGEND

- Monument – found
- Iron marker – set (#5 rebar)
- Property line (locus)
- Property line (abutter)
- Right of way line
- Edge of pavement
- Curb
- Fence
- Guard rail
- Underground water line
- Underground gas line
- Sewer line
- Contours (1ft)
- Contours (5ft)
- Water valve
- Utility pole
- Lamp or light pole
- Sewer manhole
- Sign
- Manhole
- Square catch basin
- Water valve
- Round catch basin
- Round catch basin with inlet
- N/F — Now or formerly of
- 1234/567 — Deed reference (Book/Page)
- Deciduous tree
- Existing building

NOTES

1) Book and Page references are to the Cumberland County Registry of Deeds.

2) Bearings are referenced to grid north, Maine State Plane Coordinate System, NAD83, West Zone.

3) Elevations are based on the City of Portland datum.

4) Utility information on this plan is approximate, based on location of visible features and information contained on plans and drawings provided by others. DigSafe and/or the appropriate utilities should be contacted prior to any construction.

5) Properties lie within Zone C based on FIRM Community #230051 Panel #0013–B, dated July 17, 1988. They do not lie within a special flood hazard area.

6) Right of way lines shown per electronic drawing file provided by the City of Portland Department of Engineering. See plan reference #3.

PLAN REFERENCES

1) City of Portland Department of Public Works plan number 421/6.

2) City of Portland Department of Public Works property plan number 302.

3) Digital Drawing File of Kennebec Street and surrounding streets provided by the City of Portland Department of Engineering.

4) Standard Boundary Survey made for the City of Portland by Titcomb Associates dated September 15, 2017.

AREA

Total area=10,378 square feet

OWNER OF RECORD

City of Portland
389 Congress Street
Portland, ME 04101

Book 23202, Page 38

SCALE IN FEET

10 0 10 20

1" = 10'

CERTIFICATION

This survey conforms to the current standards of practice set forth by the Maine State Board of Licensure for Land Surveyors.

Rex J. Croteau, P.L.S. #2273

PLAN OF

Existing Conditions / Standard Boundary Survey

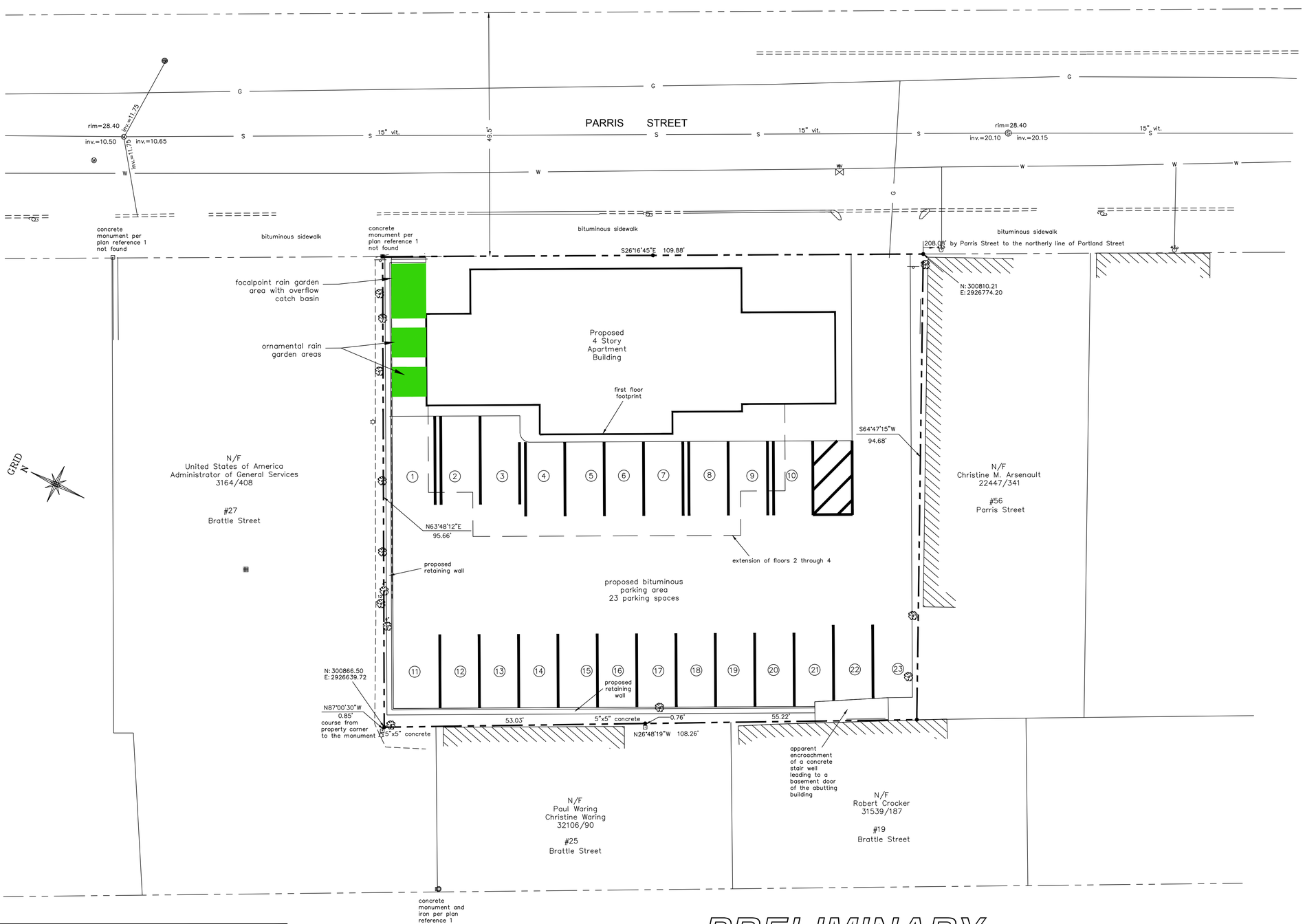
60 Parris Street Portland, Maine

MADE FOR

Jack Soley

JOB #217075	DATE: October 19, 2017	SCALE: 1" = 10'
BOOK #906		
217075.dwg (60 Parris)		

Titcomb Associates
133 Gray Road, Falmouth, Maine 04105
(207)797-9199 www.titcombsurvey.com



PRELIMINARY

Approved by the City of Portland Planning Board

dated _____

_____ _____

_____ _____

_____ _____

_____ _____

LEGEND

- Monument – found
- Iron marker – set (#5 rebar)
- Property line (locus)
- Property line (abutter)
- Right of way line
- Edge of pavement
- Curb
- Fence
- Guard rail
- Underground water line
- Underground gas line
- Sewer line
- Contours (1ft)
- Contours (5ft)
- Water valve
- Utility pole
- Lamp or light pole
- Sewer manhole
- Sign
- Manhole
- Square catch basin
- Water valve
- Round catch basin
- Round catch basin with inlet
- N/F — Now or formerly of
- 1234/567 — Deed reference (Book/Page)
- Deciduous tree
- Existing building

NOTES

1) Book and Page references are to the Cumberland County Registry of Deeds.

2) Bearings are referenced to grid north, Maine State Plane Coordinate System, NAD83, West Zone as derived from plan reference 3 as provided by the City of Portland Department of Engineering.

3) Utility information on this plan is approximate, based on location of visible features and information contained on plans and drawings provided by others. DigSafe and/or the appropriate utilities should be contacted prior to any construction.

4) Properties lie within Zone C based on FIRM Community #230051 Panel #0013–B, dated July 17, 1988. They do not lie within a special flood hazard area.

5) Right of way lines shown per electronic drawing file provided by the City of Portland Department of Engineering. See plan reference #3.

PLAN REFERENCES

1) City of Portland Department of Public Works plan number 421/6.

2) City of Portland Department of Public Works property plan number 302.

3) Digital Drawing File of Kennebec Street and surrounding streets provided by the City of Portland Department of Engineering.

4) Standard Boundary Survey made for the City of Portland by Titcomb Associates dated September 15, 2017.

AREA

Area=10,378 square feet

OWNER OF RECORD

City of Portland
389 Congress Street
Portland, ME 04101

Book 23202, Page 38

SCALE IN FEET

10 0 10 20

1" = 10'

CERTIFICATION

This survey conforms to the current standards of practice set forth by the Maine State Board of Licensure for Land Surveyors.

_____

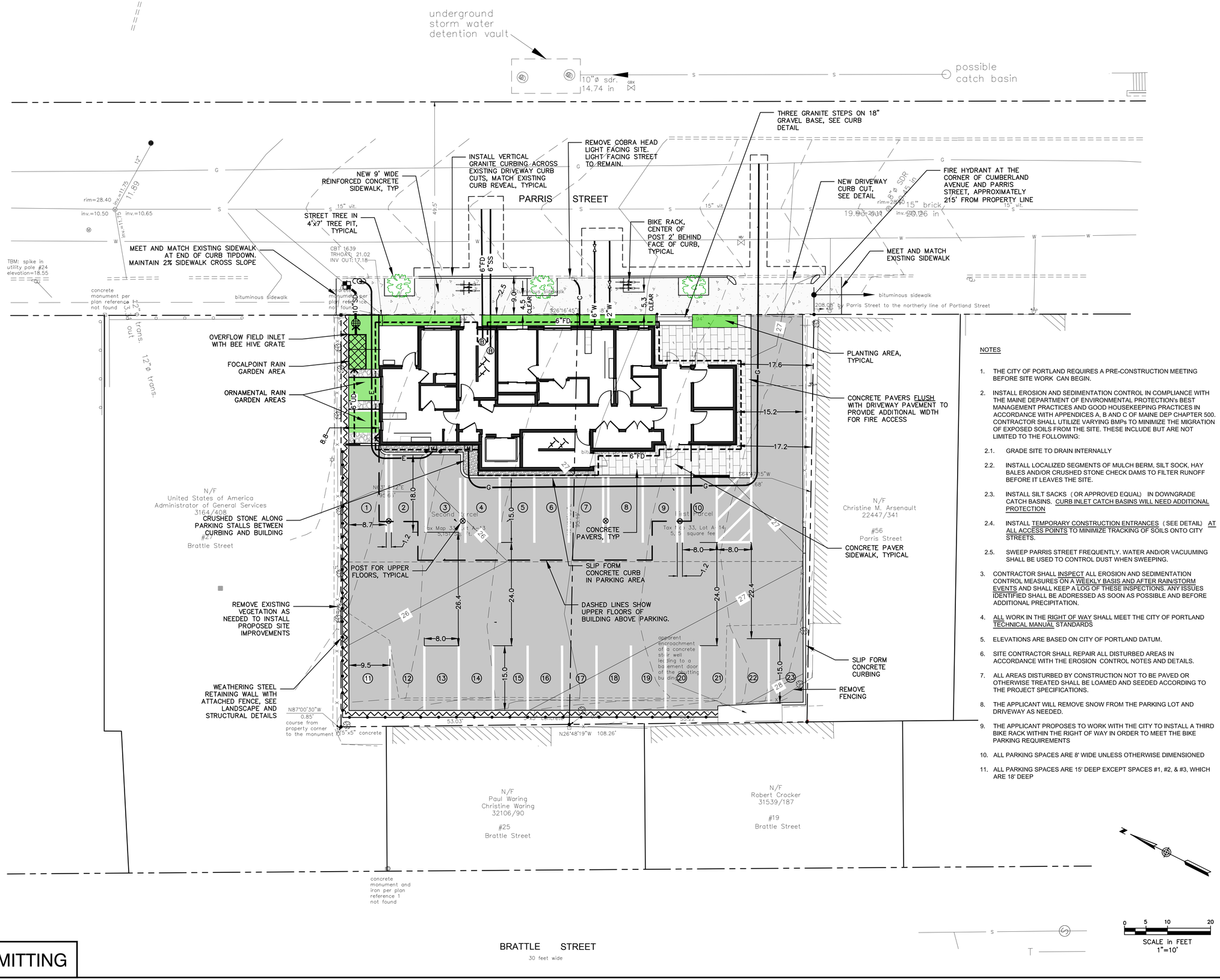
Rex J. Croteau, P.L.S. #2273

PLAN OF
Subdivision plat
60 Parris Street Portland, Maine

MADE FOR
Jack Soley

JOB #217075	DATE: March 9, 2018	SCALE: 1" = 10'
BOOK #906		
217075.dwg (Subdiv Plan)		

Titcomb Associates
133 Gray Road, Falmouth, Maine 04105
(207)797-9199 www.titcombsurvey.com



FOR PERMITTING

P:\2017\171.06098\56_ParisSt\Drawings\Working Drawings\ParrisSt--Ransom--Working.dwg C-1 Mar 14,2018- 9:10am

NOTES

1. THE CITY OF PORTLAND REQUIRES A PRE-CONSTRUCTION MEETING BEFORE SITE WORK CAN BEGIN.
2. INSTALL EROSION AND SEDIMENTATION CONTROL IN COMPLIANCE WITH THE MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION's BEST MANAGEMENT PRACTICES AND GOOD HOUSEKEEPING PRACTICES IN ACCORDANCE WITH APPENDICES A, B AND C OF MAINE DEP CHAPTER 500. CONTRACTOR SHALL UTILIZE VARYING BMPs TO MINIMIZE THE MIGRATION OF EXPOSED SOILS FROM THE SITE. THESE INCLUDE BUT ARE NOT LIMITED TO THE FOLLOWING:
   - 2.1. GRADE SITE TO DRAIN INTERNALLY
   - 2.2. INSTALL LOCALIZED SEGMENTS OF MULCH BERM, SILT SOCK, HAY BALES AND/OR CRUSHED STONE CHECK DAMS TO FILTER RUNOFF BEFORE IT LEAVES THE SITE.
   - 2.3. INSTALL SILT SACKS (OR APPROVED EQUAL) IN DOWNGRADE CATCH BASINS. CURB INLET CATCH BASINS WILL NEED ADDITIONAL PROTECTION
   - 2.4. INSTALL TEMPORARY CONSTRUCTION ENTRANCES (SEE DETAIL) AT ALL ACCESS POINTS TO MINIMIZE TRACKING OF SOILS ONTO CITY STREETS.
   - 2.5. SWEEP PARRIS STREET FREQUENTLY. WATER AND/OR VACUUMING SHALL BE USED TO CONTROL DUST WHEN SWEEPING.
3. CONTRACTOR SHALL INSPECT ALL EROSION AND SEDIMENTATION CONTROL MEASURES ON A WEEKLY BASIS AND AFTER RAIN/STORM EVENTS AND SHALL KEEP A LOG OF THESE INSPECTIONS. ANY ISSUES IDENTIFIED SHALL BE ADDRESSED AS SOON AS POSSIBLE AND BEFORE ADDITIONAL PRECIPITATION.
4. ALL WORK IN THE RIGHT OF WAY SHALL MEET THE CITY OF PORTLAND TECHNICAL MANUAL STANDARDS
5. ELEVATIONS ARE BASED ON CITY OF PORTLAND DATUM.
6. SITE CONTRACTOR SHALL REPAIR ALL DISTURBED AREAS IN ACCORDANCE WITH THE EROSION CONTROL NOTES AND DETAILS.
7. ALL AREAS DISTURBED BY CONSTRUCTION NOT TO BE PAVED OR OTHERWISE TREATED SHALL BE LOAMED AND SEEDED ACCORDING TO THE PROJECT SPECIFICATIONS.
8. THE APPLICANT WILL REMOVE SNOW FROM THE PARKING LOT AND DRIVEWAY AS NEEDED.
9. THE APPLICANT PROPOSES TO WORK WITH THE CITY TO INSTALL A THIRD BIKE RACK WITHIN THE RIGHT OF WAY IN ORDER TO MEET THE BIKE PARKING REQUIREMENTS
10. ALL PARKING SPACES ARE 8' WIDE UNLESS OTHERWISE DIMENSIONED
11. ALL PARKING SPACES ARE 15' DEEP EXCEPT SPACES #1, #2, & #3, WHICH ARE 18' DEEP

Parris Terraces Development

60 Parris Street
Portland , Maine

Applicant:

Jack Soley; Horton, LLC
Box 411
100 Commercial Street, Suite 306
Portland, Maine
207-808-4714
jsoley@eastbrowncow.com

KAPLAN THOMPSON ARCHITECTS
102 EXCHANGE STREET
PORTLAND, ME 04101
207-842-2888
KAPLANTHOMPSON.COM

MRLD Landscape Architecture + Urbanism

RANSOM Consulting, Inc.
Civil Engineer
Ransom Consulting, Inc.
400 Commercial Street, Suite 404
Portland, Maine 04101
207-772-2891

STATE OF MAINE — John I. Mahoney #12340 — LICENSED PROFESSIONAL ENGINEER

SITE PLAN

No.	Revision/Issue	Date
C	PERMITTING	3/13/18
B	PERMITTING/PRICING	2/8/18
A	PERMITTING	12/13/17

Design by:	Checked by:
JIM	SJB
Drawn by:	Approved by:
TGN	SJB

Project: 171.06098
2017-11-17

Sheet No: C-1

PARRIS STREET

REMOVE EXISTING CATCH BASIN AND ASSOCIATED PIPING

CONNECT 10" PVC STORMDRAIN OUTLET TO EXISTING CATCH BASIN LEAD. TEST PIT TO CONFIRM ELEVATION AND PIPE CONDITION BEFORE ORDERING STRUCTURE AND BEFORE CONNECTING FOUNDATION DRAIN TO 15" SEWER

CBT 1639
TRHOAT: 21.02
INV OUT: 17.18

TOP OF WEATHERING STEEL EDGING EL: 22.5

24" HARCO CATCH BASIN WITH BEE HIVE GRATE WITH FILTET INSERT. RIM: 21.0
10" INV OUT: 17.2
(TEST PIT TO CONFIRM)

12" STORMDRAIN TO CONNECT R-TANKS TO FIELD INLET

FocalPoint HIGH RATE BIOFILTER MEDIA: 28 SF (7' x 4') CROSS HATCHED AREA ONLY. SEE ORNAMENTAL RAIN GARDEN DETAIL FOR REMAINING PLANTED AREA. UNDERDRAINED WITH R-TANK UNDER DRAIN SYSTEM. SURFACE ELEVATON: 21.0

TOP OF RETAINING STEPS FROM 22.5 TO 23.5

TOP OF RETAINING STEPS FROM 23.5 TO 24.5

6" UNDERDRAIN FOR ORNAMENTAL RAIN GARDEN AREAS

TOP OF RETAINING STEPS FROM 24.5 TO 27.0

RIVER STONE SEDIMENT FOREBAY. N/F 3' WIDE AND 6" DEEP

United States of America
Administrator of General Services
3164/408

3.5' WIDE FLUSH SPILLWAY THROUGH CONCRETE RETAINING WALL EL: 25.00

#27
Brattle Street

TOP OF RETAINING WALL 25.5

RETAINING WALL WITH FENCE SEE STRUCTURAL AND LANDSCAPE DETAILS

TOP OF RETAINING WALL: 27.0

TOP OF RETAINING WALL: 28.25

WEATHERING STEEL SPILLWAY EL: 22.5

WEATHERING STEEL SPILLWAY EL: 23.5

INSTALL BACKFLOW PREVENTERS IN BASEMENT FOR BOTH SANITARY SEWER AND FOUNDATION DRAIN

ROOF DRAINS DISCHARGE INTO SEDIMENT FOREBAY, 6" INV: 23.5

FFE 27.5

ACCESSIBLE ENTRANCE

TRASH ROOM

ACCESSIBLE ENTRANCE

GRANITE STEPS

HAND RAIL

SLIP FORM CONCRETE CURB WITH 6" REVEAL.

ACCESSIBLE ROUTE TO FRONT DOOR BEGINS AT PUBLIC SIDEWALK WITH 2% CROSS SLOPE, THEN RUNS OVER A OVER THE BITUMINOUS DRIVEWAY WITH 2% SLOPE, TO A RAMP WITH 3.4% RUNNING SLOPE AND 2% CROSS SLOPE, TO A LANDING AT 2% SLOE AND THEN INTO THE FRONT DOOR.

GRADING NOTES

1. ALL WALKWAYS, PEDESTRIAN AREAS AND ACCESSIBLE PARKING AISLES SHALL CONFORM WITH THE APPROPRIATE ADA GUIDELINES. GRADING SHALL BE AS FOLLOWS:

1.1. WALKWAYS SHALL HAVE A MAXIMUM CROSS SLOPE (PERPENDICULAR TO THE DIRECTION OF TRAVEL) OF 2% AND A MAXIMUM LONGITUDINAL SLOPE (ALONG THE DIRECTION OF TRAVEL) OF 5%.

1.2. CURB RAMPS MAY HAVE A LONGITUDINAL SLOPE OF UP TO 8% (1" PER FOOT) HOWEVER, THE MAXIMUM CROSS SLOPE IS STILL 2%.

1.3. LANDING AREAS, PATIO AREAS AND AREAS WHERE PEDESTRIANS ARE TURNING SHALL HAVE A MAXIMUM SLOPE OF 2% IN ALL DIRECTIONS.

1.6. THE CONTROLLING FACTOR IN GRADING AND THE ELEVATION OF THE SIDEWALK ALONG PARRIS STREET SHALL BE A 2% CROSS SLOPE FROM THE TOP OF THE CURB TO THE PROPERTY LINE. RESET EXISTING CURB AND INSTALL NEW CURB TO MATCH EXISTING CURB REVEAL. OTHER SITE ITEMS (SUCH AS STEPS) MAY NEED TO BE ADJUSTED TO MEET THE 2% CRITERIA. CONTACT ENGINEER FOR GUIDANCE.

1.7. IF THE CONTRACTOR DETERMINES THAT ANY THE ABOVE STANDARDS ARE NOT COMPATIBLE WITH SITE CONDITIONS THEY SHALL CONTACT THE ENGINEER/OWNER UPON DISCOVERY AND REQUEST GUIDANCE.
JOHN MAHONEY: 207-831-6165

1.8. ANY WORK DONE OUTSIDE OF THESE GUIDELINES (WITHOUT FIRST REQUESTING GUIDANCE FROM THE ENGINEER) SHALL BE REMOVED AND REPLACED AT NO ADDITIONAL COST TO THE OWNER.

N/F
Chapman Trust
Second Parcel
Tax Map 33, Lot A-13
5,151 Sq. Ft.

First Parcel
Tax Map 33, Lot A-14
5,5 square fee

PAVERS FLUSH WITH DRIVEWAY PAVEMENT TO PROVIDE FIRE ACCESS.

DASHED LINE SHOWS GRADE BREAK, TYPICAL

ACCESSIBLE ROUTE TO BACK DOOR BEGINS AT ACCESSIBLE AISLE WITH 2% SLOPE, TO FLUSH PAVERS WITH 2% SLOPE, TO A RAMP WITH 3.8% RUNNING SLOPE AND 2% CROSS SLOPE, TO A LANDING AT 2% SLOPE AND THEN INTO THE BACK DOOR

CONTRACTOR SHALL PROTECT/SAFEGUARD FOUNDATION OF ADJACENT BUILDING.

PARKING LOT SLOPE INCREASES TO 4.5% FROM 27 CONTOUR TO SOUTHWESTERN PROPERTY CORNER.

SLIP FORM CONCRETE CURB.

apparent encroachment of a concrete stair well leading to a basement door of the abutting building

N87°00'30"W 0.85' course from property corner to the monument

5"x5" concrete

N26°48'19"W 108.26'

SCALE in FEET
1"=6'

FOR PERMITTING

P:\2017\171.06098\3d_ParisSt\Drawings\Working Drawings\ParrisSt-Ransom-Working.dwg C-2 Mar 20,2018- 10:32am

Parris Terraces Development

60 Parris Street
Portland , Maine

Applicant:

Jack Soley; Horton, LLC
Box 411
100 Commercial Street, Suite 306
Portland, Maine
207-808-4714
jsoley@eastbrowncow.com

KAPLAN THOMPSON ARCHITECTS
102 EXCHANGE STREET
PORTLAND, ME 04101
207-842-2888
KAPLANTHOMPSON.COM

MRLD
Landscape Architecture + Urbanism

RANSOM
Consulting, Inc.
Civil Engineer
Ransom Consulting, Inc.
400 Commercial Street, Suite 404
Portland, Maine 04101
207-772-2891

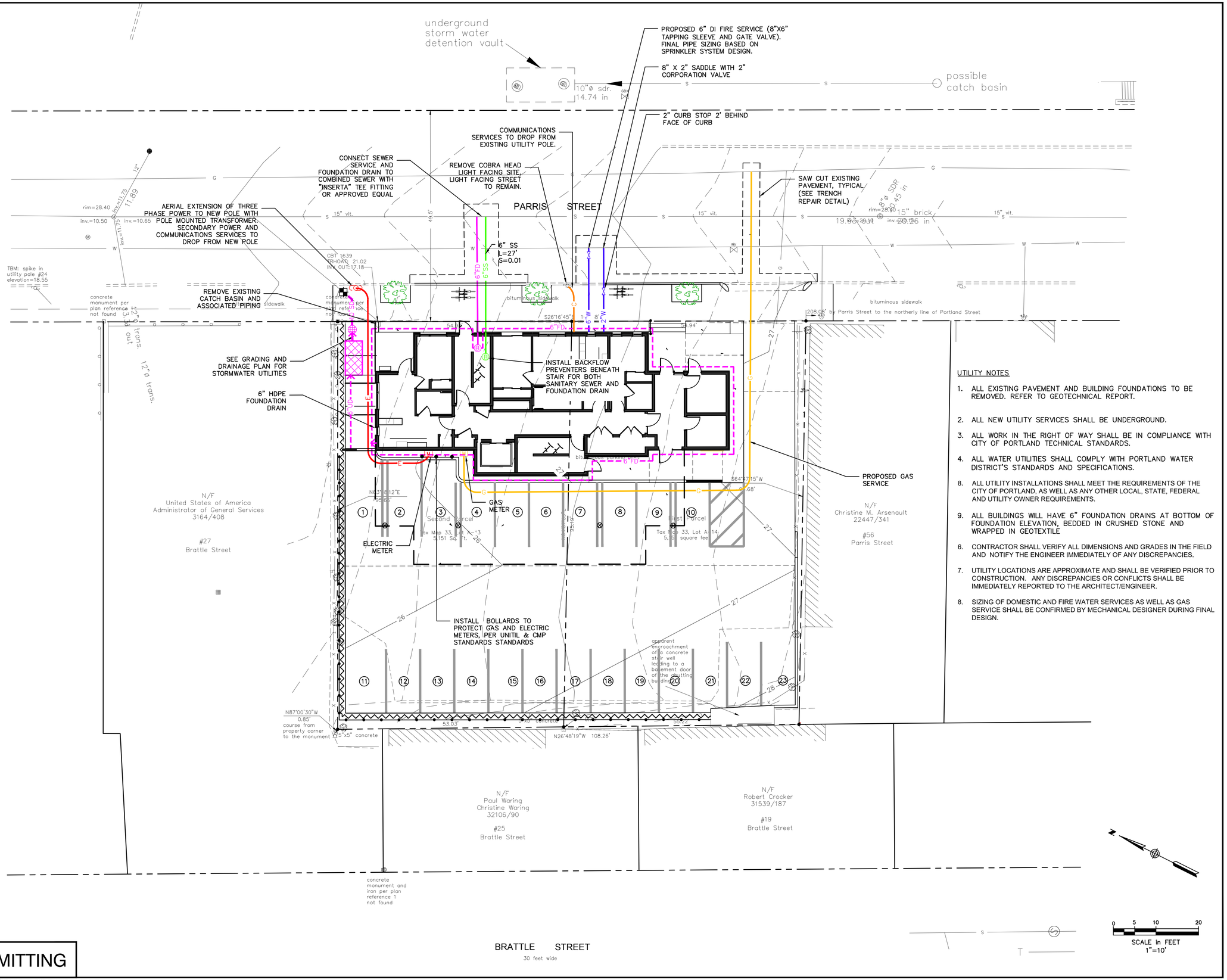
STATE OF MAINE
John I. Mahoney #12340
LICENSED PROFESSIONAL ENGINEER

GRADING, DRAINAGE AND STORMWATER PLAN

No.	Revision/Issue	Date
D	PERMITTING	3/20/18
C	PERMITTING	3/13/18
B	PERMITTING/PRICING	2/8/18
A	PERMITTING	12/13/17

Design by: JIM	Checked by: SJB
Drawn by: TGN	Approved by: SJB
Project: 171.06098	2017-11-17

Sheet No: C-2



UTILITY NOTES

1. ALL EXISTING PAVEMENT AND BUILDING FOUNDATIONS TO BE REMOVED. REFER TO GEOTECHNICAL REPORT.
2. ALL NEW UTILITY SERVICES SHALL BE UNDERGROUND.
3. ALL WORK IN THE RIGHT OF WAY SHALL BE IN COMPLIANCE WITH CITY OF PORTLAND TECHNICAL STANDARDS.
4. ALL WATER UTILITIES SHALL COMPLY WITH PORTLAND WATER DISTRICT'S STANDARDS AND SPECIFICATIONS.
8. ALL UTILITY INSTALLATIONS SHALL MEET THE REQUIREMENTS OF THE CITY OF PORTLAND, AS WELL AS ANY OTHER LOCAL, STATE, FEDERAL AND UTILITY OWNER REQUIREMENTS.
9. ALL BUILDINGS WILL HAVE 6" FOUNDATION DRAINS AT BOTTOM OF FOUNDATION ELEVATION, BEDDED IN CRUSHED STONE AND WRAPPED IN GEOTEXTILE
6. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND GRADES IN THE FIELD AND NOTIFY THE ENGINEER IMMEDIATELY OF ANY DISCREPANCIES.
7. UTILITY LOCATIONS ARE APPROXIMATE AND SHALL BE VERIFIED PRIOR TO CONSTRUCTION. ANY DISCREPANCIES OR CONFLICTS SHALL BE IMMEDIATELY REPORTED TO THE ARCHITECT/ENGINEER.
8. SIZING OF DOMESTIC AND FIRE WATER SERVICES AS WELL AS GAS SERVICE SHALL BE CONFIRMED BY MECHANICAL DESIGNER DURING FINAL DESIGN.

FOR PERMITTING

Parris Terraces Development

60 Parris Street
Portland , Maine

Applicant:

Jack Soley; Horton, LLC
Box 411
100 Commercial Street, Suite 306
Portland, Maine
207-808-4714
jsoley@eastbrowncow.com

Consultants:

KAPLAN THOMPSON ARCHITECTS
102 EXCHANGE STREET
PORTLAND, ME 04101
207-842-2888
KAPLANTHOMPSON.COM

MRLD
Landscape Architecture + Urbanism

RANSOM
Consulting, Inc.
Civil Engineer
Ransom Consulting, Inc.
400 Commercial Street, Suite 404
Portland, Maine 04101
207-772-2891

STATE OF MAINE John I. Mahoney #12340 LICENSED PROFESSIONAL ENGINEER

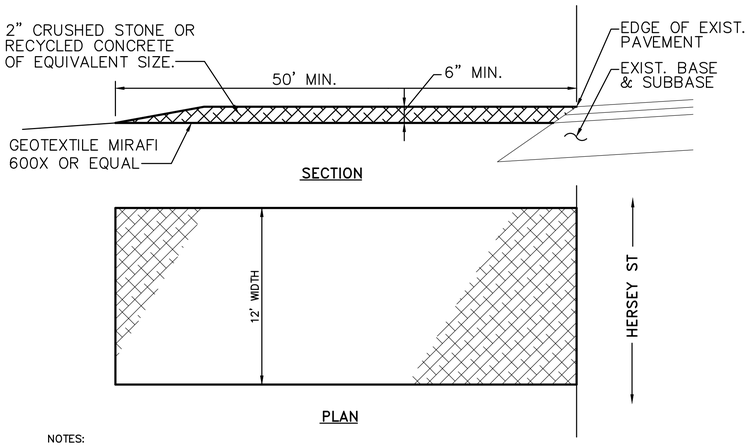
UTILITY PLAN

No.	Revision/Issue	Date
D	PERMITTING	3/13/18
C	PERMITTING/PRICING	2/23/18
B	PERMITTING/PRICING	2/8/18
A	PERMITTING	12/13/17

Design by: JIM	Checked by: SJB
Drawn by: TGN	Approved by: SJB
Project: 171.06098	

Sheet No: C-3

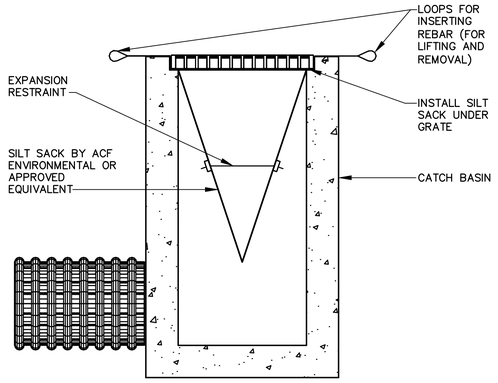
P:\2017\171.06098\56_ParisSt\Drawings\Working Drawings\ParrisSt--Ransom--Working.dwg C-3 Mar 14,2018- 9:06am



NOTES:
1. MAINTAIN ENTRANCE IN A CONDITION THAT WILL PREVENT TRACKING OF SEDIMENT ONTO PUBLIC RIGHT OF WAY. IF WASHING IS REQUIRED PREVENT SEDIMENT FROM ENTERING WATERWAYS, DITCHES OR STORM DRAINS.
2. REMOVE STABILIZED CONSTRUCTION ENTRANCE TO FINISH ROAD CONSTRUCTION & PAVEMENT.

STABILIZED CONSTRUCTION ENTRANCE

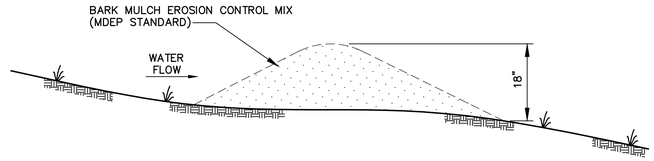
NOT TO SCALE



NOTES:
1. INSTALL SILTSACK PER MANUFACTURER'S RECOMMENDATIONS.
2. SILTSACKS SHALL BE CHECKED FOR SEDIMENT LEVEL AND OVERALL CONDITION IMMEDIATELY AFTER EVERY RAIN EVENT AND AT LEAST EVERY DAY DURING PROLONGED RAINFALL..
3. SEDIMENT SHALL BE REMOVED WHEN THE SEDIMENT HAS ACCUMULATED TO 1/2 THE DESIGN DEPTH OF THE SILTSACK. REMOVED SEDIMENT SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT WILL NOT ERODE.
4. SEDIMENT SHALL ONLY BE REMOVED BY REMOVING THE SILTSACKS FROM THE CATCH BASINS ACCORDING TO MANUFACTURER RECOMMENDATIONS.
6. CARE SHALL BE TAKEN TO AVOID SPILLING SEDIMENT WHILE REMOVING THE SILTSACK.
7. ANY DAMAGED SILTSACK SHALL BE REPLACED WITH A NEW SILTSACK.

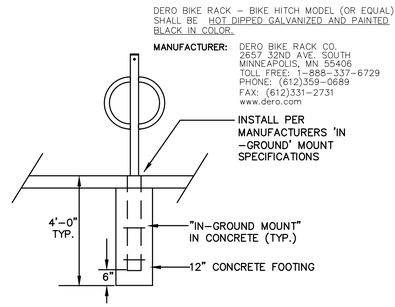
INLET PROTECTION - SILT SACK

NOT TO SCALE



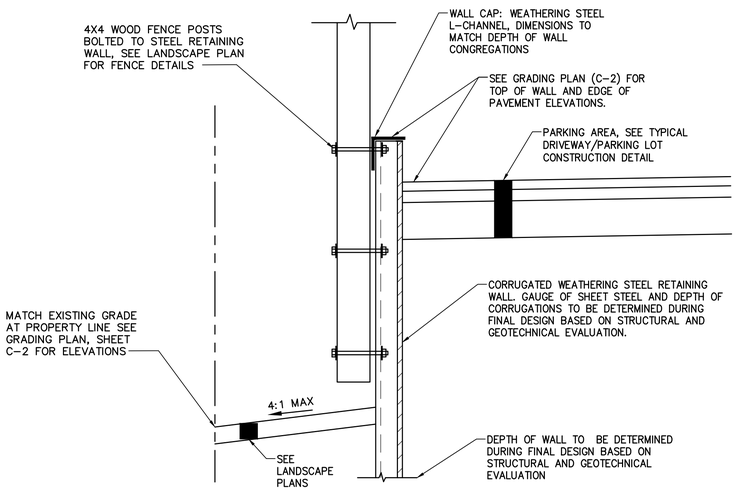
MULCH BERM DETAIL

NOT TO SCALE



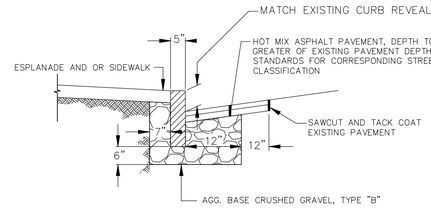
BIKE RACK DETAIL

NOT TO SCALE



WEATHERING STEEL RETAINING WALL, SCHEMATIC DETAIL

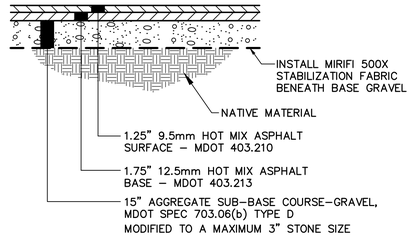
NOT TO SCALE



VERTICAL GRANITE CURB CROSS SECTION

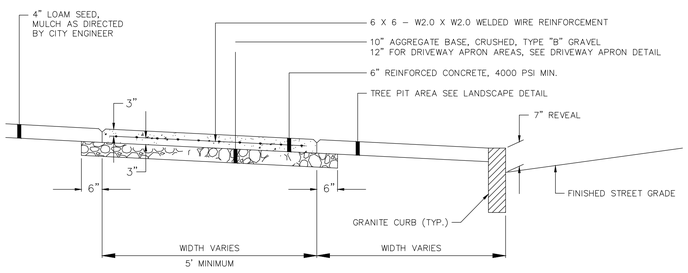
VERTICAL GRANITE CURB INSTALLATION IN EXISTING STREETS

NOT TO SCALE



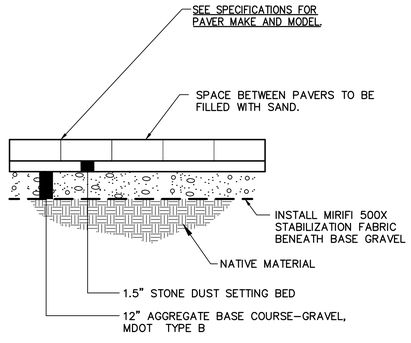
TYPICAL DRIVEWAY/PARKING LOT CONSTRUCTION OUTSIDE OF RIGHT OF WAY

NOT TO SCALE



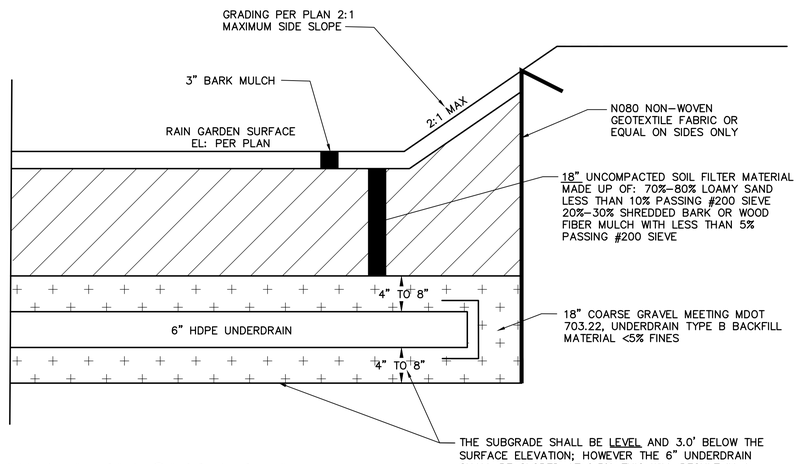
REINFORCED CONCRETE SIDEWALK

NOT TO SCALE



CONCRETE PAVER DETAIL

NOT TO SCALE



ORNAMENTAL RAIN GARDEN DETAIL

NOT TO SCALE

FOR PERMITTING

P:\2017\17.06098\56_ParisSt\Drawings\Working Drawings\ParrisSt-Ransom-Working.dwg C-4 Mar 20,2018- 10:33am

Parris Terraces Development

60 Parris Street
Portland , Maine

Applicant:

Jack Soley; Horton, LLC
Box 411
100 Commercial Street, Suite 306
Portland, Maine
207-808-4714
jsoley@eastbrowncow.com

Consultants:

KAPLAN THOMPSON ARCHITECTS
102 EXCHANGE STREET
PORTLAND, ME 04101
207-842-2888
KAPLANTHOMPSON.COM

MRLD
Landscape Architecture + Urbanism

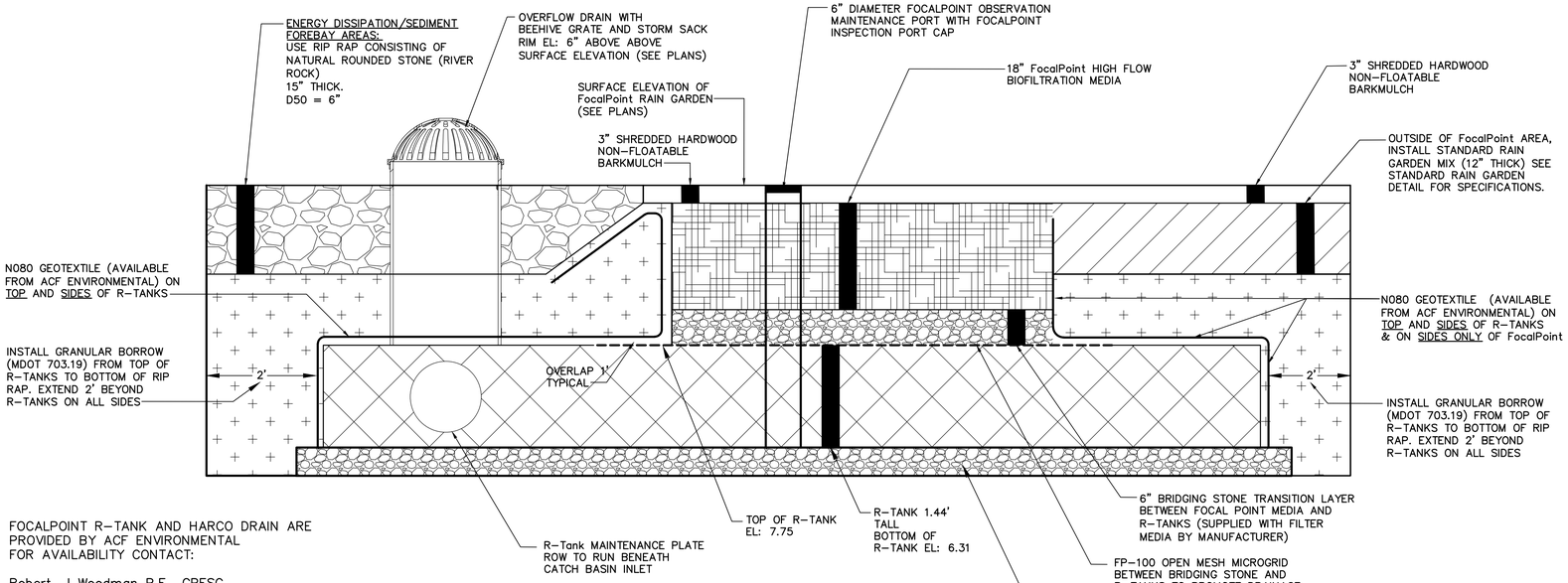
RANSOM
Consulting, Inc.
Civil Engineer
Ransom Consulting, Inc.
400 Commercial Street, Suite 404
Portland, Maine 04101
207-772-2891

CIVIL DETAILS

No.	Revision/Issue	Date
C	PERMITTING	3/20/18
B	PERMITTING	3/13/18
A	PERMITTING/PRICING	2/8/18

Design by: JIM	Checked by: SJB
Drawn by: TGN	Approved by: SJB
Project: 171.06098	

Sheet No: C-4

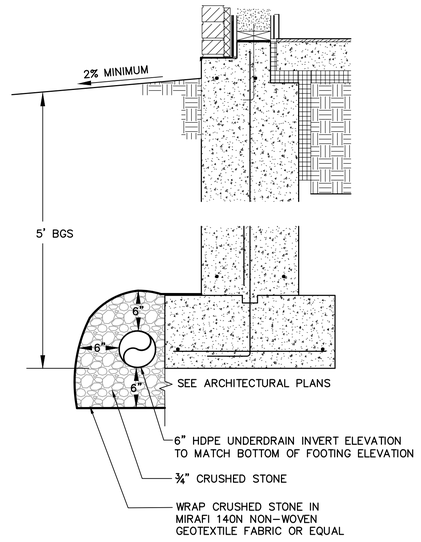


FOCALPOINT R-TANK AND HARCO DRAIN ARE PROVIDED BY ACF ENVIRONMENTAL FOR AVAILABILITY CONTACT:

Robert, J Woodman P.E., CPESC
Senior Stormwater Engineer
ACF Environmental
23 Falmouth Drive, Gorham, ME 04038
Mobile Office Phone (207) 272-4431
rwoodman@acfenv.com
www.acfenvironmental.com

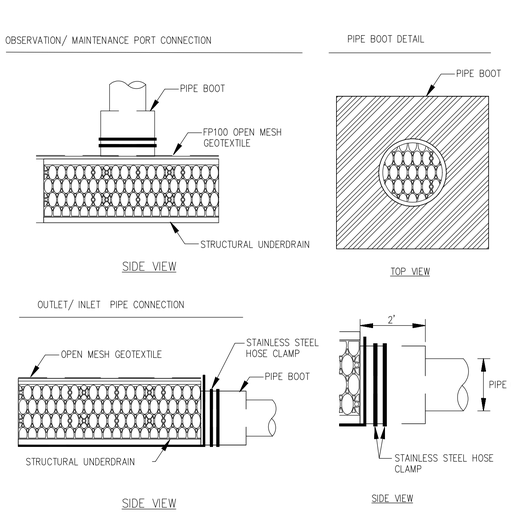
FOCAL POINT & R-TANK STORMWATER SYSTEM , TYPICAL DETAIL

NOT TO SCALE



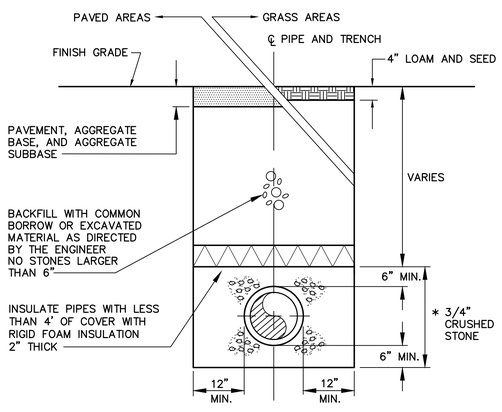
FOOTING DRAIN DETAIL

NOT TO SCALE



R-TANK PIPE AND OBSERVATION PORT CONNECTIONS

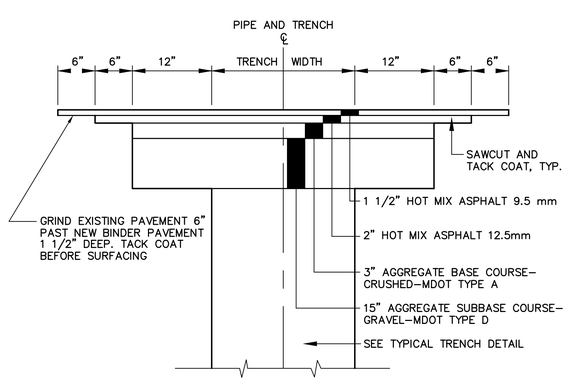
NOT TO SCALE



* USE SAND BEDDING FOR WATER INFRASTRUCTURE

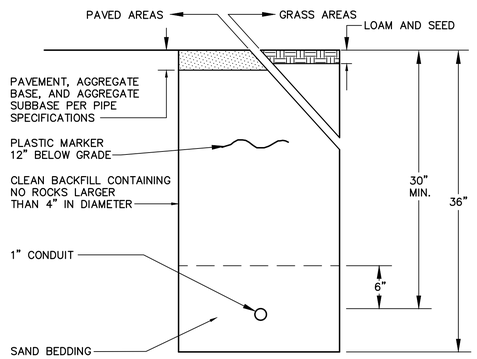
TYPICAL TRENCH REPAIR DETAIL

NOT TO SCALE



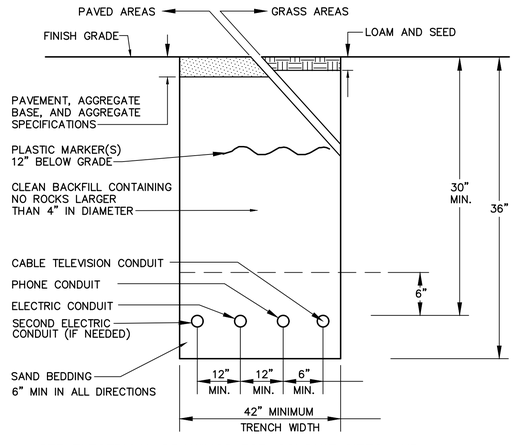
TYPICAL TRENCH PAVING DETAIL

NOT TO SCALE



STREET LIGHTING CONDUIT TRENCH DETAIL

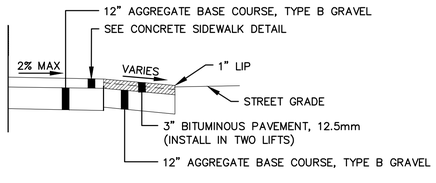
NOT TO SCALE



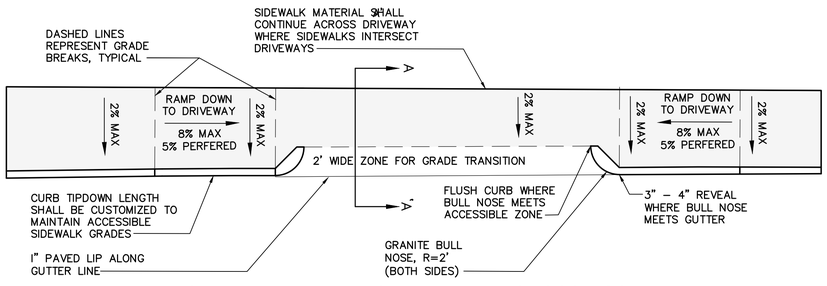
* SEE ELECTRICAL DRAWINGS FOR CONDUIT SIZES AND DETAILS ON CONDUIT BANK CONFIGURATION

UNDERGROUND ELECTRIC/COMUNICATIONS UTILITY TRENCH DETAIL

NOT TO SCALE



SECTION A-A'



SIDEWALK DETAIL FOR DRIVEWAY CROSSINGS

NOT TO SCALE

FOR PERMITTING

P:\2017\171.06098\56_ParisSt\Drawings\Working Drawings\ParrisSt-Ransom-Working.dwg C-5 Mar 14,2018- 9:05am

Parris Terraces Development

60 Parris Street
Portland , Maine

Applicant:

Jack Soley; Horton, LLC
Box 411
100 Commercial Street, Suite 306
Portland, Maine
207-808-4714
jsoley@eastbrowncow.com

Consultants:

KAPLAN THOMPSON ARCHITECTS
102 EXCHANGE STREET
PORTLAND, ME 04101
207-842-2888
KAPLANTHOMPSON.COM

MRLD
Landscape Architecture + Urbanism

RANSOM
Consulting, Inc.
Civil Engineer
Ransom Consulting, Inc.
400 Commercial Street, Suite 404
Portland, Maine 04101
207-772-2891

STATE OF MAINE — John L. Mahoney #12340 — LICENSED PROFESSIONAL ENGINEER

CIVIL DETAILS

No.	Revision/Issue	Date
B	PERMITTING	3/13/18
A	PERMITTING/PRICING	2/8/18

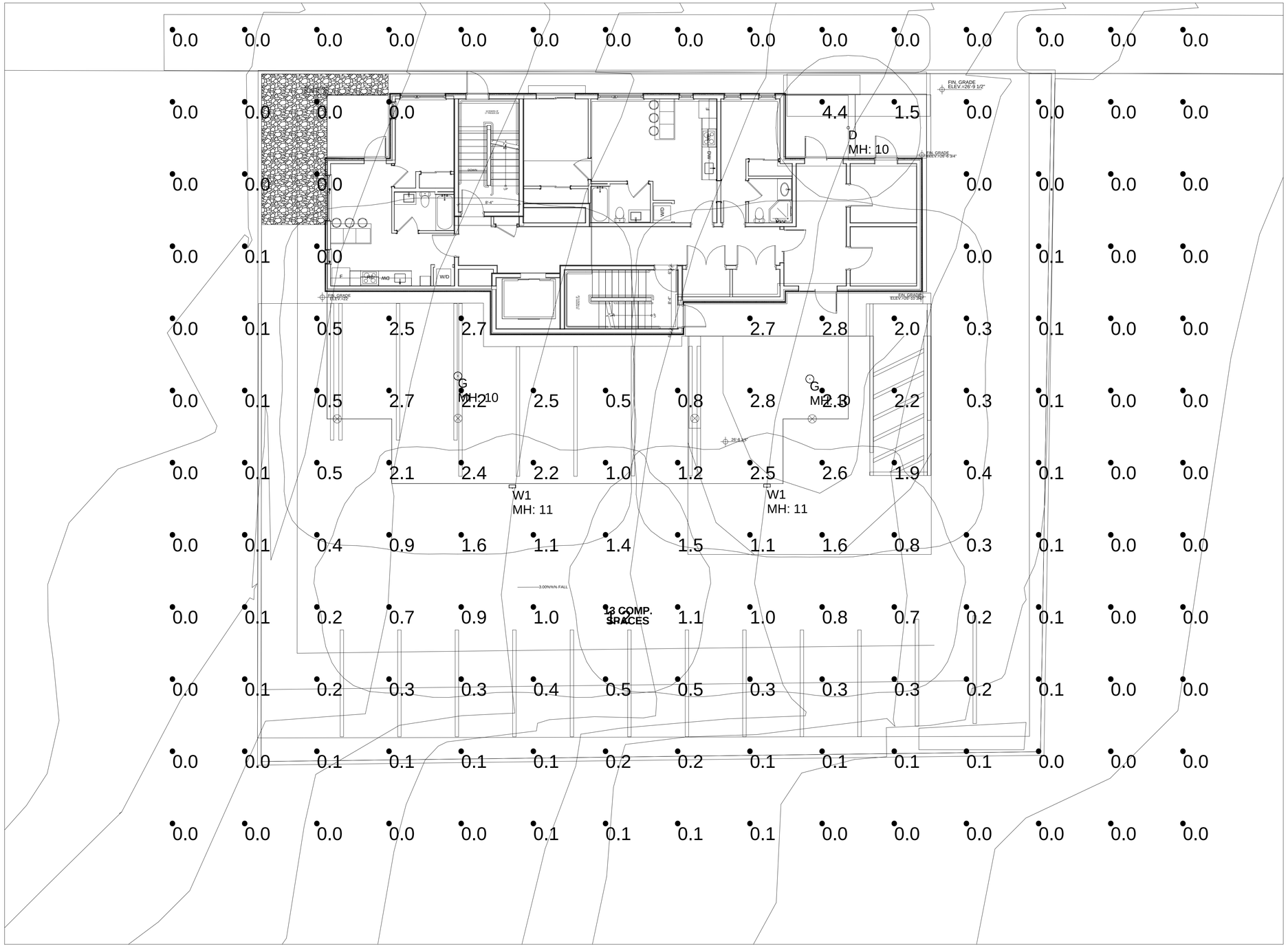
Design by: JIM
Checked by: SJB
Drawn by: TGN
Approved by: SJB
Project: 171.06098

Sheet No: C-5

Luminaire Schedule (note fixture catalogue numbers are not complete)						
Type	**Symbol**	**Qty**	**Lum. Lumens**	**LLF**	**Lum. Watts**	**Description**
G		2	3391	0.900	41.7	ARS-18L3K-070-5M-CS
D		1	998	0.900	13.68	FLC4D-RO-1000L-120-L11-T
W1		2	1471	0.900	13.9	TRP1-12L15-3K7-4

Calculation Summary					
Label	**Avg**	**Max**	**Min**	**Avg/Min**	**Max/Min**
SITE	0.50	4.4	0.0	N.A.	N.A.

NOTES:
1) EXACT MOUNTING DETAILS TO BE DETERMINED AT JOBSITE BY OTHERS.
2) CALCULATIONS DO NOT SHOW THE EFFECT OF SHADOWING CAUSED BY BUILDINGS AND OBJECTS WITHIN THE CALCULATED SPACE OR IN THE SITE AREA.
3) READINGS SHOWN ARE INITIAL HORIZONTAL FOOTCANDLES ON A FLAT SITE WITHOUT REFLECTIONS OR OBSTRUCTIONS UNLESS OTHERWISE INDICATED.
4) THIS CALCULATION IS BASED ON LIMITED INFORMATION SUPPLIED BY OTHERS TO SWANEY LIGHTING ASSOCIATES AND STANDARD ASSUMPTIONS OF THE SPACE AND/OR SITE.
5) CONFORMANCE TO CODES AND OTHER LOCAL REQUIREMENTS AS DETERMINED BY THE AHJ ARE THE RESPONSIBILITY OF THE OWNER AND/OR THE OWNER'S REPRESENTATIVE.
6) THIS LAYOUT DRAWING MUST BE COORDINATED WITH THE SITE LOCATION FOR CORRECT FIXTURE ORIENTATION.
7) DOCUMENTS PRINTED OR PLOTTED FROM ELECTRONIC FILES MAY APPEAR AT OTHER THAN THE DESIRED OR ASSUMED GRAPHIC SCALES. IT IS THE RESPONSIBILITY OF THE RECIPIENT TO VERIFY THAT THE PRINTED OR PLOTTED-TO-SCALE DRAWING IS PRINTED TO SCALE.



PLAN VIEW





HUBBELL GARAGE LED



HUBBELL WALL PACK

SITE 37662 - 3-9-18.AGI

PARRIS ST
PORTLAND, ME
SITE LIGHTING LAYOUT

TITLE

GENERATED FOR:
KAPLAN THOMPSON ARCHITECTS

SCALE NOT TO SCALE

Page 1 of 1

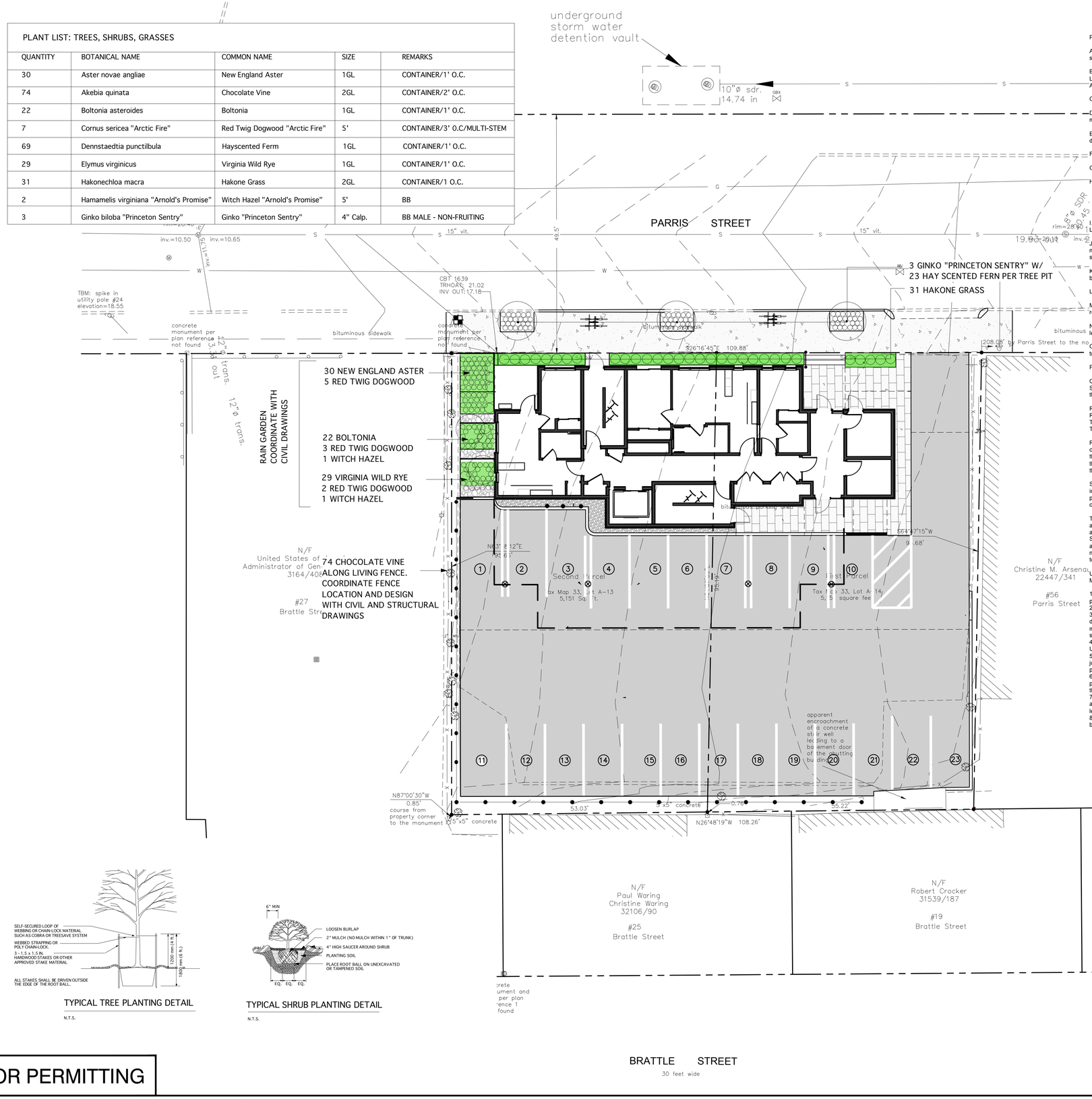
Date:3/8/2018

GENERATED BY SWANEY LIGHTING, SCARBOROUGH ME - 207-883-7100 - swaneylighting.com

SWANEY LIGHTING ASSOCIATES, INC.

NOTICE: THIS DRAWING IS THE EXCLUSIVE PROPERTY OF SWANEY LIGHTING ASSOCIATES. ITS ACCEPTANCE CONSTITUTES AN AGREEMENT THAT THE DRAWING WILL BE TREATED AS CONFIDENTIAL. THIS DRAWING IS TO BE USED FOR NO PURPOSE OTHER THAN AS DETAILED HEREIN AND IS NOT TO BE REPRODUCED, PUBLISHED OR DISCLOSED TO OTHERS NOR RETURNED UPON REQUEST AND IS NOT TO BE COMMUNICATED, DISCLOSED OR COPIED; EXCEPT AS EXPRESSLY PERMITTED BY LAW WITHOUT SWANEY LIGHTING'S WRITTEN CONSENT. ALL IDEAS, DESIGNS, ARRANGEMENTS OR PLANS INDICATED OR REPRESENTED BY THIS DRAWING ARE AND SHALL REMAIN THE PROPERTY OF SWANEY LIGHTING ASSOCIATES. NO RIGHTS TO THE USE OF ANY OF THE FOREGOING ARE CONVEYED OR SHALL BE ACQUIRED BY ANY PERSON OR ENTITY. THIS LAYOUT IS A SUGGESTION OF LIGHTING FIXTURES INCLUDED IN THIS DRAWING. IT IS PROVIDED USING FIXTURE PHOTOMETRICS SUPPLIED BY THE MANUFACTURER. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THAT THE PERFORMANCE SHOWN IN THIS FILE IS NOT THE RESPONSIBILITY OF THE MANUFACTURER. IT'S USE FOR ANY OTHER PURPOSE IS NOT AUTHORIZED BY SWANEY LIGHTING ASSOCIATES.

PLANT LIST: TREES, SHRUBS, GRASSES				
QUANTITY	BOTANICAL NAME	COMMON NAME	SIZE	REMARKS
30	Aster novae angliae	New England Aster	1GL	CONTAINER/1' O.C.
74	Akebia quinata	Chocolate Vine	2GL	CONTAINER/2' O.C.
22	Boltonia asteroides	Boltonia	1GL	CONTAINER/1' O.C.
7	Cornus sericea "Arctic Fire"	Red Twig Dogwood "Arctic Fire"	5'	CONTAINER/3' O.C/MULTI-STEM
69	Dennstaedtia punctilbula	Hayscented Ferm	1GL	CONTAINER/1' O.C.
29	Elymus virginicus	Virginia Wild Rye	1GL	CONTAINER/1' O.C.
31	Hakonechloa macra	Hakone Grass	2GL	CONTAINER/1 O.C.
2	Hamamelis virginiana "Arnold's Promise"	Witch Hazel "Arnold's Promise"	5'	BB
3	Ginko biloba "Princeton Sentry"	Ginko "Princeton Sentry"	4" Calp.	BB MALE - NON-FRUITING



TYPICAL TREE PLANTING DETAIL

N.T.S.

TYPICAL SHRUB PLANTING DETAIL

N.T.S.

PLANTING SPECIFICATION

A. Call Dig Safe prior to any excavation work. The location and maintenance of trees and landscaping cannot conflict with site utilities. Coordinate with other project drawings.

B. In any case where drawings or specifications vary from the City of Portland Technical Manual Landscaping and Landscape Preservation Standards, City regulations take precedent. Report any discrepancies to Owner and Landscape Architect

C.The location of all trees and shrubs shall be staked and approved by the Landscape Architect prior to planting.

D.Flag the northern side of trees in the nursery and install trees oriented to the north. Landscape Architect to select plant material with contractor.

E. All plant material shall be healthy and full-branching, true to form and specified size, free of disease, pests and physical damage.

F. Employ only experienced personnel familiar with required work.

G. If deciduous trees are planted in - leaf, they shall be sprayed with an anti-desiccant prior to digging operation.

H. Landscape installation timeframe:

Balled and Burlapped:
Spring 4/1 to 7/15, and Fall 8/15 to 10/15

I. Specified plant material may be substituted by the use of alternate, similar plant material, with approval from the Landscape Architect.

J. All plant material and lawn shall be guaranteed for a period for two years from date of occupancy. All dead and non-vigorous material shall be replaced, without cost to the Owner, with a similar species, and these replacement plants shall be guaranteed for one year from the date of acceptance by the Owner.

K. Planting soil shall be 2/3 topsoil, free of debris and stones over 1" in diameter, and 1/3 peat moss. The pH shall be between 5. 5 - 7.0. Ground limestone shall be added to the planting soil to achieve specified pH.

L. Add compost in planting beds at a 1 part compost to 4 part existing soil ratio,tilled to a 12" depth per industry standards.

M. Fertilizer shall be applied when planting pits are 2/3 full of planting soil with a 5-10-10 fertilizer. After planting, slow release fertilizer, minimum 5 year, shall be applied using a 4 oz. packet system at rates recommended by the manufacturer.

N. Mulch shall be 100% fine shredded pine bark, 2" deep. Planting beds adjacent to buildings shall use 3/4" aggregate or less. Landscape and Owner to approve color.

O. Tree wrap shall be Osnaburg Cloth, 4 7/8" wide, unbleached, or approved equal. Cloth should only be used for material transport and installation and removed immediately following installation.

P. Loam and seed disturbed lawn areas per civil engineering plans.

Q. Trees normally do not need to be staked and staking can be harmful to the tree and a hazard in pedestrian locations. Staking should only be done with the approval of the Landscape Architect and the Portland City Arborist if it is expected that the tree will not be able to support itself. The following are reasons why trees do not remain straight:

Root balls placed on soft soil: Tamp soils under root ball prior to planting
Root balls with very sandy soil or very wet clay soil: Staking advisable
Trees located in a place of extremely windy conditions: Staking advisable
Trees located in a place where vandalism may impact tree: Staking advisable

R. If tree stakes are required they shall be placed parallel to the curb. Trees will be secured with web strapping or polyester chain-lock. No wire or hose will be used. Assure that the bearing surface of the webbed strapping or poly chain lock against the trunk is a minimum of 12 MM (0.5 inches). Remove all staking as soon as the tree has grown sufficient roots to overcome the problem that required the tree to be staked. Stakes shall be in place no longer than one year or at least until the end of the growing season after planting.

S. Install black, molded, modular panels manufactured with 50 percent recycled polyethylene plastic with ultraviolet inhibitors, 85 mils (2.2 mm) thick, with vertical root deflecting ribs protruding _ inch (12 mm) to 3/4 inch (19 mm) out from panel, and each panel 24 inches (610 mm) wide by 18 inches in depth. Integrated zipper joining system for panel-to-panel connection.

T. Planting Pits and Trenches: Excavate circular planting pits with tapered sides. Excavations with vertical sides are not acceptable. Trim perimeter of bottom leaving center area of bottom raised slightly to support root ball and assist in drainage away from center. Do not further disturb base. Ensure that root ball will sit on undisturbed base soil to prevent settling. Scarify sides of planting pit sheared or smoothed during excavation. Excavate two times as wide as ball diameter. Excavate at least 12 inches (300 mm) wider than root spread and deep enough to accommodate vertical roots for bare-root stock. Do not excavate deeper than depth of the root ball, measured from the root flare to the bottom of the root ball. Subsoil and topsoil removed from excavations may not be used as planting media

U. Maintenance shall begin immediately after each plant is planted and shall continue until Maintenance required:

1. Maintain plantings by pruning, cultivating, watering, weeding, fertilizing, mulching, restoring water saucers, resetting to proper grade or vertical position, and performing other operations as required to establish healthy, viable plantings.
2. Planting areas shall be kept free of weeds, grass, and other undesired vegetative growth.
3. Fill in as necessary soil subsidence that may occur because of settling or other processes. Replace mulch materials damaged or lost in areas of settling. Do not place mulch within 3 inches (75 mm) of trunks or stems. A continuous, linear mulched area shall be maintained between closely spaced plants to avoid grassed strips less than 2 feet (600 mm) wide or scallops of grass that are difficult to maintain.
4. Apply treatments as required to keep plant materials, planted areas, and soils free of pests and pathogens or disease. Use practices to minimize the use of chemicals and pesticides and reduce hazards.
5. Apply pesticides and other chemical products and biological control agents in accordance with authorities having jurisdiction and manufacturer's written recommendations. Coordinate applications with Owner's operations and others in proximity to the Work. Notify Owner before each application is performed.
6. Protect plants from damage due to landscape operations and operations of other contractors and trades. Maintain protection during installation and maintenance periods. Treat, repair, or replace damaged plantings without additional cost to the Owner.
7. Prune, thin, and shape woody materials according to standard professional horticultural and arboricultural practices and in accordance with ANSI A300 (Part 3) Pruning Standards. Unless otherwise indicated by Landscape Architect, do not cut tree leaders; remove only injured, dying, or dead branches from trees and shrubs. Prune to retain natural character.
8. Pruning shall be done with clean, sharp tools. Cuts shall be made at branch collars, leaving no stubs. No tree paint shall be used.

FOR PERMITTING

Parris Terraces Development

60 Parris Street
Portland , Maine

Applicant:

Jack Soley; Horton, LLC
Box 411
100 Commercial Street, Suite 306
Portland, Maine
207-808-4714
jsoley@eastbrowncow.com

KAPLAN THOMPSON ARCHITECTS
102 EXCHANGE STREET
PORTLAND, ME 04101
207-842-2888
KAPLANTHOMPSON.COM

MRLD
Landscape Architecture + Urbanism

RANSOM
Consulting, Inc.
Civil Engineer
Ransom Consulting, Inc.
400 Commercial Street, Suite 404
Portland, Maine 04101
207-772-2891

STATE OF MAINE — John L. Mahoney #12340 — LICENSED PROFESSIONAL ENGINEER

LANDSCAPE PLAN

No.	Revision/Issue	Date
2	PERMITTING	3.13.18
1	PERMITTING	2.9.18

Design by: MHR
Drawn by: MHR
Checked by: MHR
Approved by: MHR

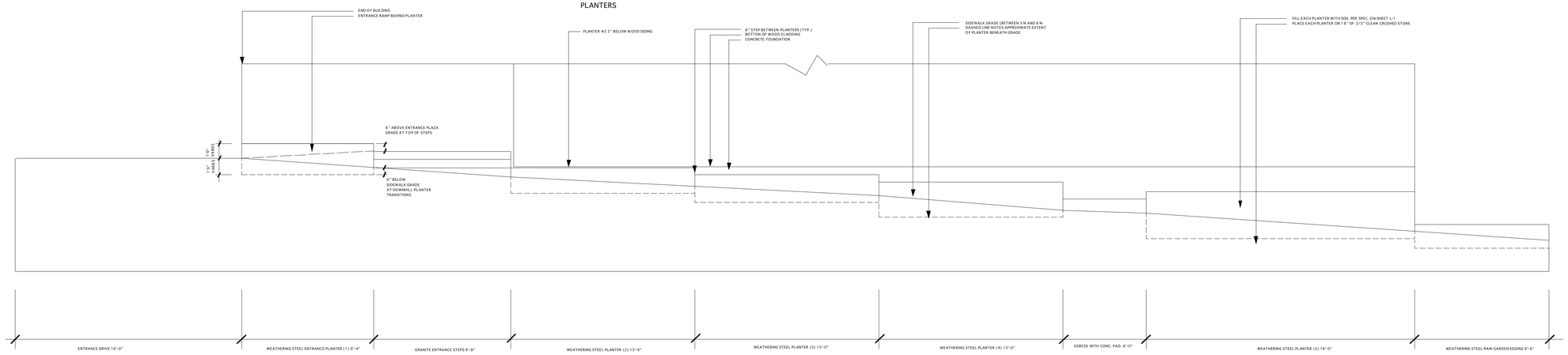
Project: 2017.35

Sheet No: L-1

MITCHELL RANSOM No. 2827 — STATE OF MAINE — LICENSED LANDSCAPE ARCHITECT

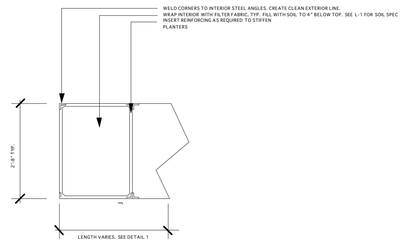
SCALE in FEET 1"=10'

NOTE: PLANTERS ALIGN WITH BUILDING FENESTRATIONS. SPECIFICALLY PLANTERS 2, 3 AND 4. REFER TO BUILDING ELEVATIONS TO CONFIRM ALIGNMENTS AND STEPS IN PLANTERS



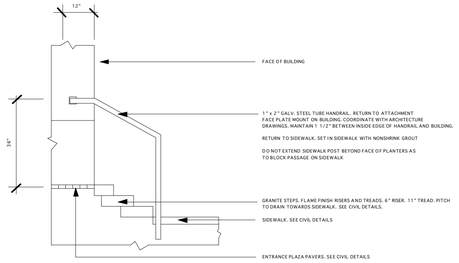
1 FRONT WEATHERING STEEL PLANTERS ELEVATION / SECTIONS

1/4" = 1'



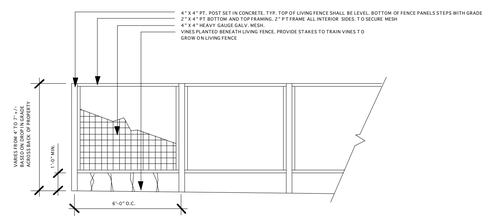
2 PLAN / SECTION WEATHERING STEEL PLANTER

NTS



3 RAILING AT FRONT ENTRANCE WITH GRANITE STEPS

NTS



4 LIVING FENCE ELEVATION

NTS

NOTE:

1. LIVING FENCE SHALL BE 42" TALL MIN. FROM TOP OF GRADE ALONG NORTHERN EDGE OF PARKING

NOTES:

1. COORDINATE ALL DETAILS WITH CIVIL, ARCHITECTURE, AND OTHER PROJECT DRAWINGS
2. SUBMIT SHOP DRAWINGS OF ALL DETAILS
3. FIELD VERIFY ALL MEASUREMENTS PRIOR TO FABRICATION OF SITE DETAILS

FOR PERMITTING

Parris Terraces Development

60 Parris Street
Portland , Maine

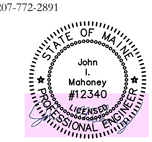
Applicant:

Jack Soley; Horton, LLC
Box 411
100 Commercial Street, Suite 306
Portland, Maine
207-808-4714
jsoley@eastbrowncow.com

KAPLAN THOMPSON ARCHITECTS
102 EXCHANGE STREET
PORTLAND, ME 04101
207-842-2888
KAPLANTHOMPSON.COM

MRLD
Landscape Architecture + Urbanism

RANSOM
Consulting, Inc.
Civil Engineer
Ransom Consulting, Inc.
400 Commercial Street, Suite 404
Portland, Maine 04101
207-772-2891



LANDSCAPE DETAILS

No.	Revision/Issue	Date
1	PERMITTING	3.13.18

Design by: MHR
Drawn by: MHR
Checked by: MHR
Approved by: MHR

Project: 2017.35

Sheet No: L-2

Code Summary	Parris St Lofts
Project address:	56 Parris St, Portland, ME
Project type:	23 Unit Multifamily Building
Square Foot	13,707 SF total, 3,852 SF typical
Building code:	MUBEC 2018
	NFPA 101 2015
	IBC 2015
	Maine Human Rights Commission

NFPA 101 2015	**ALLOWED BY CODE**	**CODE REF.**	**PAGE**	**AS DRAWN**
Occupancy	Apartment Building (3 or more dwelling units)	3.3.36.3, 6.1.8.1.5 & Ch 30	101-28	
Exit Access Corridor	Area w Occupant load > 30 = 1 Hour exit access corridors	7.1.3.1	101-48	
Exits	1 Hour Fire Resistance for 3 Stories or less	7.1.3.2.1 (1)	101-48	
	2 Hour Fire Resistance for 4 Stories or more	7.1.3.2.1 (3)	101-48	**2 HOUR**
	Structural elements that support exit components & penetrate or are installed within a rated wall assembly protected per 7.1.3.2.1 (1) & (2)	7.1.3.2.1 (5)		
Headroom	Headroom in means of egress = 7'-6" min	7.1.5.1	101-49	**8'-0" min.**
	Headroom in spaces = 7'-6" min (1/3 max may be 6'-8")	7.1.5.2		**8'-0" min.**
	Headroom in stairs = 6'-8" min	7.1.5.3		**6'-8" min.**
Door Openings	Door leaf in means of egress min width = 32" minimum	7.2.1.2.3.2	101-51	**32" min.**
Stairs	Min Width = 36" Clear (<50 occupants per story)	7.2.2.2.1.2 (A)	101-59	**44" provided**
	Min Width = 44" Clear (>50 occupants per story)			
	Max height of risers = 7"			
	Min tread depth = 11"			
	Min headroom = 6'-8"			**6'-8" min.**
	Max Height Between Landings = 12'-0"			
Landings	Landing dimension = not less than width of stair	7.2.2.3.2.3	101-60	**44" provided**
Guards & Handrails	Stairs & ramps handrails both sides	7.2.2.4.1.1	101-61	**Handrails on both sides**
	Handrail within 30" of all portions of egress width	7.2.2.4.1.2 (1)		
	Handrails continue full length of stairs, continuous on inside face	7.2.2.4.2	101-61	**Continuous on both sides**
	Handrail continue 12" horz beyond top riser & slope 1 tread beyond bottom riser	7.2.2.4.5.10	101-61	**Extensions included**
	Guards = 42" min (within dwelling units = 36")	7.2.2.4.6.2	101-62	**42"**
Fire Barriers	FB in horz exit on 1 story only if separated from other stories by equal rating & discharge directly to outside	7.2.4.3.3	101-67	
	Outside walls <180 degrees @ horz exit = 1 HR outside wall FRR & 3/4 HR opening protection for 10'-0" on each side of horz exit.	7.2.4.3.4		
Ramps	Ramps in means of egress = 44" W, 1:12 slope, 30" max rise	Table 7.2.5.3 (a)	101-69	
Occupant Load	Residential Apartment Buildings (200 SF / person)	Table 7.3.1.2	101-76	**3,852 SF / 200 = 20 Occupants/Floor**
				13,707 Total SF = 69 Occupants Total
Egress Capacity	Width of any means of Egress = 36" min.	7.3.4.1 (2)	101-77	**36" Min**
# Means of Egress	2 means of egress from any story except as under Chapter 11 -> 43	7.4.1	101-77	**2 Means of Egress Provided**
	Residential			
	Electrical Room # of means of egress per NFPA 70 (600V +/)	7.4.2.1	101-72	**1 Means of Egress Provided**
Arrangement of Means of Egress	Automatic sprinkler system per Sec 9.7 min separation distance between 2 exits = 1/3 diagonal distance	7.5.1.3.3	101-78	
Opening Protectives	Elevator Hoistways. Walls & Partitions: 2 HR, Fire Door Assemblies: 1 1/2 HR	Table 8.3.4.2	101-92	
	Vertical Shafts. Walls & Partitions: 2 HR, Fire Door Assemblies: 1 1/2 HR			
	Vertical Shafts. Walls & Partitions: 1 HR, Fire Door Assemblies: 1 HR			
	Fire Barriers. Walls & Partitions: 2 HR, Fire Door Assemblies: 1 1/2 HR			
	Fire Barriers. Walls & Partitions: 1 HR, Fire Door Assemblies: 3/4 HR			
	Fire Barriers. Walls & Partitions: 1/2 HR, Fire Door Assemblies: 1/3 HR			
	Horz Exits. Walls & Partitions: 2 HR, Fire Door Assemblies: 1 1/2 HR			
	Exit Access Corridors. Walls & Partitions: 1 HR, Fire Door Assemblies: 1/3 HR			
	Exit Access Corridors. Walls & Partitions: 1/2 HR, Fire Door Assemblies: 1/3 HR			
	Smoke Barriers. Walls & Partitions: 1 HR, Fire Door Assemblies: 1/3 HR			
	Smoke Partitions. Walls & Partitions: 1/2 HR, Fire Door Assemblies: 1/3 HR			
Concealed Spaces & Draftstopping	Concealed combustible spaces w Flame Spread > Class A shall be draftstopped. (2) Unoccipied shall be subdivided into spaces < 3,000 SF	8.6.11.1 (2)	101-99	
	New Apartment Buildings	**CHAPTER 30**		
Number of Exits	Access to 2 Separated Exit per Dwelling Unit	30.2.4.3	101-282	**Access Provided**
Arrangement of Means of Egress	Common path of travel not greater than 50' protected with sprinkler system	30.2.5.3.2	101-283	**None**
	Dead-end corridors not greater than 50' protected with sprinkler system	30.2.5.4.2	101-283	**10'-0" max**
Travel Distance to Exits	Within dwelling unit no greater than 125' with sprinkler system	30.2.6.2	101-283	**40'-0" max**
	Entrance door to unit to nearest exit not greater than 200' with sprinkler	30.2.6.3.2	101-283	**25'-0" max**
Protection of Vertical Openings	Sprinklers per 30.3.5, Vertical openings = 1 HR, Doors = 1 HR	30.3.1.1.4	101-283	
Hazardous Area Protection	Sprinklered: Boiler rooms = 1 HR, Laundry <100 SF = None, Laundry >100 SF = 1 HR, Maint Rm = 1 HR, Storage = None, Trash RM = 1 HR	Table 30.3.2.1.1	101-284	
Detection & Alarm	Four or more stories or > 11 units = Alarm per Section 9.6	30.3.4.1.1	101-284	**Detection, Alarm and Comm System Provided**
Extinguishment Requirements	4 stories or fewer & Single Occupancy = NFPA 13R per Sect 9.7	30.3.5.2	101-285	**NFPA 13 sprinkler system**
Corridors	Sprinklers per 30.3.5.2 = Corridor 1/2 HR FRR	30.3.6.1.2	101-285	
Doors	Doors that open into Exit Access Corridors = 20 minute FRR	30.3.6.2.1	101-285	

Zoning Summary	Kaplan Thompson Architects

Chapter 14

Project address	56 Parris St, Portland, ME, 04101
Tax ID	033 A014
Project type	Multi-family Housing 20 - 23 Units
City Zone	B2b Business Zone
Lot Area	10,213 SF / 0.2345 Acre / 110' x 95'
Permitted Uses	Multifamily Housing
	Site Plan review by Planning Board
Existing Uses	Vacant Land, Car Parking
Proposed Use	Multifamily Housing
Guidelines	

B2b

Dimensional Requirements	**Required / Allowed**	**Provided**
Min Lot Size:	None	10,173 SF
Min Land Area per Dwelling Unit:	435 SF per unit w Active Street Frontage	510.65 SF / unit
Min Street Frontage:	20'-0"	75'-0"
Min Front Yard	None, Max 10'-0"	
Min Rear Yard:	10'-0", Above 35' setback 15' from side	
Min Side Yard:	None, Above 35' setback 5' from side	
Max Structure Height:	85'-0" Bayside Height Overlay, 45'-0" B2b	
Max Impervious Area:	Residential, None. 90% other.	

Other Requirements		
Off-street Auto Parking	Per Div 20: 1 space for each dwelling unit	
Front Yard Parking	None allowed except driveway	none
Bicycle Parking Spaces	Per: 14-526.(a).4.b.(i).(a). Two for every 5 units (23 units x 0.4) = 9.2	10

IBC 2015	**ALLOWED BY CODE**	**CODE REF.**	**PAGE**	**AS DRAWN**
Occupancy Type	Residential R-2 (> 2 Dwelling Units)	Section 310	50	**R-2**
Detailed Requirements	Dwelling Units shall be separated by Fire Partitions per 708	420.2	92	**In Compliance**
	Floor Assemblies separating Dwelling Units shall be constructed as Horizontal Assemblies per Section 711	420.3	92	**In Compliance**
Fire Alarm Systems & Smoke Alarms	Group R-2 per 907.2.9 & 907.2.11	420.6	93	
Allowable Building Height	Type VA or VB: 60-0 max height w Type 13 or 13R sprinkler	Table 504.3	98	**49'-9"**
Allowable Number of Stories	R-2: Type VA Max Stories: 4 w Type 13 or 13R sprinkler	Table 504.4	100	**Type VA: 4 Stories & 3,852 SF / floor**
Allowable Area Factor	R-2: Type VA w Type 13 = 36,000 SF, Type 13R = 12,000	Table 506.2	103	**3,850 SF/Floor**
Incedental Accessory Occupancies	Incidental Accessory Occupancies: 1 Hour OR Automatic SPrinkler System: Furnace Rm over 400Kbtu/hr, **Laundry Rm** >100 SF, Waste Rm >100 SF	Table 509	109	**Type 13 Automatic sprinkler system provided**
Construction Type 601	**Type VA**	Table 601	113	
	Primary Structural Frame: 1 Hour			**1 Hour Fire Resistance Rating (FRR)**
	Bearing Walls, Exterior & Interior: 1 Hour			**1 Hour FRR**
	Non-bearing exterior walls & partitions: per Table 602			
	Non-bearing interior walls & partitions: 0 Hour			**0 Hour FRR**
	Floor Construction & Secondary Members: 1 Hour			**1 Hour FRR**
	Roof Construction & Secondary Members: 1 Hour			**1 Hour FRR**
Fire Separation Distance 602	Occupancy R Type VA:	Table 602	114	
	X < 5 = 1 Hour	Interior Lot Line		**NA**
	5 < X < 10 = 1 Hour	or Centerline of Street		**1 Hour FRR**
	10 < X < 30 = 1 Hour			**1 Hour FRR**
Fire Protection: Exterior Walls 705	Cornices, eave overhangs: FSD > 3' - 30" = 24" + 8" for every foot of FSD beyond 3'	705.2.2	120	**NA**
	Type V: Projections shall be of any Approved material	705.2.2	120	**In Compliance**
	Exterior Walls: Fire separation > 10-0 rated from inside. Fire separation < 10-0 rated from both sides.	705.5	97	**9'-6" segment rated from both sides**
Max Area of Exterior Openings 705	3-0 to <5-0: Unprotected & NFPA 13 = 15%, UP & no NFPA13 = NP	Table 705.8	123	
	5-0 to <10-0: Unprotected & NFPA 13 = 25%, UP & no NFPA13 = 10%			
	10-0 to <15-0: Unprotected & NFPA 13 = 45%, UP & no NFPA13 = 15%			
	15-0 to <20-0: Unprotected & NFPA 13 = 75%, UP & no NFPA13 = 25%			
	20-0 to <25-0: Unprotected & NFPA 13 = No Limit, UP & no NFPA13 = 45%			
Fire Walls 706	R-2 Fire Wall = 3 Hour FRR	Table 706.4	125	**NA**
Fire Barriers 707	R-2 Fire Barrier or Horz Assembly between Fire Areas = 2 Hour FRR	Table 707.3.10	127	
	Exterior Walls as part of rated shaft or exit per 705 only (see Section 1023.7 Exit Enclosures)	707.4	127	
Fire Partitions 708	Separation Walls: Fire Rating not less than 1 Hour (exception Corridor walls 1/2 Hour per 1020.1)	708.1.1	107	**1 HR FRR Unit Demising walls** **1/2 HR FRR Corridor walls**
Horizontal Assemblies 711	Separating Dwelling Units horizontally = 1 Hour	711.2.4.3	131	**1 HR FRR**
Shaft Enclosures (Fire Barriers)	Fire Rating: Connecting 4 stories + = 2 Hours, <4 stories = 1 Hour	713.4	133	**4 Stories = 2 HR Shaft FRR**
	Shaft FR = FR of floor being penetrated minimum, 2 hr max	713.4	133	**Shaft FRR = 1 HR**
	Openings protected per Section 715, doors self-closing.	713.7	133	**No openings**
Penetrations 714	Penetrations through Fire Walls, Fire Barriers, Smoke Barriers & Fire Partitions firestopped ASTM E 814 / UL 1479	714.3	135	
	Membrane penetrations, max 2 HR: max 16 in2 steel elect box	714.3.2 Ex 1	135	
	Horz Assemblies: max 6" diameter metal duct, max 144 in2 / 100 SF	714.4.1 Ex 1	135	
Fire Door Ratings 716	Fire Wall & Fire Barrier: 2 HR wall = 1 1/2 HR door	Table 716.5	140	
	Fire Wall & Fire Barrier: 1 1/2 HR wall = 1 1/2 HR door			
	Shaft enclosures, interior exit stairs: 2 HR wall = 1 1/2 HR door			
	Fire Barrier: 1 HR wall = 1 HR door			
	Other fire partitions: 1 HR wall = 3/4 HR door			
	Other fire partitions: 1/2 HR corridor wall = 1/3 HR door			
	Exterior Walls: 1 HR wall = 3/4 HR door			
Ducts & Air Transfer Openings 717	Fire Partitions may be penetrated by ducted HVAC systems if under 1 HR FRR without Fire Damper	717.5.4 Exception 4	146	**No Fire Dampers @ corridor walls**
	Horizontal Assemblies: protected by shaft enclosure per 708 unless 4" or less, direct to outside, open to only 1 dwelling unit (kitchen exhaust)	717.6 Exception 1-5	147	**Ducts and Openings to comply with 708**
	Membrane penetrations protected w Shaft Enclosure or Ceiling Radiation Damper	717.6.2	147	
Concealed Spaces 718	Groups R-2: Draftstopping req'd above & in line w dwelling & sleeping unit separations	718.3.2	149	**Sprinkler per 903.3.1.1 provided (Type 13)**
	Draftstopping not req'd w NFPA 13 or NFPA 13R if sprinklered in concealed spaces	718.3.2. Exception 1 & 2	149	
	Draftstopping in Attics: openings in partitions protected by self-closing latches	718.4.1.1	150	
	Draftstopping in Attics not req'd in Groups R-2 <4 stories = <3,000 SF	718.4.3	150	
Interior Finishes 803	R-2: Wall, Ceiling, Exit Enclosures/Passageway Finishes: Class C throughout	Table 803.11	205	**Class C Finishes Throughout**
Fire Protection Systems 901	All Group R buildings to be sprinklered	903.2.8	212	**Sprinkler per 903.3.1.x provided**
	Group R - up to & including 4 stories in height = NFPA-13R permitted	903.3.1.2	215	
	Balconies & Decks: sprinkler provided Type V if roof or deck above.	903.3.1.2.1	215	
	Quick-response & residential sprinklers: Dwelling & sleeping Units Group R	903.3.2	215	**Sprinklered Dwelling Units**
Standpipes 905	Height: Class 3 required for Group R if highest story > 30' above lowest level of fire dept vehicle access	905.3.1	190	**Class 1 Standpipe, See exception**
	Class 1 allowed if Sprinklered per NFPA 13 or 13R	905.3.1.1	190	**Class 1 Standpipe**
Fire Alarms & Detection Systems	Manual fire alarm box not required for R-2 unless required by fire code official	907.2 (Ex 2)	195	**None**
	Group R-2: Manual fire alarm req'd if any dwelling unit 3+ stories above level of	907.2.9.1	197	**NA, 2 Stories only**
	Manual fire alarm not req'd with automatic sprinklers & occupant notification upon a sprinkler waterflor	907.2.9.1 (Ex 2)	198	
	Group R-2: Smoke alarms outside of sleeping area, in bedrooms.	907.2.11.2	199	
	Interconnection required for Group R	907.2.11.3	199	
	Visible Alarm in all Group R-2 req'd to have a fire alarm system	907.5.2.3.4	203	
Occupant Load				
Group R-2	Floor 1: 200 SF / Occupant @ 2,150 SF	Table 1004.1.1		**11 Occupants**
	Floor 2: 200 SF / Occupant @ 3,852 SF			**20 Occupants Each**
	Floor 3: 200 SF / Occupant @ 3,852 SF			
	Floor 4: 200 SF / Occupant @ 3,852 SF			
	Total Occupancy:			**71 Total Occupants**
Egress Width	Stairways: Occ Load / 2 * 0.3" = 10"	1005.1	221	**44" Minimum (per 1009.1)**
	Other egress: Occ Load / **2 * 0.2**" = 7"	1005.1	221	**44" Minimum**
Means of Egress Illumination	Illuminated at all times except dwelling units in Group R-2	1006.1 (Ex 3)	221	
Accessible Means of Egress	Elevator not accessible means of egress if <4 stories above discharge	1007.2.1	221	
	Clear width of 48" stairway not req'd if NFPA 13 or 13R & 1016.1	1007.3 (Ex 2)	222	**44" Minimum**
	Area of Refuge not req'd in Group R-2	1007.3 (Ex 7)	222	**No Area of Refuge**
Door Width	Minimum 32" Clear	1008.1.1	224	**36" Egress Doors**
	Exception: Group R-2 doors not part of Means of Egress	1008.1.1 (Ex 1)	224	
Stairways	Stairway Width: Minimum 44" (36" < 50 occupant load)	1009.1 (Ex 1)	230	**44" Minimum**
	Headroom stair & landing: 80" clear	1009.2	230	**80" Clear maintained**
	Max. stair riser = 7", min. stair tread = 11"	1009.4.2	231	**Risers = 7" Max, Treads = 11"**
	R-2 Inside Units: 7 3/4" rise, 10" tread	1009.4.2.5	231	**No Treads inside units**
	Landings top & bottom, min depth = stair width	1009.5	231	**44" Minimum**
	Max Stair Flight Vertical Rise = 12'-0"	1009.7	232	**10'6" Maximum Rise**
	Stairway to Roof: 4 Story + required. Roof hatch OK	1009.13	233	**NA**
	Guard req. if hatch <10' of roof edge, 21"o min.opening	1013.6	237	**NA**
Exit & Exit Access Doorways	R: Spaces w occupancy >10 = 2 exits	Table 1015.1	239	**No spaces > 10 occupancy**
	Exit Separation shall be > 1/3 maximum diagonal distance	1015.2.1 (Ex 2)	239	**1/3 Max Diagonal Distance = 30'-0"** **Exit Separation Dist = 33'-0"**
Exit Access Travel Distance	Occupancy R = 250' max w NFPA 13 or 13R sprinklers	Table 1016.1	240	
Corridors	Fire Resistance Rating: Occ R NFPA 13 or 13R sprinklered = 1/2 HR	Table 1018.1	241	**1/2 HR**
	Width 44" min, width 36" if occupancy < 50	1018.2	242	**52"**
	Width 36" min within a dwelling unit	1018.2.3	242	**36" MIN.**
	Dead End in Corridor: R-2: Max 20'-0", 50' if NFPA 13 sprinklered	1018.4	242	**48'-6"**
Number of Exits & Continuity	Group R-2: Single exit in dwelling units occupancy < 20	1021.1 Ex 4	243	**1 Exit per unit**
	Min. # of exits per story: Occupant Load 1 - 500 = 2 Exits	Table 1021.1	243	**2 Exits per story, Min.**
Exit Enclosures	Min Fire Rating = 1 HR if connecting < 4 storys	1022.1	244	**1 HR**
	Exterior walls: Non-rated walls exposed <180 degrees 1 Hour rating within 10-	1022.6	245	**NA**
Exit Passageways	Width: 44" minimum. Occupancy Load <50 = 36" minimum.	1023.2	246	**44" Minimum**
	Construction: 1 Hour minimum or not less than Exit Enclosure	1023.3	246	**1 HR**
Emergency Escape & Rescue	Emergency Egress Opening not required with NFPA 13 or 13R sprinkler	1029.1 Ex 1		**None**

KAPLAN THOMPSON ARCHITECTS
102 EXCHANGE STREET
PORTLAND, ME 04101
207-842-2888
KAPLANTHOMPSON.COM

PROJECT:
PARRIS TERRACES
60 PARRIS ST.
PORTLAND, ME 04101

OWNER REP :
Donald M Peterson, Inc.
1 Avon Road
Cape Elizabeth, ME 04107
p: 207-415-0707

STRUCTURAL :
Structural Integrity
46 Forrest Avenue
Portland, ME 04101
p: 207-774-4614
f: 866-793-7835

CIVIL :
Ransom Consulting Engineers and Scientists
400 Commercial Street, Suite 404
Portland, ME 04101
p: 207 772-2891

LANDSCAPE :
MRLD Landscape Architecture + Urbanism
87 Main Street
Yarmouth, ME 04096
p: 207 846-4966

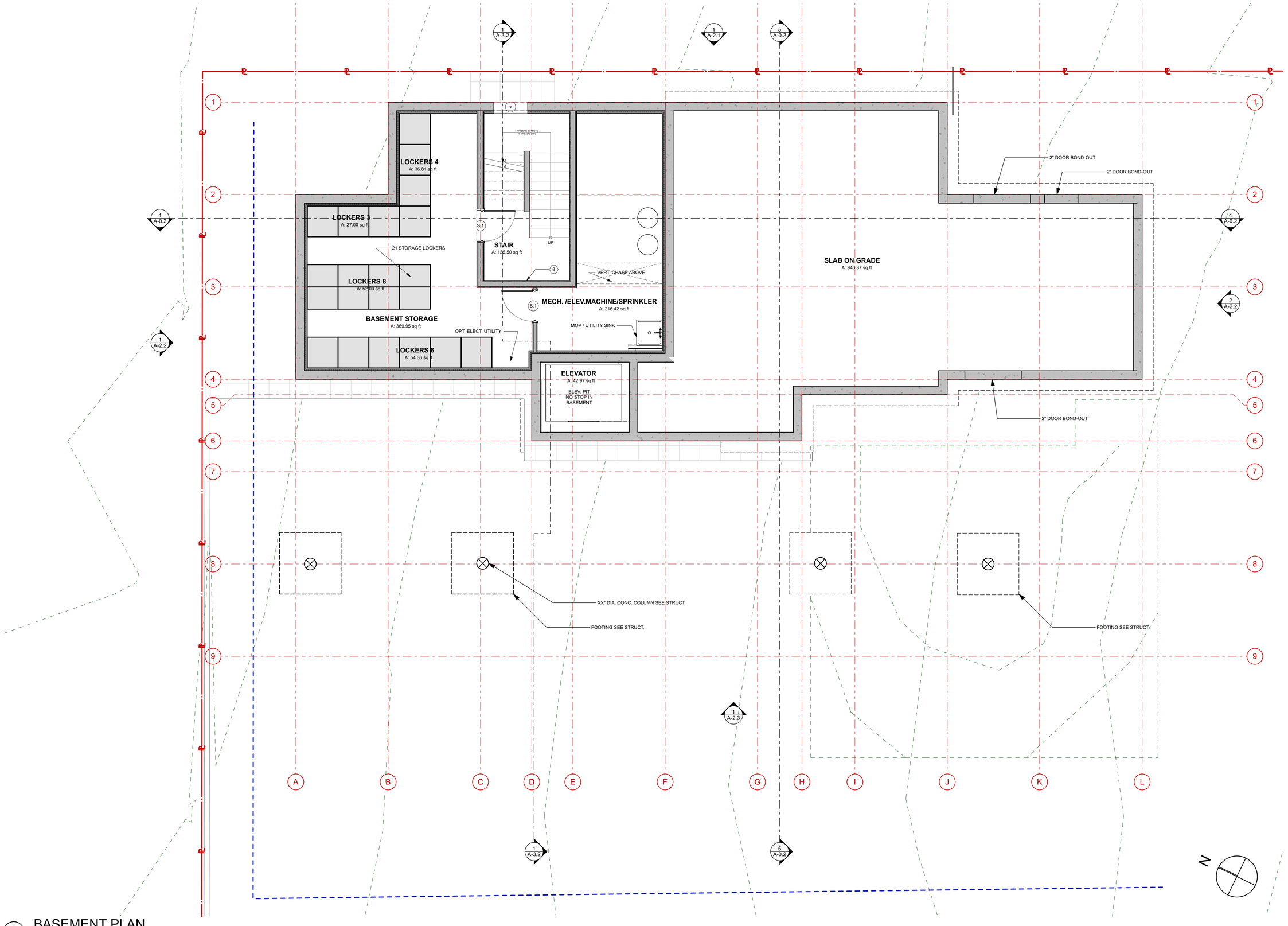
MECHANICAL :
Ripcord Engineering
PO Box 4175
Portland, ME 04101
p: 207 835-4060

ELECTRICAL :
Swiftcurrent Engineering
10 Forest Falls Drive, Unit 4B
Yarmouth, ME 04096
p: 207 847-9280

NOT FOR CONSTRUCTION

PROJECT NO:	PRS
DATE:	03/13/2018
REVISED 1:	
REVISED 2:	
DRAWN BY:	JT/AW
PHASE:	DESIGN DEVELOPMENT

CODE SUMMARY
A-0.1



1 BASEMENT PLAN
SCALE: 1/4" = 1'-0"

KAPLAN THOMPSON ARCHITECTS
102 EXCHANGE STREET
PORTLAND, ME 04101
207-842-2888
KAPLANTHOMPSON.COM

PROJECT:
PARRIS TERRACES

60 PARRIS ST.
PORTLAND, ME 04101

OWNER REP :
Donald M Peterson, Inc.
1 Avon Road
Cape Elizabeth, ME 04107
p: 207-415-0707

STRUCTURAL :
Structural Integrity
46 Forrest Avenue
Portland, ME 04101
p: 207-774-4614
f: 866-793-7835

CIVIL :
Ransom Consulting Engineers and Scientists
400 Commercial Street, Suite 404
Portland, ME 04101
p: 207 772-2891

LANDSCAPE :
MRLD Landscape Architecture + Urbanism
87 Main Street
Yarmouth, ME 04096
p: 207 846-4966

MECHANICAL :
Ripcord Engineering
PO Box 4175
Portland, ME 04101
p: 207 835-4060

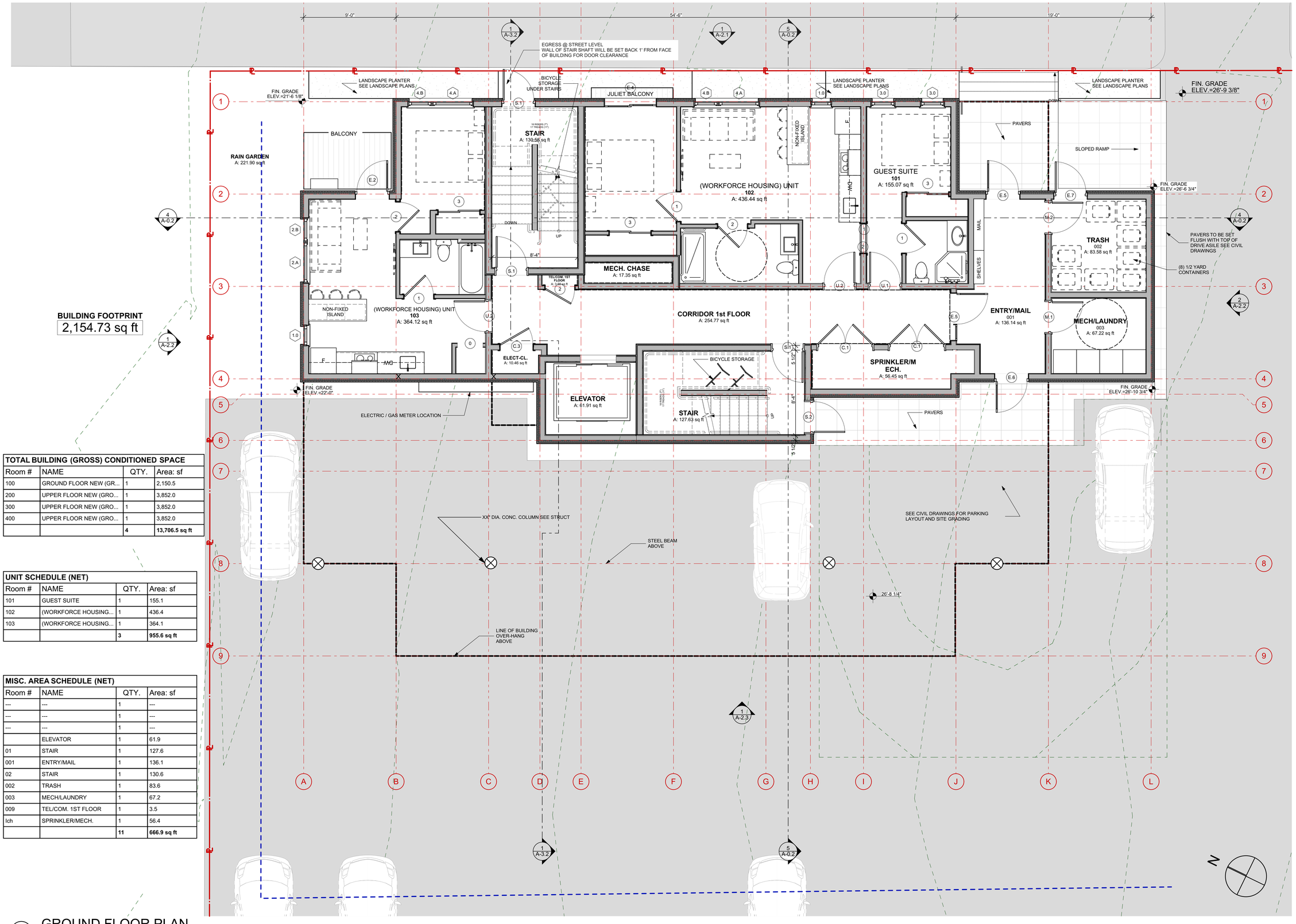
ELECTRICAL :
Swiftcurrent Engineering
10 Forest Falls Drive, Unit 4B
Yarmouth, ME 04096
p: 207 847-9280

NOT FOR CONSTRUCTION

PROJECT NO:	PRS
DATE:	02/08/2018
REVISED 1:	
REVISED 2:	
DRAWN BY:	JT/AW
PHASE:	DESIGN DEVELOPMENT

BASEMENT PLAN

A-1.0



BUILDING FOOTPRINT
2,154.73 sq ft

TOTAL BUILDING (GROSS) CONDITIONED SPACE

Room #	NAME	QTY.	Area: sf
100	GROUND FLOOR NEW (GR...	1	2,150.5
200	UPPER FLOOR NEW (GRO...	1	3,852.0
300	UPPER FLOOR NEW (GRO...	1	3,852.0
400	UPPER FLOOR NEW (GRO...	1	3,852.0
		4	**13,706.5 sq ft**

UNIT SCHEDULE (NET)

Room #	NAME	QTY.	Area: sf
101	GUEST SUITE	1	155.1
102	(WORKFORCE HOUSING...	1	436.4
103	(WORKFORCE HOUSING...	1	364.1
		3	**955.6 sq ft**

MISC. AREA SCHEDULE (NET)

Room #	NAME	QTY.	Area: sf
---	---	1	---
---	---	1	---
---	---	1	---
	ELEVATOR	1	61.9
01	STAIR	1	127.6
001	ENTRY/MAIL	1	136.1
02	STAIR	1	130.6
002	TRASH	1	83.6
003	MECH/LAUNDRY	1	67.2
009	TEL/COM. 1ST FLOOR	1	3.5
Ich	SPRINKLER/MECH.	1	56.4
		11	**666.9 sq ft**

1 GROUND FLOOR PLAN
SCALE: 1/4" = 1'-0"

0 2' 4' 8'

KAPLAN THOMPSON ARCHITECTS
102 EXCHANGE STREET
PORTLAND, ME 04101
207-842-2888
KAPLANTHOMPSON.COM

PROJECT:
PARRIS TERRACES
60 PARRIS ST.
PORTLAND, ME 04101

OWNER REP :
Donald M Peterson, Inc.
1 Avon Road
Cape Elizabeth, ME 04107
p: 207-415-0707

STRUCTURAL :
Structural Integrity
46 Forrest Avenue
Portland, ME 04101
p: 207-774-4614
f: 866-793-7835

CIVIL :
Ransom Consulting Engineers and Scientists
400 Commercial Street, Suite 404
Portland, ME 04101
p: 207 772-2891

LANDSCAPE :
MRLD Landscape Architecture + Urbanism
87 Main Street
Yarmouth, ME 04096
p: 207 846-4966

MECHANICAL :
Ripcord Engineering
PO Box 4175
Portland, ME 04101
p: 207 835-4060

ELECTRICAL :
Swiftcurrent Engineering
10 Forest Falls Drive, Unit 4B
Yarmouth, ME 04096
p: 207 847-9280

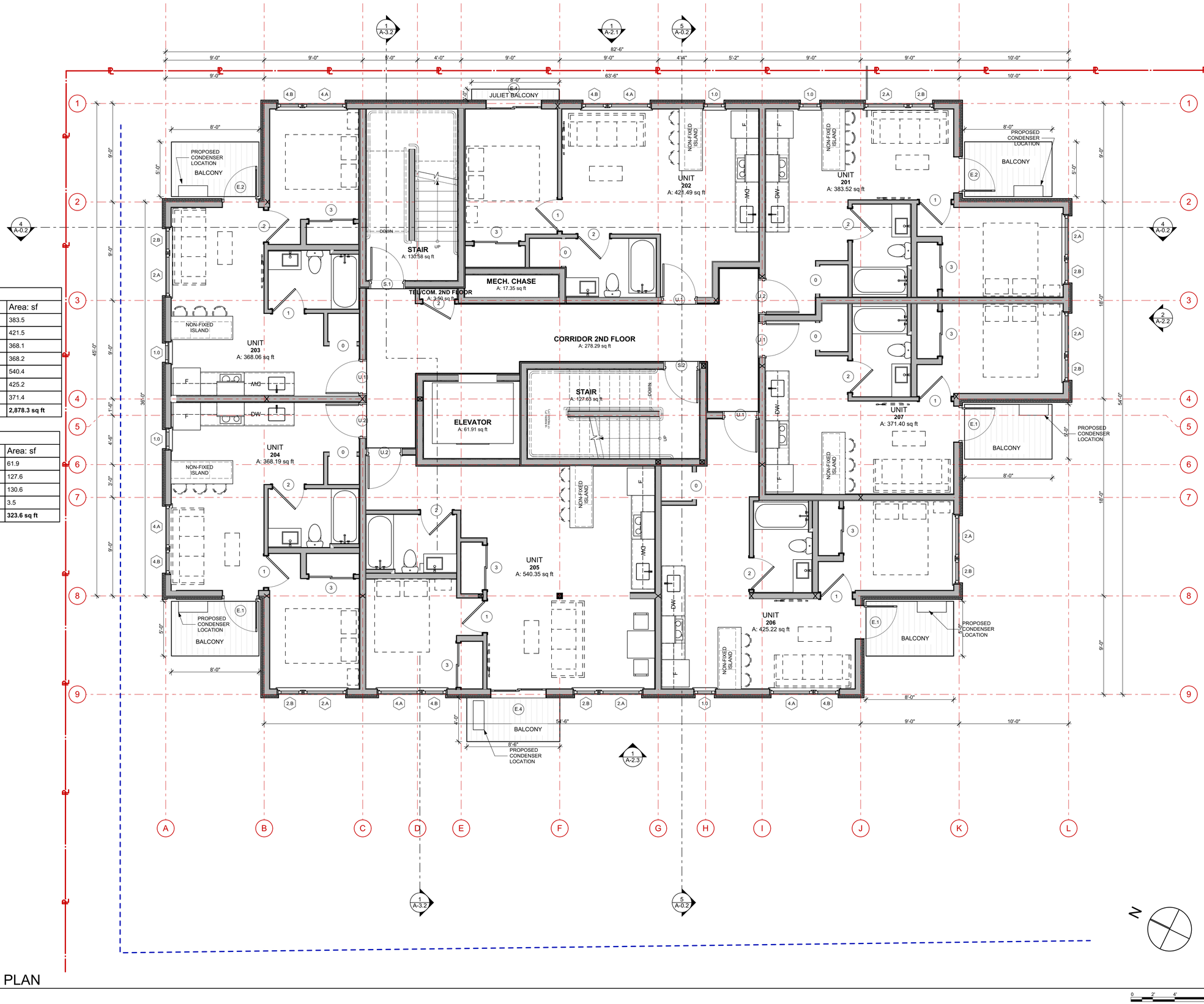
NOT FOR CONSTRUCTION

PROJECT NO:	PRS
DATE:	03/13/2018
REVISED 1:	
REVISED 2:	
DRAWN BY:	JT/AW
PHASE:	DESIGN DEVELOPMENT

GROUND FLOOR PLAN
A-1.1

UNIT SCHEDULE (NET)			
Room #	NAME	QTY.	Area: sf
201	UNIT	1	383.5
202	UNIT	1	421.5
203	UNIT	1	368.1
204	UNIT	1	368.2
205	UNIT	1	540.4
206	UNIT	1	425.2
207	UNIT	1	371.4
		7	**2,878.3 sq ft**

MISC. AREA SCHEDULE (NET)			
Room #	NAME	QTY.	Area: sf
	ELEVATOR	1	61.9
01	STAIR	1	127.6
02	STAIR	1	130.6
009	TEL/COM. 2ND FLOOR	1	3.5
		4	**323.6 sq ft**



1 SECOND FLOOR PLAN
SCALE: 1/4" = 1'-0"

KAPLAN THOMPSON ARCHITECTS
102 EXCHANGE STREET
PORTLAND, ME 04101
207-842-2888
KAPLANTHOMPSON.COM

PROJECT:
PARRIS TERRACES
60 PARRIS ST.
PORTLAND, ME 04101

OWNER REP :
Donald M Peterson, Inc.
1 Avon Road
Cape Elizabeth, ME 04107
p: 207-415-0707

STRUCTURAL :
Structural Integrity
46 Forrest Avenue
Portland, ME 04101
p: 207-774-4614
f: 866-793-7835

CIVIL :
Ransom Consulting Engineers and Scientists
400 Commercial Street, Suite 404
Portland, ME 04101
p: 207 772-2891

LANDSCAPE :
MRLD Landscape Architecture + Urbanism
87 Main Street
Yarmouth, ME 04096
p: 207 846-4966

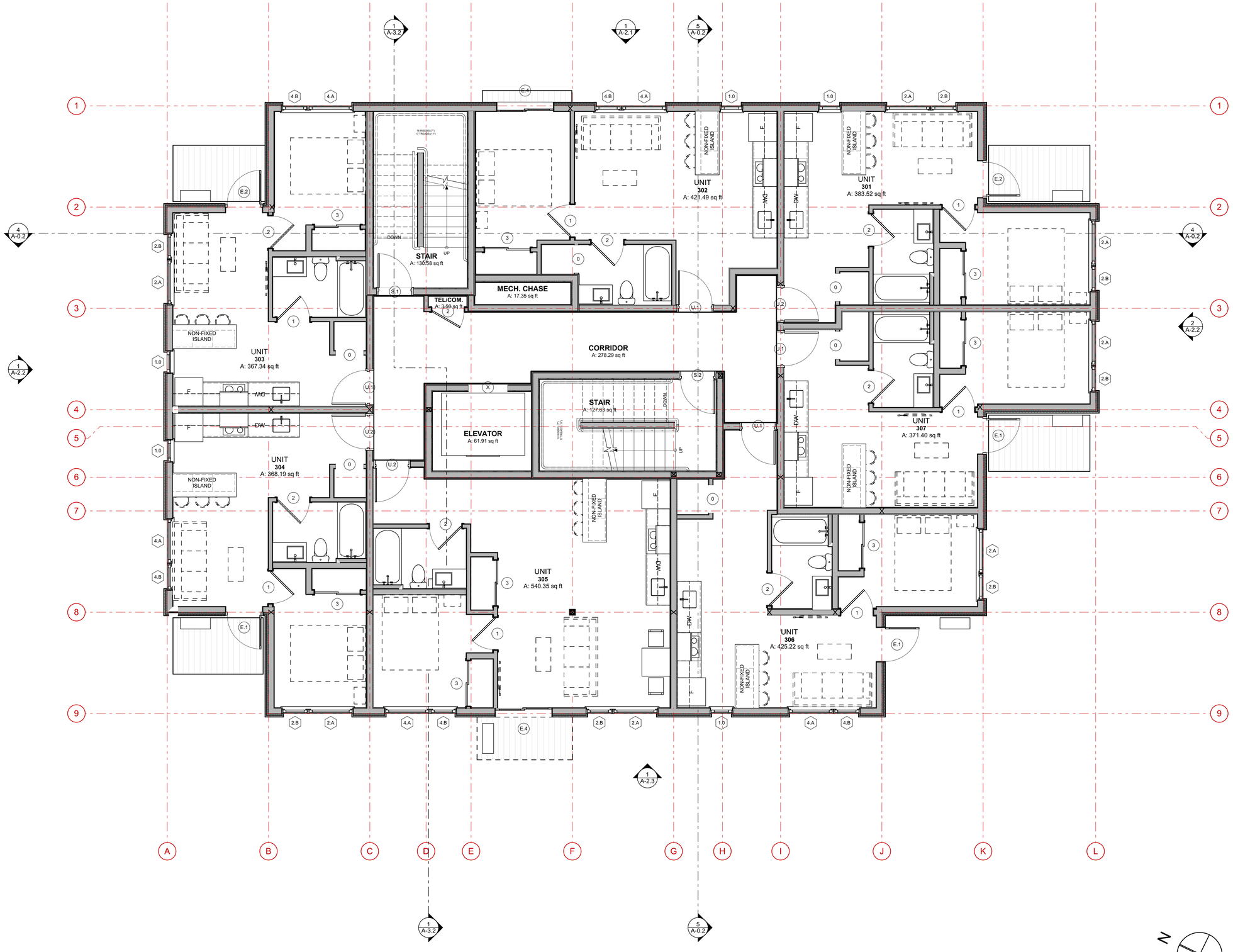
MECHANICAL :
Ripcord Engineering
PO Box 4175
Portland, ME 04101
p: 207 835-4060

ELECTRICAL :
Swiftcurrent Engineering
10 Forest Falls Drive, Unit 4B
Yarmouth, ME 04096
p: 207 847-9280

NOT FOR CONSTRUCTION

PROJECT NO:	PRS
DATE:	03/13/2018
REVISED 1:	
REVISED 2:	
DRAWN BY:	JT/AW
PHASE:	DESIGN DEVELOPMENT

SECOND FLOOR PLAN
A-1.2



KAPLAN THOMPSON ARCHITECTS
102 EXCHANGE STREET
PORTLAND, ME 04101
207-842-2888
KAPLANTHOMPSON.COM

PROJECT:
PARRIS TERRACES
60 PARRIS ST.
PORTLAND, ME 04101

OWNER REP :
Donald M Peterson, Inc.
1 Avon Road
Cape Elizabeth, ME 04107
p: 207-415-0707

STRUCTURAL :
Structural Integrity
46 Forrest Avenue
Portland, ME 04101
p: 207-774-4614
f: 866-793-7835

CIVIL :
Ransom Consulting Engineers and Scientists
400 Commercial Street, Suite 404
Portland, ME 04101
p: 207 772-2891

LANDSCAPE :
MRLD Landscape Architecture + Urbanism
87 Main Street
Yarmouth, ME 04096
p: 207 846-4966

MECHANICAL :
Ripcord Engineering
PO Box 4175
Portland, ME 04101
p: 207 835-4060

ELECTRICAL :
Swiftcurrent Engineering
10 Forest Falls Drive, Unit 4B
Yarmouth, ME 04096
p: 207 847-9280

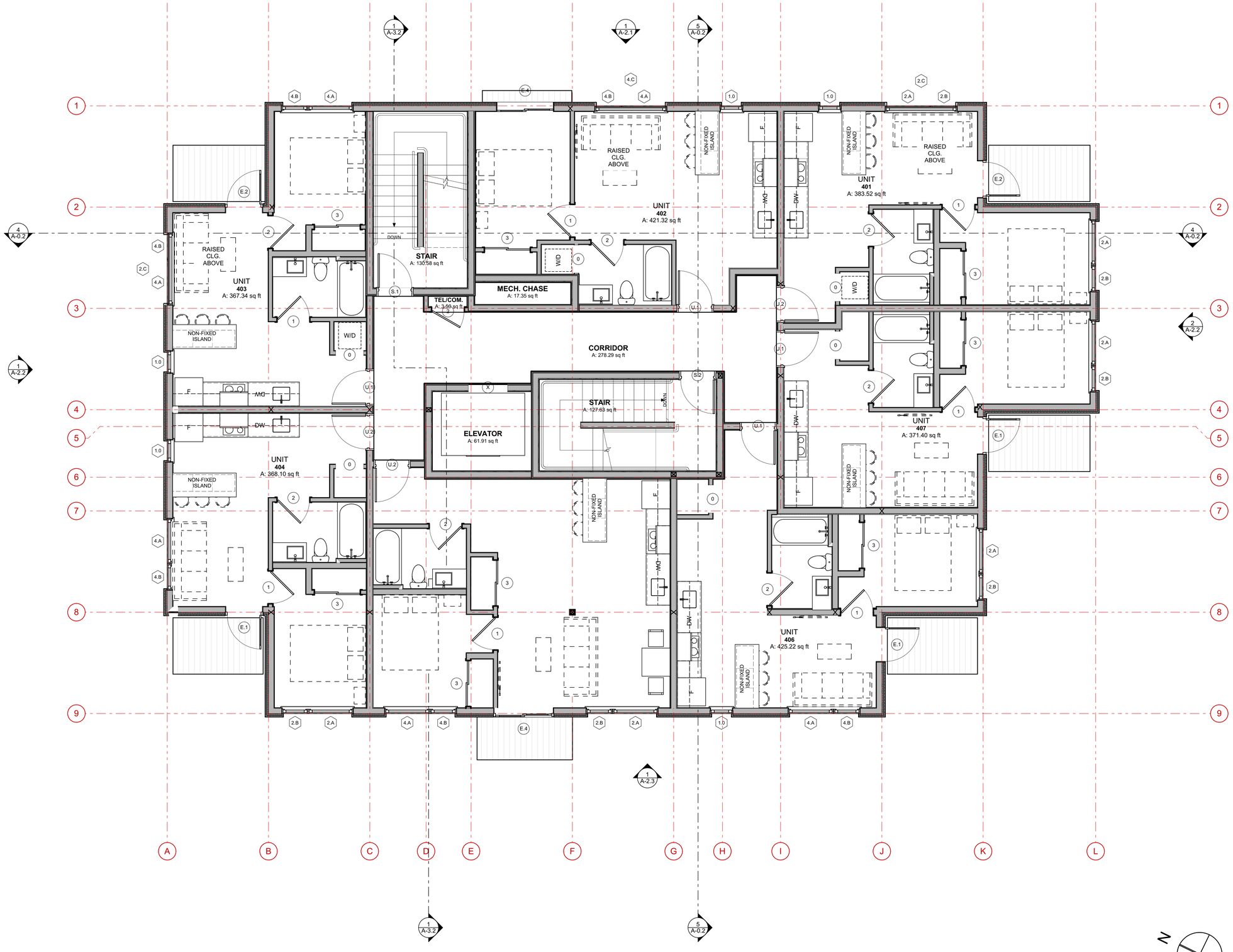
NOT FOR CONSTRUCTION

PROJECT NO:	PRS
DATE:	03/13/2018
REVISED 1:	
REVISED 2:	
DRAWN BY:	JT/AW
PHASE:	DESIGN DEVELOPMENT

THIRD FLOOR PLAN
A-1.3

1 THIRD FLOOR PLAN
SCALE: 1/4" = 1'-0"

0 2' 4' 8'



1 FOURTH FLOOR PLAN
SCALE: 1/4" = 1'-0"

0 2' 4' 8'

KAPLAN THOMPSON ARCHITECTS
102 EXCHANGE STREET
PORTLAND, ME 04101
207-842-2888
KAPLANTHOMPSON.COM

PROJECT:
PARRIS TERRACES
60 PARRIS ST.
PORTLAND, ME 04101

OWNER REP :
Donald M Peterson, Inc.
1 Avon Road
Cape Elizabeth, ME 04107
p: 207-415-0707

STRUCTURAL :
Structural Integrity
46 Forrest Avenue
Portland, ME 04101
p: 207-774-4614
f: 866-793-7835

CIVIL :
Ransom Consulting Engineers and Scientists
400 Commercial Street, Suite 404
Portland, ME 04101
p: 207 772-2891

LANDSCAPE :
MRLD Landscape Architecture + Urbanism
87 Main Street
Yarmouth, ME 04096
p: 207 846-4966

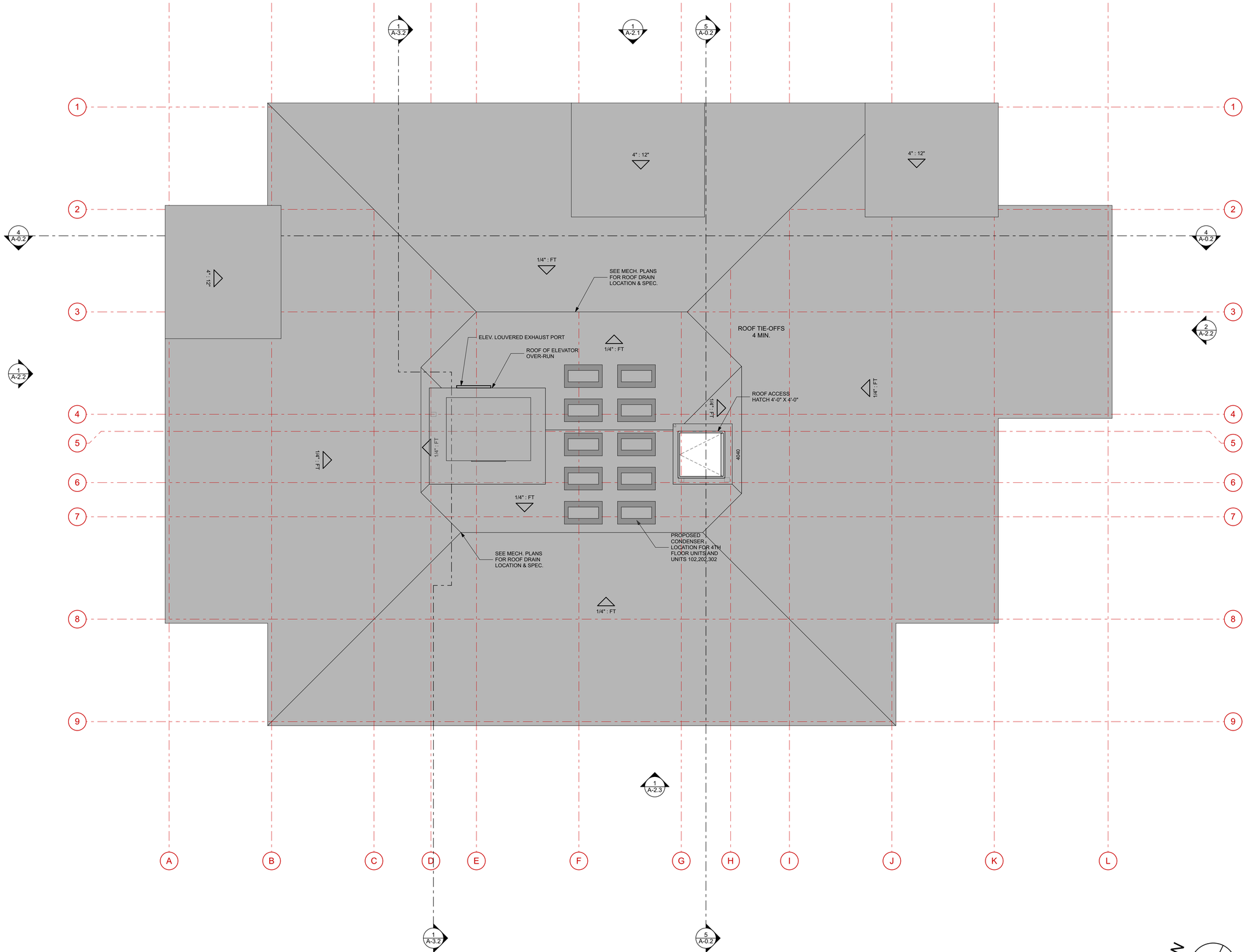
MECHANICAL :
Ripcord Engineering
PO Box 4175
Portland, ME 04101
p: 207 835-4060

ELECTRICAL :
Swiftcurrent Engineering
10 Forest Falls Drive, Unit 4B
Yarmouth, ME 04096
p: 207 847-9280

NOT FOR CONSTRUCTION

PROJECT NO:	PRS
DATE:	03/13/2018
REVISED 1:	
REVISED 2:	
DRAWN BY:	JT/AW
PHASE:	DESIGN DEVELOPMENT

FOURTH FLOOR PLAN
A-1.4



1 2ND - 4TH FLOOR PLAN
SCALE: 1/4" = 1'-0"

0 2' 4' 8'

KAPLAN THOMPSON ARCHITECTS
102 EXCHANGE STREET
PORTLAND, ME 04101
207-842-2888
KAPLANTHOMPSON.COM

PROJECT:
PARRIS TERRACES

60 PARRIS ST.
PORTLAND, ME 04101

OWNER REP :
Donald M Peterson, Inc.
1 Avon Road
Cape Elizabeth, ME 04107
p: 207-415-0707

STRUCTURAL :
Structural Integrity
46 Forrest Avenue
Portland, ME 04101
p: 207-774-4614
f: 866-793-7835

CIVIL :
Ransom Consulting Engineers and Scientists
400 Commercial Street, Suite 404
Portland, ME 04101
p: 207 772-2891

LANDSCAPE :
MRLD Landscape Architecture + Urbanism
87 Main Street
Yarmouth, ME 04096
p: 207 846-4966

MECHANICAL :
Ripcord Engineering
PO Box 4175
Portland, ME 04101
p: 207 835-4060

ELECTRICAL :
Swiftcurrent Engineering
10 Forest Falls Drive, Unit 4B
Yarmouth, ME 04096
p: 207 847-9280

NOT FOR CONSTRUCTION

PROJECT NO:	PRS
DATE:	03/13/2018
REVISED 1:	
REVISED 2:	
DRAWN BY:	JT/AW
PHASE:	DESIGN DEVELOPMENT

ROOF PLAN

A-1.5



EXTERIOR CLADDING SCHEME

AVERAGE GRADE CALCULATIONS	
SEE A-1.1 FOR LOCATIONS	
SOUTHEAST	26.782'
SOUTHWEST	26.901'
NORTHWEST	22'
NORTHEAST	21.509'
TOTAL	97.192' / 4
	= 24.298' AV. GRADE ELEV.



1 EAST ELEVATION

SCALE: 1/4" = 1'-0"

0 2' 4' 8'

KAPLAN THOMPSON ARCHITECTS
102 EXCHANGE STREET
PORTLAND, ME 04101
207-842-2888
KAPLANTHOMPSON.COM

PROJECT:
PARRIS TERRACES

60 PARRIS ST.
PORTLAND, ME 04101

OWNER REP :
Donald M Peterson, Inc.
1 Avon Road
Cape Elizabeth, ME 04107
p: 207-415-0707

STRUCTURAL :
Structural Integrity
46 Forrest Avenue
Portland, ME 04101
p: 207-774-4614
f: 866-793-7835

CIVIL :
Ransom Consulting Engineers and Scientists
400 Commercial Street, Suite 404
Portland, ME 04101
p: 207 772-2891

LANDSCAPE :
MRLD Landscape Architecture + Urbanism
87 Main Street
Yarmouth, ME 04096
p: 207 846-4966

MECHANICAL :
Ripcord Engineering
PO Box 4175
Portland, ME 04101
p: 207 835-4060

ELECTRICAL :
Swiftcurrent Engineering
10 Forest Falls Drive, Unit 4B
Yarmouth, ME 04096
p: 207 847-9280

NOT FOR CONSTRUCTION

PROJECT NO:	PRS
DATE:	03/13/2018
REVISED 1:	
REVISED 2:	
DRAWN BY:	JT/AW
PHASE:	DESIGN DEVELOPMENT

EAST ELEVATION

A-2.1



2 SOUTH ELEVATION

SCALE: 1/4" = 1'-0"



1 NORTH ELEVATION

SCALE: 1/4" = 1'-0"

0 2' 4' 8'

0 2' 4' 8'

KAPLAN THOMPSON ARCHITECTS
102 EXCHANGE STREET
PORTLAND, ME 04101
207-842-2888
KAPLANTHOMPSON.COM

PROJECT:
PARRIS TERRACES

60 PARRIS ST.
PORTLAND, ME 04101

OWNER REP :
Donald M Peterson, Inc.
1 Avon Road
Cape Elizabeth, ME 04107
p: 207-415-0707

STRUCTURAL :
Structural Integrity
46 Forrest Avenue
Portland, ME 04101
p: 207-774-4614
f: 866-793-7835

CIVIL :
Ransom Consulting Engineers and Scientists
400 Commercial Street, Suite 404
Portland, ME 04101
p: 207 772-2891

LANDSCAPE :
MRLD Landscape Architecture + Urbanism
87 Main Street
Yarmouth, ME 04096
p: 207 846-4966

MECHANICAL :
Ripcord Engineering
PO Box 4175
Portland, ME 04101
p: 207 835-4060

ELECTRICAL :
Swiftcurrent Engineering
10 Forest Falls Drive, Unit 4B
Yarmouth, ME 04096
p: 207 847-9280

NOT FOR CONSTRUCTION

PROJECT NO:	PRS
DATE:	03/13/2018
REVISED 1:	
REVISED 2:	
DRAWN BY:	JT/AW
PHASE:	DESIGN DEVELOPMENT

NORTH & SOUTH ELEVATIONS

A-2.2

AVERAGE GRADE CALCULATIONS	
SEE A-1.1 FOR LOCATIONS	
SOUTHEAST	26.782'
SOUTHWEST	26.901'
NORTHWEST	22'
NORTHEAST	21.509'
TOTAL	97.192' / 4
	= 24.298' AV. GRADE ELEV.



1 WEST ELEVATION

KAPLAN THOMPSON ARCHITECTS
102 EXCHANGE STREET
PORTLAND, ME 04101
207-842-2888
KAPLANTHOMPSON.COM

PROJECT:
PARRIS TERRACES

60 PARRIS ST.
PORTLAND, ME 04101

OWNER REP :
Donald M Peterson, Inc.
1 Avon Road
Cape Elizabeth, ME 04107
p: 207-415-0707

STRUCTURAL :
Structural Integrity
46 Forrest Avenue
Portland, ME 04101
p: 207-774-4614
f: 866-793-7835

CIVIL :
Ransom Consulting Engineers and Scientists
400 Commercial Street, Suite 404
Portland, ME 04101
p: 207 772-2891

LANDSCAPE :
MRLD Landscape Architecture + Urbanism
87 Main Street
Yarmouth, ME 04096
p: 207 846-4966

MECHANICAL :
Ripcord Engineering
PO Box 4175
Portland, ME 04101
p: 207 835-4060

ELECTRICAL :
Swiftcurrent Engineering
10 Forest Falls Drive, Unit 4B
Yarmouth, ME 04096
p: 207 847-9280

NOT FOR CONSTRUCTION

PROJECT NO:	PRS
DATE:	03/13/2018
REVISED 1:	
REVISED 2:	
DRAWN BY:	JT/AW
PHASE:	DESIGN DEVELOPMENT

WEST ELEVATION

A-2.3

PARRIS TERRACES

KAPLAN
THOMPSON
ARCHITECTS

102 EXCHANGE STREET
PORTLAND, ME 04101
207-842-2888
KAPLANTHOMPSON.COM

PLANNING BOARD REPORT
PORTLAND, MAINE

Office and Retail Building
147-155 Washington Avenue
Level III Site Plan
2017-285
Diving Rock, LLC, Applicant

Submitted to: Portland Planning Board: Public Hearing Date: March 27, 2018	Prepared by: Shukria Wiar, Planner Date: March 23, 2018

I. INTRODUCTION

On behalf of the applicant Diving Rock, LLC, William Savage of Acorn Engineering has requested Site Plan approval for a proposed new four-story building (10,855 SF total floor space) with retail space on the ground level and office space on the remaining three levels. The development site is located within the Neighborhood Business B-1 zoning district and complies with the permitted uses within the zone. The lot is currently occupied by an 1,850 SF workshop/bicycle retail space utilized by Gear Hub that will remain.



Figure 1: Aerial of Proposed Site

The plan will be reviewed for conformance with the site plan standards of the Land Use Code. The project will also be reviewed against the *B-1 and B-1B Neighborhood Business Design Standards* (Appendix 2 of the Design Manual).

Notices were sent upon receipt of the application and one hundred and eighty-three (183) notices were sent to area residents within 500 feet of the site and the interested party list for the public hearing. A notice also appeared in the March 19th and 20th 2018 editions of the *Portland Press Herald.*

Applicant Name and Owner	Diving Rock, LLC
Agent	Johnny Ritzo
Consultants:	
Engineer	William Savage of Acorn Engineering, Inc.
Architect	Ryan Senatore of Ryan Senatore Architecture
Surveyor	RW Eaton Associates

Project Reviews

Waiver Requests	*Applicable Standards*
Aisle width – To allow a 23.58'. aisle in the parking area. *Supported by consulting traffic engineer*	Technical Manual, *Section 1.14,* requiring that aisle width for right-angle parking be 24 feet per Figure I-27
Review	***Applicable Standards***
Site Plan	*Section 14-526*
Subdivision	*Section 14-497*
Design Manual	B-1 and B-1B Neighborhood Business Design Standards (Appendix 2 of the Design Manual)

II. PROJECT DATA

Existing Zoning	Neighborhood Business B-1		
Existing Use	Workshop/storage/office		
Proposed Use	Workshop/storage/office/retail		
Parcel Size	13,111 SF		
Total Disturbed Area	10,650 SF		
	Existing	Proposed	Net Change
Building Footprint	1,810 SF	3,866 SF	
Building Floor Area	1,870 SF	13,093 SF	9,682 SF
Impervious Surface Area	12,947 SF	12,252 SF	29,046 SF
Parking Spaces (on site) - Required for Development - Being Proposed	 0 13	 23 20 – see Paragraph VII Zoning Assessment	
Bicycle Parking Spaces	0	4	4
Estimated Cost of Project	$1.7 Million		

III. EXISTING CONDITIONS

The proposed project site is located at the corner of Washington Avenue and East Cove Street. The site currently housed the Portland Gear Hub, a bicycle shop, as well as a thirteen (13) surface parking lot that has access through a curb cut on Washington Avenue. The Portland Gear hub sits farther back from the street on the site, with the parking lot along Washington Avenue. In addition to the main building on the site, there are a couple of accessory buildings that will be demolished for the project. The site also abuts East Cove Street, which a vacated street. Below is Camille Alden, City Surveyor, research on the street:

> *OVERVIEW:*
> *East Cove Street: This street appears to be statutorily vacated due to omission.*
> *Poplar Street (on the north side of Walnut St.): This street also appears to be statutorily vacated due to omission.*
> *DETAIL:*
> *Poplar Street is dedicated on two plans. The first plan is recorded in 1802 in Deed Book 36, Page 247 (attached); this plan does NOT show East Cove St. because it has not yet been created. The second (and entirely different plan) is recorded in 1866 in PB 2 Page 54 (attached). I believe this is the first recorded plan that dedicates or shows East Cove Street.*

The site has street frontage on Washington Avenue, which is an accepted city street. The applicant submitted evidence (Attachment D) from Tom Jewell, Attorney, that they have the legal rights for access over East Cove Street. Jenifer Thompson, Associate Corporation Counsel, reviewed the documentation and concluded with his assessment.

IV. PROPOSED DEVELOPMENT

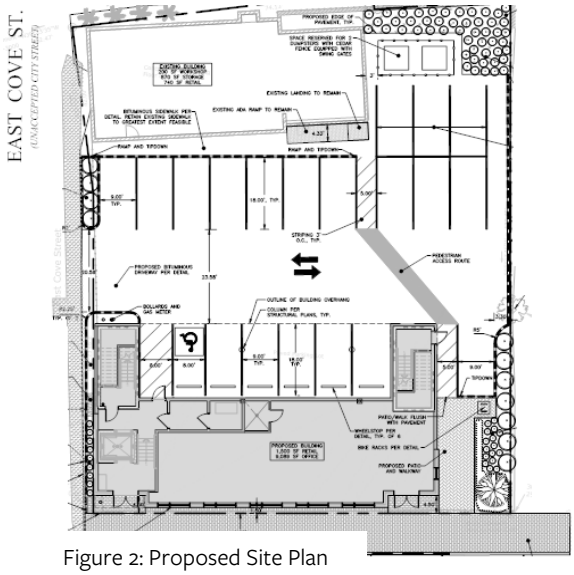


Figure 2: Proposed Site Plan

The proposed project is a four-story building with retail space on the ground level and office space on the remaining three levels. Pedestrian access to the site will be provided off Washington Avenue. The development will consist of a new office building with an associated surface parking lot containing twenty (20) parking spaces. The existing Gear Hub building will remain, which is located to the rear of the site with the pedestrian pathway leading from the sidewalk. The applicant is proposing to close the curb cut on Washington Avenue with the main vehicular entrance from East Cove Street. Two entrances to the building will be 5′ off of the Washington Avenue sidewalk.

Pedestrian access to the rear of the site will be provided by a combination of a patio/walkway and striped access aisles adjacent to parking. The development's proximity to residential housing will allow bicyclists and pedestrians to effectively link housing, jobs, and services. Along with the new construction, the site will also be improved with landscaping and new utilities. Below are the elevations of the proposed building.





Figure 3 and 4: Renderings of Proposed Building

V. PUBLIC COMMENT

No comments have been received to date. A neighborhood meeting was held on January 2, 2018 at the Root Cellar and sixteen (16) members of the public attended (Attachment V).

VI. RIGHT, TITLE AND INTEREST AND FINANCIAL/TECHNICAL CAPACITY

a. The owner of the property is Diving Rock, Inc. The applicant has provided a copy of a warranty deed, recorded at the Cumberland County Registry of Deeds (Book 33456 Page 304), which demonstrates their right, title and interest in the property.

b. The estimated cost of the development is $ 1.7 Million. The applicant has submitted a letter from Norway Savings Bank, dated November 3, 2017, as demonstration of their financial and technical capacity to complete the proposed development.

VII. ZONING ASSESSMENT

The project meets the requirements of the B-1 zone use and dimensional standards. The B-1 zone allows for a wide range of commercial and mixed uses and encourages urban patterns of development. The project is not meeting the off-street standards of Division 20. Division 20 requires one parking space per four hundred (400) square feet of office space. Therefore, the proposed office use requires twenty-three (23) spaces. The development will also have a retail use on the first floor as well as in the Gear Hub building. The standard requires one parking space per two hundred (200) square feet after the first 2,000 square feet. The new building will have 1,500 square feet of retail, whereas, the Gear Hub has 750 square feet of retail. The parking is calculated based on retail per building and per site, hence no parking spaces are needed for the retail portion. Thus, only 23 spaces are needed for the project and the applicant is proposing 20 spaces on site. The applicant wants to meet the zoning requirement by either securing off-site leased spaces for a 5-year term or pay a fee-in-lieu of $6,280.60 per space into Portland's Sustainable Transportation Fund. A proposed condition of approval requires the applicant to provide documentation of meeting the parking requirement prior to the issuance of a certificate of approval.

B. SITE PLAN STANDARDS (Section 14-526)

The proposed development has been reviewed by staff for conformance with the relevant review standards of Portland's site plan ordinance and applicable regulations. Staff comments are listed below.

1. Transportation Standards

a. Impact on Surrounding Street Systems

The site is located along Washington Avenue, which is classified as an arterial. A minimal traffic increase along Washington Avenue is expected for this project due to the low turnover of the proposed principal land use.

b. Access and Circulation

The existing driveway perpendicular to Washington Avenue that currently serves the site will be closed and the main entrance to the site is through a proposed two-way driveway perpendicular to East Cove Street that will

serve as the sole vehicle ingress and egress. East Cove Street is a vacated street by omission (accidently not listed in the Council Order for unaccepted streets in 1997). The paved width of this street is approximately 28 feet, which includes an approximately 4-5 feet sidewalk. According to Tom Errico's review, access will be tight, but acceptable for vehicles. However, the Fire Department is looking at the access for public safety vehicles and is seeking a clear travel lane of 20 feet. The applicant's consultants are working with the city staff to develop a site plan that meets this standard. A more detail site plan will be available at the Board's public hearing.

c. Parking
The applicant is proposing twenty (20) parking spaces with one handicapped space. The zoning requirement for parking is twenty-three (23) spaces. The applicant is seeking to obtain either a parking lease for the three-required on-site space or will pay into the Transportation Fund prior to the issuance of a certificate of occupancy; refer to Paragraph VII (A), above, for a detail review.

d. Sidewalk
Currently, a brick sidewalk exists along Washington Avenue. The existing sidewalk will be rebuilt from the neighbor's driveway to East Cove Street.

e. Bicycle Spaces
The site plan includes two proposed bicycle racks located near the entrance of the proposed building. This will provide four bicycles to be parked in a secure location, meeting the requirement. Additional bicycle storage may be included within the building.

f. Construction Management Plan
A construction management plan and write-up has been submitted and reviewed by Lauren Swett, Consultant Engineer, on behalf of the Department of Public Services, and states the following:

> *Finalization of the construction management plan will need to be a condition of approval. The contractor is still to be determined, and the plan notes that a "Maintenance of Traffic" plan will be submitted in the future, so there are no specific conditions identified. They include a statement "Adequate parking for construction workers shall be provided along Washington Avenue or arrangements for off-street parking at an off-site location shall be provided."*

2. Environmental Quality Standards

a. Preservation of Significant Natural Features and Landscaping and Landscape Preservation
The applicant has submitted a landscaping plan for review. The project has 102.5 feet of frontage along Washington Ave and per requirement, it is required that a minimum of six shrubs or shrub alternatives per 45 feet of frontage are planted. The requirement is met through a combination of landscaping within the setbacks and internally within the site.

Street trees are to be provided every 30 to 45 feet along the street frontage. This ratio equates to a minimum of two trees. Given the limited area, one street tree is proposed just into the private property. A street tree is not proposed within the public right-of-way because there is a sewer main that runs beneath the sidewalk. Jeff Tarling, City Arborist, has reviewed the landscaping plan and recommended on March 22, 2018, the following:

> *a) Street trees - none proposed, would like to replace the missing tree and perhaps add a second one. The spacing would be between the proposed on-street parking spaces.*
>
> *Rectangular shaped tree pit, with no tree grate or raised granite planter.*
>
> *Recommended tree type ornamental due to overhead utilities, Species type include: 'Accolade' or 'Pink Flair' Cherry, or 'Adirondack' Crabapple.*
>
> *b) Red Maple, on the right side of the building should be an upright shaped cultivar like, 'Armstrong' or 'Bowhall' Red Maple.*
>
> *c) Landscape elements - Juniper virginana (7) on the right side of the building, and on East Cove Street (4) these plants should be of a larger size then proposed 5 gal. Recommend 5 - 6' Height, 4 - 5' minimum.*

Prior to the public hearing, staff will clarify Jeff Tarling's recommendations regarding street trees, as it is unclear if he is aware that the sewer line is in the sidewalk. The applicant has the option to contribute to the City's Street Tree Fund in place of the one tree that will not be planted.

b. Water Quality, Storm Water Management and Erosion Control
The proposed project will decrease the site's impervious area by approximately 700 square-feet. Therefore, stormwater management features for quality control that meet Maine DEP's Chapter 500 General Standards have not been designed. Furthermore, features for quantity control are not required and have not been analyzed; however, the project is anticipated to meet Chapter 500 Flooding Standards by decreasing peak flows from the site. The applicant has addressed all of Ms. Swett's stormwater comments.

3. Public Infrastructure and Community Safety Standards

a. Consistency with Master Plans
The project is designed to be consistent with the City's Zoning Ordinance and off-site infrastructure.

b. Public Safety and Fire Prevention
An ambulance will be able to access all 4 side of the building and a fire truck will be able to access a minimum of 3 sides. A fire hydrant is located directly across the street from the intersection of Washington Avenue and East Cove St. There is adequate lighting on site for pedestrians.

For adequate emergency access on site, please refer to Paragraph VII(B)1(b) above.

c. Availability and Adequate Capacity of Public Utilities
The applicant has provided letters indicating the capacity to serve for water, sewer, gas, and power. All utility work has been reviewed with conformance with the city's Technical Manual, including all stormwater management standards. Trash will be stored in dumpsters, eventually to be served by a contracted waste management company. Jeff Tarling, City Arborist, has reviewed the landscaping around the dumpsters and recommends the following for year-round screening:

> *Landscape planting near Dumpsters - the proposed treatment is 50 Panicum (Switch grass). It would be recommended to use perhaps 22 grasses in the snow storage area and include woody tree(s) or shrubs near the back of the dumpster for more year around and taller screening. Overall this space seems to have just a LOT of grasses as an easy fix vs optimize the space with some creativity and interest.*

4. Site Design Standards

a. Massing, Ventilation and Wind Impact
These standards are concerned primarily with bulk, location, or height of buildings incurring health, safety, unsafe wind conditions, and direct impact of buildings on abutters. This standard is not applicable.

b. Shadows
The shadows created by the building will not influence public open spaces and therefore this standard is not applicable.

c. Snow and Ice Loading
The snow storage area can be seen on the site plan near the rear of the parcel. In addition, the applicant may have snow removed from the site when necessary. The snow storage will not adversely impact the functionality of any part of the site.

d. View Corridors
This standard is in regard to impacts on public view corridors and is not applicable.

e. Historic Resources
The property is not in an historic district and contains no designated landmarks. There are no known archeological resources on site.

f. Exterior Lighting
Lighting information and a photometric plan have been submitted as Attachment Q. The proposed lighting will all be full cutoff. Any lighting that may adversely impact the abutting residential properties will feature house-side shielding. All exterior site lighting including lighting of building entrances will have to be cutoff with no light emitted above the horizontal plane or spilled onto adjacent properties or streets. Illumination levels will be

adequate but not excessive for the safety, comfort and convenience of occupants and user of the site and will conform to all applicable standards of Section 12 of the Technical Manual. The lowest wattage possible will need to be used for the LED lighting fixtures.

Staff has recommending and specifying the city's Bayside Medium (black) fixtures on Washington Avenue frontage. The landscaping plan will need to be revised to depicted one Bayside Medium LED street light fixtures on the frontage as requested by staff.

g. Noise and Vibration
The HVAC system will meet the applicable state and federal emissions requirements and will also be screened and directed away from abutters. The proposal does not anticipate exceeding current noise levels for the permanent uses on the site.

h. Signage and Wayfinding
All signage being proposed will be reviewed and approved by the Department of Public Works separately. The applicant will need separate permits from DPW.

i. Zoning Related Design Standards
The project at 155 Washington Avenue was reviewed according to the City of Portland Design Manual standards by Caitlin Cameron, Urban Designer, Shukria Wiar, Planner, and Nell Donaldson, Senior Planner, against the B1 Commercial Business Zones Standards (Section (d) of the Design Manual).

Ms. Cameron has found the proposal to be in general compliance, however, there is recommended improvement under a couple of the standards have not been met. Excerpt from Ms. Cameron memo is below:

> Standard (1) d. Windows –Windows are provided along street frontage as required – high level of fenestration. *VT of .7 or greater is required.*
>
> Standard (1) f. Building Design – Building design conveys its commercial/mixed use nature. Use of brick and storefront is consistent with commercial buildings on this street – though many existing commercial buildings on Washington Ave are converted from different uses. Emphasis to the vertical members at the ground floor is created by the recess of the panels below the windows. *Staff suggest this treatment either be applied to the full height of the building, or at the ground floor only to delineate the different uses. The current design suggests the first and second floor are apart from the upper floors – instead, a more typical approach to the transom of the ground floor retail would be a strong horizontal line created by a lintel or transom or similar element to tie the ground level together and separate from the floors above. The ground floor windows may need to be shortened to achieve this effect.*
>
> Standard (1) g. Building Materials – Given the predominant context of simple material palette, staff found the building to include *too many materials* and that material *placement is not helping the overall proportion and massing of the building. The red brick is incongruous with the wood tone corners. Possible revision may be a grey brick with the natural tone, or that the natural tone be grey with the red brick.* Articulation details include the canopies, recessed entries, and 3" reveal between materials creates a good transition details between materials and provides some shadow line.

VIII. STAFF RECOMMENDATION
Subject to the proposed motions and conditions of approval listed below, Planning Division staff recommends that the Planning Board approve with conditions the proposed development.

IX. PROPOSED MOTIONS

WAIVERS
On the basis of the application, plans, reports and other information submitted by the applicant, findings and recommendations, contained in the Planning Board Report for 2017-285 relevant to Portland's Technical and Design Standards and other regulations, and the testimony presented at the Planning Board hearing:

The Planning Board [**waives** or **does not waive**] Technical Standard, Section 1.14, requiring that aisle width for right-angle parking be 24 feet per Figure I-27, to allow the width to be 23.58 feet.

DEVELOPMENT REVIEW

On the basis of the application, plans, reports and other information submitted by the applicant, findings and recommendations contained in Planning Board Report for application 2017-285 relevant to the Site Plan and other regulations, and the testimony presented at the Planning Board hearing, the Planning Board finds the following:

1. The applicant shall provide documentation that the parking requirements of Division 20 have been met by prior to the certificate of occupancy:
    a. Finalizing off-site parking plans and providing evidence of control of off-site parking in accordance with *Section 14-334* for review and approval by the Planning Authority, Corporation Counsel, and the Department of Public Services, with an executed lease due at certificate of occupancy, or
    b. The applicant shall contribute $6,280.60 to the City's Transportation Fund for the three parking spaces;

2. The applicant shall provide a finalized construction management plan for review and approval by the Planning Authority and Department of Public Works;

3. The applicant shall work with the Urban Designer to address the Design Review comments;

4. The applicant shall work with the City Arborist to address the landscaping recommendations and either include street trees in the final site plan or pay into the Street Tree fund; and

5. The applicant shall submit a final plan and specifications, for review and approval by the Planning Authority and the Department of Public Works, that are in conformance with the proposed LED fixture specifications for the street lights.

X. Attachments:

Planning Board Report Attachments

1. 155 Washington B1 Design Review_prelim2
2. Peer Review Comments 3.23.2018
3. City Arborist Comments 3.23.2018

A - Applicant's Submittal

A. Cover Letter
B. Level III Final Site Plan Application
C. Wastewater Capacity
D. Right, Title, Interest
E. Financial Capacity
F. Construction Management Plan
G. Stormwater Management Report
H. Erosion and Sedimentation Control Report
I. Utility Cover
J. Solid Waste Disposal
K. Fire Department Letter
L. Conformity with Land Use Ordinance
M. Request for Waivers
N. Summary of Written Easements
O. Architectural Design Narrative
P. Parking Analysis
Q. Lighting
R. Comment Response Letter
S. Certification Letter
T. Neighborhood Invitation
U. Sign-In Sheet
V. Neighborhood Meeting Minutes

B – Plans

Plan 1. Cover Sheet
Plan 2. General Notes

Plan 3. Existing Conditions
Plan 4. Construction Management Plan
Plan 5. Site & Landscape Plan
Plan 6. Utility Plan
Plan 7. Grading & Drainage Plan
Plan 8. Site Details – 1
Plan 9. Site Details – 2
Plan 10. Landscaping Details
Plan 11. Utility Details – 1
Plan 12. Utility Details – 2
Plan 13. Erosion & Sedimentation Control Details
Plan 14. Floor Plans
Plan 15. West Elevation
Plan 16. North Elevation
Plan 17. East Elevation
Plan 18. South Elevation
Plan 19. Section View
Plan 20. Rendering
Plan 21. Streetscape
Plan 22. Rendering 2

Planning and Urban Development Department
Planning Division

Subject: B-1 Design Review – 155 Washington Avenue

Written by: Caitlin Cameron, Urban Designer

Date of Review: Tuesday, March 6 2018

The project at 155 Washington Avenue was reviewed according to the *City of Portland Design Manual* standards by Caitlin Cameron, Urban Designer, Shukria Wiar, Planner, and Nell Donaldson, Senior Planner, against *the B1 Commercial Business Zones Standards* (Section (d) of the Design Manual) and *Multiple-Family Standards*.

Design Review Comments: *(questions and unmet standards in red)*

(d) B-1 Commercial Business Zones

Standard (1) a. Urban Street Wall – Building placement is near the property line and maintains the desired street wall.

Standard (1) b. Mixed Uses – Building includes retail and office uses.

Standard (1) c. Building Entrances – Both building entrances (office and retail) face and are directly accessible from the street and include building overhangs as canopies.

Standard (1) d. Windows –Windows are provided along street frontage as required – high level of fenestration. VT of .7 or greater is required.

Standard (1) e. Façade Character – Building has two entrances facing the street as well as retail storefront adjacent to the street. Blade sign placement should be as near the retail entrance as feasible to differentiate the retail from the office entrances.

Standard (1) f. Building Design – Building design conveys its commercial/mixed use nature. Use of brick and storefront is consistent with commercial buildings on this street – though many existing commercial buildings on Washington Ave are converted from different uses. Emphasis to the vertical members at the ground floor is created by the recess of the panels below the windows. Staff suggest this treatment either be applied to the full height of the building, or at the ground floor only to delineate the different uses. The current design suggests the first and second floor are apart from the upper floors – instead, a more typical approach to the transom of the ground floor retail would be a strong horizontal line created by a lintel or transom or similar element to tie the ground level together and separate from the floors above. The ground floor windows may need to be shortened to achieve this effect.

Standard (1) g. Building Materials – Given the predominant context of simple material palette, staff found the building to include too many materials and that material placement is not helping the overall proportion and massing of the building. The red brick is incongruous with the wood tone corners. Possible revision may be a grey brick with the natural tone, or that the natural tone be grey with the red brick. Articulation details include the canopies, recessed

entries, and 3” reveal between materials creates a good transition details between materials and provides some shadow line.

Standard (1) h. Building Scale – Building is four stories – one to two stories taller than immediately abutting neighbors – predominantly residential buildings on this stretch of Washington Avenue. The existing scale of building on Washington Ave varies in height from one to four stories with the majority of buildings being too short compared with the street width. Therefore, staff support new development that is appropriately scaled for the street and for a mixed-use urban corridor and finds four stories meets the standard (as well as the zoning). In addition, this project has some massing variation at the third floor that varies the height of the building at the street.

Standard (1) i. Landscaping and Buffers – Parking is to the rear of the property and is screened from view by the building.

Portland Maine Yes. Google's good here.

Shukria Wiar <shukriaw@portlandmaine.gov>

147 Washington Avenue

Lauren Swett <lswett@woodardcurran.com> Fri, Mar 23, 2018 at 8:06 AM
To: "Wiar, Shukria" <shukriaw@portlandmaine.gov>
Cc: Keith Gray <kgray@portlandmaine.gov>, Tom Errico <thomas.errico@tylin.com>, Bruce Hyman <bhyman@portlandmaine.gov>

Hi,

They have addressed all of my minor stormwater comments.

I know there were some discussions about East Cove Street, and I'm not completely sure "what" that street is, but they are proposing to install concrete slipform curb and tipdown in East Cove Street up to the Washington Ave ROW. I wanted to make sure that was acceptable to the City in this area. I believe they have rights to this space (they are doing some landscaping too), but wanted to check if this needs to meet the City standard.

Finalization of the construction management plan will need to be a condition of approval. The contractor is still to be determined, and the plan notes that a "Maintenance of Traffic" plan will be submitted in the future, so there are no specific conditions identified. They include a statement "Adequate parking for construction workers shall be provided along Washington Avenue or arrangements for off-street parking at an off-site location shall be provided." I'm just guessing, but I don't think that the City wants contractor parking on Washington Avenue, so a specific comment should be made that off-site parking is provided.

Any questions, let me know. I'm out of the office most of the day, so please call my cell phone.

Thanks,

Lauren

Lauren Swett, P.E.

Technical Manager

Woodard & Curran

41 Hutchins Drive

Portland, Maine 04102

Phone: (207)558-3763 (direct)

(207)219-3591 (cell)

(800)426-4262 (office)

Email: lswett@woodardcurran.com

Commitment & Integrity Drive Results

www.woodardcurran.com

Portland Maine Yes. Google's good here.

Shukria Wiar <shukriaw@portlandmaine.gov>

147 Washington Avenue

Jeff Tarling <jst@portlandmaine.gov> Fri, Mar 23, 2018 at 8:47 AM
To: Shukria Wiar <shukriaw@portlandmaine.gov>

Hi Shukria -

I checked the tree and landscape plan and wanted to offer the following comments as conditions of approval.

a) Street trees - none proposed, would like to replace the missiing tree and perhaps add a second one. The spacing would be between the proposed on-street parking spaces.

Rectangular shaped tree pit, with no tree grate or raised granite planter.

Recommended tree type ornamental due to overhead utilities, Species type include: 'Accolade' or 'Pink Flair' Cherry, or 'Adirondack' Crabapple.

b) Red Maple, on the right side of the building should be an upright shaped cultivar like, 'Armstrong' or 'Bowhall' Red Maple.

c) Landscape elements - Juniper virginana (7) on the right side of the building, and on East Cove Street (4) these plants should be of a larger size then proposed 5 gal. Recommend 5 - 6' Height, 4 - 5' minimum.

Landscape planting near Dumpsters - the proposed treatment is 50 Panicum (Switch grass). It would be recommended to use perhaps 22 grasses in the snow storage area and include woody tree(s) or shrubs near the back of the dumpster for more year around and taller screening. Overall this space seems to have just a LOT of grasses as an easy fix vs optimize the space with some creativity and interest.

Thanks,

Jeff
Jeff Tarling
City Arborist - City of Portland Maine
Parks, Recreation & Facilities Department
Forestry & Horticulture
212 Canco Road
Portland, ME. 04103
(207) 808-5446
jst@portlandmaine.gov

ACORN ENGINEERING, INC.

Planning Division
City of Portland, Maine
389 Congress Street, 4th Floor
Portland, ME 04101

December 5, 2017
Rev. February 27, 2018

Subject: *Updated* Level III Final Site Plan Application
Redevelopment of 149-155 Washington Avenue - Portland, Maine

To Whom It May Concern:

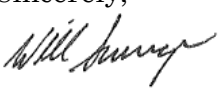
On behalf of Diving Rock, LLC, we are pleased to submit the accompanying package of submission materials related to the proposed mixed-use development of 151 Washington Avenue. This package is a resubmission of revised plans and documents based on comments received at a "post-application" meeting with City staff and peer reviewers on January 10, 2018.

After the meeting, the client authorized the design team to make changes reflecting the city staff input which primarily includes closing the curb cut and private parking along Washington Avenue and enlarging the building to occupy more street frontage. This revision has resulted in eliminating the existing non-conforming driveway/curb cut off Washington Avenue which does not meet the required separation standard from the abutting driveway. Additionally, the building frontage along Washington Avenue will better align with the design standards set forth by the City. Other changes include the elimination of compact parking spaces, increased landscape treatment, increased pedestrian access to Gear Hub, and stormwater management improvements.

The lot is currently occupied by a 1,850 SF workshop/bicycle retail space utilized by Gear Hub that will remain. The property is proposed to include the development of a 4-story building (13,093 SF total floor space) with retail space on the ground level and office space on the remaining three levels.

We believe this is an exciting opportunity for the City to increase the available retail/office space along the inner Washington Avenue corridor. The vision is to create a shared-use office to support Portland's entrepreneurial environment. The development's proximity to residential housing as well as amenities such as showers will allow bicyclists and pedestrians to effectively link housing, jobs, and services. Diving Rock, LLC and the design team look forward to your review of this project and are requesting to be placed on the next available Planning Board agenda. If you have any questions regarding these materials or the completeness of the application, please contact us within the next five (5) days.

Sincerely,



William H. Savage, P.E.
Principal - Project Manager
Acorn Engineering, Inc.

The following revised documents and drawings will be uploaded onto the City's e-plan. Sections that are not listed below have not been affected by the revisions and the original version in the e-plan will remain.

Documents:

- Section A: Cover Letter
- Section B: Level III Final Site Plan Application
- Section C: Wastewater Capacity
- Section G: Stormwater Management Report
- Section K: Fire Department Letter
- Section L: Conformity with Land Use Ordinance
- Section M: Request for Waivers
- Section O: Architectural Design Narrative
- Section P: Parking Analysis
- Section R: Comment Response Letter (*New)*

Drawings:

- Civil Site Plan Set, Dated 2/26/2018
- Architectural Plan Set, Dated 2/21/2018

Level III – Preliminary and Final Site Plans
Development Review Application
Portland, Maine

Planning and Urban Development Department
Planning Division

Portland's Planning and Urban Development Department coordinates the development review process for site plan, subdivision and other applications under the City's Land Use Code. Attached is the application form for a Level III: Preliminary or Final Site Plan. Please note that Portland has delegated review from the State of Maine for reviews under the Site Location of Development Act, Chapter 500 Stormwater Permits, and Traffic Movement Permits.

Level III: Site Plan Development includes:

- New structures with a total floor area of 10,000 sq. ft. or more except in Industrial Zones.
- New structures with a total floor area of 20,000 sq. ft. or more in Industrial Zones.
- New temporary or permanent parking area(s) or paving of existing unpaved parking areas for more than 75 vehicles.
- Building addition(s) with a total floor area of 10,000 sq. ft. or more (cumulatively within a 3 year period) except in Industrial Zones.
- Building addition(s) with a total floor area of 20,000 sq. ft. or more in Industrial Zones.
- A change in the use of a total floor area of 20,000 sq. ft. or more in any existing building (cumulatively within a 3 year period).
- Multiple family development (3 or more dwelling units) or the addition of any additional dwelling unit if subject to subdivision review.
- Any new major or minor auto business in the B-2 or B-5 Zone, or the construction of any new major or minor auto business greater than 10,000 sq. ft. of building area in any other permitted zone.
- Correctional prerelease facilities.
- Park improvements: New structures greater than 10,000 sq. ft. and/or facilities encompassing 20,000 sq. ft. or more (excludes rehabilitation or replacement of existing facilities); new nighttime outdoor lighting of sports, athletic or recreation facilities not previously illuminated.
- Land disturbance of 3 acres or more (includes stripping, grading, grubbing, filling or excavation).

Portland's development review process and requirements are outlined in the Land Use Code (Chapter 14), Design Manual and Technical Manual.

Planning Division
Fourth Floor, City Hall
389 Congress Street
(207) 874-8719
planning@portlandmaine.gov

Office Hours
Monday thru Friday
8:00 a.m. – 4:30 p.m.

I. Project Information (Please enter n/a on those fields that are not applicable)

Project Name:	151 Washington Avenue Redevelopment
Proposed Development Address:	149-155 Washington Avenue
Project Description:	Development of mixed-use building - see cover letter
Chart/Block/Lot:	12/G/1,2,3,8
Preliminary Plan	N/A
Final Plan	See Attached

II. Contact Information (Please enter n/a on those fields that are not applicable)

APPLICANT

Name:	Diving Rock, LLC
Business Name:	Diving Rock, LLC
Address:	15 Howard Street
City/State:	Portland, ME
Zip Code:	04101
Work #:	N/A
Home #:	N/A
Cell #:	(207) 577-3873
Fax #:	N/A
E-mail:	johnny@kingpinecapital.com

OWNER

Name:	Diving Rock, LLC
Address:	15 Howard Street
City/State:	Portland, ME
Zip Code:	04101
Work #:	N/A
Home #:	N/A
Cell #:	(207) 577-3873
Fax #:	N/A
E-mail:	johnny@kingpinecapital.com

AGENT/REPRESENTATIVE

Name:	Johnny Ritzo
Address:	15 Howard Street
City/State:	Portland, ME
Zip Code:	04101
Work #:	NA
Home #:	N/A
Cell #:	(207) 577-3873
Fax #:	N/A
E-mail:	johnny@kingpinecapital.com

BILLING (to whom invoices will be forwarded to)

Name:	Diving Rock, LLC
Address:	15 Howard Street
City/State:	Portland, ME
Zip Code:	04101
Work #:	N/A
Home #:	N/A
Cell #:	(207) 577-3873
Fax #:	N/A
E-mail:	johnny@kingpinecapital.com

ENGINEER

Name:	Acorn Engineering, Inc.
Address:	P.O. Box 3372
City/State:	Portland, ME
Zip Code:	04101
Work #:	(207) 775-2655
Home #:	N/A
Cell #:	(207) 317-1884
Fax #:	N/A
E-mail:	wsavage@acorn-engineering.com

SURVEYOR

Name:	R.W. Eaton Associates
Address:	58 Pleasant Street
City/State:	Westbrook, ME
Zip Code:	04092
Work #:	(207) 854-2402
Home #:	N/A
Cell #:	N/A
Fax #:	856-7167
E-mail:	rweaton@maine.rr.com

ARCHITECT

Name:	Ryan Senatore Architecture
Address:	565 Congress Street #304
City/State:	Portland, ME
Zip Code:	04101
Work #:	(207) 747-5159
Home #:	N/A
Cell #:	(207) 650-6414
Fax #:	N/A
E-mail:	ryan@senatorearchitecture.com

ATTORNEY

Name:	Tom Jewell
Address:	477 Congress St.
City/State:	Portland, Maine
Zip Code:	04101
Work #:	(207) 774-6665
Home #:	N/A
Cell #:	N/A
Fax #:	N/A
E-mail:	tjewell@jewellandbulger.com

DESIGNATED PERSON(S) FOR UPLOADING INTO e-PLAN

Name:	Sam Lebel
E-mail:	slebel@acorn-engineering.com
Name:	Alyssa Gartley
E-mail:	agartley@acorn-engineering.com
Name:	
E-mail:	

III. APPLICATION FEES

LEVEL III DEVELOPMENT (check applicable review)

☑	Less than 50,000 sq. ft.	$750.00
☐	50,000 – 100,000 sq. ft.	$1,000.00
☐	100,000 – 200,000 sq. ft.	$2,000.00
☐	200,000 – 300,000 sq. ft.	$3,000.00
☐	Over 300,000 sq. ft.	$5,000.00
☐	Parking lots over 100 spaces	$1,000.00
☐	After-the-fact Review	$1,000.00 + applicable application fee above

PLAN AMENDMENTS (check applicable review)

☐	Planning Staff Review	$250.00
☐	Planning Board Review	$500.00

OTHER REVIEWS (check applicable review)

☐	Traffic Movement	$1,500.00
☐	Stormwater Quality	$250.00
☐	Subdivision	$500.00 + applicable fee for lots/units below
	# of Subdivision Lots/Units [ ] x $25.00 each	$
☐	Site Location	$3,500.00 + applicable fee for lots/units below
	# of Site Location Lots/Units [ ] x $200.00 each	$
☐	Change of Use	
☐	Flood Plain	
☐	Shoreland	
☐	Design Review	
☐	Housing Replacement	
☐	Historic Preservation	
	TOTAL APPLICATION FEE DUE:	$ 750.00

IV. FEES ASSESSED AND INVOICED SEPARATELY

- Notices to abutters (receipt of application, workshop and public hearing meetings) ($.75 each)
- Legal Ad in the Newspaper (% of total ad)
- Planning Review ($52.00 hour)
- Legal Review ($75.00 hour)
- Third Party Review (all outside reviews or analysis, eg. Traffic/Peer Engineer, are the responsibility of the applicant and will be assessed and billed separately)

V. PROJECT DATA (Please enter n/a on those fields that are not applicable)

TOTAL AREA OF SITE	13,111	sq. ft.
PROPOSED DISTURBED AREA OF THE SITE	10,650	sq. ft.
If the proposed disturbance is greater than one acre, then the applicant shall apply for a Maine Construction General Permit (MCGP) with DEP and a Stormwater Management Permit, Chapter 500, with the City of Portland.		
IMPERVIOUS SURFACE AREA		
Impervious Area (Total Existing)	12,947	sq. ft.
Impervious Area (Total Proposed)	12,252	sq. ft.
Building Ground Floor Area and Total Floor		
Building Footprint (Total Existing)	1,870	sq. ft.
Building Footprint (Total Proposed)	3,866 (Proposed building only)	sq. ft.
Building Floor Area (Total Existing)	1,810	sq. ft.
Building Floor Area (Total Proposed)	13,093 (Proposed building only)	sq. ft.
ZONING		
Existing	B-1	
Proposed, if applicable		
LAND USE		
Existing	Workshop/storage/retail	
Proposed	Workshop/storage/retail/office	
RESIDENTIAL, IF APPLICABLE		
# of Residential Units (Total Existing)		
# of Residential Units (Total Proposed)		
# of Lots (Total Proposed)		
# of Affordable Housing Units (Total Proposed)		
PROPOSED BEDROOM MIX		
# of Efficiency Units (Total Proposed)		
# of One-Bedroom Units (Total Proposed)		
# of Two-Bedroom Units (Total Proposed)		
# of Three-Bedroom Units (Total Proposed)		
PARKING SPACES		
# of Parking Spaces (Total Existing)	13	
# of Parking Spaces (Total Proposed)	20**	
# of Handicapped Spaces (Total Proposed)	1	
BICYCLE PARKING SPACES		
# of Bicycle Spaces (Total Existing)	0 fixed*	
# of Bicycle Spaces (Total Proposed)	4 fixed*	
ESTIMATED COST OF THE PROJECT	$1.7 million	

* There are currently portable bicycle racks serving the existing use which will remain. The proposed project includes 2 permanent bicycle racks with a capacity for 4 bicycles with additional storage inside.

**Additionally, the project includes the closure of a curb cut along Washington Ave which increases the on-street parking by 3 spaces.

VI. APPLICANT SIGNATURE

By digitally signing the attached document(s), you are signifying your understanding this is a legal document and your electronic signature is considered a ***legal signature*** per Maine state law.

I hereby certify that I am the Owner of record of the named property, or that the owner of record authorizes the proposed work and that I have been authorized by the owner to make this application as his/her authorized agent. I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in this application is issued, I certify that the Planning Authority and Code Enforcement's authorized representative shall have the authority to enter all areas covered by this permit at any reasonable hour to enforce the provisions of the codes applicable to this permit.

This application is for a Level III Site Plan review. It is not a permit to begin construction. An approved site plan, a Performance Guarantee, Inspection Fee, Building Permit, and associated fees will be required prior to construction. Other Federal, State or local permits may be required prior to construction, which are the responsibility of the applicant to obtain.

Signature of Applicant:	for diving rock, LLC
Date:	12/4/17

FINAL PLAN - Level III Site Plan			
Applicant Checklist	Planner Checklist	# of Copies	**GENERAL WRITTEN SUBMISSIONS CHECKLIST (* If applicant chooses to submit a Preliminary Plan, then the * items were submitted for that phase and only updates are required)**
X		1	* Completed Application form
X		1	* Application fees
X		1	* Written description of project
X		1	* Evidence of right, title and interest
N/A		1	* Evidence of state and/or federal permits
X		1	* Written assessment of proposed project's specific compliance with applicable Zoning requirements
X		1	* Summary of existing and/or proposed easements, covenants, public or private rights-of-way, or other burdens on the site
X		1	* Evidence of financial and technical capacity
X		1	Construction Management Plan
N/A		1	A traffic study and other applicable transportation plans in accordance with Section 1 of the technical Manual, where applicable.
N/A		1	Written summary of significant natural features located on the site (Section 14-526 (b) (a))
X		1	Stormwater management plan and stormwater calculations
X		1	Written summary of project's consistency with related city master plans
X		1	Evidence of utility capacity to serve
X		1	Written summary of solid waste generation and proposed management of solid waste
X		1	A code summary referencing NFPA 1 and all Fire Department technical standards
X		1	Where applicable, an assessment of the development's consistency with any applicable design standards contained in Section 14-526 and in City of Portland Design Manual
X		1	Manufacturer's verification that all proposed HVAC and manufacturing equipment meets applicable state and federal emissions requirements.

Applicant Checklist	Planner Checklist	# of Copies	**SITE PLAN SUBMISSIONS CHECKLIST** **(* If applicant chooses to submit a Preliminary Plan, then the * items were submitted for that phase and only updates are required)**
X		1	* Boundary Survey meeting the requirements of Section 13 of the City of Portland's Technical Manual
X		1	**Final Site Plans including the following:**
X		Existing and proposed structures, as applicable, and distance from property line (including location of proposed piers, docks or wharves if in Shoreland Zone);	
X		Existing and proposed structures on parcels abutting site;	
X		All streets and intersections adjacent to the site and any proposed geometric modifications to those streets or intersections;	
X		Location, dimensions and materials of all existing and proposed driveways, vehicle and pedestrian access ways, and bicycle access ways, with corresponding curb lines;	
X		Engineered construction specifications and cross-sectional drawings for all proposed driveways, paved areas, sidewalks;	
X		Location and dimensions of all proposed loading areas including turning templates for applicable design delivery vehicles;	
X		Existing and proposed public transit infrastructure with applicable dimensions and engineering specifications;	
X		Location of existing and proposed vehicle and bicycle parking spaces with applicable dimensional and engineering information;	
X		Location of all snow storage areas and/or a snow removal plan;	
N/A		A traffic control plan as detailed in Section 1 of the Technical Manual;	
N/A		Proposed buffers and preservation measures for significant natural features, where applicable, as defined in Section 14-526(b)(1);	
N/A		Location and proposed alteration to any watercourse;	
N/A		A delineation of wetlands boundaries prepared by a qualified professional as detailed in Section 8 of the Technical Manual;	
N/A		Proposed buffers and preservation measures for wetlands;	
X		Existing soil conditions and location of test pits and test borings;	
X		Existing vegetation to be preserved, proposed site landscaping, screening and proposed street trees, as applicable;	
X		A stormwater management and drainage plan, in accordance with Section 5 of the Technical Manual;	
X		Grading plan;	
X		Ground water protection measures;	
X		Existing and proposed sewer mains and connections;	

- Continued on next page -

X		Location of all existing and proposed fire hydrants and a life safety plan in accordance with Section 3 of the Technical Manual;
X		Location, sizing, and directional flows of all existing and proposed utilities within the project site and on all abutting streets;
X		Location and dimensions of off-premises public or publicly accessible infrastructure immediately adjacent to the site;
X		Location and size of all on site solid waste receptacles, including on site storage containers for recyclable materials for any commercial or industrial property;
X		Plans showing the location, ground floor area, floor plans and grade elevations for all buildings;
N/A		A shadow analysis as described in Section 11 of the Technical Manual, if applicable;
N/A		A note on the plan identifying the Historic Preservation designation and a copy of the Application for Certificate of Appropriateness, if applicable, as specified in Section Article IX, the Historic Preservation Ordinance;
X		Location and dimensions of all existing and proposed HVAC and mechanical equipment and all proposed screening, where applicable;
X		An exterior lighting plan in accordance with Section 12 of the Technical Manual;
X		A signage plan showing the location, dimensions, height and setback of all existing and proposed signs;
X		Location, dimensions and ownership of easements, public or private rights of way, both existing and proposed.

CITY OF PORTLAND WASTEWATER CAPACITY APPLICATION

Department of Public Services,
55 Portland Street,
Portland, Maine 04101-2991

Bradley Roland, P.E.
Water Resources Division

Date: 11/15/2017

1. Please, Submit Utility, Site, and Locus Plans.

Site Address: 151-155 WASHINGTON AVE

Chart Block Lot Number: 12/G/1,2,3,8

Proposed Use: OFFICE/RETAIL/WORKSHOP
Previous Use: RETAIL/WORKSHOP
Existing Sanitary Flows: 361 GPD
Existing Process Flows: 0 GPD
Description and location of City sewer that is to receive the proposed building sewer lateral.

COMBINED SEWER WITHIN WASHINGTON AVE TO RECEIVE 6" SEWER LATERAL AND 6" STORM DRAIN.

Site Category		
	Commercial *(see part 4 below)*	X
	Industrial *(complete part 5 below)*	
	Governmental	
	Residential	
	Other *(specify)*	

Clearly, indicate the proposed connections, on the submitted plans.

2. Please, Submit Contact Information.

City Planner's Name: TBD Phone:
Owner/Developer Name: JOHNNY RITZO
Owner/Developer Address: 15 HOWARD STREET PORTLAND, ME 04101
Phone: 577-3873 Fax: E-mail: JOHNNY@KINGAVECAPITAL.COM
Engineering Consultant Name: ACORN ENGINEERING, INC.
Engineering Consultant Address: 158 DANFORTH ST PORTLAND, ME 04102
Phone: 775-2655 Fax: E-mail: WSAVAGE@ACORN-ENGINEERING.COM

Note: Consultants and Developers should allow +/- 15 days, for capacity status, prior to Planning Board Review.

3. Please, Submit Domestic Wastewater Design Flow Calculations.

Estimated Domestic Wastewater Flow Generated: TOTAL: 1,186 GPD/NEW: 825 GPD
Peaking Factor/ Peak Times: DIURNAL FLOW PATTERN
Specify the source of design guidelines: *(i.e._"Handbook of Subsurface Wastewater Disposal in Maine," __"Plumbers and Pipe Fitters Calculation Manual," __ Portland Water District Records, Other (specify)* MAINE SUBSURFACE WASTEWATER DISPOSAL RULES

Note: Please submit calculations showing the derivation of your design flows, either on the following page, in the space provided, or attached, as a separate sheet.

4. Please, Submit External Grease Interceptor Calculations.

Total Drainage Fixture Unit (DFU) Values: N/A NO RESTAURANT

Size of External Grease Interceptor: PROPOSED

Retention Time: _____

Peaking Factor/ Peak Times: _____

Note: In determining your restaurant process water flows, and the size of your external grease interceptor, please use The Uniform Plumbing Code. Note: In determining the retention time, sixty (60) minutes is the minimum retention time. Note: Please submit detailed calculations showing the derivation of your restaurant process water design flows, and please submit detailed calculations showing the derivation of the size of your external grease interceptor, either in the space provided below, or attached, as a separate sheet.

5. Please, Submit Industrial Process Wastewater Flow Calculations

Estimated Industrial Process Wastewater Flows Generated: N/A GPD

Do you currently hold Federal or State discharge permits? Yes ___ No ___

Is the process wastewater termed categorical under CFR 40? Yes ___ No ___

OSHA Standard Industrial Code (SIC): *(http://www.osha.gov/oshstats/sicser.html)*

Peaking Factor/Peak Process Times: _____

Note: On the submitted plans, please show where the building's domestic sanitary sewer laterals, as well as the building's industrial-commercial process wastewater sewer laterals exits the facility. Also, show where these building sewer laterals enter the city's sewer. Finally, show the location of the wet wells, control manholes, or other access points; and, the locations of filters, strainers, or grease traps.

Note: Please submit detailed calculations showing the derivation of your design flows, either in the space provided, or attached, as a separate sheet.

Calculation of Wastewater Flowrate for 151-155 Washington Ave. Redevelopment

The proposed project will include the development of four stories with retail space on the ground level and office space on the remaining stories. Based upon the Section 4 of the Maine Subsurface Wastewater Disposal Rules, the project anticipates the following daily flows:

Estimate of Design Flows			
Classification of Water Demand	**Number of Units**	**Gallons per Day per unit**	**Total Gallons per Day**
Existing			
Retail (Employee at place of employment with no showers: 12 GPD per employee)	3	12	36
Public Restroom	1	325	325
Proposed			
Office/Retail (Employee at place of employment with showers: 20 GPD per employee)	25	20	500
Public Restroom	1	325	325
		Total Existing	**361**
		Total Proposed	**825**
		Net Change	**+825 GPD**
*Values based on STATE OF MAINE: SUBSURFACE WASTEWATER DISPOSAL RULES, most recent edition			

CITY OF PORTLAND WASTEWATER CAPACITY APPLICATION

Department of Public Services,
55 Portland Street,
Portland, Maine 04101-2991

Date: 2/12/2018

Bradley Roland, P.E.
Water Resources Division

1. Please, Submit Utility, Site, and Locus Plans.

Site Address: 149-155 WASHINGTON AVENUE

Chart Block Lot Number: 12/G/1,2,3,8

Proposed Use: OFFICE/RETAIL/WORKSHOP
Previous Use: RETAIL/WORKSHOP
Existing Sanitary Flows: 361 GPD
Existing Process Flows: 0 GPD
Description and location of City sewer that is to receive the proposed building sewer lateral.
COMBINED SEWER W/I WASHINGTON AVE. TO RECEIVE 6" SEWER LATERAL AND 6" DRAIN

Site Category:
- Commercial *(see part 4 below)* [X]
- Industrial *(complete part 5 below)* [ ]
- Governmental [ ]
- Residential [ ]
- Other *(specify)* [ ]

Clearly, indicate the proposed connections, on the submitted plans.

2. Please, Submit Contact Information.

City Planner's Name: SHUKRIA WIAR Phone: 756-8083
Owner/Developer Name: DIVING ROCK, LLC (JOHN RITZO)
Owner/Developer Address: 15 HOWARD ST. PORTLAND, ME 04101
Phone: 577-3873 Fax: N/A E-mail: JOHNNY@KINGPINECAPITAL.COM
Engineering Consultant Name: ACORN ENGINEERING, INC.
Engineering Consultant Address: 158 DANFORTH ST. PORTLAND, ME 04102
Phone: 775-2655 Fax: _____ E-mail: WSAVAGE@ACORN-ENGINEERING.COM

Note: Consultants and Developers should allow +/- 15 days, for capacity status, prior to Planning Board Review.

3. Please, Submit Domestic Wastewater Design Flow Calculations.

Estimated Domestic Wastewater Flow Generated: TOTAL: 1,286 NEW: 925 GPD
Peaking Factor/ Peak Times: DIURNAL FLOW PATTERN
Specify the source of design guidelines: *(i.e.__"Handbook of Subsurface Wastewater Disposal in Maine," __ "Plumbers and Pipe Fitters Calculation Manual," __ Portland Water District Records, Other (specify)* _____

Note: Please submit calculations showing the derivation of your design flows, either on the following page, in the space provided, or attached, as a separate sheet.

4. Please, Submit External Grease Interceptor Calculations.

Total Drainage Fixture Unit (DFU) Values: N/A

Size of External Grease Interceptor: _____

Retention Time: _____

Peaking Factor/ Peak Times: _____

Note: In determining your restaurant process water flows, and the size of your external grease interceptor, please use The Uniform Plumbing Code. Note: In determining the retention time, sixty (60) minutes is the minimum retention time. Note: Please submit detailed calculations showing the derivation of your restaurant process water design flows, and please submit detailed calculations showing the derivation of the size of your external grease interceptor, either in the space provided below, or attached, as a separate sheet.

5. Please, Submit Industrial Process Wastewater Flow Calculations

Estimated Industrial Process Wastewater Flows Generated: N/A GPD

Do you currently hold Federal or State discharge permits? Yes ____ No ____

Is the process wastewater termed categorical under CFR 40? Yes ____ No ____

OSHA Standard Industrial Code (SIC): *(http://www.osha.gov/oshstats/sicser.html)*

Peaking Factor/Peak Process Times: _____

Note: On the submitted plans, please show where the building's domestic sanitary sewer laterals, as well as the building's industrial-commercial process wastewater sewer laterals exits the facility. Also, show where these building sewer laterals enter the city's sewer. Finally, show the location of the wet wells, control manholes, or other access points; and, the locations of filters, strainers, or grease traps.

Note: Please submit detailed calculations showing the derivation of your design flows, either in the space provided, or attached, as a separate sheet.

Calculation of Wastewater Flowrate for 151-155 Washington Ave. Redevelopment

The proposed project will include the development of four stories with retail space on the ground level and office space on the remaining stories. Based upon the Section 4 of the Maine Subsurface Wastewater Disposal Rules, the project anticipates the following daily flows:

Estimate of Design Flows			
Classification of Water Demand	**Number of Units**	**Gallons per Day per unit**	**Total Gallons per Day**
Existing			
Retail (Employee at place of employment with no showers: 12 GPD per employee)	3	12	36
Public Restroom	1	325	325
Proposed			
Office/Retail (Employee at place of employment with showers: 20 GPD per employee)	30	20	600
Public Restroom	1	325	325
		Total Existing	**361**
		Total Proposed	**925**
		Net Change	**+925 GPD**
*Values based on STATE OF MAINE: SUBSURFACE WASTEWATER DISPOSAL RULES, most recent edition			

D. Right, Title, or Interest

Please find attached:

- Deed in Book 33456 and Page 304, Dated September 19, 2016 confirming Diving Rock LLC's ownership of 155 Washington Avenue.
- Deed in Book 34423 and Page 221, Dated October 26, 2017 confirming Diving Rock LLC's ownership of 149 Washington Avenue.
- Letter from Attorney Tom Jewell of Jewell & Bulger, P.A. outlining the Applicant's rights to make improvements to East Cove Street.

WARRANTY DEED
(Maine Statutory Short Form)

KNOW ALL PERSONS BY THESE PRESENTS, that, **Akasha 155, LLC a Maine limited liability company,** with a place of business in Portland, County of Cumberland and the State of Maine, for consideration paid, hereby GRANTS to **Diving Rock, LLC, a Maine limited liability company,** whose mailing address is 15 Howard Street Portland, Maine 04101 with **WARRANTY COVENANTS**, the land with any buildings thereon situated in Portland, County of Cumberland, and State of Maine, described as follows:

See Attached Exhibit A

Meaning and intending to convey a portion of the premises conveyed to Akasha 155, LLC by deed from Wendy Morse Baldwin dated March 11, 2015, recorded in the Cumberland County Registry of Deeds in Book 32168, Page 262.

MAINE REAL ESTATE TAX PAID

In Witness Whereof, Akasha155, LLC has caused this instrument to be signed and sealed by its duly authorized officer this 19 day of September, 2016.

Witness

Akasha 155, LLC

By: Asher Woodworth
Its: Manager

STATE OF MAINE
COUNTY OF Cumberland

September 19, 2016

Then personally appeared before me the above named Asher Woodworth, Manager of Akasha 155, LLC and acknowledged the foregoing instrument to be his free act and deed in his said capacity, and the free act and deed of said limited liability corporation.

Before me,

~~Notary Public~~/ Attorney at Law
Printed Name:
My Comm. Exp:

PATRICK D. THORNTON
MAINE ATTORNEY AT LAW

EXHIBIT A

A certain lot or parcel of land located on the east bounds of Washington Ave. and the south bounds of East Cove Street in the City of Portland, Cumberland County and the State of Maine and being more particularly as follows.

Beginning at a 5/8" rebar set with cap on the east bounds of Washington Ave. being N24°-36'-14"W one hundred seventy four and forty five hundredths 174.45' feet from the intersection point of the north bounds of Walnut Street and the east bounds of Washington Ave.

Thence N24°-36'-14"W sixty nine and nine hundredths 69.09' feet along the east bounds of Washington Ave. to a 5/8' rebar set with cap at the intersection point of the south bounds of East Cove Street and the east bounds of Washington Ave.

Thence N65°-23'-43"E eighty and zero hundredths 80.00' feet along the south bounds of East Cove Street to a point.

Thence N58°-18'-31"E forty two and zero hundredths 42.00' feet along the south bounds of East Cove Street to a 5/8" rebar set with cap at the northwest corner of land of Austin and Buss described in Book 21521 Page 18

Thence S31°-41'-29"E seventy four and thirteen hundredths 74.13' feet along the west bounds of land of Austin and Buss to a point on the north bounds of land of Phillip Rando described in Book 15029 Page 300.

Thence S58°-45'-14"W four and sixty six hundredths 4.66' feet along the north bounds of land of Rando to a point at the northwest corner of land of Rando.

Thence S65°-23'-46"W one hundred twenty six and twenty one hundredths 126.21' feet along the north bounds of remaining land of grantor to the point of beginning.

Containing 8,851 Square Feet or 0.20 Acres and being a portion of land Akasha 166 LLC described in Book 32168 Page 262.

Also including all interest in the unaccepted street known as East Cove Street.

Received
Recorded Register of Deeds
Sep 20,2016 01:47:11P
Cumberland County
Nancy A. Lane

WARRANTY DEED
(Maine Statutory Short Form)

KNOW ALL PERSONS BY THESE PRESENTS, that AKASHA 155, LLC, of Portland, Maine, for consideration paid, grants to DIVING ROCK, LLC, whose mailing address is 100 Commercial Street, Portland, County of Cumberland and State of Maine, with warranty covenants, a certain lot or parcel of land, with any buildings thereon, situated at 149 Washington Avenue, City of Portland, County of Cumberland and State of Maine, as more fully described in Exhibit A attached hereto:

Meaning and intending to convey a portion of the premises conveyed to Grantor by deed dated March 11, 2015, from Wendy Morse Baldwin recorded in the Cumberland County Registry of Deeds Book 32168, Page 262, on March 31, 2015.

MAINE REAL ESTATE TAX PAID

Witness our signatures this 26th day of October, 2017.

AKASHA 155, LLC

Witness

By: Asher Woodworth
Its: Manager

STATE OF MAINE
COUNTY OF CUMBERLAND

October 26, 2017

Then personally appeared the above named Asher Woodworth, in his capacity of manager of AKASHA 155, LLC, and acknowledged the foregoing instrument to be his free act and deed and the free act and deed of AKASHA 155, LLC.

Before me,

Notary Public/Attorney at Law

LINDA MAYO
Notary Public, Maine
My Commission Expires May 25, 2017

SEAL

Exhibit A

A certain lot or parcel of land located on the east bounds of Washington Avenue in the City of Portland, Cumberland County and the State of Maine and being more particularly bounded and described as follows:

Beginning at a 5/8" rebar set with cap on the east bounds of Washington Avenue, being N24°-36'-14"W one hundred forty one feet (141') from the intersection point of the north bounds of Walnut Street and the east bounds of Washington Avenue.

1) Thence N24°-36'-14"W thirty three and forty five hundredths (33.45) feet along the east bounds of Washington Avenue to a 5/8" rebar set with cap at the southerly corner of land of Diving Rock, LLC, as described in a deed recorded in the Cumberland County Registry of Deeds in Book 33456, Page 304;
2) Thence N65°-23'-46"E one hundred twenty six and twenty one hundredths (126.21) feet along said land of Diving Rock, LLC to a point;
3) Thence S28°-30'-11"E thirty three and fifty three hundredths (33.53) feet along land now or formerly of Phillip Rando, as described in a deed recorded in said registry in Book 15029, Page 300 to a point;
4) Thence S65°-23'-46"W one hundred twenty eight and forty nine hundredths (128.49) feet along land of grantor to the point of beginning.

Being a portion of land Akasha 155, LLC described in Book 32168, Page 262. Reference is made to a "Boundary Survey with Existing Conditions" by R. W. Eaton Associates dated March 31, 2014 and March 4, 2016.

The above described parcel completely subsumes an easement described in said registry in Book 33456, Page 306. It is the intention of the parties that this conveyance shall extinguish said easement, as both the dominant and servient parcels will be owned by grantee.

Received
Recorded Register of Deeds
Oct 30,2017 01:19:28P
Cumberland County
Nancy A. Lane

JEWELL & BULGER, P.A.
Attorneys at Law
477 Congress Street, Suite 1104
Portland, ME 04101-3453
T: (207) 774-6665
F: (207) 774-1626

Thomas F. Jewell, Esq.
tjewell@jewellandbulger.com

Paul S. Bulger, Esq.
pbulger@jewellandbulger.com

December 13, 2017

City of Portland
Planning Department
389 Congress Street
Portland, ME

Re: 155 Washington Avenue project for Diving Rock, LLC

Dear Sirs and Madams:

Our office has been requested by the Applicant to review the status of East Cove Street, abutting the locus of the proposed development.

The first record of East Cove Street that we could find is Plan of Land of Baxter, circa 1866, recorded at the Cumberland County Registry of Deeds at Plan Book 2, Page 54, attached. East Cove is not named in that Plan, but it is laid out, connecting Poplar Street to Washington Avenue. Later the name of Poplar Street was changed to Sheridan Street.

East Cove Street is not listed in City Council Order #84, recorded at the Registry of Deeds in Book 13326, Page 247. Similarly, no unnamed street matching the description of East Cove was listed in that Council Order. Poplar Street was listed, however, the Council Order provided the wrong reference to the recorded plan and has deemed to be of no effect. This situation was addressed by the City when the neighboring Munjoy Heights condominium project was developed by Jonathan Culley. Our office represented Mr. Culley concerning that project. We had Bill Clark, late of Public Services, review the matter of paper streets in this vicinity in 2013, and he agreed with our assessment that due to the failure of the 1997 Council Order to properly identify East Cove Street that the public rights had terminated.

As to the fee title in East Cove Street, pursuant to Title 33 MRS Sec. 469-A, there is a presumption that the sub-divider conveyed all of its interest in the "proposed, unaccepted way" to the abutters. The only exceptions to this result are when the fee interest in the street was expressly reserved by the sub-divider, or the sub-divider subsequently filed a notice to preserve its claim of title to the street. Our title examination has found no reservation of rights or subsequently filed claim of title by the sub-divider, therefore the Applicant holds title to the middle of the abutting portion of East Cove Street.

Even though public rights to the paper street are no longer valid, as an abutter, the Applicant continues to enjoy private rights to use East Cove Street. The Applicant has a private right of way to utilize all of East Cove Street as an owner of a lot include within the bounds of the original 1866 subdivision plan recorded by Plan Book 2, Page 54. This right is set forth in Title 33 MRS Sec. 3033, et seq, which sets forth the requirements for extinguishing the private rights of way. In the neighboring Munjoy Heights project, such a proceeding was employed to eliminate the private rights of way in the eastern end of East Cove Street and in northern portion of Sheridan Street. That proceeding did not affect the private rights of way in the rest of East Cove Street. That Notice to terminate private rights of way was recorded in Book 32118, Page 145, CCRD.

In conclusion, the Applicant has full private rights to use East Cove Street for all purposes that would be included within a public way, including rights of improvement and for ingress and egress.

Please let me know if you need further information in this regard.

Yours truly,

Thomas F. Jewell, Esq.

TFJ/t

E. Financial Capacity

A letter from the Applicant's bank confirming financial capacity is attached to this section.

Norway Savings Bank
COLORFUL SOLUTIONS™

November 3, 2017

City of Portland
Planning Board

RE: Washington St Project – Diving Rock, LLC

To Whom It May Concern:

On behalf of Norway Savings Bank I am pleased to provide this letter of support for Diving Rock, LLC for the above referenced project. Based on our prior experience with the project sponsor, we believe that the applicant has the financial capacity and developer expertise to complete the project.

While this letter of support is not a commitment to lend, Norway Savings Bank would welcome the opportunity to be a resource to Diving Rock, LLC for financing necessary in connection with this project. The project sponsor is a highly valued client of Norway Savings Bank.

Please feel free to call me 207-393-3663 or by email at ipullen@norwaysavingsbank.com if I can be of assistance in anyway.

Sincerely,

Ian T. Pullen
VP, Commercial Lending

F. Construction Management Plan

Project Address: 151 Washington Ave.

Project Description:

The proposed project includes the development of a 4-story building with retail space on the ground level and office space on the remaining three levels. The existing structure will be maintained as part of the project and will remain functional during construction to the greatest extent possible.

Project Team Summary:

Owner:	Diving Rock, LLC
General Contractor:	TBD
Civil Engineer:	Acorn Engineering, Inc.
Architect:	Ryan Senatore Architecture

The Owner/GC and all subcontractors will work with the City of Portland and adjacent landowners to minimize any project impacts.

The GC will remain responsible for enforcement of all compliance with 1) all contract plans and specifications in their scope of work and 2) all site working conditions and safety requirements, day and night, for both persons and property, in each case for the duration of their work. These include OSHA, NIOSH, U.S. EPA, local ordinance and any other applicable governmental regulations. Both the Owner/GC and any subcontractors will remain responsible for safeguarding the general public.

The GC shall review all permits and conditions associated with the project. Refer to the Civil/Site Plan Set, Sheet C-03 Construction Management Plan for visual representation of the measures to be taken during construction.

The following outline has been developed in accordance with the City of Portland Construction Management Plan General Template and shall be referenced by the GC during construction.

A. Construction Management Principles

The control of noise, vibrations, ground movement, truck traffic, and other construction related factors will be of utmost importance. Care shall be taken to minimize these effects in the best interest of neighbors and the general public. GC to ensure that work hours conform to the City of Portland's Ordinance.

B. Development Review of Construction Management Plan

Logistics and safety program shall be submitted at or prior to the preconstruction meeting by the GC with all pertinent information required by the Maine Department of Transportation's Traffic Control Plan Standard Specification 652.3.3.

C. Performance Guarantees, Inspection Fees, Preconstruction Meeting, and Permits

Guarantees and fees will be paid at the time of the respective application. Sections 14-530 and 13-532 will be complied with all necessary permits will be obtained prior to work.

1. Street Opening and Street Occupancy Permits:

   Required permits regarding street opening and occupancy will be obtained from the Department of Public Works. The requests shall conform to the approved Construction Management Plan.

2. Blasting:

   Although not anticipated, if blasting occurs, it shall conform to Article VIII. In Chapter 14 of the City Code and Section 3.7 in the City's Technical Manual.

3. Building Code:

   Employ the best practices, as applicable, of Chapter 33 Safeguards During Construction, from the 2009 International Building Code.

D. Construction Administration and Communication

The Contractor will work closely with adjacent abutters, businesses, and all parties informed, as far in advance as possible, of scheduled work, particularly work anticipated to cause significant noise, vibrations, or dust. Communication in order to comply with all agreements, ordinances, and special permits will be of the utmost importance. Contractor contact information shall be posted on a sign on the construction fence along the Washington Avenue frontage. Additional signage necessary for communication shall be provided, but will be temporary and removed upon completion of the project. The contract information for the project personnel is:

Johnny Ritzo, Agent
Diving Rock, LLC
(207) 577-3873

GC and Subcontractor information will be posted along the Washington Avenue frontage once contracted.

E. Construction Schedule

The GC shall submit a construction timeline at or prior to the preconstruction meeting. Construction may occur during the daytime hours as defined in Section 17-18. Construction Activities for Building permit and City Code Section 25-129, Noise, dust and debris. Between September 1 and May 31, the following year, no person shall engage in construction activities generating noise exceeding 50 decibels, between the hours of 7 pm and 7 am of the following day within 500 feet of any buildings. From June 1 to August 31, construction activity may continue until 8 pm. No construction activity shall begin before 8 am on a Saturday, Sunday, or legal holiday. Extended hours or night work may be

requested for special circumstances and street utility work if needed. These requests will be subject to approval by the Public Works Authority.

Due to the limited space within the project parcel, deliveries will need to be stored in an alternate location or deliveries must be small enough to fit within the property. Deliveries will be scheduled between 7 am and 5 pm.

The estimated timeframe of the proposed project is outlined below:

Project Start Date:	Spring 2018
Project End Date:	Spring 2019

A more detailed work schedule shall be provided by the GC at or before the pre-construction meeting with the City.

F. Security

1. The Construction Management Plan, Sheet C-03, depicts all proposed fencing and other barriers, with the intent of separating pedestrian and vehicle circulation from the construction site. Construction entrances per detail shall be installed.

2. Structures undergoing construction, alteration, or demolition operations, including those in underground locations, shall comply with NFPA 1 Chapter 16. *Safeguarding Construction, Alteration, and Demolition Operations.*

3. Fire Safety Program: Prior to construction, an overall construction and demolition fire safety program shall be developed. Essential items to be emphasized include the following:
    - Good Housekeeping
    - On-site security
    - Installation of new fire protection systems as construction progresses
    - Preservation of existing systems during demolition
    - Organization and training of an on-site fire brigade
    - Development of a pre-fire plan with the local fire department
    - Rapid communication
    - Consideration of special hazards resulting from previous occupancies
    - Protection of existing structures and equipment from exposure fires resulting from construction, alteration, and demolition operations.

4. Blasting, if required, shall conform with all measures of Article VIII. Regulation of Explosives in the Land Use Code and Section 3.7 Standards for Blasting and Regulation of Explosives in Portland's Technical Manual.

5. Temporary security lighting shall be shown on the Construction Management Plan, and all fixtures shall be full cutoffs.

G. Construction Permitting and Traffic Control Plans

1. Construction Activity in Public Streets

   Construction activity in the public right-of-way shall be compliant with Chapter 25 Article VII of the City Code. At no time will it be permissible for construction activity including delivery vehicle to close or block streets or affect public safety access without prior notice and approval of the Department of Public Works.

2. Sewer and Stormwater

   Sewer and stormwater system connections are controlled by Chapters 24 and 32 of the City code of Ordinance. Required permits for new connections and/or abandonment of existing connections are available through the Street Opening Clerk at the Department of Public Works. Rules and Regulations for these utility systems are available through the City Engineer's office of the Department of Public Works and in Section II of the Technical Manual. This will apply to the new connections within Washington Avenue.

3. Traffic Control Plans

   Construction activity that impacts the existing public street system must be controlled to protect the safety of the construction workers and all modes of the traveling public. The contractor shall submit a satisfactory "Maintenance of Traffic" (MOT) plan prior to any street opening permit approval. This document shall contain all pertinent information from the Maine Department of Transportation's Traffic Control Plan Standard Specification 652.3.3.

   The MOT will address the work required for utility connections in Washington Avenue. Traffic will be channelized utilizing drums and cones. Proper signage will be installed prior to the through work zone. Alternating traffic will be controlled with flaggers. Trenches will be patched with pavement daily.

   The MOT plan shall provide for the safe passage of the public through or along the construction work zone. It may be permissible to close a portion of Washington Avenue during utility connections and/or detour a mode of traffic when absolutely necessary for safety. All requests shall be subject to City approval. MOT plans shall employ the appropriate techniques and devices as called for in the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD). In addition:

   - Construction speed signing may be used as needed to slow traffic.
   - Traffic Control signs shall not be placed where they would create any obstructions to bicycles or pedestrians.
   - Flaggers will be utilized when necessary.

   All existing modes of travel in the work zone area shall be accommodated if impacted by the activity. The safe passage of pedestrians, bicyclists, transit providers, and motorists are of equal importance when planning and laying out the work zone; no pre-existing travel mode may be eliminated without the express approval of the Department of Public Works. The MOT should also address on-street parking impacts, including deliveries and parking for adjoining businesses and property owners, analysis of

roadway capacity or diversion capacity if street closure or change to roadway capacity is required, and coordination with other on-going or future construction or utility projects in the vicinity.

- Traffic control bicycle and pedestrian facilities or routes through work zones shall be maintained until the bicycle and pedestrian facilities or routes are ready for safe operation. Traffic control will not be removed to allow auto travel at the expense of bicycle and pedestrians.
- Barrier systems utilized to separate the construction activity from the public street and /or sidewalk shall not inhibit sight distances, particularly for visibility of pedestrians and bicyclists.
- ADA compliance in all capacities shall be maintained.

Use of public parking spaces or the blockage of any portion of sidewalk for the purpose of construction activity shall require an occupancy permit and appropriate fee as assessed by the Department of Public Works.

H. Site Management and Controls

1. Regular trash and debris shall be managed appropriately and its removal shall comply with all local, state, and federal regulations.

2. Street cleaning and sweeping shall be followed as outlined in the erosion and sedimentation control notes and report. Damage to the street shall be avoided and shall be the responsibility of the contractor.

3. Dust shall be controlled and shall comply with Section 25-129 and the erosion and sedimentation control notes, plan, and details.

4. Noise shall be controlled and shall comply with Section 17-18 and Section 25-129.

5. Rodent Control shall be provided, if applicable, by a professional exterminator and shall be consistent with Chapter 22 of the City Code.

6. Snow and Ice Removal shall be provided. Pursuant to Section 25-173, the Contractor shall ensure a safe means of travel within the work zone by the following steps:

    a. Snow/ice removal or commence automatically from 1" or greater of snow or ice
    b. Remove snow as needed within the work zone, including parking spaces. Driveways and site lines shall not be blocked by piles of snow.
    c. Clear all walks and ramps within the work zone
    d. Sand or salt as needed
    e. Clear all basin or drainage to help snow melt
    f. The above steps shall be carried out Sunday-Saturday including holidays.

I. Erosion & Sedimentation Control

1. The Contractor shall install all erosion and sedimentation controls as depicted on the approved Construction Management Plan, C-03, and the approved erosion and sedimentation control report, prior to the pre-construction meeting for inspection by the City. The Contractor shall regularly inspect the control measures, no less than weekly

and after storm events (0.5" or more in 24 hours). Additionally, temporary or permanent stormwater management systems shall be inspected and maintained to ensure working order. The Contractor shall document all inspection activities and corrective actions and be prepared to provide these documents for inspection by the City, Maine Department of Environmental Protection (MDEP) or the U.S. Environmental Protection Agency (EPA) upon request.

2. Due to the existing, sparse landscaping on site, no protection during construction will be necessary.

3. Stored materials shall be identified and avoid being located under/near trees.

J. Construction Staging Area

1. The Contractor shall submit a plan with locations depicted for the location of material staging areas, the location of on-site temporary construction trailers, the location of on-site truck delivery holding areas, the location of on-site truck washing stations, masonry mixing stations, the general location of the construction security fence and the general location of temporary construction dumpsters. This plan shall be submitted at or prior to the pre-construction meeting. Any open storage areas shall be shown on the plan.

2. Delivery Truck Holding Areas On-Site: The majority of materials delivered to the site will be scheduled such that they are able to be off-loaded immediately. On days when the construction activities require multiple truck deliveries, these deliveries will be carefully scheduled so that there is always adequate on-site area for the holding of trucks until they can be unloaded. Once at the site all vehicles will be brought within the fence line and will make every attempt to avoid queuing on public streets. If, for any reason, on-site holding of trucks is not feasible, an off-site location must be designated and shown on the submitted plan referenced above in J.1.

3. All deliveries for materials shall comply with the City's noise requirements.

K. Parking During Construction

1. Adequate parking for construction workers shall be provided along Washington Avenue or arrangements for off-street parking at an off-site location shall be provided.

2. Truck Routes and Volumes: The following quantities are estimated as part of the reconstruction:

    - Gravel & Stone – 5,000 CF. Earthwork subcontractor(s) pit to project site.
    - Hot Mix Asphalt – 170 Tons. Paving subcontractor(s) pit to project site.

L. Special Measures as Necessary

No special measures are necessary for the proposed reconstruction.

ACORN ENGINEERING, INC.

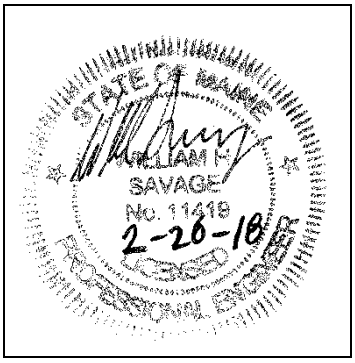
STORMWATER MANAGEMENT REPORT

Prepared For:

Diving Rock, LLC
15 Howard Street
Portland, Maine 04101

Prepared By:

Acorn Engineering, Inc.
158 Danforth Street
Portland, Maine 04102



December 2017

Rev. February 2018

ACORN ENGINEERING, INC.

INTRODUCTION

Acorn Engineering, Inc. has been retained by Diving Rock, LLC to provide civil engineering services for the proposed redevelopment of 149-155 Washington Avenue. The proposed project includes the development of a 4-story building with retail space on the ground level and office space on the remaining three levels.

A stormwater analysis has been prepared to demonstrate that the project will meet the following requirements of the City of Portland (the City):

- City of Portland Land Use Ordinance Chapter 14, Article V. Site Plan Section 14-523. Required Approvals and Applicability (F) Level III Site Plan Review.
- City of Portland Technical Manual – Section 5 – Portland Stormwater Management Standards and Maine DEP Chapter 500 Stormwater Management.

The proposed project is expected to decrease the impervious area by approximately 700 square-feet. Additionally, the proposed landscaping will help retain stormwater on site. These features will help reduce the overall runoff of stormwater into the street and thus reduce the demand on the City's combined sewer/storm system.

EXISTING CONDITIONS

The proposed project site is located at the corner of Washington Avenue and East Cove Street. A boundary plan has been prepared by R.W. Eaton Associates of Westbrook, Maine dated March 31, 2016.

Abutting Uses:

➢ North	B-1 Zone	Single Family Residential
➢ East	R-6 Zone	Multi Family Residential
➢ South	B-1/R-6 Zones	Single Family Residential
➢ West	B-1 Zone	Single/Multi Family Residential

Nearly 100% of the site is comprised of pavement or rooftop. The average slope is relatively steep with grades dropping towards Washington Avenue at approximately 8%.

The project team is not aware of the presence of any existing significant natural features located on the site. Given the urban setting, and existing impervious surfaces, a field inventory of significant natural feature was not undertaken. The project is not located within a watershed classified as an Urban Impaired Stream.

PROPOSED DEVELOPMENT

The proposed project is a four-story building with retail space on the ground level and office space on the remaining three levels. Pedestrian access to the site will be provided off Washington Avenue. The development will be served by Portland Water District, Department of Public Works (sewer and storm), Unitil (natural gas), CMP (electric), Charter (cable), and Fairpoint (telephone). All utilities will be routed underground.

The proposed project will decrease the site's impervious area by approximately 700 square-feet. Therefore, stormwater management features for quality control that meets Maine DEP's Chapter 500 General Standards have not been designed. Furthermore, features for quantity control are not required and have not been analyzed; however, the project is anticipated to meet Chapter 500 Flooding Standards by decreasing peak flows from the site.

Furthermore, the non-roof impervious area has remained well under 5,000 square-feet. Please refer to the attached exhibit which outlines the redeveloped pavement vs the maintained pavement. Maintenance activities retain the original grade while the redeveloped areas are those that notable change the grade and drainage pattern.

A catch basin with a 3' sump and a hood will be provided to collect runoff from the southerly side of the site. The catch basin, along with the roof and foundation drains, will connect to the combined sewer via a 10" storm drain.

SOILS

Onsite soil information includes the following:

- Soil Conservation Service Medium Intensity Soil Survey for Cumberland County
- United States Department of Agriculture Web Soil Survey

Given the soils information, listed above, no onsite wastewater is proposed; the applicant does not intend to perform a more intense hydric soil boundary delineation because the waiver requirements set forth in the City of Portland Technical Manual – Section 7 – Soil Survey, Rev. 6/17/11 are met.

The area within and surrounding the project includes soil types listed in the table below. The susceptibility of soils to erosion is indicated on a relative "K" scale of values over a range of 0.02 to 0.69. Higher "K" values indicate more erodible soils.

Table 1 - "K" Value		
Soils Type	**Subsurface**	**Substratum**
Hinckley	0.17	0.17

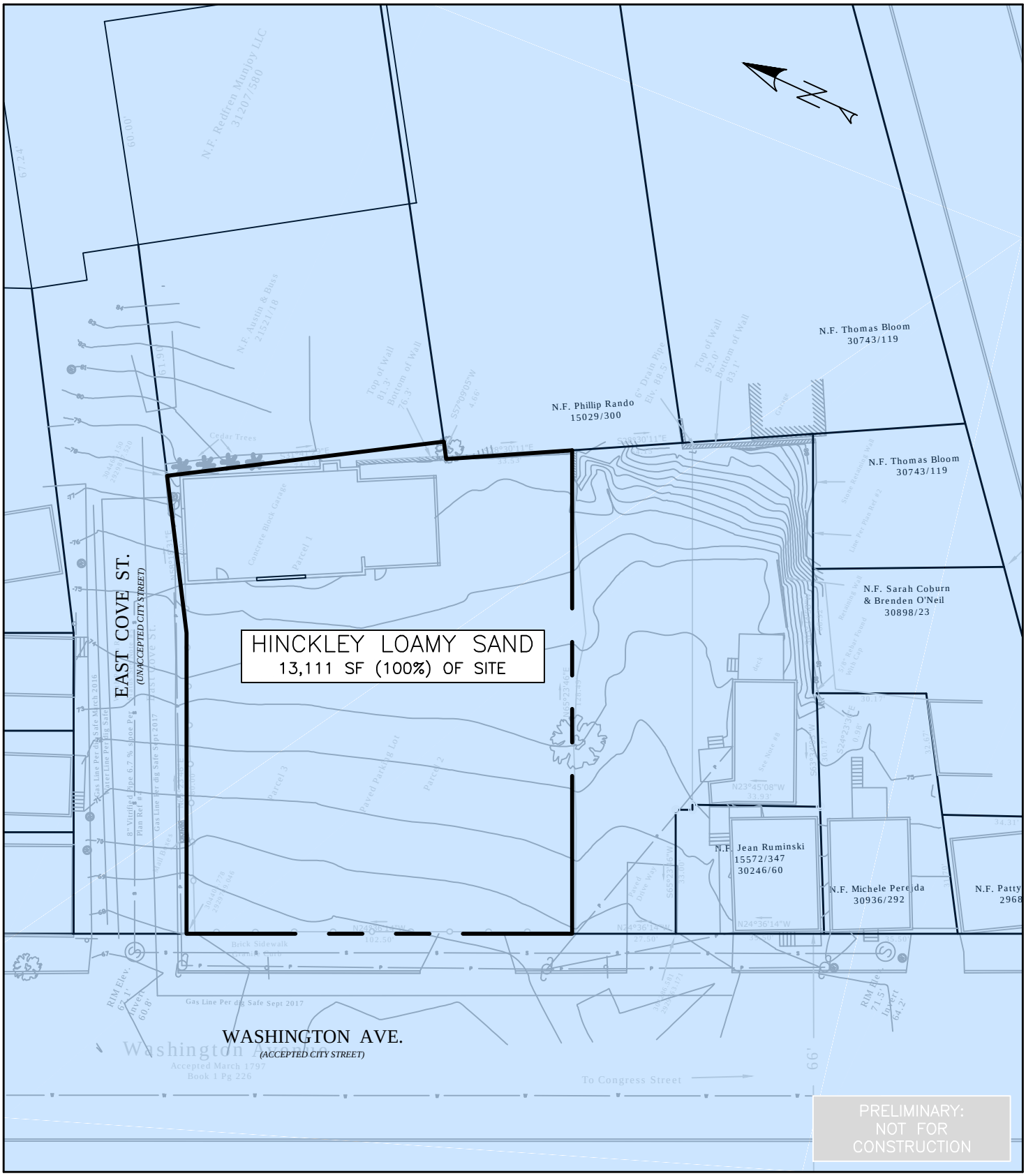
The soil "K" values for the soils, listed above, show a low susceptibility to erosion. The site's susceptibility to erosion is from the Soil Conservation Service Medium Intensity Soil Survey for Cumberland County. Although soil "K" values for the soils show a low susceptibility to erosion, implementation of the proposed Erosion & Sedimentation Measures by the contractor will be of the utmost importance given the sustained slope throughout the site.

Conclusion

The proposed redevelopment was designed to meet the requirements set forth in the City of Portland Technical Manual – Section 5 – Portland Stormwater Management Standards. The proposed project as designed is anticipated to largely maintain existing drainage patterns while decreasing the overall volume and flowrate of stormwater runoff. The project will not cause flooding or erosion problems within the subject site, abutters' sites, nor within the right-of-way.

Attachments

Attachment A: Soils Map
Attachment B: Pre-Construction Watershed Map
Attachment C: Post-Construction Watershed Map
Attachment D: Redevelopment Exhibit



THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM ACORN ENGINEERING, INC. ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

DRAWING NO.
SOILS

FILE:	1090_CIVIL
DATE:	11/9/17
JN:	1090
SCALE:	NTS
DESIGN BY:	SJL
DRAWN BY:	SJL
CHECKED BY:	WHS

ACORN ENGINEERING, INC
ACORN ENGINEERING, INC. P.O. BOX 3372
PORTLAND, MAINE 04104 (207) 775-2655

DRAWING NAME: SOILS MAP

PROJECT NAME: 151 WASHINGTON AVE REDEVELOPMENT

CLIENT: DIVING ROCK, LLC

ISSUED FOR	BY	DATE
CITY APP.	WHS	11/9/17
REV.	DATE	

GENERAL NOTES:

1. REFER TO STORMWATER REPORT FOR MORE INFORMATION

1 — SUBCATCHMENT NUMBER

SUBCATCHMENT EXTENTS

POI #1 — POINT OF INTEREST (POI)

EAST COVE ST.
(UNACCEPTED CITY STREET)

WASHINGTON AVE.

Cedar Trees
Concrete Block Garage
Parcel 1
Parcel 2
Parcel 3
Paved Parking Lot
Paved Drive Way
Brick Sidewalk
Granite Curb
Stone Retaining Wall
Line Pe
Retaining Wall
5/8" Rebar Found With Cap
deck
See Note #8
N.F. Jean Ruminski
15572/347
30246/60
N.F. Mi
30
S31°54'19"E
N18°30'11"E
33.53'
N65°23'46"E
128.49'
S24°23'30"E
0.98'
S63°34'03"W
30.17'
N23°45'08"W
33.93'
S65°23'46"W
33.00'
N24°36'14"W
102.50'
N24°36'14"W
27.50'
N24°36'14"W
39.50'
8" Vitrified Pipe 6.7 % slpoe Per Plan Ref # 4
Water Line Per dig Safe March 2016
Gas Line Per dig Safe March 2016
Gas Line Per dig Safe Sept 2017
Gas Line Per dig Safe Sept 2017
Gas Line Per dig Safe Sept 2017
Main Blvd
Vitrified Pipe
Status See Note #3
RIM Elev.
Invert
30440.778
29297.046
30286.581
29263.171
-78
-77
-76
-75
-74
73
72
71
70
69
68
67

NOT FOR CONSTRUCTION

ISSUED FOR	BY DATE
CITY APP.	WHS 11/9/17

DRAWING NAME: PRE-DEVELOPMET WATERSHED MAP

PROJECT NAME: 151 WASHINGTON AVE. REDEVELOPMENT

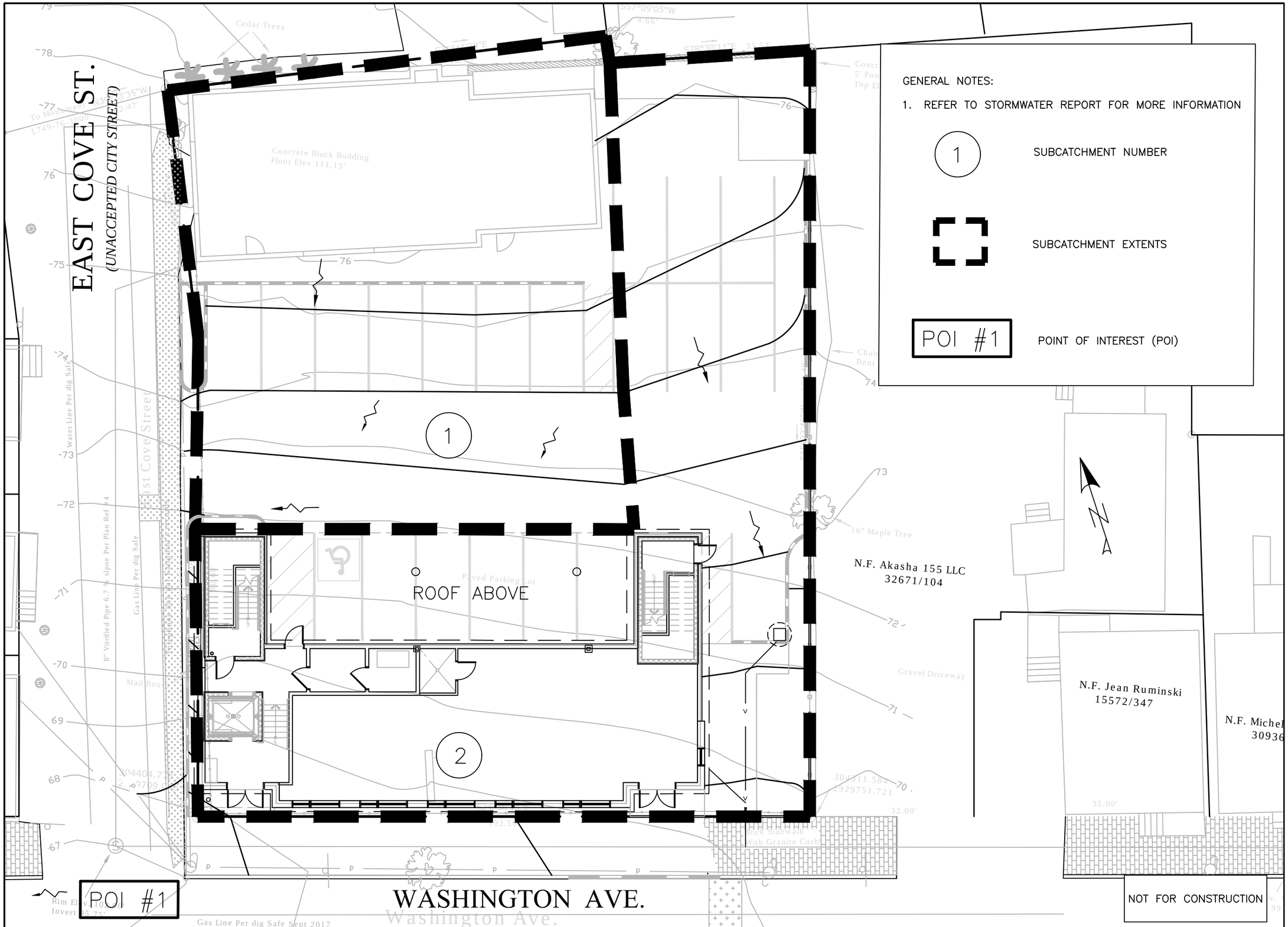
CLIENT: DIVING ROCK, LLC
15 HOWARD STREET, PORTLAND, ME 04101

ACORN ENGINEERING, INC
158 DANFORTH ST
PORTLAND, MAINE 04104
(207) 775-2655

FILE:	1090_CIVIL
JN:	1090
SCALE:	NTS
DESIGN BY:	SJL
DRAWN BY:	SJL
CHECKED BY:	WHS

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM ACORN ENGINEERING, INC. ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

DRAWING NO.
PRE



GENERAL NOTES:

1. REFER TO STORMWATER REPORT FOR MORE INFORMATION

(1) SUBCATCHMENT NUMBER

SUBCATCHMENT EXTENTS

POI #1 POINT OF INTEREST (POI)

ISSUED FOR	BY / DATE
PRELIM APP.	WHS 9/30/17
BLDG REV.	WHS 2/26/18

DRAWING NAME: PRE-DEVELOPMET WATERSHED MAP

PROJECT NAME: 151 WASHINGTON AVE. REDEVELOPMENT

CLIENT: DIVING ROCK, LLC
15 HOWARD STREET, PORTLAND, ME 04101

ACORN ENGINEERING, INC
158 DANFORTH ST
PORTLAND, MAINE 04104
(207) 775-2655

FILE:	1090_CIVIL
JN:	1090
SCALE:	NTS
DESIGN BY:	SJL
DRAWN BY:	SJL
CHECKED BY:	WHS

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM ACORN ENGINEERING, INC. ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

DRAWING NO.
POST

EAST COVE ST.
(UNACCEPTED CITY STREET)

Cedar Trees
Concrete Block Building
Floor Elev 111.15'
Concrete Retaining Wall
5' Foot Tall 1' Foot Wide
Top Elev. 116.25'
Chain Link Fence
Bent Over
16" Maple Tree
N.F. Akasha 155 LLC
32671/104
N.F. Jean Ruminski
15572/347
N.F. Michel
30936
Gravel Driveway
Brick Sidewalk
With Granite Curb
Mail Boxes
Gas Line Per dig Safe
8" Vitrified Pipe 6.7' S Slpoe Per Plan Ref #4
Telephone line per Fairpoint's records
East Cove Street
Rim Elev. 102.00'
Invert 95.75'
Gas Line Per dig Safe Sept 2017
Washington Ave.

PROPOSED CONTOUR, TYP.

EXISTING CONTOUR, TYP.

REDEVELOPED AREA
'A' = 1,418 SF

ROOF ABOVE
1,145 SF

REDEVELOPED AREA
'B' = 203 SF

WASHINGTON AVE.

SUMMARY	
NON-ROOF REDEVELOPED IMPERVIOUS AREA	SF
A	1,418
B	203
TOTAL	1,621

NOT FOR CONSTRUCTION

ISSUED FOR	BY DATE
RESPONSE TO CITY	WHS 1/15/18

DRAWING NAME: REDEVELOPED IMPERVIOUS AREA EXHIBIT

PROJECT NAME: 151 WASHINGTON AVE. REDEVELOPMENT

CLIENT: DIVING ROCK, LLC
15 HOWARD STREET, PORTLAND, ME 04101

ACORN ENGINEERING, INC
158 DANFORTH ST
PORTLAND, MAINE 04104
(207) 775-2655

FILE:	1090_CIVIL
JN:	1090
SCALE:	NTS
DESIGN BY:	SJL
DRAWN BY:	SJL
CHECKED BY:	WHS

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM ACORN ENGINEERING, INC. ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

DRAWING NO.
EX.

ACORN
ENGINEERING, INC.

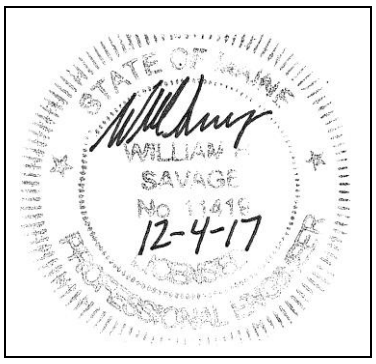
EROSION & SEDIMENTATION CONTROL REPORT

Prepared For:

Diving Rock, LLC
15 Howard Street
Portland, Maine 04101

Prepared By:

Acorn Engineering, Inc.
158 Danforth Street
Portland, Maine 04102



December 2017

INTRODUCTION

Acorn Engineering, Inc. has been retained by Diving Rock, LLC to provide civil engineering services for the proposed redevelopment of 149-155 Washington Avenue. The proposed project includes a four-story building with retail space on the ground level and office space on the remaining three levels.

The following Erosion and Sedimentation Control Report was developed in accordance with the City of Portland Technical Manual – Section 5 – Portland Stormwater Management Standards and the Maine DEP Chapter 500 Stormwater Management Appendix A and B (1), Amended August 12, 2015. This narrative also meets the standards required in the Maine DEP's Erosion & Sediment Control BMP's Manual, revised in 2016.

1.0 EXISTING CONDITIONS

The proposed project site is located at the corner of Washington Avenue and East Cove Street. A boundary plan has been prepared by R.W. Eaton Associates of Westbrook, Maine dated March 31, 2016.

Abutting Uses:

- North B-1 Zone — Single Family Residential
- East R-6 Zone — Multi Family Residential
- South B-1/R-6 Zones — Single Family Residential
- West B-1 Zone — Single/Multi Family Residential

The majority of the site is comprised of pavement. There is also a 1,850 square-foot structure that functions as a retail/workshop space. Less than 100 SF of pervious area exists on site.

1.1 Existing Soils

Onsite soil information includes the following:

- Soil Conservation Service Medium Intensity Soil Survey for Cumberland County
- United States Department of Agriculture Web Soil Survey

Given the soils information, listed above, no onsite wastewater is proposed; the applicant does not intend to perform a more intense hydric soil boundary delineation because the waiver requirements set forth in the City of Portland Technical Manual – Section 7 – Soil Survey, Rev. 6/17/11 are met.

The area within and surrounding the project includes soil types listed in the table below. The susceptibility of soils to erosion is indicated on a relative "K" scale of values over a range of 0.02 to 0.69. Higher "K" values indicate more erodible soils.

Table 1 - "K" Value		
Soils Type	**Subsurface**	**Substratum**
Hinckley	0.17	0.17

The soil "K" values for the soils, listed above, show a low susceptibility to erosion. The site's susceptibility to erosion is from the Soil Conservation Service Medium Intensity Soil Survey for Cumberland County. Although soil "K" values for the soils show a low susceptibility to erosion, implementation of the proposed Erosion & Sedimentation Measures by the contractor will be of the utmost importance given the sustained slope throughout the site.

1.2 Existing Erosion Problems

There are no signs of erosion.

1.3 Critical Areas

Critical areas that would require special attention during construction include, but are not limited to, the existing structures, the drainage system within Washington Avenue, and slope stabilization located within the vicinity during earthwork and foundation construction.

1.4 Protected Natural Resource

The client is not aware of the presence of any existing significant natural features located on the site as listed in Section 14-526 (b) 1. of the Land Use Code. The project is not located within a watershed classified as an Urban Impaired Stream by the Maine DEP.

1.5 Previous Construction Activity (5 years)

Acorn Engineering, Inc. is not aware of any construction related activities within the project limits within the past 5 years. However, a shed was demolished within the past year.

1.6 Timber Harvesting

Acorn Engineering, Inc. is not aware of any timber harvesting within the past five years.

2.0 EROSION CONTROL MEASURES AND SITE STABILIZATION

As part of the site development, the following temporary and permanent erosion and sedimentation control devices shall be implemented. Devices shall be installed as described in this report or within the plan set. See the Maine Erosion and Sediment Control Handbook for Construction: Best Management Practices for further reference.

2.1 Temporary Erosion Control Measures

The following temporary erosion and sedimentation control measures are planned for the project's construction period:

2.1.1 Crushed stone stabilized construction entrances shall be placed at all access points to the project site where there are disturbed areas. The following specifications shall be followed at a minimum:

- Stone size shall be 2-3 inches, or reclaimed or recycled concrete equivalent.
- The thickness of the entrance stone layer shall be no less than 6 inches.
- The entrance shall not be less than 20 feet wide, however not less than the full width of points where ingress or egress occurs. The length shall not be less than 50 feet in length.
- Geotextile fabric (woven or non-woven) shall be placed over the entire entrance area.
- The entrance/exit shall be maintained to the extent that it will prevent the tracking of sediment onto public road ways.

2.1.2 Siltation fence or erosion control berm shall be installed down gradient of any disturbed areas to trap runoff borne sediments until permanent stabilization is achieved. The silt fence or erosion control berm shall be installed per the details provided in the plan set and inspected before and immediately after each rainfall and at least daily during prolonged rainfall. Repairs shall be made if there are any signs of erosion or sedimentation below the fence line or berm. If there are signs of undercutting at the center or the edges, or impounding of large volumes of water behind the fence or berm, the barrier shall be replaced with a stone check dam.

2.1.3 Hay mulch including hydro seeding is intended to provide cover for denuded or seeded areas until revegetation is established. Mulch placed between April 15th and November 1st on slopes of less than 15 percent shall be covered by fabric netting and anchored with staples in accordance with the manufacturer's recommendation. Mulch placed between November 1st and April 15th on slopes equal to or steeper than 8 percent and equal to or flatter than 2:1 shall use mats or fabric netting and anchored with staples in accordance with the manufacturer's recommendation.

2.1.4 At any time of the year, all slopes greater than 3:1 shall be stabilized with Double Net Erosion Control Blanket Bionet SC150BN by North American Green or Approved Equal, or Erosion Control Mix Slope Protection as detailed within the plans.

2.1.5 Washington Avenue and East Cove Street shall be swept to control mud and dust from the construction site as necessary. Add additional stone to the stabilized construction entrance to minimize the tracking of material off the site and onto the surrounding roadways.

2.1.6 During demolition, clearing and grubbing operations, stone check dams shall be installed at any areas of concentrated flow. The maximum height of the check dam shall not exceed 2 feet. The center of the check dam shall be 6 inches below the outer edges of the dam. The contractor shall mulch the side slopes and install stone check dams for all newly excavated ditch lines within 24 hours of their creation.

2.1.7 Silt fence stake spacing shall not exceed 6 feet unless the fence is supported with 14-gauge wire in which case the maximum spacing shall not exceed 10 feet. The silt fence shall be "toed" into the ground.

2.1.8 Storm drain inlet protection shall be provided to storm drains using any of the following: hay bale drop inlet structures, silt fence drop inlet sediment filter, gravel and wire mesh drop inlet sediment filter, or curb inlet sediment filter. Barriers shall be inspected after every rainfall event and repaired as necessary. Sediments shall be removed when accumulation has reached ½ the design height.

2.1.9 Dust control shall be accomplished using any of the following: water, calcium chloride, stone, or an approved MDEP product. Dust control shall be applied as needed to accomplish dust control.

2.1.10 Temporary loam, seed, and mulching shall be used in areas where no other erosion control measure is used. Application rates for seeding are provided at the end of this report.

2.1.11 Stockpiles shall be stabilized within 7 days of formation unless a scheduled rain event occurs prior to the 7-day window, in which case the stockpile shall be stabilized prior to the rain event. Methods of stabilization shall be mulch, erosion control mix, or erosion control blankets/mats. Silt fence or a wood waste compost filter berm shall be placed downhill of any soil stockpile location.

2.1.12 For disturbance between November 1 and April 15, please refer to winter stabilization plan in this report and the Maine Erosion and Sediment Control BMP manual for further information.

2.1.13 It is of the utmost importance that stormwater runoff and potential sediment from the construction site be diverted around the proposed underdrains until the trench is backfilled.

2.2 Permanent Erosion Control Measures

The following permanent erosion control measures are intended for post disturbance areas of the project.

2.2.1 All disturbed areas during construction, not subject to other proposed conditions, shall receive a minimum 4" of loam, limed, and mulched. Erosion

control blankets or mats shall be placed over the mulch in areas noted in paragraph 4.1 of this report.

2.2.2 All stormwater devices shall be installed and tributary areas stabilized prior receiving stormwater.

2.2.3 Refer to the Maine Erosion and Sediment Control BMP manual for additional information.

3.0 EROSION AND SEDIMENTATION CONTROL PLAN

3.1 The Erosion and Sedimentation Control Plan is included within the plan set.

4.0 DETAILS AND SPECIFICATIONS

4.1 Erosion Control Details and Specifications are included in the plan set.

5.0 STABILIZATION PLAN FOR WINTER CONSTRUCTION

Winter Construction consists of earthwork disturbance between the dates of November 1 and April 15. If a construction site is not stabilized with pavement, a road gravel base, 75% mature vegetation cover or riprap by November 15, then the site shall be protected with over-winter stabilization. Any area not stabilized with pavement, vegetation, mulching, erosion control mix, erosion control mats, riprap, or gravel base on a road shall be considered open.

The contractor shall limit the work area to areas that work will occur in during the subsequent 15 days and so that it can be mulched one day prior to a snow event. The contractor shall stabilize work areas prior to opening additional work areas to minimize areas without erosion control measures.

The following measures shall be implemented during winter construction periods:

5.1 Sediment Barriers

During frozen conditions, sediment barriers may consist of erosion control mix berms or any other recognized sediment barriers as frozen soil prevents the proper installation of hay bales or silt fences.

5.2 Mulching

All areas shall be considered to be denuded until seeded and mulched. Hay and straw mulch shall be applied at a rate of 150 lb. per 1,000 square feet or 3 tons/acre (twice the normal accepted rate of 75-lbs./1,000 s.f. or 1.5 tons/acre) and shall be properly anchored. Erosion control mix must be applied with a minimum 4-inch thickness. Mulch shall not be spread on top of snow. The snow shall be removed down to a one-inch depth or less prior to application. After each day of final grading, the area shall be properly stabilized with anchored hay or straw or erosion control matting. An area shall be considered to have been stabilized when exposed surfaces have been either

mulched or adequately anchored so that ground surface is not visible through the mulch. Between the dates of November 1 and April 15, all mulch shall be anchored by either mulch netting, tracking or wood cellulose fiber. The cover will be considered sufficient when the ground surface is not visible through the mulch. After November 1st, mulch and anchoring of all exposed soil shall occur at the end of each final grading workday.

5.3 Soil Stockpiling

Stockpiles of soil or subsoil shall be mulched for over winter protection with hay or straw at twice the normal rate or with a four-inch layer of erosion control mix. This shall be done within 24 hours of stocking and re-established prior to any rainfall or snowfall.

5.4 Seeding

Between the dates of October 15th and April 1st, loam or seed shall not be required. During periods of above freezing temperatures finished areas shall be fine graded and either protected with mulch or temporarily seeded and mulched until the final treatment can be applied. If the date is after November 1st and if the exposed area has not been loamed, final grading with a uniform surface, then the area may be dormant seeded at a rate of 3 times higher than specified for permanent seed and then mulched.

Dormant seeding may be placed prior to the placement of mulch or erosion control blankets. If dormant seeding is used for the site, all disturbed areas shall receive 4" of loam and seed at an application rate of 5 lbs./1,000 s.f. All areas seeded during the winter shall be inspected in the spring for adequate catch. All areas insufficiently vegetated (less than 75% catch) shall be revegetated by replacing loam, seed and mulch. If dormant seeding is not used for the site, all disturbed areas shall be revegetated in the spring.

5.5 Over winter stabilization of disturbed soils

By September 15th, all disturbed soils on areas having a slope less than 15% shall be seeded and mulched. If the disturbed areas are not stabilized by this date, then one of the following actions shall be taken to stabilize the soil for late fall and winter:

- Stabilize the soil with temporary vegetation – By October 1st, seed the disturbed soil with winter rye at a seeding rate of 3lbs per 1,000 s.f., lightly mulch the seeded soil with hay or straw at 75 lbs per 1,000 s.f., and anchor the mulch with plastic netting. Monitor growth of the rye over the next 30 days. If the rye fails to grow at least three inches or fails to cover at least 75% of the disturbed soil before November 1st, then mulch the area for over-winter protection.

- Stabilize the soil with sod – Stabilize the disturbed soil with properly installed sod by October 1st. Proper installation includes pinning the sod onto the soil with wire pins, rolling the sod to guarantee contact between the sod and underlying soil, and watering the sod to promote root growth into the disturbed soil.

- Stabilize the soil with mulch – By November 15th, mulch the disturbed soil by spreading hay or straw at a rate of at least 150 lbs per 1,000 s.f. on the area so that no soil is visible through the mulch. Immediately after applying the mulch, anchor the mulch with plastic netting to prevent wind from moving the mulch off the disturbed soil.

5.6 Over winter stabilization of disturbed slopes

All stone-covered slopes shall be constructed and stabilized by November 15th. All slopes to be vegetated shall be seeded and mulched by September 1st. A slope is considered a grade greater than 15%. If a slope to be vegetated is not stabilized by September 1st, then one of the following action shall be taken to stabilize the slope for late fall and winter:

- Stabilize the soil with temporary vegetation and erosion control mats – By October 1st the disturbed slope shall be seeded with winter rye at a seeding rate of 3 lbs per 1,000 s.f. and then install erosion control mats or anchored mulch over the seeding. If the rye fails to grow at least three inches or fails to cover at least 75% of the slope by November 1st, then the contractor shall cover the slope with a layer of erosion control mix or with stone riprap.

- Stabilize the soil with sod – The disturbed slope shall be stabilized with properly installed sod by October 1st. Proper installation includes the contractor pinning the sod onto the slope with wire pins, rolling the sod to guarantee contact between the sod and underlying soil, and watering the sod to promote root growth into the disturbed soil. The contractor shall not use late-season sod installation to stabilize slopes having a grade greater than 3H:1V or having groundwater seeps on the slope face.

- Stabilize the soil with erosion control mix – Erosion control mix shall be properly installed by November 15th. The contractor shall not use erosion control mix to stabilize slopes having grades greater than 2H:1V or having groundwater seeps on the slope face.

- Stabilize the soil with stone riprap – Place a layer of stone riprap on the slope by November 15th. A registered professional engineer shall be hired to determine the stone size needed for stability on the slope and to design a filter layer for underneath the riprap.

6.0 INSPECTION AND MAINTENANCE

A person with knowledge of erosion and stormwater control, including the standards and conditions in the permit, shall conduct periodic visual inspections of installed erosion control measures. The frequency of inspection shall occur at least once every two weeks, as well as after a "storm event". A "storm event" shall consist 0.5 inches of rain within a 24-hour period. The following Erosion and Sediment Control - Best Management Practices (BMP's) shall inspected in the manner as described.

6.1 Sediment Barriers

Hay bale barriers, silt fences and filter berms shall be inspected and repaired for the following if there are any signs of erosion or sedimentation below them. If there are signs of undercutting at the center or the edges of the barrier, or impounding of large volumes of water behind them, sediment barriers shall be replaced with a temporary check dam. Should the fabric on a silt fence or filter barrier decompose or become ineffective prior to the end of the expected usable life and the barrier is still necessary, the fabric shall be replaced promptly. Sediment deposits should be removed when deposits reach approximately one-half the height of the barrier. Filter berms should be reshaped as needed. Any sediment deposits remaining in place after the silt fence or filter barrier is no longer required should be dressed to conform to the existing grade, prepared and seeded.

6.2 Stabilized Stone Construction Entrances

The exit shall be maintained in a condition that will prevent tracking of sediment onto public rights-of-way. When the control pad becomes ineffective, the stone shall be removed along with the collected soil material and redistributed on site in a stable manner. The entrance should then be reconstructed. The contractor shall sweep or wash pavement at exits, which have experienced mud-tracking on to the pavement or traveled way. When washing is required, it shall be done on an area stabilized with aggregate, which drains into an approved sediment trapping device. All sediment shall be prevented from entering storm drains, ditches, or waterways.

6.3 Mulched Areas

All mulches must be inspected periodically, in particular after rainstorms, to check for rill erosion. If less than 90% of the soil surface is covered by mulch, additional mulch shall be immediately applied. Nets must be inspected after rain events for dislocation or failure. If washouts or breakage occur, re-install the nets as necessary after repairing damage to the slope. Where mulch is used in conjunction with ornamental plantings, inspect periodically throughout the year to determine if mulch is maintaining coverage of the soil surface. Repair as needed.

6.4 Dust Control

When temporary dust control measures are used, repetitive treatment shall be applied as needed to accomplish control.

6.5 Stormwater Appurtenances

All underdrains, storm drains, and catch basins need to be operating effectively and free of debris.

6.6 Erosion and Sedimentation Control Inspections:

Acorn Engineering has personnel qualified to conduct Erosion and Sedimentation Control Inspections. For further information, contact:

Contact: Will Savage, PE
Telephone: (207) 775-2655

Qualifications:

- Maine Professional Engineering License #11419
- Maine DEP - Certified in Maintenance & Inspection of Stormwater BMP's Cert #14
- Certified Erosion, Sediment and Storm Water Inspector (CESSWI) Cert #0293
- Certified Professional in Erosion and Sediment Control (CPESC) Cert. #4620

The Contractor has sole responsibility for complying with the Erosion and Sedimentation Report/Plan, including control of fugitive dust. The Contractor shall be responsible for any monetary penalties resulting from failure to comply with these standards.

7.0 IMPLEMENTATION SCHEDULE

The following implementation sequence is intended to maximize the effectiveness of the above described erosion control measures. Contractors should avoid overexposing disturbed areas and limit the amount of stabilization area.

1. Install a stabilized construction entrance in all locations where construction traffic will enter and exit the site.
2. Install perimeter silt fence or erosion control berm.
3. Commence installation of drainage infrastructure.
4. Install all other erosion control devices as necessary throughout the remainder of this schedule.
5. Commence earthwork operations, associated with the roadway construction.
6. Commence installation of utilities.
7. Continue earthwork and grading to subgrade as necessary for construction.
8. Complete installation of drainage infrastructure, as well as other utility work.
9. Complete remaining earthwork operations.
10. Install sub-base and base gravels in paved areas.
11. Install paving, curbing and brickwork.
12. Loam, lime, fertilize, seed and mulch disturbed areas and complete all landscaping.
13. Once the site is stabilized, 90% catch of grass has been obtained, or mulching of landscape areas is complete remove all temporary erosion control measures.
14. Touch up areas without a vigorous catch of grass with loam and seed.
15. Complete site signage and striping.
16. Execute proper maintenance of all temporary and permanent erosion control measures throughout the project.

The above implementation sequence should be generally followed by the site contractor. However, the contractor may construct several items simultaneously. The contractor shall submit to the owner a schedule of the completion of the work. If the contractor is to commence the construction of more than one item above, they shall limit the amount of exposed areas to those areas in which work is expected to be undertaken during the following 30 days.

The contractor shall re-vegetate disturbed areas as rapidly as possible. All areas shall be permanently stabilized within 7 days of final grading or before a storm event. The contractor shall incorporate planned inlets and drainage systems as early as possible into the construction phase.

8.0 CONCLUSION

The above erosion control narrative is intended to minimize the development impact by implementing temporary and permanent erosion control measures. The contractor shall also refer to the Maine Erosion and Sediment Control BMP manual for additional information.

9.0 ATTACHMENTS

- Temporary Seeding Plan
- Permanent Seeding Plan

TEMPORARY SEEDING PLAN

Site Preparation

The seeded areas shall be feasibly graded out to provide the use of equipment for seedbed preparation, seeding, mulch application, and mulch anchoring. If necessary, the site may require additional temporary erosion control measures outlined in the Erosion Control report.

Seedbed Preparation

Fertilizer shall be applied to the site at a rate of 13.8 pounds per 1,000 square feet. The composition of the fertilizer shall be 10-10-10 (N-P2O5-K2O) or equivalent.

Limestone shall be applied to the site at a rate of 138 pounds per 1,000 square feet.

Seeding

The composition and amount of temporary seed applied to a site shall be determined by the following table:

Seed	Pounds / 1,000 S.F.	Recommended Seeding Dates
Winter Rye	2.57	Aug-15 to Oct-1
Oats	1.84	Apr-1 to Jul-1 Aug-15 to Sep-15
Annual Ryegrass	0.92	Apr-1 to Jul-1
Sudangrass	0.92	May-15 to Aug-15
Perennial	0.92	Aug-15 to Sep-15

Mulching

Mulch shall be applied at a rate of 70 lbs – 90 lbs per 1,000 square feet. The mulch shall be installed at a minimum depth of 4 inches. The seeded area shall be mulched immediately after seed is applied. Mulching during the winter season shall be double the normal amount.

Conclusion

Please refer to the Maine Erosion and Sediment Control BMP manual for additional information pertaining to temporary seeding and mulching.

PERMANENT SEEDING PLAN

Site Preparation

The seeded areas shall be feasibly graded out to provide the use of equipment for seedbed preparation, seeding, mulch application, and mulch anchoring. If necessary, the site may require additional temporary erosion control measures outlined in the Erosion Control report.

Seedbed Preparation

Fertilizer shall be applied to the site at a rate of 13.8 pounds per 1,000 square feet. The composition of the fertilizer shall be 10-10-10 (N-P2O5-K2O) or equivalent.

Limestone shall be applied to the site at a rate of 138 pounds per 1,000 square feet.

Seeding

The composition and amount of permanent seed applied to a site shall be determined by the following table:

Seed	Pounds / 1,000 S.F.
Kentucky Bluegrass	0.46
Creeping Red Fescue	0.46
Perennial Ryegrass	0.11
Total	1.03

Mulching

Mulch shall be applied at a rate of 70 lbs – 90 lbs per 1,000 square feet. The mulch shall be installed at a minimum depth of 4 inches. The seeded area shall be mulched immediately after seed is applied. Mulching during the winter season shall be double the normal amount.

Recommendations

Permanent seeding is recommended to be completed in the spring. Later summer seeding is allowed if completed prior to September 1st. If seeding cannot be accomplished during the periods recommended for permanent seeding, then the contractor shall perform temporary seeding per the temporary seeding plan.

Conclusion

Please refer to the Maine Erosion and Sediment Control BMP manual for additional information pertaining to permanent seeding and mulching.

I. Utilities

The proposed project will include installation of multiple utility services to the new building.

Water:

An existing water line currently services the Gear Hub building from a water main within East Cove Street. This service will remain. A 6" parent connection is proposed from the new building to the water main within Washington Ave. At the property line, the 6" line will break off into two lines, a 4" and a 6". The 4" will function as the domestic water line and the 6" will function a sprinkler line.

Sewer:

An existing sewer service to the Gear Hub building is located along East Cove Street near the water service. This lateral will remain. A 6" sewer lateral is proposed from the new building to the sewer main which is located below the Washington Ave sidewalk.

Stormwater:

There is currently no drainage infrastructure on site. It is proposed to tie the new roof and foundation drains into the combined sewer via a storm drain. This connection will be separate from the sewer lateral so that if the sanitary and storm sewers are separated in the future, the storm drain can be tied into the separated storm sewer.

UGE/T/C:

The existing building has aerial services off of the utility pole within East Cove Street. These services will remain. To facilitate the construction of the building, the overhead lines that run from the utility pole at the intersection of Washington Ave and East Cove Street to the utility pole at the top of East Cove Street are proposed to be rerouted underground. Furthermore, underground conduits for electric, telephone, and cable utilities will be routed underground the new building from the utility pole adjacent to the existing driveway.

Gas:

There is currently no natural gas servicing the property. It is proposed to install a gas service off of the gas main within East Cove Street as seen on the Utility Plan, Sheet C-20.

Ability to serve letters have been sent out to the respective utility companies on November 6th, 2017 in accordance with the City of Portland Code of Ordinances Chapter 14 Land Use, Section 14-527(g)(7). Responses from the utility companies can be found attached to this section. Reponses received after this application will be uploaded as they're received.

ACORN ENGINEERING, INC.

Portland Water District
Attn: MEANS Department
225 Douglass Street
Portland, Maine 04104

November 6, 2017

Subject: 151-155 Washington Ave. Redevelopment
Re: Ability to Serve

To Whom It May Concern:

On behalf of Diving Rock, LLC, we are pleased to submit the following request for Portland Water District's (PWD) ability to serve the proposed redevelopment project. The project is located at 151-155 Washington Avenue (Chart, Book, Lots 12-G-1,2,3,8), within the B-2 Zoning District in Portland, Maine. The project consists of the development of a 4-story building with retail on the first floor and office space on stories 2,3 and 4. Utilities for the new building are proposed to be installed from the mains within Washington Ave.

It is believed that the existing building/garage has an existing water service off East Cove Street. The existing building and service is to remain. It is proposed to tap a 4" fire line off the main within Washington Ave with a 2" domestic line splitting off the 4" line just before the property line. Based upon the Section 4 of the Maine Subsurface Wastewater Disposal Rules, the project anticipates the following design flows:

Estimate of Design Flows			
Classification of Water Demand	**Number of Units**	**Gallons per Day per unit**	**Total Gallons per Day**
Existing			
Retail (Employee at place of employment with no showers: 12 GPD per employee)	3	12	36
Public Restroom	1	325	325
Proposed			
Office/Retail (Employee at place of employment with showers: 20 GPD per employee)	25	20	500
Public Restroom	1	325	325
		Total Existing	**361**
		Total Proposed	**825**
		Net Change	**+825 GPD**
*Values based on STATE OF MAINE: SUBSURFACE WASTEWATER DISPOSAL RULES, most recent edition			

Based on a value of 25 employees and one public restroom within the new structure, the proposed project is anticipated to increase the net water demand by approximately 825 gallons per day (GPD). It should be noted that these values were developed using conservative estimates from the State of Maine Subsurface Wastewater Disposal Rules

On behalf of the client, we are requesting the following information:

1. Any additional information, such as utility mapping within Washington Ave. & East Cove St.
2. Alternative connection locations from the property to the existing system
3. PWD's proposed infrastructure improvements within the project vicinity
4. Flow data for adjacent hydrants
5. PWD's ability to serve the project

I have attached an existing conditions plan created by R.W. Eaton Associates, the fixture count spreadsheet, and the proposed preliminary utility plan from our office to facilitate your review. Please do not hesitate to contact me or the office for any questions or clarifications.

Sincerely,

Sam Lebel

Sam Lebel, E.I.
Design Engineer
Acorn Engineering, Inc.

Portland Water District

FROM SEBAGO LAKE TO CASCO BAY

November 17, 2017

Sam Lebel
Acorn Engineering Inc.
158 Danforth Street
Portland, ME 04102

Re: 155 Washington Avenue, PO
Ability to Serve with PWD Water

Dear Mr. Lebel:

The Portland Water District has received your request for an Ability to Serve Determination for the noted site submitted on November 6, 2017. Based on the information provided per plans dated November 9, 2017, we can confirm that the District will be able to serve the proposed project as further described in this letter. **Please note that this letter constitutes approval of the water system as currently designed. Any changes affecting the approved water system will require further review and approval by PWD.**

Conditions of Service

The following conditions of service apply:

- A new 4-inch fire service and 2-inch domestic service may be installed from the water main in Washington Avenue. The service should enter through the properties frontage on Washington Avenue at least 10-feet from any side property lines.

- Portland Water District requires proper backflow prevention devices at all commercial properties. Each service line will require testable double check valve assembly backflow prevention devices. If any use other than that stated in your letter of November 6, 2017 is expected, please contact the District so we can review the backflow prevention requirements to meet your domestic water needs.

- Due to potential utility conflicts, test pits will be required to confirm adequate separation and ability to tap main prior to scheduling a service application. The test pits must be performed under PWD inspection and will be the responsibility of the developer.

Prior to construction, the owner or contractor will need to make an appointment to complete a service application form and pay all necessary fees. The appointment shall be requested through MEANS@pwd.org or by calling 207-774-5961 ext. 3199. Please allow (3) business days to process the service application paperwork. PWD will guide the applicant through the new development process during the appointment.

Existing Site Service

According to District records, the project site does not currently have existing water service.

Water System Characteristics

According to District records, there is an 8-inch diameter cast iron water main in Washington Avenue and a public fire hydrant located approximately 75 feet from the site. The most recent static pressure reading was 83 psi on July 26, 2017.

Public Fire Protection

The installation of new public hydrants to be accepted into the District water system will most likely not be required. It is your responsibility to contact the Portland Fire Department to ensure that this project is adequately served by existing and/or proposed hydrants.

Domestic Water Needs

The data noted above indicates there should be adequate pressure and volume of water to serve the domestic water needs of your proposed project. Based on the high water pressure in this area, we recommend that you consider the installation of pressure reducing devices that comply with state plumbing codes.

Private Fire Protection Water Needs

You have indicated that this project will require water service to provide private fire protection to the site. Please note that the District does not guarantee any quantity of water or pressure through a fire protection service. Please share these results with your sprinkler system designer so that they can design the fire protection system to best fit the noted conditions. If the data is out of date or insufficient for their needs, please contact MEANS to request a hydrant flow test and we will work with you to get more complete data.

Should you disagree with this determination, you may request a review by the District's Internal Review Team. Your request for review must be in writing and state the reason for your disagreement with the determination. The request must be sent to MEANS@PWD.org or mailed to 225 Douglass Street, Portland Maine, 04104 c/o MEANS. The Internal Review Team will undertake review as requested within 2 weeks of receipt of a request for review.

If the District can be of further assistance in this matter, please let us know.

Sincerely,
Portland Water District



Robert A. Bartels, P.E.
Senior Project Engineer

ACORN ENGINEERING, INC.

Central Maine Power Company
Attn: Mr. Paul DuPerre
162 Canco Road
Portland, Maine 04103

November 6, 2017

Subject: 151-155 Washington Ave. Redevelopment
Re: Ability to Serve

Mr. DuPerre:

On behalf of Diving Rock, LLC, we are pleased to submit the following request for Central Maine Power's (CMP) ability to serve the proposed redevelopment project. The project is located at 151-155 Washington Avenue (Chart, Book, Lots 12-G-1,2,3,8), within the B-2 Zoning District in Portland, Maine. The project consists of the development of a 4-story building with retail on the first floor and office space on stories 2,3 and 4. Utilities for the new building are proposed to be installed from the mains within Washington Ave.

The existing building/garage on site is proposed to remain and has overhead services from the existing utility pole at the top (easterly end) of East Cove Street. These services are also to remain. As seen on the attached Utility Plan, the proposed plan includes an underground electrical/telephone/cable service from the existing utility pole at the corner of Washington Ave. and East Cove St to the proposed structure. The projected electrical loads have not been determined at this point, but an ADA accessible elevator will be provided.

Furthermore, to facilitate the development of the new building, it is proposed to reroute the overhead lines that run from the utility pole at the intersection of Washington Ave and East Cove St. to the utility pole at the top of East Cove St, underground. This will allow the new structure to maintain adequate separation from any overhead utility lines.

On behalf of the client, we are requesting the following information:

1. Any easements for overhead services currently crossing the proposed development
2. Alternative connection locations from the property to the existing system
3. CMP's proposed infrastructure improvements within the project vicinity
4. CMP's ability to serve the project
5. Access requirement to the CMP meters

I have attached an existing conditions plan created by R.W. Eaton Associates and the proposed preliminary utility plan from our office to facilitate your review. Please do not hesitate to contact me or the office for any questions or clarifications.

Sincerely,

Sam Lebel

Sam Lebel, E.I.
Design Engineer
Acorn Engineering, Inc.

From: Duperre, Paul
To: Sam Lebel
Subject: 151 - 155 Washington
Date: Friday, December 1, 2017 12:57:13 PM

Hi Sam, I spoke to the line supervisors, CMP can put the primary wire underground at Pole 22 Washington Avenue and rise back at Pole 1 East Cove Street.

Also CMP may be able to feed your new facility off the existing bank of transformers feeding 134 Washington Avenue if your new loads do not exceed the 80kva available.

paul

==========

Please consider the environment before printing this email.

If you have received this message in error, please notify the sender and immediately delete this message and any attachment hereto and/or copy hereof, as such message contains confidential information intended solely for the individual or entity to whom it is addressed. The use or disclosure of such information to third parties is prohibited by law and may give rise to civil or criminal liability.

The views presented in this message are solely those of the author(s) and do not necessarily represent the opinion of Avangrid Networks, Inc. or any company of its group. Neither Avangrid Networks, Inc. nor any company of its group guarantees the integrity, security or proper receipt of this message. Likewise, neither Avangrid Networks, Inc. nor any company of its group accepts any liability whatsoever for any possible damages arising from, or in connection with, data interception, software viruses or manipulation by third parties.

==========

ACORN ENGINEERING, INC.

Fairpoint Communications
5 Davis Farm Road
Portland, Maine 04103

November 6, 2017

Subject: 151-155 Washington Ave. Redevelopment
Re: Ability to Serve

To Whom It May Concern:

On behalf of Diving Rock, LLC, we are pleased to submit the following request for Fairpoint's ability to serve the proposed redevelopment project. The project is located at 151-155 Washington Avenue (Chart, Book, Lots 12-G-1,2,3,8), within the B-2 Zoning District in Portland, Maine. The project consists of the development of a 4-story building with retail on the first floor and office space on stories 2,3 and 4. Utilities for the new building are proposed to be installed from the mains within Washington Ave.

The existing building/garage on site is proposed to remain and has overhead services from the existing utility pole at the top (easterly end) of East Cove St. These services are also to remain. As seen on the attached Utility Plan, the proposed plan includes an underground electrical/telephone/cable service from the existing utility pole at the corner of Washington Ave. and East Cove St. to the proposed structure.

Furthermore, to facilitate the development of the new building, it is proposed to reroute the overhead lines that run from the utility pole at the intersection of Washington Ave and East Cove St. to the utility pole at the top of East Cove St, underground. This will allow the new structure to maintain adequate separation from any overhead utility lines.

On behalf of the client, we are requesting the following information:

1. Any additional information, such as utility mapping within Washington Ave. & East Cove St.
2. Any easements for overhead services currently crossing the proposed development
3. Alternative connection locations from the property to the existing system
4. Fairpoint's proposed infrastructure improvements within the project vicinity
5. Fairpoint's ability to serve the project

I have attached an existing conditions plan created by R.W. Eaton Associates and the proposed preliminary utility plan from our office to facilitate your review. Please do not hesitate to contact me or the office for any questions or clarifications.

Sincerely,

Sam Lebel

Sam Lebel, E.I.
Design Engineer
Acorn Engineering, Inc.

ACORN ENGINEERING, INC.

Charter Communications
Attn: Mr. Mark Pelletier
118 Johnson Road
Portland, Maine 04102

November 6, 2017

Subject: 151-155 Washington Ave. Redevelopment
Re: Ability to Serve

Mr. Pelletier:

On behalf of Diving Rock, LLC, we are pleased to submit the following request for Charter's ability to serve the proposed redevelopment project. The project is located at 151-155 Washington Avenue (Chart, Book, Lots 12-G-1,2,3,8), within the B-2 Zoning District in Portland, Maine. The project consists of the development of a 4-story building with retail on the first floor and office space on stories 2,3 and 4. Utilities for the new building are proposed to be installed from the mains within Washington Ave.

The existing building/garage on site is proposed to remain and has overhead services from the existing utility pole at the top (easterly end) of East Cove Street. These services are also to remain. As seen on the attached Utility Plan, the proposed plan includes an underground electrical/telephone/cable service from the existing utility pole at the corner of Washington Ave. and East Cove St to the proposed structure.

Furthermore, to facilitate the development of the new building, it is proposed to reroute the overhead lines that run from the utility pole at the intersection of Washington Ave. and East Cove St. to the utility pole at the top of East Cove St, underground. This will allow the new structure to maintain adequate separation from any overhead utility lines.

On behalf of the client, we are requesting the following information:

1. Any additional information, such as utility mapping within Washington Ave & East Cove St.
2. Any easements for overhead services currently crossing the proposed development
3. Alternative connection locations from the property to the existing system
4. Charter's proposed infrastructure improvements within the project vicinity
5. Charter's ability to serve the project

I have attached an existing conditions plan created by R.W. Eaton Associates and the proposed preliminary utility plan from our office to facilitate your review. Please do not hesitate to contact me or the office for any questions or clarifications.

Sincerely,

Sam Lebel

Sam Lebel, E.I.
Design Engineer
Acorn Engineering, Inc.

From:	Pelletier, Mark
To:	Sam Lebel
Cc:	William Savage
Subject:	RE: 151-155 Washington Ave Redevelopment
Date:	Wednesday, November 8, 2017 8:12:45 AM

Sam,

Please accept this email as the letter for Ability to Serve. Spectrum cable has cable plant on the pole that will service the bldg. The provided information shows to be serviced underground from pole. Spectrum will need 1- 4inch conduit swept up above grade and against riser pole. The same to be done at the foundation of bldg and by the power meters. A pull rope installed. We will need a common ground with CMP for our use for grounding our equipment.

Mark

From: Sam Lebel [mailto:slebel@acorn-engineering.com]
Sent: Monday, November 06, 2017 5:03 PM
To: Pelletier, Mark <Mark.Pelletier@charter.com>
Cc: William Savage <wsavage@acorn-engineering.com>
Subject: 151-155 Washington Ave Redevelopment

Hi Mark,

On behalf of our client, we are sending a formal ability to serve letter regarding the proposed development of a mixed-use building at 155 Washington Ave. in Portland. Please refer to the attached letter, existing conditions plan, and a preliminary utility plan from our office for more information. Please do not hesitate to contact me if you have any questions.

Thanks,

Sam Lebel
Design Engineer

Licensed E.I. in Maine

Acorn Engineering, Inc
PO Box 3372
Portland, Maine 04104
www.acorn-engineering.com

B. 207.775.2655
C. 207.478.4327

This electronic communication, which includes any files or attachments thereto, contains proprietary or confidential information and may be privileged and otherwise protected under copyright or other applicable intellectual property laws. All information contained in this electronic communication is solely for the use of the individual(s) or entity to which it was addressed. If you are not the intended recipient(s), you are hereby notified that distributing, copying, or in any way disclosing any of the information in this e-mail is strictly prohibited. If you have received this e-mail in error, please notify the sender immediately, and destroy the communication and any files or attachments in their entirety, whether in electronic or hard copy format. Since data stored on electronic media can deteriorate, be translated or modified, Acorn Engineering, Inc., and/or affiliates will not be liable for the completeness, correctness or readability of the electronic data. The electronic data should be verified against the hard copy.

The contents of this e-mail message and any attachments are intended solely for the addressee(s) and may contain confidential and/or legally privileged information. If you are not the intended recipient of this message or if this message has been addressed to you in error, please immediately alert the sender by reply e-mail and then delete this message and any attachments. If you are not the intended recipient, you are notified that any use, dissemination, distribution, copying, or storage of this message or any attachment is strictly prohibited.

ACORN ENGINEERING, INC.

Unitil Service Corp.
Attn: Bridget Harmon
376 Riverside Industrial Parkway
Portland, Maine 04103

November 6, 2017

Subject: 151-155 Washington Ave. Redevelopment
Re: Ability to Serve

Ms. Harmon:

On behalf of Diving Rock, LLC, we are pleased to submit the following request for Unitil's ability to serve the proposed redevelopment project. The project is located at 151-155 Washington Avenue (Chart, Book, Lots 12-G-1,2,3,8), within the B-2 Zoning District in Portland, Maine. The project consists of the development of a 4-story building with retail on the first floor and office space on stories 2,3 and 4. Utilities for the new building are proposed to be installed from the mains within Washington Ave.

The existing building/garage on site is proposed to remain. There are no known existing gas services to the site. It is proposed to install a gas service from the main within Washington Ave to the proposed structure as seen on the attached utility plan.

On behalf of the client, we are requesting the following information:

1. Any additional utility mapping such as gas lines on Washington Ave. and East Cove St.
2. A confirmation of an existing gas main within Washington Ave. & East Cove St., as well as the size of any gas lines and services.
3. Unitil's proposed infrastructure improvements within the project vicinity.
4. Unitil's ability to serve the project.

I have attached an existing conditions plan created by R.W. Eaton Associates and the proposed preliminary utility plan from our office to facilitate your review. Please do not hesitate to contact me or the office for any questions or clarifications.

Sincerely,

Sam Lebel

Sam Lebel, E.I.
Design Engineer
Acorn Engineering, Inc.

November 9, 2017

Sam Lebel, E.I.
Acorn Engineering, Inc.
PO Box 3372
Portland Maine 04104

Re: 151-155 Washington Avenue, Portland Maine

Dear Mr. Lebel:

Thank you for your interest in using natural gas for the above referenced project.

This is to confirm that natural gas can be made available from our distribution system to serve your proposed project. Any improvements to the existing distribution system necessary to provide this service, as well as the design of the gas system in the project itself will be established as the overall design and scope of your project progresses.

All work necessary to provide service will be performed in accordance with the Maine Public Utilities Commission requirements.

If you have any further questions or require additional information, please contact me directly at (207) 541-2536 or at harmon@unitil.com.

Sincerely,
Bridget L. Harmon
Business Development Executive
Unitil Corporation
(o) 207-541-2536 (f) 207-541-2586

J. Solid Waste Disposal

The property management company or Owner shall be responsible for locating the solid waste and recyclable material to the space allocated for solid waste storage as noted on the Site Plan (C-10).

The solid waste containers will be fully enclosed and screened from the public view.

ACORN ENGINEERING, INC.

Assistant Chief Keith Gautreau
City of Portland Fire Department
380 Congress St.
Portland, ME 04101

December 5, 2017

Subject: 149-155 Washington Avenue – Fire Department Checklist
Section K of Application

On behalf of Diving Rock, LLC, the design team is pleased to respond to the Portland Fire Department Site Review Checklist.

1. Name, address, telephone number of applicant

   Diving Rock, LLC
   15 Howard Street
   Portland, Maine 04101
   (207) 577-3873

2. Name address, telephone number of architect

   Ryan Senatore Architecture
   565 Congress Street #304
   Portland, Maine 04101
   (207) 747-5159

3. Proposed uses of any structures [NFPA and IBC classification]

   NFPA: Business / IBC: B

4. Square footage of all structures, including decks [total and per story]

Existing Building		
1st Floor	1,870	sf
Total	1,870	**sf**

Proposed Building		
1st Floor	2,416	sf
2nd Floor	3,640	sf
3rd Floor	3,640	sf
4th Floor	3,640	sf
Total	13,093	**sf**

5. Elevation of all structures

   Based upon the average grade plane defined by the IBC, the proposed building height is 44 feet. This height is below the allowable 45 feet within the B-1 zone. Please refer to the building elevations provided by the Architect for additional information.

6. Proposed fire protection of all structures

   The building will have a sprinkler system with additional protection per code. Fire flows and requirements for system storage or booster pumping are subject to the fire professional design which will be performed prior the request for a building permit.

7. Hydrant locations

   An existing hydrant is located directly across Washington Avenue from the westerly corner of the property. Hydrant flow data from the Portland Water District once received may be made available to the Fire Department upon request.

8. Water main size and location

   The redevelopment will be serviced by the existing water main within Washington Avenue. A 6" fire service line will extend from the existing water main to the building fire suppression system. The building is expected to have internal sprinkler risers and a Fire Department pump connection on the street side of the building.

9. Access to all structures [min. 2 sides]

   Access to the structure is provided directly on Washington Avenue. Additionally, the site is accessible by a fire truck through East Cove Street and the 20.5-foot driveway.

10. The Architect has provided a code summary (attached).

NFPA 1 – Chapter 18 Fire Department Access and Water Supply

18.2 Fire Department Access:

The project site is located in a densely developed area and is fronted by a public street. The following pavement street width is currently available:

- Washington Avenue: 44 feet

Per NFPA 1 – Chapter 18.2.3.3.1, there will be public street access within 50 feet of at least one exterior door. Per NFPA 1 – Chapter 18.2.3.2.2.1, all first story floors shall be located not more than 450 feet from a Fire Department access road.

City of Portland Technical Manual – Section 3 Public Safety
3.4.1 Every dead-end roadway more than one hundred fifty (150') feet in length shall provide a turnaround at the closed end. Turnarounds shall be designed to facilitate future street connectivity and shall always be designed to the right (refer to Figure I-5).
Response: Not applicable

3.4.2 Where possible, developments shall provide access for Fire Department vehicles to at least two sides of all structures. Access may be from streets, access roads, emergency access lanes, or parking areas.

Response: As depicted on the site plan, the proposed building layout provides a minimum of two paved access points to the structure: one from Washington Avenue directly and one from East Cove Street.

3.4.3 Building setbacks, where required by zoning, shall be adequate to allow for emergency vehicle access and related emergency response activities and shall be evaluated based on the following factors:

- *Building Height.*
- *Building Occupancy.*
- *Construction Type.*
- *Impediments to the Structures.*
- *Safety Features Provided.*

Response: The proposed development layout has contemplated emergency access conditions and provides for safe and efficient access along the public street for emergency vehicles.

3.4.4. Fire Dept. access roads shall extend to within 50' of an exterior door providing access to the interior of the structure.

Response: The building will be provided with exterior doors that will be within 50' of a Fire Department access route, namely Washington Avenue.

3.4.5. Site access shall provide a minimum of nine (9) feet clearance height to accommodate ambulance access.

Response: The proposed site maintains the required clearance height of nine feet in all cases except for the small area with covered parking. The four covered parking spots will have a clearance height of approximately eight feet.

3.4.6. Elevators shall be sized to accommodate an 80 x 24-inch stretcher.

Response: The elevators will be sized to accommodate an 80 x 24 stretcher, per the Architect's designs.

3.4.7. All structures are required to display the assigned street number. Numbers shall be clearly visible from the public right of way.

Response: The applicant will work with the City's Public Works Division to assign street addresses and numbering to meet City Standards.

Thank you for your review. Please let me know if you have any additional questions or comments.

Sincerely,



William H. Savage, P.E.
Principal
Acorn Engineering, Inc.

L. Conformity with Land Use Ordinance

The following outline is made in accordance with the City of Portland Code of Ordinances, Chapter 14 Land Use, Article V Section 14-526 as well as the City of Portland Technical Manual, Chapter 14 Standards for Local Site Location of Development Review.

OVERVIEW

The proposed 4-story building with first floor retail space and three stories of office space has been designed to conform to City standards where possible as well as improve upon existing non-conformities. This project conforms with the majority of the applicable standards of Portland's Land Use Ordinance Section 14-526 as demonstrated in the following narrative.

(a) Transportation Standards

1. Impact on Surrounding Street Systems:

   The site is located along 151 Washington Avenue which is classified as an arterial and currently supports a high traffic volume. A minimal traffic increase along Washington Ave. is expected for this project due to the low turnover of the proposed principal land use.

2. Access and Circulation:

   a. Site Access and Circulation:

      This project conforms with the majority of design standards of Section 14-526 as demonstrated in the following narrative, with some minor dimensional variances.

      (i) The development will provide safe access and internal circulation for both pedestrians and vehicles as seen on the Site Plan.

      (ii) The existing driveway perpendicular to Washington Ave. that currently serves the site will be closed. There is a proposed two-way driveway perpendicular to East Cove St. that will serve as the sole vehicle ingress and egress. The functionality of all internal vehicle movements has been verified with AutoTurn, a computer program that models the turning radii of various types of vehicles. Furthermore, improvements to East Cove Street along with a 20-foot pavement width will allow for nonconflicted vehicle movements.

      (iii) The site does not feature drive up services as mentioned in this requirement.

   b. Loading and Servicing:

      (i) The site will have minimal loading for the retail store. The movements required for a small box truck will be accommodated within the site and/or the existing street parking along the project's Washington Ave. frontage.

   c. Sidewalks:

      (i) A brick sidewalk exists along Washington Avenue.

      (ii) The existing sidewalk will be rebuilt from the neighbor's driveway to East Cove St. This

exceeds the requirement of providing a sidewalk along the project frontage.

(iii) Two entrances to the building will be 5' off of the Washington Ave. sidewalk. Pedestrian access to the rear of the site will be provided by a combination of a patio/walkway and striped access aisles adjacent to parking. Please refer to the Site Plan, Sheet C-10, for more information.

3. Public Transit Access:

a. Not applicable.

b. Not applicable.

c. Not applicable.

4. Parking:

a. Location and Required Number of Vehicle Parking Spaces:

(i) The proposed project will provide 20 parking spaces. This count is three below the required 23 spaces based on the floor space of the office area. The retail shops do not factor into the required parking count because each business has less than 2,000 SF of floor space. An increase of 3 on-street parking spaces will be provided due to the closed curb cut on Washington Ave. Therefore, the net parking count is 23.

(ii) A parking study is not required.

(iii) The proposed parking is not 10% or more over the requirement.

(iv) The parking space and aisle dimensions are in conformance with the Technical Standards, with a few minor exceptions. In all cases where a dimension does not meet the requirement, the difference is 6 inches or less. Please refer to the Site Plan for more information.

(v) The driveway and parking areas will be constructed of bituminous pavement which will drain water without eroding.

b. Location and Required Number of Bicycle Parking Spaces:

(i) The site plan includes two proposed bicycle racks located near the entrance of the proposed building. This will provide 4 bicycles to be parked in a secure location, meeting the requirement. Additional bicycle storage may be included within the building.

c. Motorcycles and Scooter Parking:

(i) There are no areas designated for motorcycles or scooters at this time.

d. Snow Storage:

(i) The snow storage area can be seen on the site plan near the rear of the parcel. In addition, the Owner may have snow removed from the site when necessary.

(ii) The snow storage has not been located where it will adversely impact the functionality of any part of the site.

5. Transportation Demand Management (TDM):

   a. A TDM plan is not required for this project.
   b. A TDM plan is not required for this project.
   c. A TDM plan is not required for this project.

(b) Environmental Quality Standards

1. Preservation of Significant Natural Features:

   a. Not applicable.

   b. Not applicable.

2. Landscaping and Landscaping Preservation:

   a. Landscape Preservation.

      (i) The disturbance of trees and vegetation that are not proposed to be removed as part of the project will be limited as much as possible.

      (ii) There are no trees 10 inches DBH or greater within the property. A tree, as noted on the Construction Management Plan, that is just into the abutter's property is proposed to be removed. An agreement has been made with the neighbor to provide cedar fence along the property line and remove the tree. This is necessary due to the required excavation depths for construction. Attempting to keep this tree would result in significant damage and compaction to the root system.

      (iii) It is not anticipated that the project will necessitate any tree protection.

      (iv) A waiver is not requested.

      (v) Not applicable.

   b. Site Landscaping.

      (i) Landscaped Buffers:

         a. All loading and dumpster locations will be screened from view.

         b. The project has 102.5 linear feet of frontage along Washington Ave; per requirement, it is required that a minimum of six shrubs or shrub alternatives per 45 feet of frontage are planted. The requirement is met through a combination of landscaping within the setbacks and internally within the site. Please refer to the Site Plan for more information.

         c. Not applicable.

         d. Not applicable.

      (ii) Parking Lot Landscaping:

a. The landscaping requirement is met within the site. The existing 13 spaces have no trees or shrubs associated with the parking. The increase of 7 spaces as part of this project will feature a variety of trees, grasses, and perennials.

b. There is no proposed area with greater than 40 parking spaces without interrupted pavement.

c. Not applicable.

d. Not applicable.

e. Not applicable.

f. Not applicable.

(iii) Street Trees:

a. Street trees are to be provided every 30 to 45 feet along the street frontage. This ratio equates to a minimum of 2 trees. Given the limited area, one street tree is proposed just into the private property. A street tree is not proposed within the public right-of-way because there is a sewer main that runs beneath the sidewalk.

b. The applicant will contribute to the City's Street Tree Fund in place of the one tree that will not be planted.

3. Water Quality, Stormwater Management and Erosion Control:

a. Stormwater:

(i) The site drainage will not be directed to flow or pond onto adjacent lots. The drainage patterns will largely be maintained as existing. Furthermore, impervious area on the site will be decreased, reducing runoff from the site.

(ii) Any stormwater that flows onto adjacent lots will not exceed the pre-development flows.

(iii) The runoff from the site into the City property will not increase from the pre-development condition.

(iv) Not applicable.

b. A site specific Stormwater Management Plan has been developed for the project to show compliance with Section 5 of the Technical Manual, including the basic standards of MEDEP Chapter 500. Please refer to sections G and H, the Stormwater Management and Erosion & Sedimentation Control Plans, respectively, for more information.

c. The project is not located in a watershed of an urban impaired stream as listed by the MEDEP.

d. Not applicable.

e. The development is not anticipated to pose a contamination risk to groundwater during or after construction. The project will be serviced by a public wastewater system.

f. The development will provide for adequate and sanitary disposal of sewage in accordance with Section 2 of the Technical Manual.

(c) Public Infrastructure and Community Safety Standards

1. Consistency with City Master Plans:

   a. The project has been designed to be consistent with the City's Zoning Ordinance and off-site infrastructure.

   b. Not applicable.

2. Public Safety and Fire Prevention:

   a. The site has been designed to promote safe and inviting public access.

   b. Adequate emergency access has been provided. An ambulance will be able to access all 4 side of the building and a fire truck will be able to access a minimum of 3 sides.

   c. A fire hydrant is located directly across the street from the intersection of Washington Ave. and East Cove St.

3. Availability and Adequate Capacity of Public Utilities:

   a. Public utilities in the vicinity of the site have capacity to serve the project. Ability to Serve letters have been sent to the respective companies. Responses have been included in the submission.

   b. The electrical service will be wired underground.

   c. The new sewer and stormwater infrastructure will meet the provisions of the Technical Manual.

   d. The project will be served by connection to the public sewer system within Riverside Street.

   e. The sanitary sewer collection system meets all applicable sections of the Technical Manual. The stormwater management system is designed to meet the standards of Chapter 500.

   f. The self-storage facility is not expected to create a large volume of solid waste.

(d) Site Design Standards

1. Massing, Ventilation and Wind Impact:

   a. Not applicable.

   b. Not applicable.

   c. Not applicable.

2. Shadows:

a. The shadows created by the building will not influence public open spaces.

3. Snow and Ice Loading:

   a. The structures will not distribute snow and ice onto adjacent properties.

4. View Corridors:

   a. The project site is located outside the Downtown Vision View Corridor Protection Plan.

5. Historic Resources:

   a. The development is not located in a historic district, historic landscape district or City designated landmark.

   b. The development is not located adjacent to designated landmarks, historic district, or historic landscape district.

   c. There are no known archaeological resources on the site.

6. Exterior Lighting:

   a. Site Lighting.

      (i) Exterior lighting will be designed to meet the requirements of Section 12 of the Technical Manual. A photometric plan has been included with this submission.

      (ii) Any lighting that may adversely impact the abutting residential properties will feature house-side shielding.

   b. Architectural and Specialty Lighting.

      (i) No architectural or specialty lighting is proposed.

      (ii) No up-lighting is proposed.

   c. Street Lighting.

      (i) No new street lights are proposed.

7. Noise and Vibration:

   a. The HVAC system will meet the applicable state and federal emissions requirements and will also be screened and directed away from abutters.

8. Signage and Wayfinding:

   a. All street and wayfinding signage shall meet the requirements of the Manual on Uniform Traffic Devices (MUTCD) and Division 22 of the City Code.

      (i) The project is not located in a historic district or subject to Article IX.

(ii) Not applicable.

(iii) All street and wayfinding signage shall meet the requirements of the Manual on Uniform Traffic Devices (MUTCD) and Division 22 of the City Code.

9. Zoning Related Design Standards:

   a. The project has been designed to meet the standards set forth in the B-1 zone. Please refer to the Site Plan for more information on the Space & Bulk Standards.

M. Written Request for Waivers

The following list represents the requested project waivers:

1. There are no waivers requested at this time.

N. Summary of Written Easements

There are no existing easements identified by R.W. Eaton Associates on the Existing Conditions Plan.

There are no proposed easements as part of the project.

February 22, 2018

Planning Department
City of Portland Maine
389 Congress Street
Portland, Maine 04101

Re: 155 Washington Design Narrative

The following design narrative is intended to supplement the previous design narrative submitted on 12/1/17 and respond to the B-1 Design Review memo dated 1/12/18.

Based on the design review meeting with city staff we have revised the building design to expand its footprint in width along Washington Avenue, thus providing more of a building street presence and less driveway and parking visibility from the street.

To address the design review comments we offer the following:

- Standard (1) d = the windows will have a VT of .7 or greater

- Standard (1) g = We have revised the base below the first floor storefront to a gray panel that will contrast the brick and provide the vertical emphasis at the street facade. We have also removed the panels above the first floor windows. The red brick and wood veneer panel are rich colors that we feel provide a warm material palate that we would propose to remain as the facade material. We also propose to keep both corners of the building at the entrances the wood panel material on the 2nd and 3rd floors, this not only scales the facade but also the wood material is a light material that is a good cladding for these elevated facade forms.

207-747-5159

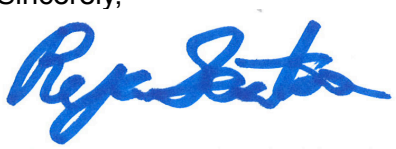
senatorearchitecture.com

ryan@senatorearchitecture.com

We do propose that the wood panel on the office building entry side of the building will be recessed 3” back from the adjacent face of brick so is will be a clean definition between the materials and a create a shadow line between the two materials. The brick material does maintain its continuity below the ‘z’ form from the main facade down below to the retail entry area.

We look forward to discussing the vision for 155 Washington Avenue at the upcoming meeting.

Sincerely,



Ryan Senatore, AIA LEED-AP

Principal

207-747-5159

senatorearchitecture.com

ryan@senatorearchitecture.com

ACORN
ENGINEERING, INC.

P. Parking Analysis

Based on comments received from the City after submitting the Level III Site Plan application, the design team increased the size of the building and closed the curb cut on Washington Avenue, pushing all vehicle ingress and egress to East Cove Street. Due to the increased floor area, the required parking is now 23 vehicles. The site allows for 20 spaces within the site; however, because the curb cut is closing Washington Avenue will now have three additional on-street spaces adjacent to the site as seen on the Site Plan. This increase helps compensate for the three spaces that will not be provided per the City's land use code.

Given the proximity of the proposed project to Munjoy Hill and East Bayside, the development will encourage multimodal transportation, including walking and biking. Between the project's intended market and the net parking count of 23 spaces, it is our opinion that the proposed plan will adequately serve the parking demand.

Please let me know if you have any additional questions or comments.

Sincerely,

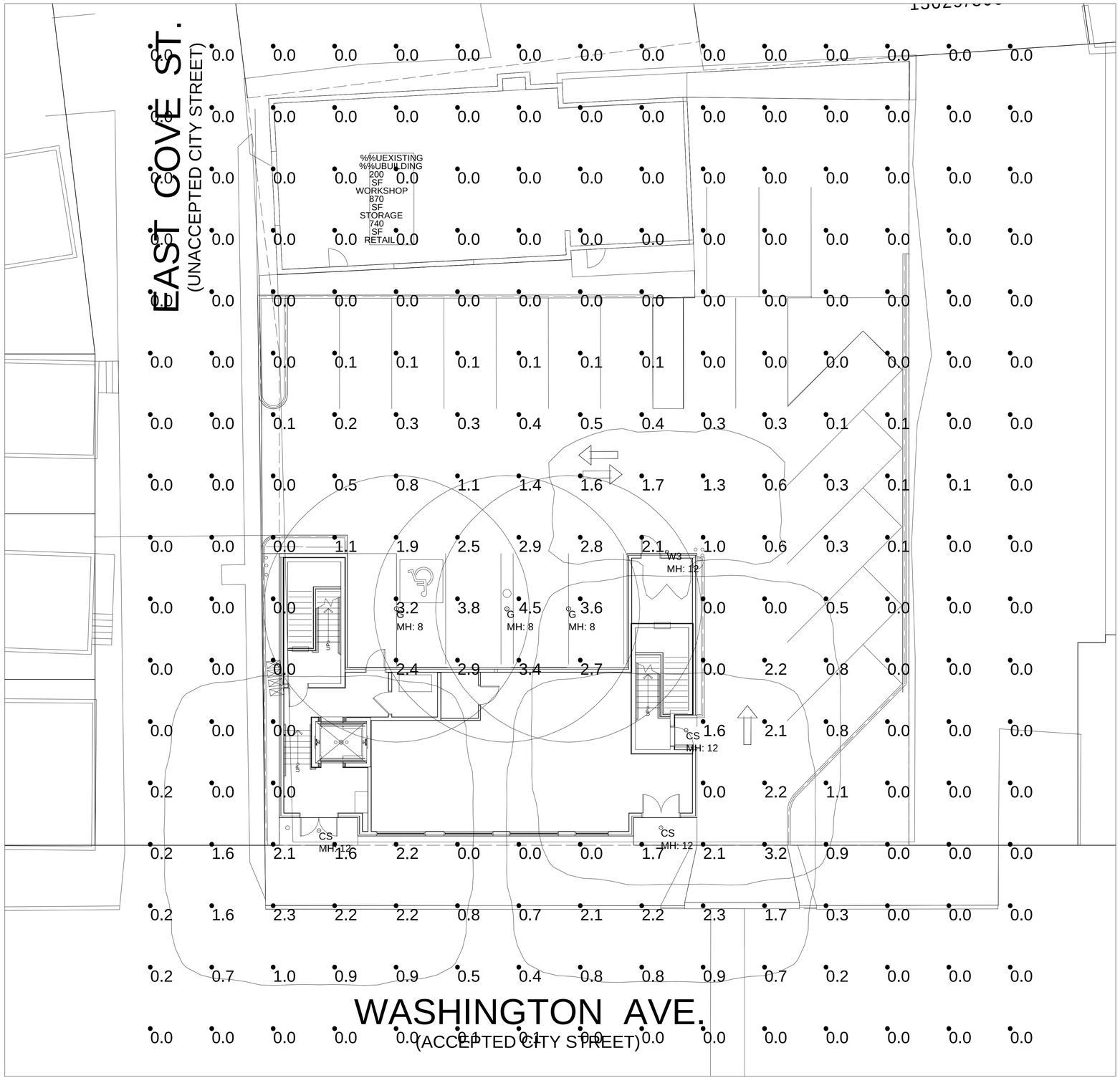


William H. Savage, P.E.
Principal - Project Manager
Acorn Engineering, Inc.

ACORN ENGINEERING, INC.

Q. Lighting

Please find attached the photometric plan and cut sheets.



PLAN VIEW

NOTES:
1) EXACT MOUNTING DETAILS TO BE DETERMINED AT JOBSITE BY OTHERS.
2) CALCULATIONS MAY or MAY NOT SHOW THE EFFECT OF SHADOWING CAUSED BY BUILDINGS AND OBJECTS WITHIN THE CALCULATED SPACE OR IN THE SITE AREA.
3) READINGS SHOWN ARE INITIAL HORIZONTAL FOOTCANDLES ON A FLAT SITE WITHOUT REFLECTIONS OR OBSTRUCTIONS UNLESS OTHERWISE INDICATED.
4) THIS CALCULATION IS BASED ON LIMITED INFORMATION SUPPLIED BY OTHERS TO SWANEY LIGHTING ASSOCIATES AND STANDARD ASSUMPTIONS OF THE SPACE AND/OR SITE.
5) CONFORMANCE TO CODES AND OTHER LOCAL REQUIREMENTS AS DETERMINED BY THE AHJ ARE THE RESPONSIBILITY OF THE OWNER AND/OR THE OWNER'S REPRESENTATIVE.
6) THIS LAYOUT DRAWING MUST BE COORDINATED WITH THE SITE LOCATION FOR CORRECT FIXTURE ORIENTATION.
7) DOCUMENTS PRINTED OR PLOTTED FROM ELECTRONIC FILES MAY APPEAR AT OTHER THAN THE DESIRED OR ASSUMED GRAPHIC SCALES. IT IS THE RESPONSIBILITY OF THE RECIPIENT TO VERIFY THAT THE PRINTED OR PLOTTED-TO-SCALE DRAWING IS PRINTED TO SCALE.

Calculation Summary

Label	Avg	Max	Min	Avg/Min	Max/Min
site	0.44	4.5	0.0	N.A.	N.A.

Luminaire Schedule (note fixture cataloge numbers are not complete)

Type	Qty	Lumens	LLF	Watts	Description
W3	1	1477	0.900	13.9	TRP1-12L15-3K7-3
G	3	4398	0.500	42.8	ORB-18LED-40-3K-T5W reduced output
CS	3	4984	0.800	57.8	CLO-24NB-55-3K-T5QM-UNV reduced output

SITE 12-6-17 - 36528.AGI

GENERATED BY SWANEY LIGHTING, SCARBOROUGH ME - 207-883-7100 - swaneylighting.com

TITLE
151-155 WASHINGTON AVE
PORTLAND, ME
SITE LIGHTING LAYOUT

Date:12/7/2017

GENERATED FOR:
ACORN ENGINEERING

SCALE NOT TO SCALE

Page 1 of 1

SWANEY LIGHTING ASSOCIATES, INC.

NOTICE: THIS DRAWING IS THE EXCLUSIVE PROPERTY OF SWANEY LIGHTING ASSOCIATES. ITS ACCEPTANCE CONSTITUTES AN AGREEMENT THAT THE DRAWING WILL BE TREATED AS CONFIDENTIAL. THIS DRAWING IS TO BE USED FOR NO PURPOSE OTHER THAN AS DETAILED INFORMATION. ACCEPTANCE OF THIS DRAWING IS TO BE RETURNED UPON REQUEST AND IS NOT TO BE COMMUNICATED, DISCLOSED OR COPIED; EXCEPT AS EXPRESSLY AUTHORIZED BY SWANEY LIGHTING ASSOCIATES.
NOTICE: THE INTENT OF THIS LIGHTING LAYOUT IS TO SUGGEST THE BEST UTILIZATION OF LIGHTING FIXTURES INCLUDED IN THIS DRAWING. IT IS PROVIDED USING FIXTURE PHOTOMETRICS FURNISHED BY THE MANUFACTURER. ANY VARIATION IN FIXTURE PERFORMANCE FROM PERFORMANCE SHOWN IN ITS FILE IS NOT THE RESPONSIBILITY OF THE MANUFACTURER. IT'S USE FOR ANY OTHER PURPOSE IS NOT AUTHROIZED BY SWANEY LIGHTING ASSOCIATES.

CEILEO
SERIES
CEILING/GARAGE

Cat.#	
Job	Type

BEACON design . performance . technology

Approvals

SPECIFICATIONS

Intended Use:

Ceileo is a commercial grade LED outdoor and indoor canopy downlight that utilizes high powered LEDs with precise and efficient optical control and on board wattage and lumen choices. Ceileo is designed to replace up to 175W and 250 watt HID lamps with 55 watts and reduce maintenance by delivering over 200,000 hours of projected life.

Construction:

- Cast aluminum external housing and recessed driver housing
- Cast aluminum housing provides direct heat exchange between the LED light engine and the cool outdoor air

LED/Optics:

- Optical one piece cartridge system consisting of an LED engine, LED lamps, optics, gasket and stainless steel bezel.
- Die cut foam silicone gasket ensures a weather-proof seal around each individual LED
- Ceileo uses a 24-LED engine that can be field adjusted to four wattages (55, 45, 30,15 watts) and four lumen outputs by a four position rotary dimming switch. The switch shall be mounted on the PCB and used to manually set dimming level to approximately 25%, 50%, 75% and 100% of current. Dimming switch shall be accessible by removing a sealing screw from the lens. Following removal of screw, switch may be rotated with a small screwdriver. A metal insert shall be provided in lens to accept the access screw.
- Ceileo comes standard with 0-10 OV dimming capability, with flicker-free dimming to 10%.
- Independent insitute thermal testing shall confirm solder point temperatures not to exceed 55ºC and driver case temperatures not to exceed 60ºC at 55-watts input power.
- At 30-watts input power solder point temperature shall not exceed 40-C and driver case temperatures not to exceed 55ºC.

Electrical:

- 100V through 277V, 50 Hz to 60 Hz (UNV).
- Power factor is ≥.90 at full load.
- Dimming drivers are standard. Must contact factory to request wiring leads for purpose of external dimming controls.
- Component-to-component wiring within the luminaire may carry no more than 80% of rated load and is certified by UL for use at 600VAC at 90°C or higher.
- Surge protection - 20kA.
- Luminaires are equipped with an LED driver that accepts 100V through 277V, 50 Hz to 60 Hz (UNIV).

Options:

- Available in Round and Square versions.
- Able to co-exist with other 0-10V current-sinking control devices (occupancy sensors, external dimmers, etc.).
- Driver and wiring compartments comprise min. 20 gauge corrosion protected steel platform utilizing a J-box with snap-on cover for easy access.
- LED cast housing is designed to easily be removed for access and replacement.

Finish:

- IFS polyester powder-coat electrostatically applied and thermocured.
- IFS finish consists of a five stage iron phosphate chemical pretreatment regimen with a polymer primer sealer, oven dry off, and top coated with a thermoset super TGIC polyester powder coat finish.
- The finish meets the AAMA 2604 performance specification which includes passing a 3000 hour salt spray test for corrosion resistance and resists cracking or loss of adhesion per ASTM D522 and resists surface impacts of up to 160 inch-pounds.

Listings:

The luminaire shall be NRTL certified to UL 1598 and 8750 standards for use in wet locations.

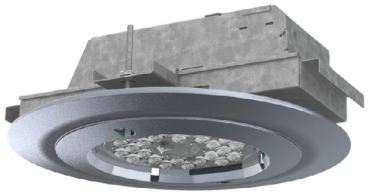
Warranty:

Five year limited warranty (for more information visit: http://www.hubbelllighting.com/resources/warranty)

CERTIFICATIONS/LISTINGS

UL 1598

PRODUCT IMAGE(S)

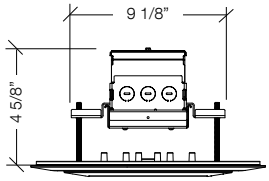


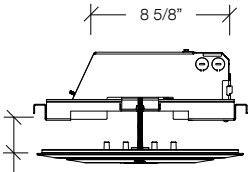
Round



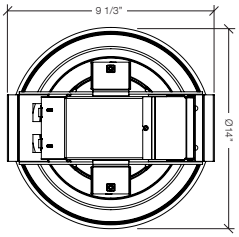
Square

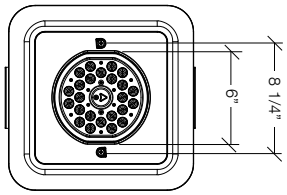
DIMENSIONS

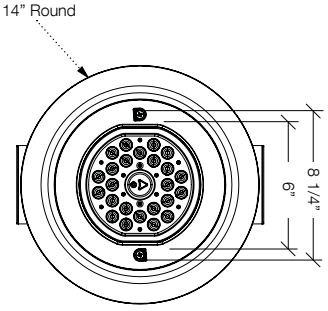




0" to 2" adjustable







© 2017 BEACON PRODUCTS, All Rights Reserved • For more information visit our website: **www.beaconproducts.com** • Printed in USA November 8, 2017 10:58 AM

HUBBELL Lighting

ORDERING INFORMATION ORDERING EXAMPLE: CLO/24L-55/5K7/5W/UNV/RD/WHT

CLO	24L-55						
SERIES	**ENGINE-WATTS**	**LED COLOR**	**OPTICS**	**VOLTAGE**	**STYLE OPTIONS**	**FINISH**
CLO Ceileo	**24L-55** 55 Watts - LED array	**3K7** 3000K **4K7** 4000K **5K7** 5000K	**5X5** aisle lighter **5R** type V, rectangular **5QM** type V, square medium **5QN** type V, square narrow **5W** type V, round wide **3X5** vertical flood	**UNV** 120-277V	**RD** Round **SQ** Square	**DBT** dark bronze textured **BMT** black matte textured **PS** Platinum silver smooth **WHT** white textured **CC** Custom Color (RAL#)

PERFORMANCE

				5K (5000K nominal, 70 CRI)					4K (4000K nominal, 70 CRI)					3K (3000K nominal, 70 CRI)				
# LED'S	DRIVE CURRENT (MILLIAMPS)	SYSTEM WATTS	DISTRIBUTION TYPE	LUMENS	LPW[1]	B	U	G	LUMENS	LPW[1]	B	U	G	LUMENS	LPW[1]	B	U	G
24	700mA	55W	5X5	6089	112	N/A	N/A	N/A	6213	114	N/A	N/A	N/A	5716	105	N/A	N/A	N/A
			5R	6025	111	3	1	3	5147	113	3	1	3	5655	104	3	1	3
			5QM	6038	111	3	1	1	6161	113	3	1	1	5668	104	3	1	1
			5QN	6142	113	2	0	0	6267	115	2	0	0	5766	106	2	0	0
			5W	5902	108	3	1	1	6022	111	3	1	1	5541	102	3	1	1
			3X5	5777	106	N/A	N/A	N/A	5895	108	N/A	N/A	N/A	5423	100	N/A	N/A	N/A

[1]Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown. Actual performance may differ as a result of end-user environment and application.

PROJECTED LUMEN MAINTENANCE

AMBIENT TEMP.	0	25,000	50,000	[1]TM-21-11 60,000	100,000	Calculated L70 (HOURS)
25°C / 77°F	1.00	0.98	0.97	0.96	0.94	>704,000

[1] Projected per IESNA TM-21-11
[2] Data references the extrapolated performance projections for the base model in a 25°C ambient, based on 10,000 hours of LED testing per IESNA LM-80-08.

ELECTRICAL DATA

# OF LEDS	NUMBER OF DRIVERS	DRIVE CURRENT (mA)	INPUT VOLTAGE (V)	OPER. CURRENT (Amps)	SYSTEM POWER (Watts)
24	1	700 (mA)	120	0.48	57.0
			277	0.21	57.0

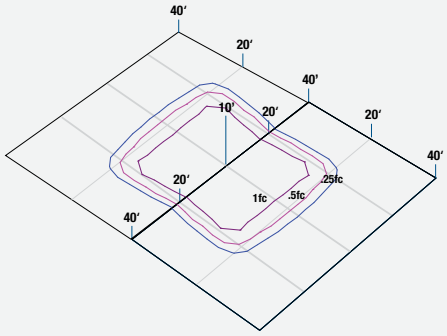
AMBIENT TEMPERATURE		LUMEN MULTIPLIER
0°C	32°F	1.02
10°C	50°F	1.01
20°C	68°F	1.00
25°C	77°F	1.00

Use these factors to determine relative lumen output for average ambient temperatures from 0-50°C (32-122°F).

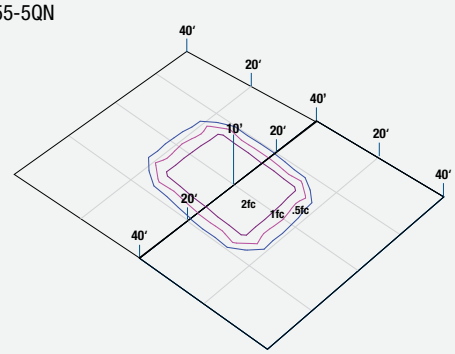
© 2017 BEACON PRODUCTS, All Rights Reserved • For more information visit our website: **www.beaconproducts.com** • Printed in USA November 8, 2017 10:58 AM

PHOTOMETRICS

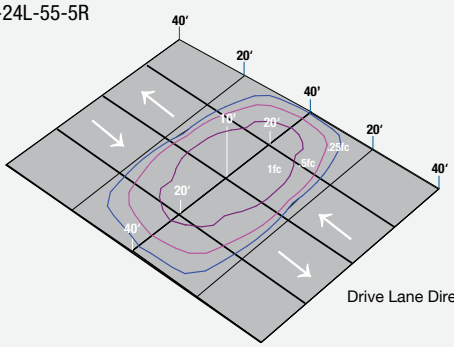
Type V Square Medium
CLO-24L-55-5QM



Type V Square Narrow
CLO-24L-55-5QN



Type V Rectangular
CLO-24L-55-5R

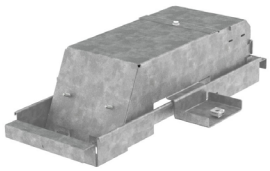


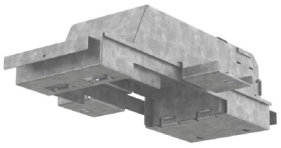
Drive Lane Direction

PRODUCT VIEWS

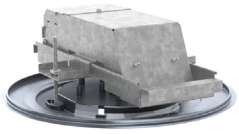


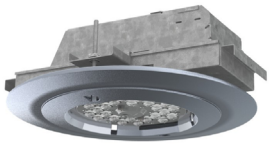












© 2017 BEACON PRODUCTS, All Rights Reserved • For more information visit our website: **www.beaconproducts.com** • Printed in USA November 8, 2017 10:58 AM

GEOPAK SERIES SIZE 1 LED

Architectural Wallpack

TRP1/RDI1/QSP1

NEW

Cat.#	
Job	Type

HUBBELL Outdoor Lighting

Approvals

SPECIFICATIONS

APPLICATIONS

- Small sized architectural wallpacks in three stylish shapes with molded contours to accentuate building architecture. Provides excellent illumination in energy-saving LED systems.
- Back box accessory available for surface conduit application.

Construction:

- Housing is made from die-cast aluminum with a hinged back-plate for ease of installation and maintenance.
- The LED bezel and trim-plate are made of stainless steel.
- Five powder coat standard finishes, plus custom color options.
- Wet Location Listed to UL924 and UL1598 Standard.

LED:

- 12 high power LEDs delivering up to 3,000 lumens.
- Up to 118 lumens per watt
- Type II, III and IV distributions for a wide variety of applications.
- Zero uplight (UO), dark sky, neighbor friendly

Electrical:

- 120-277 operation, 50/60Hz
- 0-10V dimming driver standard
- 10kA surge protector
- Photocell and occupancy sensor options available for complete on/off and dimming control

Battery Backup:

- Intergral Battery Backup provides emergency lighting for the required 90 minute path of egress.
- Includes a long-life Lithium Iron Phosphate battery with optional battery heater for cold temperature application.
- Utilizes 4 LEDs in emergency mode with 657 lumens. Each of the 4 LEDs in emergency are designed to function independently in the unlikely event of a single LED malfunction
- Spectron® self-testing/self-diagnostic electronics are included standard
- Independent dedicated driver and LED array for battery/emergency mode operation.

Installation:

- Universal plate for mounting to standard 3 1/2" and 4" square electrical boxes. All connections are made from connections at the rear of the unit.
- Optional back-box accessory available for surface conduit application. See BB-Geo accessories.

Listings:

- UL 1598 listed for use in wet locations
- Drivers IP66 and RoHS compliant
- DesignLights Consortium® (DLC) qualified. Please refer to the DLC website for specific product qualifications at www.designlights.org

Warranty:

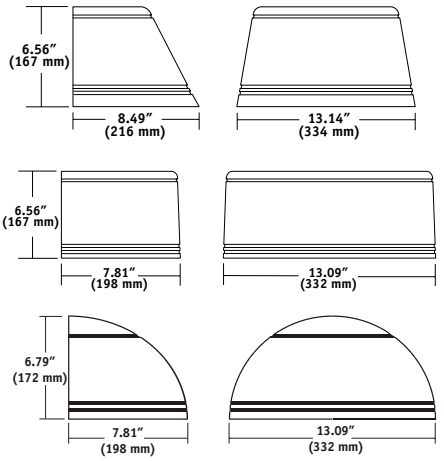
- For more information visit:

http://www.hubbelloutdoor.com/resources/warranty/

PRODUCT IMAGE(S)



DIMENSIONS



SHIPPING INFORMATION

Catalog Number	Weight (lbs)	Carton Dimensions		
		Length Inch (cm)	Width Inch (cm)	Height Inch (cm)
TRP1	11.5	17.0	9.9	10.0
RDI1	11.5	18.0	11.0	9.25
QSP1	10.5	17.0	9.6	10.5

CERTIFICATIONS/LISTINGS

C US

*3000K and warmer CCTs only

ORDERING INFORMATION

ORDERING EXAMPLE: TRP-12L-20-4K-3-1-BL-SCP-EH

[ ] - [ ] - [ ] - [ ] - [ ] - [ ] - [ ] - [ ] - [ ] - [ ]

HOUSING	VERSION	WATTAGE	CCT/CRI	DISTRIBUTION	VOLTAGE	FINISH	CONTROL OPTIONS	OPTIONS
TRP1 Trapeziod	12L 12 LEDS	15 15 watts	3K7 3000K, 70CRI	2 Type II	U 120-277	BL Black	PCU Button Photocell	F[4] Fusing (only available with STD fixture configuration, 120-277V only)
RDI1 Radius		20 20 watts	4K7 4000K, 70CRI	3 Type III	1 120	DB Bronze	SCP[2,3] Programmable Motion Sensor	E[1] Battery Pack (0˚C)
QSP1 Quartersphere		30 30 watts	5K7 5000K, 70CRI	4 Type IV	2 208	GR Gray	SPECIFY SCP HEIGHT: 8F Up to 8ft mount height; 20F Up to 20ft mount height	EH[1] Battery Pack (-30˚C) with heater
					3 240	PS Platinum		
					4 277	WH White		
						CC Custom		

[1] Voltage specific (120 or 277V only)
[2] Must order minimum of one remote control to program dimming settings, 0-10V fully adjustable dimming with automatic daylight calibration and different time delay settings, 120-277V only
[3] PCU option not applicable, included in sensor
[4] Must specify input voltage (120, 208, 240 or 277)

© 2016 HUBBELL OUTDOOR LIGHTING, All Rights Reserved • For more information visit our website: **www.hubbelloutdoor.com** • Printed in USA

ACCESSORIES - Order separately

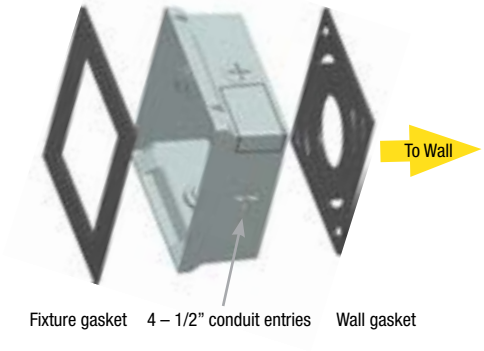
Catalog Number	Description
SCP-REMOTE[2]	Remote control for SCP option. Order at least one per project to program and control.
BB-GEO-XX	Back box with 4 - 1/2" threaded conduit holes, specify finish by replacing "XX" with finish selection, eg. Dark Bronze "DB"

[2] Must order minimum of one remote control to program dimming settings, 0-10V fully adjustable dimming with automatic daylight calibration and different time delay settings, 120V-277V only



BB-GEO-XX – Mounted to luminaire

BB-GEO-XX



PERFORMANCE DATA (AC/Standard Configurations)

				5K (5000K nominal, 70 CRI)					4K (4000K nominal, 70 CRI)					3K (3000K nominal, 70 CRI)				
# OF LEDS	DRIVE CURRENT	SYSTEM WATTS	DIST. TYPE	LUMENS	LPW[1]	B	U	G	LUMENS	LPW[1]	B	U	G	LUMENS	LPW[1]	B	U	G
12	350mA	13.9	2	1635	118	1	1	1	1577	113	1	1	1	1497	108	1	1	1
			3	1613	116	1	0	1	1556	112	1	0	1	1477	106	1	0	1
			4	1607	116	0	0	1	1550	111	0	0	1	1471	106	0	0	1
	500mA	19.9	2	2268	114	1	1	1	2176	109	1	1	1	2077	104	1	1	1
			3	2245	113	1	0	1	2140	108	1	0	1	2049	103	1	0	1
			4	2229	112	0	0	1	2150	108	0	0	1	2041	103	0	0	1
	700mA	28.2	2	2942	104	1	1	1	2885	102	1	1	2	2721	96	1	1	1
			3	2912	103	1	0	1	2836	101	1	0	1	2685	95	1	0	1
			4	2892	103	1	0	1	2789	99	1	0	1	2674	95	1	0	1

Electrical Data

Input Power Consumption

Drive Current (mA)	Input Voltage (V)	System Power (w)	Current (Amps)
350mA	120	13.9	0.12
	277		0.05
500mA	120	19.9	0.17
	277		0.07
700mA	120	28.2	0.24
	277		0.10

Battery backup units consume additional power during charging (maximum 32.2 watts for E, 50.7 watts for EH)

Projected Lumen Maintenance

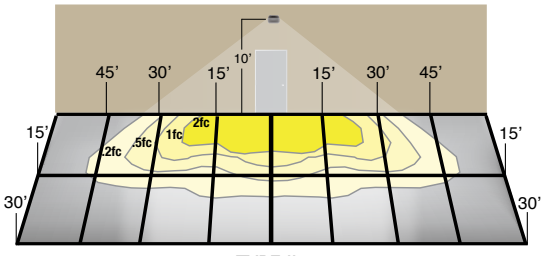
Ambient Temp.	Operating Hours 0	25,000	50,000	TM-21-11[1] 60,000	100,000	L70 (hours)
25°C/77°F	1.00	0.98	0.97	0.95	0.91	>345,000
40°C/104°F	1.00	0.96	0.95	0.92	0.87	>268,000

LUMINAIRE AMBIENT TEMPERATURE FACTOR (LATF)

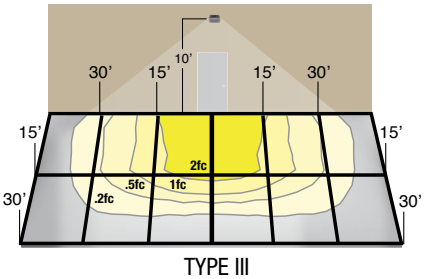
AMBIENT TEMPERATURE		LUMEN MULTIPLIER
0° C	32° F	1.02
10° C	50° F	1.01
20° C	68° F	1.00
25° C	77° F	1.00
30° C	86° F	1.00
40° C	104° F	0.99
50° C	122° F	0.98

Use these factors to determine relative lumen output for average ambient temperatures from 0-40°C (32-104°F).

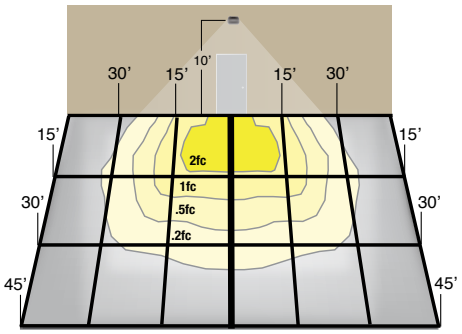
PHOTOMETRIC REPORTS



TYPE II



TYPE III



TYPE IV (Forward throw)

© 2016 HUBBELL OUTDOOR LIGHTING, All Rights Reserved • For more information visit our website: **www.hubbelloutdoor.com** • Printed in USA

GeoPak - Battery Back Up

Functional Circuitry: Transient surge protection device on AC input. Upon failure of the normal utility power, an LED driver is automatically activated to power the emergency LEDs. Upon resumption of normal utility power, the LED driver is turned off, and the battery is recharged through a micro-controller based 3-stage charger. The battery is a maintenance-free Lithium Iron Phosphate (LiFePo) type. A low voltage battery disconnect (LVD) feature protects the battery from severe damage during prolonged power failures. Manual testing is available at any time using the push-to-test button. The optional heater features a heating wrap and thermostat to maintain optimal battery temperature during charge or discharge. The GeoPak includes the following features:

- Battery re-charge within 24 hours
- AC Lock-out circuit
- Self-diagnostics monitors LED status, LED driver circuit, battery capacity and charger function and displays any fault detection by means of a flashing code.
- Self-Test feature runs a 1 minute test once a month and an alternating 30 or 60 minute test once every 6 months. Multi-color LED indicator provides visible fault detection and charging status.
- User initiated 1, or 90-minute system test feature
- 15 minute re-transfer delay
- Automatic unit transfer in brown-out conditions (below 80% of nominal AC input voltage).

Emergency Photometric Performance (1 fc average .1 fc minimum)

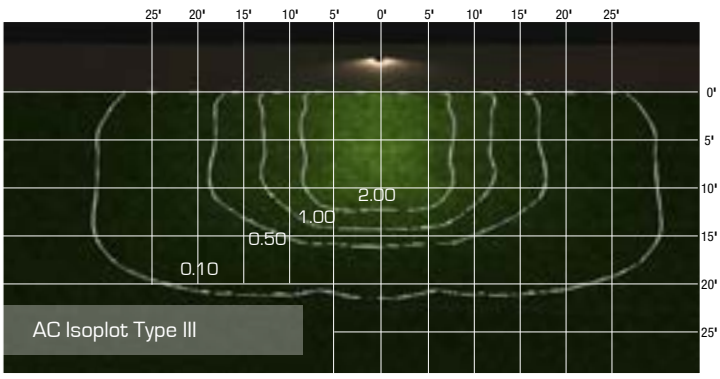
28’ multi-unit spacing at 10’ MH with 0/30/10 reflectances on a 6’ path

26’ x 10’ single unit coverage at 10’ MH with 0/30/10 reflectances

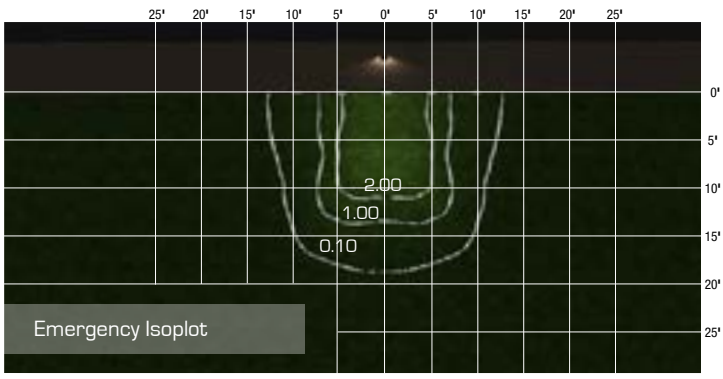
6’ x 19’ forward throw coverage at 10’ MH with 0/30/10 reflectances



Normal Mode



Emergency Mode



Provides Life Safety Code average illuminance of 1.0 fc. Assumes open space with no obstructions.

Diagrams for illustration purposes only, please consult factory for application layout.

© 2016 HUBBELL OUTDOOR LIGHTING, All Rights Reserved • For more information visit our website: **www.hubbelloutdoor.com** • Printed in USA

ORBEON SERIES

SURFACE/CEILING/GARAGE

Cat.#	
Job	Type

BEACON design . performance . technology

Approvals

SPECIFICATIONS

Intended Use:

Orbeon is a commercial grade LED parking garage and canopy luminaire which utilizes high powered LEDs, precise efficient optical control, and features application versatility through integrated intelligent control options. Orbeon is designed to replace up to 100 Watt HID lamps with 40 watts and 175 Watt HID lamps with 60 watts while at the same time reducing maintenance by delivery of over 100,000 hours of projected life.

Construction:

- Monolithic die cast aluminum housing, providing direct convective heat exchange between the LED light engine and the cool ambient air.
- LED drivers are strategically heat sinked to the main housing for maximum reliability and longevity.
- Electro-galvanized mounting bracket is provided for quick and easy mounting to an overhead junction box.

LED/Optics:

- Each Orbeon luminaire is supplied with one of multiple lamp and optical systems designed to meet specific needs of optical performance or control.
- Each of these options features an LED engine with thermally conductive metal clad PCB, high power and efficient LED lamps, and PMMA (acrylic) optics/lenses.
- Silicone foam gasketing ensures a weather tight seal around the optical assembly.

Electrical:

- 120V through 277V, 50 Hz to 60 Hz.
- Orbeon comes standard with 70 CRI.
- Power factor is min 0.90 at full load.
- All electrical components are rated over 100,000 hours at full load and 25ºC ambient conditions.
- Driver is specially designed to minimize the burden of wiring and connections within the luminaire - and the concurrent risk of failure of those components.
- Driver is also specially designed for use with SiteSync – including the ability to turn off LED lamps without use of a relay.

SiteSync™ Controls:

- Dimming schedules, diagnostics, and other advanced features are optionally available through SiteSync lighting control system.
- Proprietary SiteSync board is tightly integrated to the LED module, for an affordable solution with aggressive return on investment times.
- Battery-backed real time clock.
- Self-contained wireless control for maximum simplicity and reliability.
- The feature shall be wirelessly adjustable with respect to dimmed and high brightness levels, cycle duration, time periods when the motion detection is active, and sensitivity level.
- A luminaire so equipped may also be set as a "master" to remotely drive one or more "satellite" luminaires to a high level upon detecting motion.
- This functionality can be used to limit motion sensors to strategic locations, with "satellites" acting in near unison and with minimal latency.
- An integrated photo sensor can be utilized for daylight harvesting by inhibiting motion activation in the presence of sufficient ambient light.
- In addition, Orbeon can be specified with **SiteSync™** wireless control system for reduction in energy and maintenance cost while optimizing light quality 24/7. See ordering information or visit: www.hubbelllighting.com/sitesync/ for more details.

Installation:

- Eight pound luminaire body is easily hung from the bracket to facilitate wiring, then is swung up and secured in place with a single screw to complete the installation process.
- An optional bird guard provides a conical surface surrounding the junction box, to deter birds from nesting atop the luminaire.

Finish:

- IFS polyester powder-coat electro-statically applied and thermocured.
- IFS finish consists of a five stage pretreatment regimen with a polymer primer sealer and top coated with a thermoset super TGIC polyester powder coat finish.
- The finish meets the AAMA 605.2 performance specification which includes passing a 3000 hour salt spray test for corrosion resistance and resists cracking or loss of adhesion per ASTM D522 and resists surface impacts of up to 160 inch-pounds.

Listings:

The luminaire shall be NRTL certified to IP65, UL 1598 and 8750 standards for use in wet locations.

Warranty:

Five year limited warranty for more information visit:
www.hubbelllighting.com/resources/warranty

CERTIFICATIONS/LISTINGS

C SP US · UL 1598 · UL 8750 · DLC QPL LISTED · IP65

PRODUCT IMAGE(S)



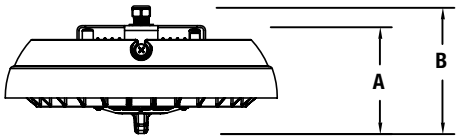
60W Shown with SiteSync and Occupancy Sensor options

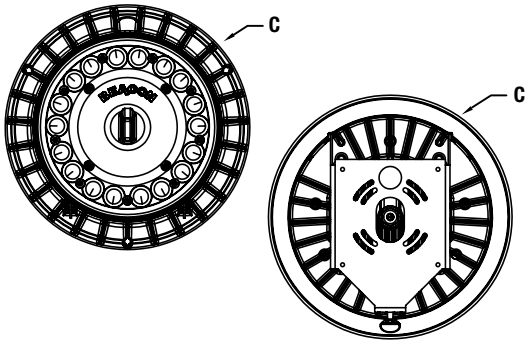


40W version shown with Occupancy Sensor option

DIMENSIONS

Direct to Surface Mount





A	B	C	Weight:
4.5" (114 mm)	5.31" (135 mm)	11.25" (286 mm)	8.0 lbs (3 kg)

© 2017 BEACON PRODUCTS, All Rights Reserved • For more information visit our website: **www.beaconproducts.com** • Printed in USA JULY 31, 2017 5:13 PM

HUBBELL Lighting

ORDERING INFORMATION ORDERING EXAMPLE: ORB/18LED-60/5K/T5W/UNV/SWP/GYS

ORB				UNV		
SERIES	ENGINE-WATTS	LED COLOR	OPTICS	VOLTAGE	CONTROL/SENSOR OPTIONS	FINISH
ORB Orbeon surface/ ceiling/garage luminaire	**18LED-40** 40W, 18 LED array **18LED-60** 60W, 18 LED array	**3K** 3000K **4K** 4000K **5K** 5000K	**L5W** one-piece lens type V, wide **T5W** type V, wide **T5R** type V, rectangular **T5QN** type V, square narrow **T5QM** type V, square medium **5X5** type V, concentrated **DF** diffused lens **T5RW** type V, rectangular wide	**UNV** 120-277V	**MOB**[2,3,4] Occupancy Sensor (33% or 50% dimming) **SWP**[5] SiteSync Wireless Pre-Commission **SWPM**[3,5] SiteSync Wireless Pre-Commission w/ Occupancy Sensor	**BBT** basic black textured **BMT** black matte textured **WHT** white textured **MBT** metallic bronze textured **BZT** bronze textured **DBT** dark bronze textured **GYS** gray smooth **DPS** dark platinum smooth **GNT** green textured **MST** metallic silver textured **MTT** metallic titanium textured **OWI** old world iron **RAL** _____

[1] Specify group and zone. See SiteSync product page on www.hubbelllighting.com/controls/sitesync for more details..
[2] Specify time delay; dimming level and mounting height.
[3] Not available with L5W or DF lens options.
[4] Not available with other control or sensor options.
[5] Not available with 18LED-40.

PRECOMMISSIONED SITESYNC ORDERING INFORMATION: When ordering a fixture with the SiteSync lighting control option, additional information will be required to complete the order. The SiteSync Commissioning Form or alternate schedule information must be completed. This form includes Project location, Group information, and Operating schedules. For more detailed information please visit www.hubbell-automation.com/products/sitesync/ or contact Hubbell Lighting tech support at (800) 345-4928.

SiteSync fixtures with occupancy sensor (SWPM) require the mounting height of the fixture for selection of the lens.

Examples: ORB/18LED-60/4K/T5W/UNV/SWP/GYS — SiteSync only
ORB/18LED-60/4K/T5W/UNV/SWPM-8F/GYS — SiteSync with Occupancy Sensor

Accessories and Services (Ordered Separately)

Catalog Number	Description
SWUSB*^	SiteSync loaded on USB flash drive (Windows® based only)
SWTAB*^	SiteSync Windows® Tablet
SWBRG+	SiteSync Wireless Bridge Node

* When ordering with SiteSync, one of the following interface options must be chosen and ordered separately. Each option contains the SiteSync License, GUI and Bridge Node.
+ If needed, an additional Bridge Node can be ordered.
^ Available on 18LED-60 only.



SiteSync Lighting Control is available from our most popular brands in a broad range of award-winning product families.

DesignLights Consortium qualified.
Consult DLC website for more details:
http://www.designlights.org/QPL

PERFORMANCE DATA

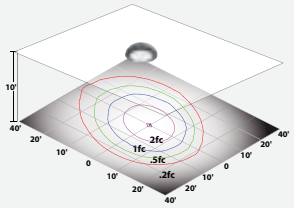
				5K (5000K nominal, 70 CRI)					4K (4000K nominal, 70 CRI)					3K (3000K nominal, 70 CRI)				
# LED'S	DRIVE CURRENT (MILLIAMPS)	SYSTEM WATTS	DISTRIBUTION TYPE	LUMENS	LPW[1]	B	U	G	LUMENS	LPW[1]	B	U	G	LUMENS	LPW[1]	B	U	G
18	700	40W	DF	4014	94	2	3	2	3974	93	2	3	2	3849	90	2	3	2
			5x5	4763	111	3	0	1	4715	110	3	0	1	4622	108	3	0	1
			L5W	5233	122	3	0	2	5180	121	3	0	2	5077	119	3	0	2
			T5QM	4694	110	3	0	1	4645	109	3	0	1	4552	106	3	0	1
			T5QN	4846	113	2	0	0	4797	112	2	0	0	4702	110	2	0	0
			T5R	4786	112	3	0	3	4738	111	3	0	3	4643	108	3	0	3
			T5RW	4671	110	3	0	1	4626	109	3	0	1	4466	104	3	0	1
			T5W	4600	107	3	0	1	4555	106	3	0	1	4398	103	3	0	1
	1000	60W	DF	5428	88	2	3	2	5374	87	2	3	2	4614	75	2	3	2
			5x5	6441	104	3	0	1	6377	103	3	0	1	5540	90	3	0	1
			L5W	7077	115	3	0	2	7006	114	3	0	2	6086	99	3	0	2
			T5QM	6348	103	3	0	1	6282	102	3	0	1	5457	88	3	0	1
			T5QN	6554	106	2	0	0	6488	105	2	0	0	5636	91	2	0	0
			T5R	6472	105	3	0	3	6407	104	3	0	3	5566	90	3	0	3
			T5RW	6317	102	3	0	1	6256	101	3	0	1	5353	87	3	0	1
			T5W	6221	101	3	0	1	6160	100	3	0	1	5272	85	3	0	1

[1]Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown. Actual performance may differ as a result of end-user environment and application.

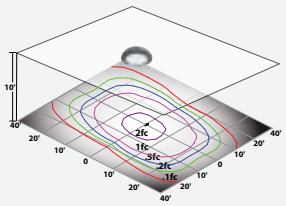
© 2017 BEACON PRODUCTS, All Rights Reserved • For more information visit our website: **www.beaconproducts.com** • Printed in USA JULY 31, 2017 5:13 PM

PHOTOMETRICS

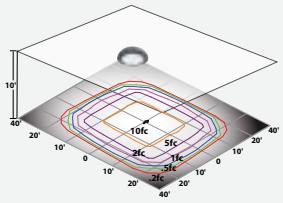
Type V Wide
ORB-18LED60-T5W



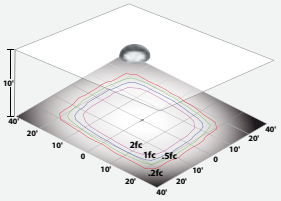
Type V Rectangular
ORB-18LED60-T5R



Type V Square Narrow
ORB-18LED60-T5QN



Type V Medium
ORB-18LED60-T5QM



PROJECTED LUMEN MAINTENANCE

System Power	AMBIENT TEMP.	0	25,000	50,000	[1]TM-21-11 60,000	100,000	Calculated L70 (HOURS)
40W	25°C/77°F	1.00	0.98	0.96	0.95	0.92	>345,000
40W	40°C/104°F	1.00	0.98	0.95	0.94	0.91	>340,000
60W	25°C/77°F	1.00	0.98	0.95	0.94	0.91	>340,000
60W	40°C/104°F	1.00	0.97	0.94	0.93	0.89	>315,000

[1] Projected per IESNA TM-21-11
Data references the extrapolated performance projections for the base model in a 40°C ambient, based on 10,000 hours of LED testing per IESNA LM-80-08.

ELECTRICAL DATA

# OF LEDS	NUMBER OF DRIVERS	DRIVE CURRENT (mA)	INPUT VOLTAGE (V)	SYSTEM POWER (w)	CURRENT (Amps)
18	1	700mA	120	42	0.36
			277	40	0.16
		1000mA	120	63	0.53
			277	62	0.24

MOUNTING INSTRUCTIONS



Loosen Phillips screw that holds the bracket to the housing.



Remove bracket from Orbeon housing. Attach the mounting bracket to the junction box using screws. Junction box may be surface mounted, recessed or suspended.



If provided with the optional bird guard, secure bracket to the housing using screws provided.



Hook the Orbeon housing to the bracket.



Assure bracket is square with traffic for aesthetics.



Secure the Orbeon housing by tightening the Phillips screw loosened in step 1.

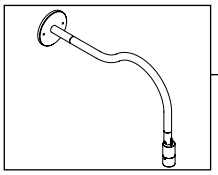


Observe "street side" label if directional optics are provided.



Turn power on and test.

© 2017 BEACON PRODUCTS, All Rights Reserved • For more information visit our website: **www.beaconproducts.com** • Printed in USA JULY 31, 2017 5:13 PM



the power of e

BK SSL LIGHTING

MICRO NITE™ SIGN STAR™ STYLE A

PROJECT:	

TYPE:	
CATALOG NUMBER:	
SOURCE:	
NOTES:	

CATALOG NUMBER LOGIC

SN		A	MN	LED						

Example: SN - 18 - A - MN - LED - e67 - SP - BZP - 12 - 11 - A

Series
SN - Sign Star™

Stem Length
18", 24", 30", 36", 42", or 48"
(Specify in inches)

Style
A - Dual bend, 90° Radius

Fixture
MN - Micro Nite Star™

Source
LED - **'e'** Technology with Integral Dimming Driver (See Specifications for Dimming)
Designed for use with remote 12VAC BKSSL® transformers. Requires magnetic Low Voltage dimmer.

LED Type
e67 - 7WLED/2.7K
e68 - 7WLED/3K
e69 - 7WLED/4K
e75 - 7WLED/Amber

Optics*
SP - Spot (Green Indicator)
MFL - Medium Flood (Yellow Indicator)
FL - Flood (Blue Indicator)

Finish

Aluminum Finish

Powder Coat Color	Satin	Wrinkle
Bronze	**BZP**	**BZW**
Black	**BLP**	**BLW**
White (Gloss)	**WHP**	**WHW**
Aluminum	**SAP**	—
Verde	—	**VER**

Premium Finish

ABP	Antique Brass Powder	**CMG**	Cascade Mountain Granite	**RMG**	Rocky Mountain Granite
AMG	Aleutian Mountain Granite	**CRI**	Cracked Ice	**SDS**	Sonoran Desert Sandstone
AQW	Antique White	**CRM**	Cream	**SMG**	Sierra Mountain Granite
BCM	Black Chrome	**HUG**	Hunter Green	**TXF**	Textured Forest
BGE	Beige	**MDS**	Mojave Desert Sandstone	**WCP**	Weathered Copper
BPP	Brown Patina Powder	**NBP**	Natural Brass Powder	**WIR**	Weathered Iron
CAP	Clear Anodized Powder	**OCP**	Old Copper	*Also available in RAL Finishes See submittal SUB-1439-00*	

Lens Type
12 - Soft Focus Lens
13 - Rectilinear Lens

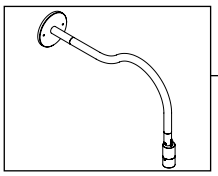
Shielding
11 - Honeycomb Baffle

Cap Style
A - 45°
B - 90°
C - Flush
D - 45° less Weep Hole *(Interior Use Only)*
E - 90° less Weep Hole *(Interior Use Only)*

B-K LIGHTING
40429 Brickyard Drive • Madera, CA 93636 • USA
559.438.5800 • FAX 559.438.5900
www.bklighting.com • info@bklighting.com

RELEASED 07-25-17
DRAWING NUMBER SUB-2193-00

THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION OF B-K LIGHTING, INC. AND ITS RECEIPT OR POSSESSION DOES NOT CONVEY ANY RIGHTS TO REPRODUCE, DISCLOSE ITS CONTENTS, OR TO MANUFACTURE, USE OR SELL ANYTHING IT MAY DESCRIBE. REPRODUCTION, DISCLOSURE OR USE WITHOUT SPECIFIC WRITTEN AUTHORIZATION OF B-K LIGHTING, INC. IS STRICTLY FORBIDDEN.

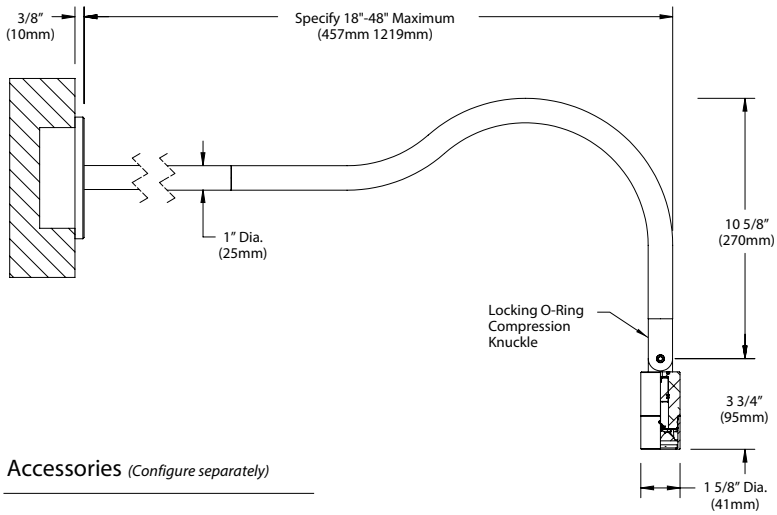


the power of e

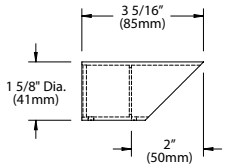
MICRO NITE™ SIGN STAR™ STYLE A

PROJECT:	
TYPE:	

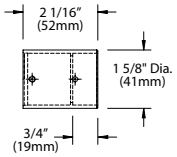
SIDE VIEW



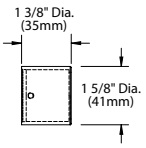
"A/D" CAP



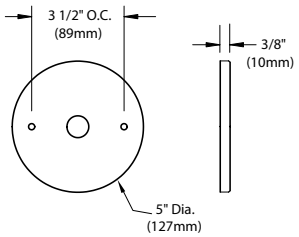
"B/E" CAP



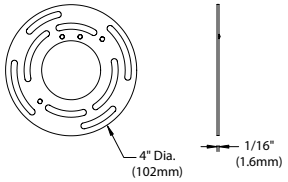
"C" CAP



CANOPY DETAIL

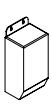


UNIVERSAL RING

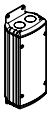


Accessories *(Configure separately)*

Remote Transformers:



TR Series



UPMRM™

All dimensions indicated on this submittal are nominal.
Contact Technical Sales if you require more stringent specifications.

SPECIFICATIONS

GreenSource Initiative™
Metal and packaging components are made from recycled materials. Manufactured using renewable solar energy, produced on site. Returnable to manufacturer at end of life to ensure cradle-to-cradle handling. Packaging contains no chlorofluorocarbons (CFC's). Use of this product may qualify for GreenSource efficacy and recycling rebate(s). Consult www.bklighting.com/greensource for program requirements.

Materials
Furnished in Copper-Free Aluminum (Type 6061-T6).

Style
'A' Style provides dual bend, 90° radius from fixture to stem.

Body
Fully machined from solid billet. Unibody design provides enclosed, water-proof wireway and integral heat sink for maximum component life. Integral knuckle for maximum mechanical strength. High temperature, silicone 'O' Ring provides water-tight seal.

Knuckle
The LOCK™ (Locking 'O' Ring Compression Knuckle) is comprised of two components. The first is integral to the body and features an interior, machined taper. The second is machined from solid billet and features a second, reverse angle taper. The resultant mechanical taper-lock allows a full 180° vertical adjustment without the use of serrated teeth, which inherently limit aiming. High temperature, silicone 'O' Ring provides water-tight seal and compressive resistance to maintain fixture position. Design withstands 73 lb. static load prior to movement to ensure decades of optical alignment. Biaxial source control with 360° horizontal rotation in addition to vertical adjustment.

Cap
Fully machined. Accommodates [1] lens or louver media. Choose from 45° cutoff ('A' or 'D'), 3/4" deep bezel with 90° cutoff ('B' or 'E'), or flush lens ('C') cap styles. 'A' and 'B' caps include weep-hole for water and debris drainage. 'D' and 'E' caps exclude weep-hole and are for interior use only.

Stem
Fully machined, 1" dia. with internal threads for maximum visual appeal. Available in configurable lengths to 48" maximum overall.

Lens
Shock resistant, tempered, glass lens is factory adhered to fixture cap and provides hermetically sealed optical compartment. Specify soft focus (#12) or rectilinear (#13) lens.

BKSSL®
Integrated solid state system with 'e' technology is scalable for field upgrade. Modular design with electrical quick disconnects permit field maintenance. High power, forward throw source complies with ANSI C7777 binning requirements. Exceeds ENERGY STAR® lumen maintenance requirements. LM-80 certified components.

Integral, constant current driver. 12VAC/VDC input. 50/60Hz. Proprietary input control scheme achieves power factor correction and eliminates inrush current. Output, over-voltage, open-circuit, and short circuit protected. Inrush current limited to 250mA (non-dimmed). Conforms to Safety Std. C22.2 No. 250.13-12.

Dimming
Line voltage dimmable via magnetic low voltage dimmer. For use with low voltage dimmer with dedicated neutral conductor. For purposes of dimming: Remote magnetic transformer with BKSSL® Power of 'e' technology loads should be loaded to 25% of the transformer VA (watts) rated value.

Optics
Interchangeable OPTIKIT™ modules permit field changes to optical distribution. Color-coded for easy reference: Spot (SP) = Green. Medium Flood (MFL) = Yellow. Flood (FL) = Blue.

Installation
5" dia., machined canopy permits mounting to 4" octagonal junction box. Junction box installation must be designed to hold full fulcrum weight of fixture (junction box and gasket by others).

Remote Transformer
For use with 12VAC BKSSL remote transformer or magnetic transformers only. B-K Lighting cannot guarantee performance with third party manufacturers' transformers.

Wiring
PVC coated, 18AWG, 150V, 60°C rated and certified to UL 1838 standard.

Hardware
Tamper-resistant, stainless steel hardware. LOCK™ aiming screw and canopy mounting screws are additionally black oxide treated for additional corrosion resistance.

Finish
StarGuard®, our exclusive RoHs compliant, 15 stage chromate-free process cleans and conversion coats aluminum components prior to application of Class 'A' TGIC polyester powder coating.

Warranty
5 year limited warranty.

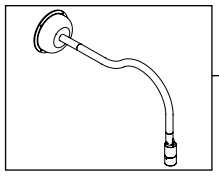
Certification and Listing
ITL tested to IESNA LM-79. UL Listed. Certified to CAN/CSA/ANSI Standards. RoHS compliant. Suitable for indoor or outdoor use. Suitable for use in wet locations. IP 66 Rated. Made in USA.

c UL us LISTED RoHS MADE IN THE USA

®Energy Star is a registered trademark of the United States Environmental Protection Agency.

B-K LIGHTING
40429 Brickyard Drive • Madera, CA 93636 • USA
559.438.5800 • FAX 559.438.5900
www.bklighting.com • info@bklighting.com

RELEASED	DRAWING NUMBER
07-25-17	SUB-2193-00



the power of e

BK SSL LIGHTING

MICRO NITE™
SIGN STAR™ STYLE A
with Power Canopy

PROJECT:	
TYPE:	
CATALOG NUMBER:	
SOURCE:	
NOTES:	

CATALOG NUMBER LOGIC

SN		A	MN	LED							PC
SN	- 18	- A	- MN	- LED	- e69	- SP	- BZP	- 12	- 11	- A	- PC

Example: SN - 18 - A - MN - LED - e69 - SP - BZP - 12 - 11 - A - PC

Series
SN - Sign Star™

Stem Length
18", 24", 30", or 36"
(Specify in inches)

Style
A - Dual bend, 90° Radius

Fixture
MN - Micro Nite Star™

Source
LED - **'e'** Technology with Integral Driver

LED Type
e67 - 7WLED/2.7K
e68 - 7WLED/3K
e69 - 7WLED/4K
e75 - 7WLED/Amber

Optics*
SP - Spot (Green Indicator)
MFL - Medium Flood (Yellow Indicator)
FL - Flood (Blue Indicator)

Finish

Aluminum Finish

Powder Coat Color	Satin	Wrinkle
Bronze	BZP	BZW
Black	BLP	BLW
White (Gloss)	WHP	WHW
Aluminum	SAP	—
Verde	—	VER

Premium Finish

ABP	Antique Brass Powder	CMG	Cascade Mountain Granite	RMG	Rocky Mountain Granite
AMG	Aleutian Mountain Granite	CRI	Cracked Ice	SDS	Sonoran Desert Sandstone
AQW	Antique White	CRM	Cream	SMG	Sierra Mountain Granite
BCM	Black Chrome	HUG	Hunter Green	TXF	Textured Forest
BGE	Beige	MDS	Mojave Desert Sandstone	WCP	Weathered Copper
BPP	Brown Patina Powder	NBP	Natural Brass Powder	WIR	Weathered Iron
CAP	Clear Anodized Powder	OCP	Old Copper	*Also available in RAL Finishes See submittal SUB-1439-00*	

Lens Type
12 - Soft Focus Lens
13 - Rectilinear Lens

Shielding
11 - Honeycomb Baffle

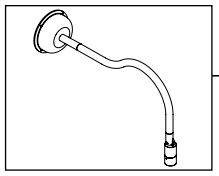
Cap Style
A - 45°
B - 90°
C - Flush
D - 45° less Weep Hole *(Interior Use Only)*
E - 90° less Weep Hole *(Interior Use Only)*

Transformer Style
PC - Power Canopy with TRe20 Electronic Transformer*
**105-300 VAC. 50/60 Hz. Non-Dimming*

B-K LIGHTING
40429 Brickyard Drive • Madera, CA 93636 • USA
559.438.5800 • FAX 559.438.5900
www.bklighting.com • info@bklighting.com

RELEASED 07-25-17
DRAWING NUMBER SUB-2194-00

THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION OF B-K LIGHTING, INC. AND ITS RECEIPT OR POSSESSION DOES NOT CONVEY ANY RIGHTS TO REPRODUCE, DISCLOSE ITS CONTENTS, OR TO MANUFACTURE, USE OR SELL ANYTHING IT MAY DESCRIBE. REPRODUCTION, DISCLOSURE OR USE WITHOUT SPECIFIC WRITTEN AUTHORIZATION OF B-K LIGHTING, INC. IS STRICTLY FORBIDDEN.



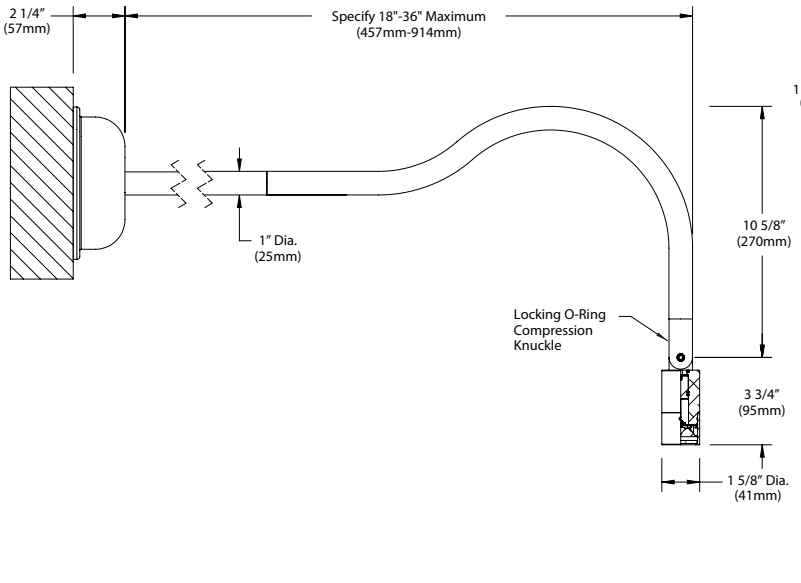
the power of e

BKSSL SOLID STATE LIGHTING

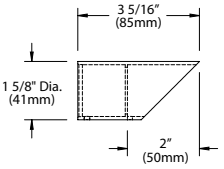
MICRO NITE™
SIGN STAR™ STYLE A
with Power Canopy

PROJECT:	
TYPE:	

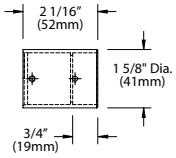
SIDE VIEW



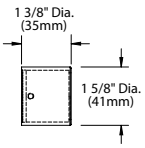
"A/D" CAP



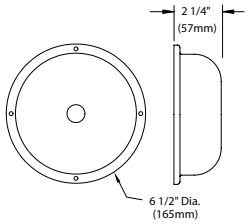
"B/E" CAP

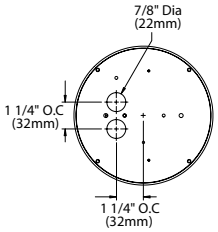


"C" CAP



POWER CANOPY DETAIL





All dimensions indicated on this submittal are nominal.
Contact Technical Sales if you require more stringent specifications.

SPECIFICATIONS

GreenSource Initiative™
Metal and packaging components are made from recycled materials. Manufactured using renewable solar energy, produced on site. Returnable to manufacturer at end of life to ensure cradle-to-cradle handling. Packaging contains no chlorofluorocarbons (CFC's). Use of this product may qualify for GreenSource efficacy and recycling rebate(s). Consult www.bklighting.com/greensource for program requirements.

Materials
Furnished in Copper-Free Aluminum (Type 6061-T6).

Style
'A' Style provides dual bend, 90° radius from fixture to stem.

Body
Fully machined from solid billet. Unibody design provides enclosed, water-proof wireway and integral heat sink for maximum component life. Integral knuckle for maximum mechanical strength. High temperature, silicone 'O' Ring provides water-tight seal.

Knuckle
The LOCK™ (Locking 'O' Ring Compression Knuckle) is comprised of two components. The first is integral to the body and features an interior, machined taper. The second is machined from solid billet and features a second, reverse angle taper. The resultant mechanical taper-lock allows a full 180° vertical adjustment without the use of serrated teeth, which inherently limit aiming. High temperature, silicone 'O' Ring provides water-tight seal and compressive resistance to maintain fixture position. Design withstands 73 lb. static load prior to movement to ensure decades of optical alignment. Biaxial source control with 360° horizontal rotation in addition to vertical adjustment.

Cap
Fully machined. Accommodates [1] lens or louver media. Choose from 45° cutoff ('A' or 'D'), 3/4" deep bezel with 90° cutoff ('B' or 'E'), or flush lens ('C') cap styles. 'A' and 'B' caps include weep-hole for water and debris drainage. 'D' and 'E' caps exclude weep-hole and are for interior use only.

Stem
Fully machined, 1" dia. with internal threads for maximum visual appeal. Available in configurable lengths to 36" maximum overall.

Lens
Shock resistant, tempered, glass lens is factory adhered to fixture cap and provides hermetically sealed optical compartment. Specify soft focus (#12) or rectilinear (#13) lens.

BKSSL®
Integrated solid state system with 'e' technology is scalable for field upgrade. Modular design with electrical quick disconnects permit field maintenance. High power, forward throw source complies with ANSI C78.377 binning requirements. Exceeds ENERGY STAR® lumen maintenance requirements. LM-80 certified components.

Integral, constant current driver. 12VAC/VDC input. 50/60Hz. Proprietary input control scheme achieves power factor correction and eliminates inrush current. Output, over-voltage, open-circuit, and short circuit protected. Inrush current limited to 250mA (non-dimmed). Conforms to Safety Std. C22.2 No. 250.13-12.

Optics
Interchangeable OPTIKIT™ modules permit field changes to optical distribution. Color-coded for easy reference: Spot (SP) = Green. Medium Flood (MFL) = Yellow. Flood (FL) = Blue.

Installation
6-1/2" dia. Power Canopy™ features gasketed mounting plate for surface or junction box installation with two ½" KO's for wiring (hardware by others). Junction box installation must be designed to hold full fulcrum weight of fixture.

Transformer
Integral, TRe20 electronic transformer. 105-300VAC primary voltage. 50/60Hz. Non Dimming. 20VA maximum load.

Wiring
PVC coated, 18AWG, 150V, 60°C rated and certified to UL 1838 standard.

Hardware
Tamper-resistant, stainless steel hardware. LOCK™ aiming screw and canopy mounting screws are additionally black oxide treated for additional corrosion resistance.

Finish
StarGuard®, our exclusive RoHs compliant, 15 stage chromate-free process cleans and conversion coats aluminum components prior to application of Class 'A' TGIC polyester powder coating.

Warranty
5 year limited warranty.

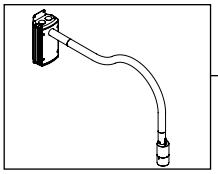
Certification and Listing
ITL tested to IESNA LM-79. UL Listed. Certified to CAN/CSA/ANSI Standards. RoHs compliant. Suitable for indoor or outdoor use. Suitable for use in wet locations. IP 66 Rated. Made in USA.

c UL us LISTED RoHS MADE IN THE USA

*Energy Star is a registered trademark of the United States

B-K LIGHTING
40429 Brickyard Drive • Madera, CA 93636 • USA
559.438.5800 • FAX 559.438.5900
www.bklighting.com • info@bklighting.com

RELEASED	DRAWING NUMBER
07-25-17	SUB-2194-00



the power of e

BK SSL LIGHTING

MICRO NITE™
SIGN STAR™ STYLE A
with PM1

PROJECT:	
TYPE:	
CATALOG NUMBER:	
SOURCE:	
NOTES:	

CATALOG NUMBER LOGIC

SN		A	MN	LED							PM1		

Example: SN - 18 - A - MN - LED - e69 - SP - BZP - 12 - 11 - A - PM1 - SM -

Series
SN - Sign Star™

Stem Length
18", 24", 30", 36", 42" or 48"
(Specify in inches)

Style
A - Dual bend, 90° Radius

Fixture
MN - Micro Nite Star™

Source
LED - **'e'** Technology with Integral Driver

LED Type
e67 - 7WLED/2.7K
e68 - 7WLED/3K
e69 - 7WLED/4K
e75 - 7WLED/Amber

Optics*
SP - Spot (Green Indicator
MFL - Medium Flood (Yellow Indicator)
FL - Flood (Blue Indicator)

Finish

Aluminum Finish

Powder Coat Color	Satin	Wrinkle
Bronze	**BZP**	**BZW**
Black	**BLP**	**BLW**
White (Gloss)	**WHP**	**WHW**
Aluminum	**SAP**	—
Verde	—	**VER**

Premium Finish

ABP	Antique Brass Powder	**CMG**	Cascade Mountain Granite	**RMG**	Rocky Mountain Granite
AMG	Aleutian Mountain Granite	**CRI**	Cracked Ice	**SDS**	Sonoran Desert Sandstone
AQW	Antique White	**CRM**	Cream	**SMG**	Sierra Mountain Granite
BCM	Black Chrome	**HUG**	Hunter Green	**TXF**	Textured Forest
BGE	Beige	**MDS**	Mojave Desert Sandstone	**WCP**	Weathered Copper
BPP	Brown Patina Powder	**NBP**	Natural Brass Powder	**WIR**	Weathered Iron
CAP	Clear Anodized Powder	**OCP**	Old Copper	*Also available in RAL Finishes See submittal SUB-1439-00*	

Lens Type
12 - Soft Focus Lens
13 - Rectilinear Lens

Shielding
11 - Honeycomb Baffle

Cap Style
A - 45°
B - 90°
C - Flush
D - 45° less Weep Hole *(Interior Use Only)*
E - 90° less Weep Hole *(Interior Use Only)*

Transformer Style
PM1 - Universal Power Module™with TRe20 Electronic Transformer*
**105-300 VAC. 50/60 Hz. Non-Dimming*

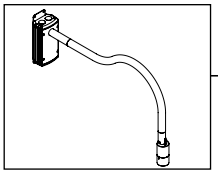
Mounting
SM - Surface Mount
CR - Round Camlock™
CT - Rectangular Camlock™

Options
MB - Mounting Brackets *(for CR and CT only)*

B-K LIGHTING
40429 Brickyard Drive • Madera, CA 93636 • USA
559.438.5800 • FAX 559.438.5900
www.bklighting.com • info@bklighting.com

RELEASED 07-25-17
DRAWING NUMBER SUB-2195-00

THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION OF B-K LIGHTING, INC. AND ITS RECEIPT OR POSSESSION DOES NOT CONVEY ANY RIGHTS TO REPRODUCE, DISCLOSE ITS CONTENTS, OR TO MANUFACTURE, USE OR SELL ANYTHING IT MAY DESCRIBE. REPRODUCTION, DISCLOSURE OR USE WITHOUT SPECIFIC WRITTEN AUTHORIZATION OF B-K LIGHTING, INC. IS STRICTLY FORBIDDEN.



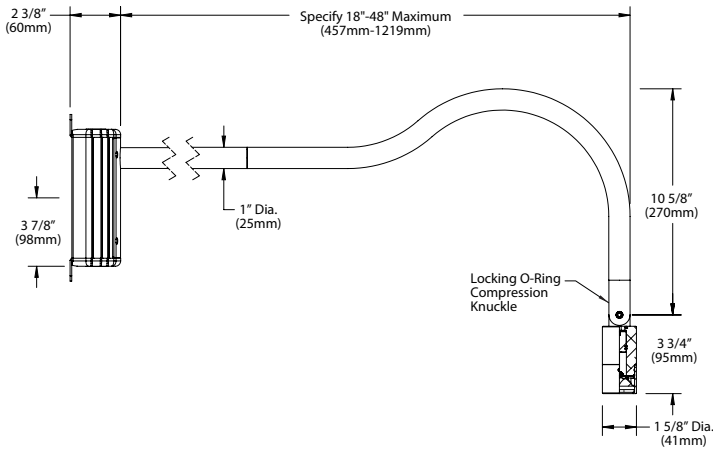
the power of e

BKSSL SOLID STATE LIGHTING

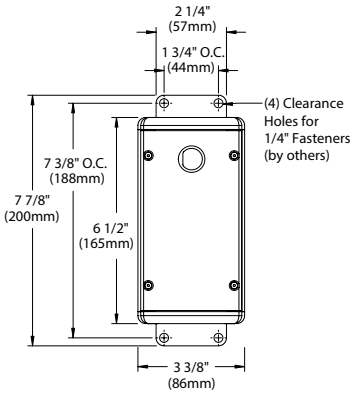
MICRO NITE™
SIGN STAR™ STYLE A
with PM1

PROJECT:	
TYPE:	

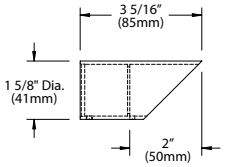
SIDE VIEW



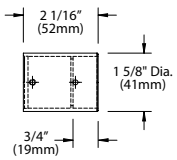
SURFACE MOUNT WITH BRACKETS



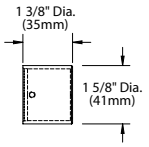
"A/D" CAP



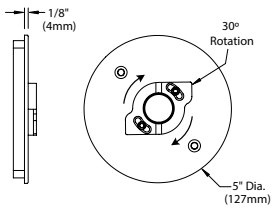
"B/E" CAP



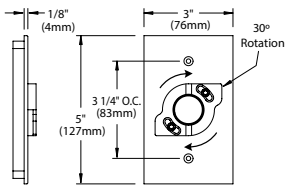
"C" CAP



ROUND CAMLOCK™ CANOPY



RECTANGULAR CAMLOCK™ CANOPY



All dimensions indicated on this submittal are nominal.
Contact Technical Sales if you require more stringent specifications.

SPECIFICATIONS

GreenSource Initiative™
Metal and packaging components are made from recycled materials. Manufactured using renewable solar energy, produced on site. Returnable to manufacturer at end of life to ensure cradle-to-cradle handling. Packaging contains no chlorofluorocarbons (CFC's). Use of this product may qualify for GreenSource efficacy and recycling rebate(s). Consult www.bklighting.com/greensource for program requirements.

Materials
Furnished in Copper-Free Aluminum (Type 6061-T6).

Style
'A' Style provides dual bend, 90° radius from fixture to stem.

Body
Fully machined from solid billet. Unibody design provides enclosed, water-proof wireway and integral heat sink for maximum component life. Integral knuckle for maximum mechanical strength. High temperature, silicone 'O' Ring provides water-tight seal.

Knuckle
The LOCK™ (Locking 'O' Ring Compression Knuckle) is comprised of two components. The first is integral to the body and features an interior, machined taper. The second is machined from solid billet and features a second, reverse angle taper. The resultant mechanical taper-lock allows a full 180° vertical adjustment without the use of serrated teeth, which inherently limit aiming. High temperature, silicone 'O' Ring provides water-tight seal and compressive resistance to maintain fixture position. Design withstands 73 lb. static load prior to movement to ensure decades of optical alignment. Biaxial source control with 360° horizontal rotation in addition to vertical adjustment.

Cap
Fully machined. Accommodates [1] lens or louver media. Choose from 45° cutoff ('A' or 'D'), 3/4" deep bezel with 90° cutoff ('B' or 'E'), or flush lens ('C') cap styles. 'A' and 'B' caps include weep-hole for water and debris drainage. 'D' and 'E' caps exclude weep-hole and are for interior use only.

Stem
Fully machined, 1" dia. with internal threads for maximum visual appeal. Available in configurable lengths to 48" maximum overall.

Lens
Shock resistant, tempered, glass lens is factory adhered to fixture cap and provides hermetically sealed optical compartment. Specify soft focus (#12) or rectilinear (#13) lens.

BKSSL®
Integrated solid state system with 'e' technology is scalable for field upgrade. Modular design with electrical quick disconnects permit field maintenance. High power, forward throw source complies with ANSI C78.377 binning requirements. Exceeds ENERGY STAR® lumen maintenance requirements. LM-80 certified components.

Integral, constant current driver. 12VAC/VDC input. 50/60Hz. Proprietary input control scheme achieves power factor correction and eliminates inrush current. Output, over-voltage, open-circuit, and short circuit protected. Inrush current limited to 250mA (non-dimmed). Conforms to Safety Std. C22.2 No. 250.13-12.

Optics
Interchangeable OPTIKIT™ modules permit field changes to optical distribution. Color-coded for easy reference:
Spot (SP) = Green. Medium Flood (MFL) = Yellow.
Flood (FL) = Blue.

Installation
Universal Power Module™ (PM1) features aluminum extrusion with die cast end caps. Surface mounted with flow through back channel to prevent water and debris collection. Machined aluminum cover with countersunk holes for flush hardware installation. Front access for ease of installation and inspection. [2] 1/2" NPT female conduit entries per end cap for through wiring. Specify Surface Mount (SM), Round Camlock™ Canopy (CR) or Rectangular Camlock™ Canopy (CT).

Transformer
Integral, TRe20 electronic transformer. 105-300VAC primary voltage. 50/60Hz. Non Dimming. 20VA maximum load.

Wiring
PVC coated, 18AWG, 150V, 60°C rated and certified to UL 1838 standard.

Hardware
Tamper-resistant, stainless steel hardware. LOCK™ aiming screw and canopy mounting screws are additionally black oxide treated for additional corrosion resistance.

Finish
StarGuard®, our exclusive RoHs compliant, 15 stage chromate-free process cleans and conversion coats aluminum components prior to application of Class 'A' TGIC polyester powder coating.

Warranty
5 year limited warranty.

Certification and Listing
SignStar™: UL Listed. Certified to CAN/CSA/ANSI Standards. IP66 Rated. RoHs compliant. Suitable for indoor or outdoor use. Suitable for use in wet locations.

PM1™: NEMA 4X / IP-66 Rated Enclosure. UL Listed. Certified to CAN/CSA/ANSI Standards.

RoHs compliant. Suitable for indoor or outdoor use. Suitable for use in wet locations. IP 66 Rated. Made in USA.

c UL us LISTED RoHS MADE IN THE USA

*Energy Star is a registered trademark of the United States Environmental Protection Agency.

the power of e

BKSSL SOLID STATE LIGHTING

LAMP & DRIVER DATA

e67, e68, e69, e75

DRIVER DATA	Input Volts	InRush Current	Operating	Dimmable	Operation Ambient Temperature
	12VAC/DC 50/60Hz	<250mA (non-dimmed)	500mA	Magnetic Low Voltage Dimmer	-22°F-194°F (-30°C - 90°C)

LM79 DATA

BK No.	CCT (Typ.)	CRI (Typ.)	Input Watts (Typ.)
e67	2700K	80	7
	2700K	80	7
	2700K	80	7
e68	3000K	80	7
	3000K	80	7
	3000K	80	7
e69	4000K	80	7
	4000K	80	7
	4000K	80	7
e75	Amber (590nm)	~	7

L70 DATA

Minimum Rated Life (hrs.) 70% of initial lumens (L_{70})
50,000
50,000
50,000
50,000
50,000
50,000
50,000
50,000
50,000
50,000

OPTICAL DATA

Angle	CBCP	Delivered Lumens
17°	3632	459
25°	1708	435
30°	1337	438
17°	3871	489
25°	1821	464
30°	1425	467
17°	3991	504
25°	1877	478
30°	1469	481
~	~	~

OPTICS

Optic	Angle
NSP - Narrow Spot	17°
MFL - Medium Flood	25°
FL - Flood	30°

ACORN ENGINEERING, INC.

Shukria Wiar – City Planner
Planning Division, City of Portland
389 Congress Street
Portland, ME 04101

February 27, 2018

Subject: Comment Response Letter
151 Washington Ave. Redevelopment – Portland, Maine

On behalf of Diving Rock, LLC we are pleased to respond to the comments that we've received thus far.

Woodard & Curran, Civil Engineering

Comment – *The existing parking lot is being reconstructed and regraded, and this wouldn't be considered "maintenance", so it is redevelopment. If the non-roof development area is greater than 5,000 SF, they'll need to provide treatment for 50% of the area. They are not providing any treatment now. A potential location for treatment is in the landscaped area at the Washington Ave entrance.*

Response – Please refer to the revised stormwater management plan which incorporates an exhibit outlining the redeveloped non-roof impervious area vs the maintained non-roof impervious area. The hatches outline the areas in which the site would not be meeting the "maintenance" definition as outlined by the Maine DEP: "Routine maintenance is maintenance performed to maintain the original line and grade, hydraulic capacity, and original purpose of the facility. Paving impervious gravel surfaces while maintaining the original line and grade, hydraulic capacity and original purpose of the facility is considered routine maintenance…" Based on this definition, the majority of the parking lot reconstruction would be considered maintenance since the original line and grade, hydraulic capacity, and original purpose of the facility is being maintained. The hatched areas are those that have a notable change in grade and drainage pattern. The total non-roof redeveloped area is 1,621 square feet, well below the 5,000 square foot threshold for water quality.

Comment – *There are 4 parking spaces under the building. They need some additional spot grades to show how drainage is going to exit this area. I don't see any existing catch basins in the street, so I'm not really sure where the water is going now.*

Response – Please refer to the revised Grading & Drainage plan in which we've added additional spot grades to depict the drainage. No rainfall will reach the covered parking; however, some snowmelt from cars will flow along the gutter line at 1% towards East Cove Street. The closest existing downstream catch basin is approximately 300 feet west of the site, just before the Northern Burner Supply building. Stormwater runs off from the project site as well as multiple other properties and flows to this catch basin. A new catch basin is proposed on site with a hood and 3-foot sump.

Comment – *They are proposing to tie a combined roof and foundation drain into the combined sewer located in the sidewalk. I believe that this stormwater connection to the sewer will be allowed as they are on the peninsula, but wanted to flag the connection for Keith and Brad.*

Response – Thank you for your review – we are in agreement as many other recent projects have tied storm drains into the combined sewer.

Jeff Tarling, Landscaping

Comment – *The proposed project is shy on tree and landscape planting for the size of the development. Recommendations - Available space for trees and landscape are often at a minimum when project 'built space' / paved space is nearly 100%. Tree and Landscape standards should be met with creative design. Parking lot tree and landscape for the proposed project should meet standards as a condition of approval. This could include the space between the parking spaces and the existing building, the end caps on the left and right sides of the parking lot.*

Response – Thank you for your review. We have revised the Site and Landscape Plan to incorporate more appropriate screening treatment. Given the site's existing impervious area of nearly 100% and the parking requirement set forth by the City, the landscaping is limited to certain areas. Overall, the site will be much improved from what is existing regarding total pervious area, screening, and aesthetics.

Comment – *While perennials are landscape plants they offer little in the way of 3-season interest or screening, Recommendation / condition - include woody plants and or herbaceous plants with increased density.*

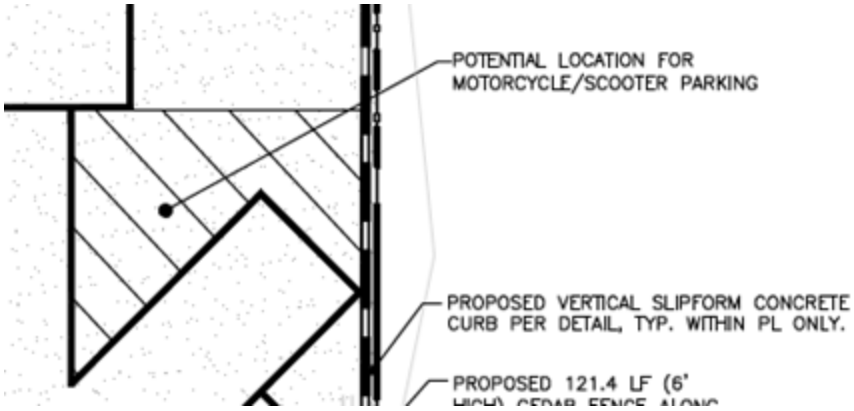
Response – The perennials on the upper island adjacent to the existing building have been replaced with woody evergreens for year-round screening.

Comment – *The proposed seven perennials shown near the parking entrance and the nine perennials shown to the left of the building should be improved as the numbers are well below planting standards.*

Response – The seven perennials have been replaced. The nine perennials have also been replaced with taller, ornamental grasses. Given the small width of planting area and the business sign proposed on the exterior wall, the goal is to provide relatively low-growing landscaping treatment for adequate viewing of the sign. Therefore, no shrubs or trees have been proposed in this area.

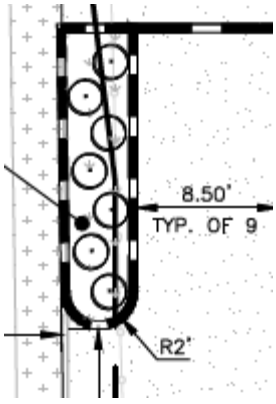
Towards the rear of the building, a green wall is proposed to help compliment the building and provide more landscaping. Please refer to the building elevations for renderings of the green wall. Based on the landscaping requirements for parking and street frontage, this project exceeds the standards.

Comment – *Additional tree and shrubs could be planted in the corner location, this area should also include curbing to protect the landscape.*



Response – Please refer to the revised site plan in which this parking layout is no longer proposed. As part of the revision, more green space is proposed next to patio and Washington Avenue.

Comment – *This area should be large enough to provide landscape buffer per standards, recommend small tree and shrubs.*



Response – We have replaced the low-lying plants with taller junipers to function as year-round screening. The island will accommodate these small trees.

Comment – *Overall the tree and landscape treatment appears inadequate for the scale of the project. Recommend that the project revisits the landscape plan and update.*

Response – Thank you for the review. Please refer to the revised C-10 for the changes.

Please let me know if you have any additional questions or comments.

Sincerely,





William H. Savage, P.E.
Principal - Project Manager
Acorn Engineering, Inc.

Samuel J. Lebel, E.I.
Design Engineer
Acorn Engineering, Inc.

ACORN ENGINEERING, INC.

Planning Division
City of Portland, Maine
389 Congress Street, 4th Floor
Portland, ME 04101

January 4, 2018

Subject: 151 Washington Avenue Neighborhood Meeting

I, Will Savage, hereby certify that a neighborhood meeting was held on January 2, 2018 at the Root Cellar at 5:30 pm.

I also certify that on December 22, 2017, invitations were mailed to the following:

1. All addresses on the mailing list provided by the Planning Division which includes property owners within 500 feet of the proposed development.

2. Residents on the "interested parties" list.

3. A digital copy of the notice was also provided to the Planning Division (jmy@portlandmaine.gov and ldobson@portlandmaine.gov) and the assigned planner to be forwarded to those on the interested citizen list who receive e-mail notices.

Sincerely,

Date: 1/4/18

William H. Savage, P.E.
Principal - Project Manager
Acorn Engineering, Inc.

Included with this certification are:

1. Copy of the invitation sent
2. Sign-in sheet
3. Meeting minutes

ACORN ENGINEERING, INC.

December 22, 2017

Dear Neighbor:

On behalf of Diving Rock, LLC, we are pleased to invite you to a neighborhood meeting to discuss our plans for the proposed project at 149-155 Washington Ave. which includes the development of a mixed used, energy efficient building designed by Ryan Senatore Architecture. Retail space will be provided on the 1st floor with offices on the upper levels. Given the site's proximity to several neighborhoods, the goal is to provide office space for professionals in which they will have the opportunity to walk and bike to work. Thus, the building will feature amenities such as showers. Landscaping will be improved and the existing building at the rear of the property, presently occupied by Gear Hub, will remain.

Meeting Location: The Root Cellar – 94 Washington Ave., Portland, ME 04101

Meeting Date: Tuesday, January 2, 2018

Meeting Time: 5:30 p.m.

The City code requires that property owners within 500 feet of the proposed development and residents on an "interested parties list" be invited to participate in a neighborhood meeting. A sign-in sheet will be circulated and minutes of the meeting will be taken. Both the sign-in sheet and minutes will be submitted to the Planning Board.

If you have any questions regarding the neighborhood meeting, please don't hesitate to call me or the office at 775 – 2655. We look forward to seeing you at the meeting.

Sincerely,



William H. Savage, P.E.
Acorn Engineering, Inc.

149-155 Washington Ave. Neighborhood Meeting Sign-In Sheet

1. BEN AUSTIN
2. BILL BUSS
3. CHRIS BRUNI
4. THOMAS DOHERTY
5. LAURA BALLADER
6. JOHN COURTNEY
7. TOM BLOOM
8. ELLEN BAILEY
9. DAVID COURTNEY
10. TOM COURTNEY
11. ANDREW MARSTERS
12. CYNTHIA COCHRAN
13. RYAN SINATORE
14. SAM LEBEL
15. WILL SAVAGE
16. JOHN RIZZO
17.
18.
19.
20.
21.
22.
23.
24.
25.
26.
27.
28.
29.
30.
31.
32.
33.
34.
35.
36.
37.
38.
39.
40.
41.
42.
43.
44.
45.
46.
47.
48.
49.
50.
51.
52.
53.
54.

ACORN ENGINEERING, INC.

149-155 Washington Ave. Redevelopment
Level III Site Plan Application

Neighborhood Meeting Minutes

January 2, 2018 / 5:30 pm
The Root Cellar

Project Team Attendees:

John Ritzo (JR):	Developer/Presenter (Diving Rock, LLC)
Will Savage (WS):	Civil Engineer/Presenter (Acorn Engineering)
Sam Lebel (SL):	Civil Engineer/Note Taker (Acorn Engineering)
Ryan Senatore (RS):	Architect/Presenter (Ryan Senatore Architecture)
Jed Rathband (Jed):	Commercial Real Estate Agent (Keller Williams Realty / The Rathband Company)

Meeting started at approximately 5:35 pm.

Presentation:

John Ritzo:

- Introduced the project team
- Introduced himself and his background
  - Native Mainer
  - Lives on Munjoy Hill
  - Involved with real estate and development
  - Transitioned out of fixing up residential rentals to focus on deep energy efficient retrofits and commercial properties.
- Bought 155 Washington Ave. in September of 2016 – renovated/added on to building and leased to Gear Hub.
- This project will keep Gear Hub as the tenant in the existing building with the new building along Washington Ave frontage.
- Goal is to retain ownership of this project and to stay connected in the community.
- Building design features 4 stories with approx. 1,200 SF retail on first floor and 2,600 SF

office per floor on upper levels. 4th floor will be an executive style office space.

Will Savage:

- Familiar with the area given the numerous projects Acorn and RSA have designed in the vicinity of the subject property.
- Neighborhood Meeting is a City requirement.
- Sign In Sheet and Meeting Minutes will be submitted to the City.
- This is a great opportunity for the neighbors to learn about the project and to ask any questions.
- Outlined the site within the neighborhood and pointed out the different zoning districts before moving into the zoomed in site plan.
- Existing conditions:
    - Primarily a parking lot
    - 1,800 SF workshop space for Gear Hub (used to be an auto shop)
    - Site is within the B1 Zone which encourages mixed-use, multistory buildings (specifically 1st floor retail with office above) such as this project.
- Proposed 4-story building with a total of 10,855 SF of floor space. If floor space was kept under 10,000 SF, this project would be a level II site plan without the requirement for neighborhood or planning board meetings. We saw this project as a true benefit to the City and did not want permitting to limit the size so we recommended to the Client to surpass the 10,000 SF threshold and move forward with a level III site plan application.
- There will be a one-way ingress off of Washington Ave
- Parking Overview
    - 45-degree parking on the drive aisle perpendicular to Washington Ave.
    - 90-degree parking within the two-way drive aisle perpendicular to East Cove St.
    - 20 parking spaces proposed vs 18 required.
    - 4 tandem spaces next to the existing building.
    - 4 covered spaces by building overhang.
    - Layout was confirmed to be functional by a computer simulation program, AutoTurn.
- 4 exterior bicycle spaces
- Showers on office floors with the potential of interior bicycle parking to promote walking and biking to work.
- A common question that's brought up is the requested waivers – we are requesting one. This waiver includes increasing the allowable 20% compact spaces. However, the proposed compact spaces will not be the City-defined 8'x15'. These "compact spaces" will be 8.5'x18' which is closer to the standard 9'x18' size. The justification for this decrease is to allow additional space for pedestrian and ADA routes.
- Site is nearly 100% impervious. Plan is to add open space and landscaping.
- A cedar fence is proposed along the southerly property line.
- Utility Overview (all underground)
    - New sewer service
    - New gas service
    - Electric/Telephone/Cable
        - Drop overhead lines in between existing utility poles underground up E. Cove St. to allow room for the new building
        - Service to the new building will be from the Utility Pole near the existing driveway

    - Water
        - 6" Fire line for sprinkler system
        - 4" domestic line
- Project is subject to Level III Site Plan Standards and is under review by the Peer Review Engineer.
- No Planning Board meeting has been scheduled thus far. If you sign up on the City's website, you can receive emails notifying you of the Planning Board agenda.
- Based on the City's comprehensive Plan, this development is in line:
    - We believe this is an exciting opportunity for the City to increase the available retail/office space along the inner Washington Avenue corridor. The vision is to create a shared-use office to support Portland's entrepreneurial environment. The development's proximity to residential housing as well as amenities such as showers will allow bicyclists and pedestrians to effectively link housing, jobs, and services.

Ryan Senatore:

- 4-story building
- Section view shows how the building will be constructed. Grades go up towards the rear of the property.
- 1st level retail to encourage an active street frontage.
- 2nd, 3rd, 4th levels will be office space.
- Large section view showing Munjoy Heights to Washington Ave. This outlines the relation of each building.
- Overview of floor plans
    - 2 entrances off Washington Ave – 1 for each use
    - 2 means of egress
    - 2nd floor is open concept
    - Shower and kitchenette on all office floors
    - 3rd floor is blank as we envision a tenant coming in and putting together the floor plan themselves
    - 4th floor has decks for lowering the massing. Ideally, it will be an executive-style office for someone living in the neighborhood
- Overview of elevations
    - Lot of glazing along frontage
    - Transitional siding to include traditional Portland materials
        - Primarily brick façade
        - Resin panels to offset brick
        - Fiber cement panels to further help contrast with brick
        - *Material samples were presented at the meeting*
    - Existing vs Proposed Streetscape Rendering looking South
    - Existing vs Proposed Streetscape Rendering looking North
    - Rendering view from Munjoy Heights

Comments, Questions & Answers:

Please note that the following questions and answers were not recorded verbatim and aim to represent and summarize the actual questions, answers, and discussion that took place at the meeting.

Q: Can you show the view from Sheridan (Munjoy Heights)? Are those the existing condos in the picture?

JR: Yes

Q: Where is the Gear Hub building?

JR: Just of out sight behind the pictured condo

Q: Will there be 3 retailers?

RS: 1 retailer floor

JR: 3 office floors

Q: Can I get an idea of how you would set it up? How many people will be working in the building? Does the City limit the amount of people based on available parking?

JR: The required parking is calculated on a per SF basis

WS: 18 parking spaces are required and we're proposing 20

RS: The building code limits the maximum occupancy at 1 per 100 SF.

Q: How do you anticipate the abutter's new views and skyline?

JR: Looking at the cross-section diagram, our building will likely block the views of a few units in the Munjoy Heights condo complex, particularly the garage and basement levels. However, we believe that the upper floor(s), which contain the primary living spaces, will not have obscured views.

C: What about the Walnut Street residents who will have obscured views.

C: I would request 3 stories instead of 4. Not all buildings on Washington Ave are 4 stories. Take into consideration the people who live here. There's concern that our view will be gone with a 4th story. I want to be on the record.

JR: We are building in an urban environment where buildings are quite close together. Some blocking of views is inevitable. The homes above our site, though, enjoy a broad spectrum of views including cityscape, mountains, and Back Cove. Our building may block some of these views, but we believe that these homeowners will retain some combination of views. Due to land and construction costs, this project is not financially viable at 3 stories.

Q: Could you put 1 story below grade?

RS: It would be very difficult from an ADA accessibility and marketability standpoint.

JR: There would be no windows and it would not be marketable.

Q: What is the timeline of the project?

JR: Ideally, late summer 2018 start and it would last 10-12 months.

Q: Are there underground tanks from the previous auto shop?

JR: There was an underground storage tank removed from the site with both DEP and City supervision. Since then, a phase 1 environmental assessment was conducted by MAI Environmental. Their report concluded that the site was clean and no environmental issues were present.

Q: How will the parking work? Are there some spaces designated for the retail? What are the other accommodations to promote less car usage?

RS: Location and proximity to living is the biggest driver of reduced vehicle reliance.

JR: There are 18 parking spaces required with 2 extra proposed. Gear Hub has space reserved in the parking plan.

Q: Will the exit onto East Cove and then Washington affect the parking for residents on East Cove Street?

JR: The parking will not be affected.

Q: Will the chain-link fence along East Cove Street be removed?

JR: Yes, it will be removed.

Q: What will happen to the existing mailboxes?

WS: They will be reset in the same location.

Q: How will you get to the dumpster?

WS: The pedestrian route includes walking alongside the existing building.

JR: We'll coordinate dumpster pickups with the tenants who park in the lot.

Q: Is there a parking requirement for different types of retail?

JR: Just for retail, not for specific types.

WS: *Read from the B-1 zoning in the City's Ordinance Section 14-162 regarding the restrictions

on the permitted uses*

Q: But no parking requirements?

WS: Under 2,000 SF there is no parking requirement for retail.

JR: Over 2,000 SF there is a requirement per SF, but not for each individual type of retail.

Q: Do you have an idea for what type of retail you'd like to see?

JR: It's very early in the process right now, my commercial real estate agent is gathering ideas.

C: You should come to an East Bayside Neighborhood Meeting for ideas.

Jed: It wouldn't be food, but rather a straight up retailer such as a sports store for example. There's a potential that someone buys the whole building who would want a retail component. This would improve management on every level.

Q: Can the abutters and homeowners get a better idea of how this will affect our view on Walnut Street? Could you show the obstructions to the view?

JR: We had Munjoy Heights data so that's how we made that rendering.

Q: Could you do a Google Sketchup view?

RS: We would need better elevation data, but we could possibly do an approximate rendering

JR: We can consider developing a rendering.

WS: If you looked at Thomas Heights (across Washington Ave) and placed it on this parcel, you could get an idea of the massing.

Q: What is the length of the building?

JR: 68 feet along Washington Ave.

Q: Why did you choose retail/office over more housing?

JR: It was my decision. I saw a market demand for office space. I live on Munjoy Hill and I couldn't find office space nearby. It's an alternative to the Old Port which is overly crowded in the Summer. It's really for people who live here year round and work.

C: I like the office space. Washington Ave is a good fit.

C: My only wish is a hardware store.

JR: It's an open slate right now. The goal is to diversify away from food, beer, and luxury condos. I'm waiting to see what comes in.

C: Thank you.

Q: Are these images available online?

SL: I would recommend emailing the project planner, Shukria Wiar, for the documents that have been submitted to the City.

WS: I provided the entire application – plans and reports to East Bayside Neighborhood Organization (EBNO) over the Holiday vacation since Planning was closed.

C: EBNO can make the copies available to the public.

Q: Do you have a builder?

JR: We're in the process of signing a contract right now. We're also reaching out to energy efficiency companies.

Meeting concluded at approximately 6:20 pm.

The abovementioned material was as interpreted and recorded from handwritten notes. Please note and relay any discrepancies or disputed information in the recorded minutes to the below address so that they can be reviewed, revised, and resubmitted as necessary.

Recorded by,

Sam Lebel

Sam Lebel, E.I.
Design Engineer
Acorn Engineering, Inc.
slebel@acorn-engineering.com

151 WASHINGTON AVE. REDEVELOPMENT

DIVING ROCK, LLC
PORTLAND, MAINE

LEGEND

EXISTING		PROPOSED
REFER TO THE EXISTING CONDITIONS PLAN FOR ADDITIONAL INFORMATION	UNDERDRAIN	
	GREEN SPACE	
	UTILITY PAVEMENT CUTS	
	STRIPING	
	SEDIMENTATION BARRIER	
	EDGE OF EX. PAVEMENT	
	CURB	
	SIGN	
	UTILITY POLE	
W	WATER VALVE	
S	SEWER MANHOLE	
UE — UE	UNDERGROUND ELECTRIC/TELEPHONE/CABLE	UGE/T/C
W — W	UNDERGROUND WATER LINE	1"W — 1"W
64	MINOR CONTOURS (1 FT)	64
65	MAJOR CONTOURS (5 FT)	65
GAS	GAS LINE	GAS — GAS
	STORM DRAIN LINE	
SS — SS	SEWER LINE	S — S
	EXISTING/PROPOSED BUILDING	
OHE/T/C	OVERHEAD ELECTRICAL/TELEPHONE/CABLE	
	PROPERTY LINE	
	SETBACKS	

INDEX

C-01	COVER SHEET & LEGEND
C-02	GENERAL NOTES
EX	EXISTING CONDITIONS PLAN – BY R.W. EATON ASSOCIATES
C-03	CONSTRUCTION MANAGEMENT & EROSION CONTROL PLAN
C-10	SITE & LANDSCAPE PLAN
C-20	UTILITY PLAN
C-30	GRADING & DRAINAGE PLAN
C-40	SITE DETAILS – 1
C-41	SITE DETAILS – 2
C-42	LANDSCAPING DETAILS
C-43	UTILITY DETAILS – 1
C-44	UTILITY DETAILS – 2
C-45	EROSION & SEDIMENTATION CONTROL DETAILS

UTILITIES

SEWER:

DEPARTMENT OF PUBLIC WORKS (DPW)
55 PORTLAND STREET
PORTLAND, MAINE 04101
CONTACT: KEITH GRAY, P.E.
(207) 874–8834

WATER:

PORTLAND WATER DISTRICT (PWD)
225 DOUGLASS STREET
PO BOX 3553
PORTLAND, MAINE 04104
ATTN: MEANS DIVISION
(207) 774–5961

ELECTRIC:

CENTRAL MAINE POWER COMPANY (CMP)
162 CANCO ROAD
PORTLAND, MAINE 04103
CONTACT: PAUL DUPERRE
(207) 828–2882

TELEPHONE:

FAIRPOINT COMMUNICATIONS
45 FOREST AVENUE
PORTLAND, MAINE 04101
CONTACT: MIKE SAMIYA
(207) 991–6724

CABLE:

SPECTRUM/CHARTER COMMUNICATIONS
(FORMERLY TIME WARNER CABLE)
118 JOHNSON ROAD
PORTLAND, MAINE 04102
CONTACT: MARK PELLETIER
(877) 546–0962

NATURAL GAS:

UNITIL SERVICE CORP.
1075 FOREST AVENUE
PORTLAND, ME 04103
CONTACT: BRIDGET HARMON
(207) 541–2536

CALL BEFORE YOU DIG
1–888–DIG–SAFE
1–888–344–7233

PROJECT TEAM

DEVELOPER:

DIVING ROCK, LLC
PORTLAND, MAINE
CONTACT: JOHNNY RITZO
(207) 577–3873

ARCHITECT:

RYAN SENATORE ARCHITECTURE
PORTLAND, MAINE
CONTACT: RYAN SENATORE, R.A.
(207) 650–6414

SURVEYOR:

R.W. EATON ASSOCIATES
WESTBROOK, MAINE
CONTACT: RICHARD EATON, P.L.S.
(207) 854–2402

ABBREVIATIONS

PARTIAL LIST OF ABBREVIATIONS AND THEIR CORRESPONDING MEANING. PLEASE CONTACT THE ENGINEER FOR ANY CLARIFICATION

APPROX.	APPROXIMATE
BC	BOTTOM OF CURB
BMP	BEST MANAGEMENT PRACTICE
BOT.	BOTTOM
CB	CATCH BASIN
CF	CUBIC FOOT
CIP	CAST IN PLACE
CM	CONSTRUCTION MANAGER
CMP	CENTRAL MAINE POWER
CONC.	CONCRETE
CY	CUBIC YARD
DIP	DUCTILE IRON PIPE
DIA.	DIAMETER
DIM.	DIMENSION
EA.	EACH
ELEC.	ELECTRICAL
ELEV.	ELEVATION
EQUIV.	EQUIVALENT
EST.	ESTIMATE
EX.	EXISTING
FFE	FINISH FLOOR ELEVATION
FT.	FEET
GAL.	GALVANIZED
ID	INNER DIAMETER
IN.	INCH
INV.	INVERT
L	LENGTH
MAX.	MAXIMUM
MDOT	MAINE DEPARTMENT OF TRANSPORTATION
MFG.	MANUFACTURED
MH	MANHOLE
MIN.	MINIMUM
O.C.	ON CENTER
OD	OUTSIDE DIAMETER
OHE/T/C	OVERHEAD ELECTRIC/TELEPHONE/CABLE
PC	PRECAST
PE	PROFESSIONAL ENGINEER
PL	PROPERTY LINE
PLS	PROFESSIONAL LAND SURVEYOR
PROP.	PROPOSED
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE
R	RADIUS
RD	ROOF DRAIN
RET.	RETAINING
ROW	RIGHT OF WAY
S	SLOPE
SD	STORM DRAIN
SDR	STANDARD DIMENSION RATIO
SF	SQUARE FEET
SMH	SEWER MANHOLE
SPEC.	SPECIFICATION
TC	TOP OF CURB
TW	TOP OF WALL
TWC	TIME WARNER CABLE/CHARTER COMM.
TYP.	TYPICAL
UD	UNDERDRAIN
UGE	UNDERGROUND ELECTRIC

PERMIT LEVEL
NOT ISSUED FOR CONSTRUCTION

ISSUED FOR	BY	DATE
CITY APP.	WHS	12/4/17

DRAWING NAME: COVER SHEET & LEGEND
PROJECT NAME: 151 WASHINGTON AVE. REDEVELOPMENT
CLIENT: DIVING ROCK, LLC
15 HOWARD STREET, PORTLAND, ME 04101

ACORN ENGINEERING, INC.
THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM ACORN ENGINEERING, INC. ANY MODIFICATIONS MADE TO THIS PLAN WITHOUT THE WRITTEN PERMISSION OF ACORN ENGINEERING, INC. SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

ACORN ENGINEERING, INC.
158 DANFORTH STREET, PORTLAND, MAINE 04102
(207) 775-2655

FILE:	1090_CIVIL
JN:	1090
SCALE:	NTS
DESIGNED BY:	WHS
DRAWN BY:	SJL
CHECKED BY:	WHS

STATE OF MAINE
WILLIAM H. SAVAGE
No. 11456
12-4-17
REGISTERED PROFESSIONAL ENGINEER

DRAWING NO.
C-01

GENERAL NOTES:

1. THE CONTRACTOR SHALL CALL THE APPROPRIATE UTILITY COMPANIES AND DIG SAFE AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION FOR UTILITIES. OTHERWISE IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE LOCATION OF UNDERGROUND UTILITIES AND LOCATE ANY POTENTIAL CONFLICTS WITH THE APPROVED PLANS PRIOR TO CONSTRUCTION.
2. THE CONTRACTOR IS RESPONSIBLE FOR MAINTENANCE OF ALL EROSION CONTROL MEASURES SHOWN ON THE PLAN. IF DEEMED NECESSARY BY THE OWNER OR OWNER'S REPRESENTATIVE, ADDITIONAL EROSION CONTROL MEASURES SHALL BE INSTALLED AT NO ADDITIONAL COST TO THE OWNER.
3. THE CONTRACTOR SHALL PREPARE THEIR OWN MATERIAL SCHEDULE BASED ON THE PLANS AND FIELD VERIFICATION BY THE CONTRACTOR. ALL MATERIAL SCHEDULES SHOWN WITHIN THE PLAN SET ARE FOR GENERAL INFORMATION ONLY.
4. ALL CONSTRUCTION METHODS, TESTING AND MATERIALS SHALL CONFORM TO THE MAINE DEPARTMENT OF TRANSPORTATION SPECIFICATIONS, THE CITY OF PORTLAND AND SERVICING UTILITY REQUIREMENTS, IF ANY. IN CASES WHERE THESE CONFLICT THE MOST STRINGENT SPECIFICATION SHALL APPLY AT NO ADDITIONAL COST TO THE OWNER.
5. THE SITE CONTRACTOR SHALL MAINTAIN A SET OF PAPER AND CAD DRAWINGS WHICH SHALL RECORD THE ACTUAL LOCATION, DIMENSIONS, ELEVATIONS, MATERIALS OF THEIR WORK, INDICATING THEREON ALL VARIATIONS FROM THE CONTRACT DRAWINGS. THE CONTRACTOR SHALL PROVIDE THE OWNER WITH ONE COMPLETE SET OF REPRODUCIBLE RECORD DRAWINGS, IN AUTOCAD FORMAT AND PAPER, STAMPED "AS-BUILT". IF AUTOCAD NOT AVAILABLE EXCLUDE FROM BID IN WRITING.
6. THE CONTRACTOR WILL REMAIN SOLELY AND COMPLETELY RESPONSIBLE FOR ENFORCEMENT OF AND COMPLIANCE WITH 1) ALL CONTRACT PLANS AND SPECIFICATIONS, 2) APPLICABLE INTERNATIONAL BUILDING CODE REQUIREMENTS, AND 3) ALL SITE WORKING CONDITIONS AND SAFETY REQUIREMENTS, DAY AND NIGHT, FOR BOTH PERSONS AND PROPERTY, IN EACH CASE BOTH BY THE CONTRACTOR AND ITS SUBCONTRACTORS. THESE INCLUDE ALL OSHA, NIOSH, U.S. EPA AND ANY OTHER APPLICABLE GOVERNMENTAL REGULATIONS.
7. EXISTING CONDITIONS, BOUNDARY SURVEY, AND TOPOGRAPHY FROM THE PLAN TITLED BOUNDARY SURVEY WITH EXISTING CONDITIONS BY R.W. EATON ASSOCIATES FOR AKASHA 155 LLC, DATED 3/31/2014 & 3/4/2016
8. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ACCESS TO THE SITE AND ALL ADJACENT PROPERTIES AT ALL TIMES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY MARKINGS, SIGNAGE AND INCIDENTALS TO MAINTAIN A SAFE VEHICLE AND PEDESTRIAN ACCESS THOUGH THE LIFE OF THE PROJECT. THE CONTRACTOR SHALL NOTIFY THE PORTLAND PUBLIC SAFETY DIVISION ROUTINELY REGARDING TEMPORARY IMPACTS OR CHANGES TO SITE ACCESS CONDITIONS.
9. THE CONTRACTOR SHALL REVIEW ACORN'S CONSTRUCTION MANAGEMENT PLAN. CONTRACTOR SHALL REMAIN RESPONSIBLE FOR ANTICIPATED PROJECT SCHEDULE AND CLOSURES. CONSTRUCTION MANAGEMENT, MEANS AND METHODS, TRAFFIC CONTROL, ETC. SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
10. CONTRACTOR TO DETERMINE SOIL CLASSIFICATION INDEPENDENTLY FOR TRENCH, SHORING, AND OTHER SIMILAR CONSTRUCTION MEANS AND METHODS APPLICATIONS.
11. THE CONTRACTOR SHALL SURVEY ROCK SURFACE PRIOR TO EXCAVATION AND DEVELOP VOLUME CALCULATIONS TO SHARE WITH ACORN, IF ANY.
12. THE CONTRACTOR SHALL CONDUCT A PRE-CONSTRUCTION SURVEY OF ADJACENT PROPERTIES INTERIOR SUBGRADE AND ABOVE GRADE ACCESSIBLE WALLS, CEILINGS, FLOORS, ROOF AND VISIBLE EXTERIOR AS VIEWED FROM THE GRADE LEVEL. DOCUMENT WITH PICTURES AT A MINIMUM.

CIVIL SITE NOTES:

1. THE CONTRACTOR SHALL SUBMIT IN WRITING ANY REQUESTS TO MODIFY THE CONTRACT DOCUMENTS.
2. ALL SHOP AND ERECTION DRAWINGS SHALL BE CHECKED AND STAMPED BY THE GENERAL CONTRACTOR PRIOR TO SUBMISSION FOR ENGINEER'S REVIEW. ANY UNCHECKED OR NON-STAMPED SUBMITTALS WILL BE RETURNED WITHOUT REVIEW.
3. CONTRACTOR SHALL THOROUGHLY INSPECT AND SURVEY EXISTING STRUCTURES AND SITE TO VERIFY CONDITIONS THAT AFFECT THE WORK SHOWN ON THE DRAWINGS. CONTRACTOR TO NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO PROCEEDING.
4. DETAILS SHOWN APPLY TO ALL SIMILAR CONDITIONS UNLESS OTHERWISE INDICATED.
5. ALTHOUGH ALL DUE DILIGENCE HAS BEEN APPLIED TO MAKE THE DRAWINGS AS COMPLETE AS POSSIBLE, NOT ALL DETAILS ARE ILLUSTRATED, NOR IS EVERY EXCEPTION CONDITION ADDRESSED WITHIN THE CONTRACT DOCUMENTS.
6. ALL PROPRIETARY CONNECTIONS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
7. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OF ALL WORK, INCLUDING DIMENSION AND LAYOUT VERIFICATION, MATERIALS COORDINATION, SHOP DRAWING REVIEW, AND THE WORK OF ANY SUBCONTRACTORS.
8. UNLESS OTHERWISE SPECIFICALLY INDICATED, THE DRAWINGS DO NOT DESCRIBE OR DIRECT MEANS OR METHODS OF CONSTRUCTION.
9. THE CONTRACTOR, IN THE PROPER SEQUENCE, SHALL PERFORM OR SUPERVISE ALL WORK NECESSARY TO ACHIEVE THE FINAL COMPLETED STRUCTURE, AND TO PROTECT THE STRUCTURE, WORKMEN, AND OTHERS DURING THE CONSTRUCTION. SUCH WORK SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, SHORING FOR CONSTRUCTION EQUIPMENT, SHORING FOR EXCAVATION, FORMWORK, SCAFFOLDING, SAFETY DEVICES AND PROGRAMS OF ALL KINDS, SUPPORT AND BRACING FOR CRANES AND OTHER ERECTION EQUIPMENT.
10. DO NOT BACKFILL AGAINST RETAINING WALLS UNTIL SUPPORTING SLABS AND FLOOR FRAMING ARE IN PLACE AND SECURELY ANCHORED, UNLESS ADEQUATE BRACING IS PROVIDED.
11. TEMPORARY BRACING SHALL REMAIN IN PLACE UNTIL ALL FLOORS, WALLS, ROOFS AND OTHER SUPPORTING ELEMENTS ARE IN PLACE.
12. THE CONTRACTOR SHALL CONDUCT A PRE-CONSTRUCTION SURVEY OF ADJACENT PROPERTIES INTERIOR SUBGRADE AND ABOVE GRADE ACCESSIBILE WALLS, CEILINGS, FLOORS, ROOF AND VISIBLE EXTERIOR AS VIEWED FROM THE GRADE LEVEL.
13. THE ENGINEER BEARS NO RESPONSIBILITY FOR THE ABOVE ITEMS, AND OBSERVATION VISITS TO THE SITE DO NOT IN ANY WAY INCLUDE INSPECTION OF THEM.

SPECIAL INSPECTION NOTES:

1. ALL SITE SOILS-RELATED WORK AND FOOTING EXCAVATIONS PRIOR TO PLACING FORMS, AS WELL AS SITE DRAINAGE, SHALL BE REVIEWED BY THE PROJECT GEOTECHNICAL ENGINEER.
2. NORMAL REVIEWS BY LOCAL BUILDING DEPARTMENT.
3. NOTIFY 48 HOURS PRIOR TO REQUIRED REVIEW.
4. REQUIRED SPECIAL INSPECTIONS PER I.B.C. SECTION 1705.6 BY AN APPROVED SPECIAL INSPECTOR RETAINED BY OWNER. CONTRACTOR TO COORDINATE SPECIAL INSPECTIONS.
5. SPECIAL INSPECTOR SHALL BE A QUALIFIED PERSON WHO SHALL DEMONSTRATE COMPETENCE, TO THE SATISFACTION OF THE BUILDING OFFICIAL, FOR INSPECTION OF THE PARTICULAR TYPE OF CONSTRUCTION OR OPERATION REQUIRING SPECIAL INSPECTION.
6. DUTIES AND RESPONSIBILITIES OF THE SPECIAL INSPECTOR SHALL BE TO OBSERVE AND/OR TEST THE WORK ASSIGNED AND OUTLINE ABOVE FOR CONFORMANCE WITH THE CONTRACT DOCUMENTS, ALL DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION.
7. THE SPECIAL INSPECTOR SHALL FURNISH REGULAR REPORTS TO THE BUILDING OFFICIAL, THE ARCHITECT AND ENGINEER OF RECORD, AND OTHER DESIGNATED PERSONS. PROGRESS REPORTS FOR CONTINUOUS INSPECTION SHALL BE FURNISHED WEEKLY. INDIVIDUAL REPORTS OF PERIODIC INSPECTIONS SHALL BE FURNISHED WITHIN ONE WEEK OF INSPECTION DATES. THE REPORTS SHALL NOTE UNCORRECTED DEFICIENCIES, AND NET CHANGES TO THE APPROVED CONSTRUCTION DOCUMENTS AUTHORIZED BY THE ENGINEER OF RECORD.
8. THE SPECIAL INSPECTOR SHALL SUBMIT A FINAL SIGNED REPORT WITHIN TEN DAYS OF THE FINAL INSPECTION STATING WHETHER THE WORK REQUIRING A SPECIAL INSPECTION WAS, TO THE BEST OF THE INSPECTOR'S KNOWLEDGE AND BELIEF, IN CONFORMANCE WITH THE APPROVED CONSTRUCTION DOCUMENTS AND THE APPLICABLE WORKMANSHIP PROVISIONS OF THE INTERNATIONAL BUILDING CODE. WORK NOT IN COMPLIANCE SHALL BE NOTED IN THE REPORT.
9. SPECIAL INSPECTION FIRM SHALL BE EMPLOYED BY DIVING ROCK, LLC AND COORDINATED BY THE CONTRACTOR.

LAYOUT NOTES:

1. MONUMENTS DELINEATING PROPERTY LINES OR RIGHT OF WAYS SHALL NOT BE DISTURBED DURING CONSTRUCTION OPERATIONS. IN THE CASE A MONUMENT IS DISTURBED, AT THE CONTRACTOR'S EXPENSE, THE MONUMENT SHALL BE RESET TO ITS ORIGINAL LOCATION AND ELEVATION BY A REGISTERED LAND SURVEYOR.
2. ALL DIMENSIONS ON THE FOLLOWING SHEETS TAKE PRECEDENT OVER SCALED DIMENSIONS. EACH DRAWING WITH A BAR SCALE MEANS THAT THE DRAWING/DETAIL HAS BEEN SCALED AS ACCURATELY AS POSSIBLE, AND THE BAR SCALE IS FOR GENERAL REFERENCE ONLY. IF NO BAR SCALE IS PRESENT, THEN THERE IS NO SCALE TO THAT DRAWING/DETAIL. AT NO TIME SHOULD DRAWINGS BE SCALED FROM. ANY DISCREPANCIES BETWEEN DRAWINGS, DETAILS, SPECIFICATIONS AND THE FIELD CONDITION SHALL BE IMMEDIATELY REPORTED TO THE CIVIL ENGINEER FOR FURTHER DIRECTIONS BEFORE ANY ADDITIONAL WORK PROCEEDS.
3. SIGNAGE, STRIPING AND PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
4. ALL TRAFFIC CONTROL SIGNS INDICATED ON THE SITE LAYOUT PLAN ARE TO MEET ALL REQUIREMENTS & CONDITIONS OF THE CITY OF PORTLAND, MAINE DEPARTMENT OF TRANSPORTATION AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION.
5. THE CONTRACTOR SHALL OBTAIN THE SERVICES OF A LICENSED PROFESSIONAL LAND SURVEYOR TO PROVIDE A MINIMUM OF TWO TEMPORARY BENCHMARKS WITHIN THE SITE AND TO LOCATE PROPOSED FOUNDATION CORNERS.
6. CONTRACTOR TO ENSURE THAT DRIVEWAYS AND MAILBOXES ADJACENT TO THE PROJECT REMAIN FUNCTIONAL AND IN USE AT ALL TIMES.

PERMITTING NOTES

1. THIS PROJECT IS SUBJECT TO THE TERMS AND CONDITIONS OF SITE PLAN – LEVEL III PERMIT FROM THE CITY OF PORTLAND.
2. THE CONTRACTOR SHALL REVIEW THE ABOVE REFERENCED PERMITS PRIOR TO SUBMITTING A BID FOR THIS PROJECT, AND INCLUDE COSTS AS NECESSARY TO COMPLY WITH THE CONDITIONS OF THESE PERMITS.

GRADING AND DRAINAGE NOTES:

1. TOPSOIL STRIPPED FROM THE SITE THAT IS SUITABLE FOR REUSE AS LOAM SHALL BE STOCKPILED WITHIN THE PROPOSED LIMIT OF WORK AREA. THE CONTRACTOR SHALL NOT ASSUME THAT ANY LOAM WILL BE ACCEPTABLE FOR REUSE WITH THEIR ESTIMATE.
2. THE CONTRACTOR SHALL ANTICIPATE THAT GROUNDWATER WILL BE ENCOUNTERED DURING CONSTRUCTION AND SHALL INCLUDE SUFFICIENT COSTS WITHIN THEIR BID TO PROVIDE DEWATERING AS NECESSARY; NO SEPARATE PAYMENT SHALL BE MADE TO THE CONTRACTOR FOR DEWATERING. SEE BORING LOGS FOR ADDITIONAL INFORMATION.
3. THE OWNER SHALL BE RESPONSIBLE FOR OBTAINING ANY EASEMENT OR TEMPORARY CONSTRUCTION RIGHTS AS NECESSARY BY PRIVATE ADJACENT LAND OWNERS. THE CONTRACTOR SHALL NOT DISTURB ANY SOIL BEYOND THE PROPERTY LINE WITHOUT NOTIFYING AND OBTAINING SUCH EASEMENT OR TEMPORARY CONSTRUCTION RIGHT FROM THE OWNER. PRIOR TO THE CONTRACTOR PRICING THE WORK THE CONTRACTOR SHALL REQUEST PROOF OF SUCH EASEMENT OR TEMPORARY RIGHTS. SHOULD EASEMENTS OR TEMPORARY RIGHTS NOT BE AVAILABLE THE CONTRACTOR SHALL INCLUDE COST FOR BRACING AND SHORING AS NECESSARY.
4. THE CONTRACTOR SHALL PROVIDE A FINISH PAVEMENT SURFACE FREE OF LOW SPOTS AND PONDING AREAS. THE MINIMUM SLOPE SHALL MEET OR EXCEED 0.5% IN ALL CASES. ALL SLOPES SHALL BE AWAY FROM BUILDINGS AND TOP OF PAVEMENT SHALL BE AT OR BELOW EXISTING FINISH FLOOR ELEVATIONS.
5. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST GEOTECHNICAL REPORT PREPARED BY THE PROJECT GEOTECHNICAL ENGINEER.
6. NO ADDITIONAL PAYMENT FOR UNSUITABLE MATERIALS.
7. ALL STORM DRAIN PIPE SHALL BE SMOOTH BORE INTERIOR PROVIDING A MANNINGS ROUGHNESS COEFFICIENT OF N=0.012 OR LESS.
8. ADJUST ALL MANHOLES, CATCH BASINS, CURB BOXES, ETC. WITHIN LIMITS OF WORK TO FINISH GRADE.
9. NATIVE SOILS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LIMIT THE DISTURBANCE TO SUBGRADE SOILS. SHOULD THE SUBGRADE BECOME YIELDING OR DIFFICULT TO WORK, DISTURBED AREAS SHALL BE EXCAVATED AND BACKFILLED WITH COMPACTED SELECT FILL OR CRUSHED STONE AT NO ADDITIONAL EXPENSE TO THE OWNER. ALL SUBGRADE PREPARATION IS SUBJECT TO THE RECOMMENDATIONS OF THE PROJECT GEOTECHNICAL ENGINEER.

EROSION CONTROL NOTES:

1. ALL ROUTINE MAINTENANCE ACTIVITIES SHALL BE CONDUCTED IN SUCH A WAY TO LIMIT THE AMOUNT OF DISTURBED AREA AT ONE TIME TO THE EXTENT PRACTICABLE.
2. PRIOR TO THE START OF ANY CLEARING/LAND DISTURBING ACTIVITIES, THE CONTRACTOR SHALL INSTALL APPLICABLE EROSION CONTROL DEVICES SUCH AS PERIMETER SILT FENCE, AND OTHER APPLICABLE MEASURES. IN THE EVENT THE CONTRACTOR IS NOT SURE A EROSION CONTROL MEASURE SHOULD BE IMPLEMENTED, THE CONTRACTOR SHALL CONTACT THE ENGINEER OF RECORD TO CONFIRM IMPLEMENTATION OF ANY EROSION CONTROL DEVICES.
3. ALL GROUND AREAS GRADED FOR CONSTRUCTION SHALL BE GRADED, LOAMED, SEEDED AND MULCH SHALL BE APPLIED AS SOON AS POSSIBLE WITHIN 7 DAYS FOLLOWING THE COMPLETION OF ANY SOIL DISTURBANCE, AND PRIOR TO ANY STORM EVENT.
4. EROSION AND SEDIMENTATION CONTROL MEASURES SHALL SHALL BE INSTALLED TO THE SATISFACTION OF THE CITY. THE CONTRACTOR SHALL REFERENCE THE APPROVED EROSION AND SEDIMENTATION CONTROL REPORT FOR TEMPORARY AND PERMANENT EROSION AND SEDIMENTATION CONTROL DEVICES IN ADDITION TO THE PLAN SET. THE CONTRACTOR SHALL ALSO REFER TO THE MAINE D.E.P.'S PERMIT CONDITIONS, FINDINGS OF FACT AND ORDER (IF ANY), AND THE CURRENT MAINE EROSION AND SEDIMENT CONTROL BMP MANUAL FOR ADDITIONAL INFORMATION.
5. PRIOR TO PAVING, THE CONTRACTOR SHALL REMOVE ALL SEDIMENT FROM STORM DRAINS, CATCH BASINS, AND APPURTENANCES.
6. REFER TO THE EROSION CONTROL DETAILS & NOTES FOR ADDITIONAL INFORMATION.

UTILITY NOTES:

1. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND ELEVATION OF THE EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED UPON RECORDS OF VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THIS INFORMATION IS NOT TO BE RELIED UPON AS BEING EXACT OR COMPLETE. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO TEST PIT TO DETERMINE THE EXACT LOCATION AND ELEVATION OF UTILITIES TO COORDINATE WITH THE PROPOSED CONNECTIONS OR CROSSING. ANY DISCREPANCIES SHALL BE IMMEDIATELY REPORTED TO THE CIVIL ENGINEER FOR FURTHER DIRECTIONS BEFORE ANY ADDITIONAL WORK PROCEEDS.
2. CONTRACTOR SHALL, AT NO ADDITIONAL COST TO THE OWNER, CONDUCT EXPLORATORY EXCAVATIONS AT LOCATIONS WHERE PROPOSED EXCAVATION WILL INTERSECT WITH EXISTING UTILITIES.
3. CONTRACTOR TO PROVIDE 5' OF COVER FROM TOP OF PIPE TO FINISH GRADE FOR WATER MAINS.
4. THRUST BLOCKS SHALL BE USED FOR THRUST RESTRAIN ON WATER MAINS. DETAIL AND LIMITS FOR THRUST BLOCKS ARE SHOWN ON SHEET C-43.
5. WATER INFRASTRUCTURE SHALL BE TESTED IN ACCORDANCE WITH THE PORTLAND WATER DISTRICT DOCUMENT "WATER AND SEWER CONSTRUCTION SPECIFICATIONS AND PROCEDURES", MOST RECENT REVISION.
6. ALL REQUIRED FITTINGS FOR THE WATER MAIN ARE NOT SHOWN ON DRAWINGS. CONTRACTOR SHALL FURNISH AND INSTALL ALL NECESSARY FITTINGS REQUIRED TO CONSTRUCT THE WATER MAIN IN ACCORDANCE WITH CITY OF PORTLAND, STATE OF MAINE, AND AMERICAN WATER WORKS ASSOCIATION STANDARDS AND REGULATIONS.
7. CONTRACTOR SHALL COORDINATE WORK REGARDING ANY WATER MAIN CONNECTION AND WATER MAIN SHUTDOWN WITH THE PORTLAND WATER DISTRICT AT LEAST SEVEN (7) DAYS PRIOR TO CONSTRUCTION.
8. ALL WATER PIPE INSTALLATION SHALL CONFORM WITH THE PORTLAND WATER DISTRICT SPECIFICATIONS AND PROCEDURES, MOST RECENT EDITION.
9. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
10. SEWER, GAS, TELEPHONE, ELECTRICITY, CABLE, WATER AND ANY OTHER UTILITY CONNECTIONS SHALL BE REVIEWED BY PLUMBING, ELECTRICAL, AND MECHANICAL DESIGNER FOR CONSISTENCY WITH THEIR PLANS PRIOR TO CONSTRUCTION.
11. COORDINATE EXIT POINT FOR SECONDARY SERVICE WITH THE ARCHITECT/ELECTRICAL ENGINEER. SECONDARY LINE LOCATIONS NOT PROVIDED BY ACORN ENGINEERING WITHIN THE UTILITY PLAN.
12. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN ALL THE NECESSARY PERMITS FOR THE INSTALLATION OF THE UTILITIES AND STORMDRAINS WITHIN THE PUBLIC RIGHT OF WAY. THE CONTRACTOR SHALL SUBMIT A MAINTENANCE OF TRAFFIC PLAN TO THE CITY IN ACCORDANCE WITH THE CITY OF PORTLAND TECHNICAL MANUAL PRIOR TO ANY WORK.
13. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL BOXES, FITTINGS, CONNECTORS, COVER PLATES AND OTHER MISCELLANEOUS ITEMS NOT NECESSARILY DETAILED ON THE DRAWINGS TO RENDER INSTALLATION OF UTILITIES COMPLETE AND OPERATIONAL AT NO EXTRA EXPENSE TO THE OWNER.

DEMOLITION NOTES:

1. ALL DISPOSAL OF DEMOLITION DEBRIS OR WASTE SHALL BE IN ACCORDANCE WITH ALL LOCAL, STATE, & FEDERAL REGULATIONS. CONTRACTORS SHALL PROVIDE OWNER WITH APPROPRIATE "BILLS OF LADING" DEMONSTRATING PROPER DISPOSAL OF ALL MATERIALS.
2. REFER TO THE PHASE I – ENVIRONMENTAL SITE ASSESSMENT FOR MORE INFORMATION REGARDING THE SITE'S HISTORY AND ENVIRONMENTAL CONCERNS.

PERMIT LEVEL
NOT ISSUED FOR
CONSTRUCTION

ISSUED FOR	BY / DATE
CITY APP.	WHS 12/4/17

DRAWING NAME: GENERAL NOTES

PROJECT NAME: 151 WASHINGTON AVE. REDEVELOPMENT

CLIENT: DIVING ROCK, LLC
15 HOWARD STREET, PORTLAND, ME 04101

A C O R N ENGINEERING, INC.
ACORN ENGINEERING, INC.
158 DANFORTH ST, PORTLAND MAINE 04102
(207) 775-2655

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM ACORN ENGINEERING, INC. ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

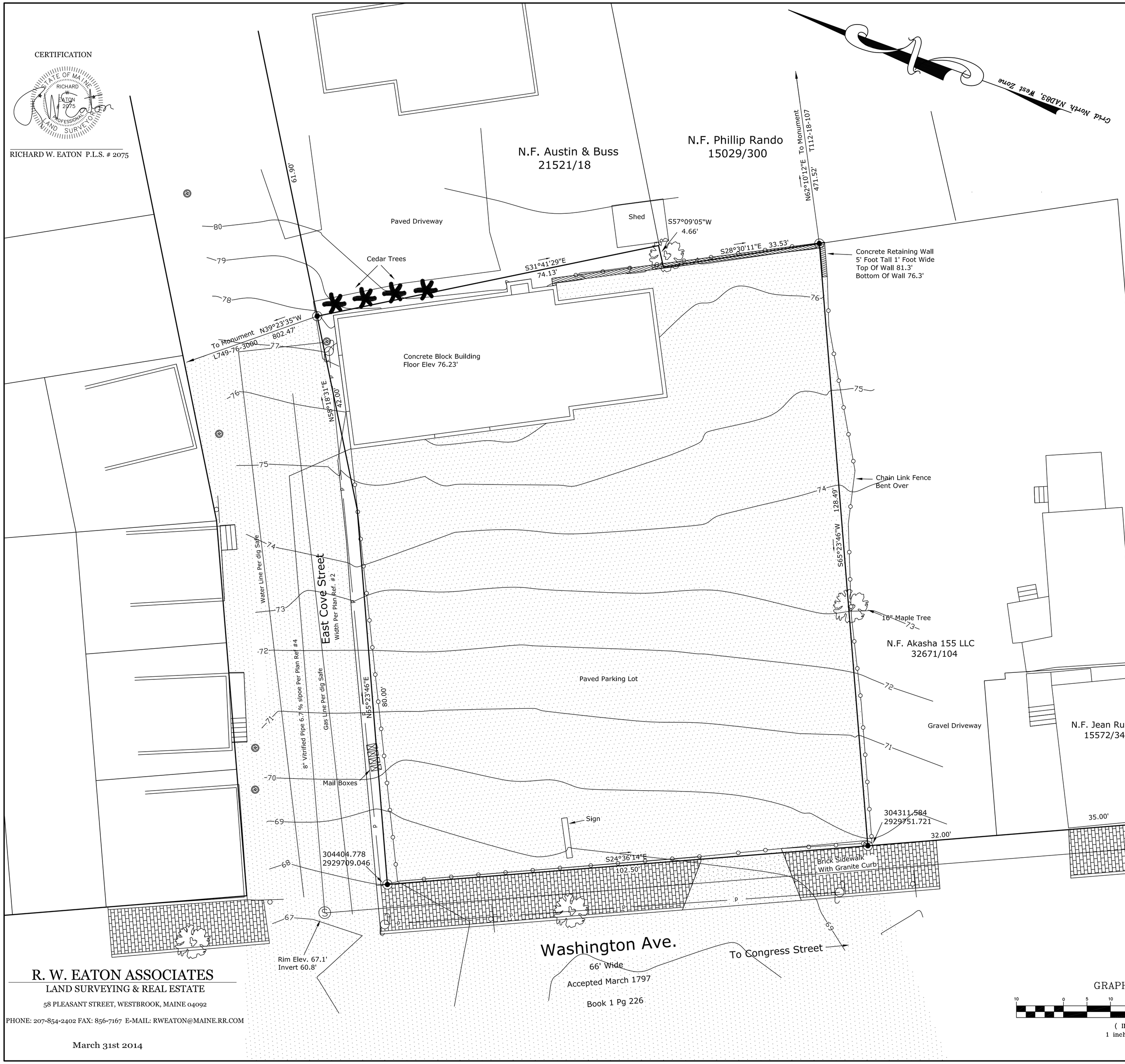
FILE:	1090_CIVIL
JN:	1090
SCALE:	NTS
DESIGNED BY:	WHS
DRAWN BY:	SJL
CHECKED BY:	WHS

STATE OF MAINE
WILLIAM H. SAVAGE
No. 11419
12-4-17
LICENSED
PROFESSIONAL ENGINEER

DRAWING NO.
C-02

CERTIFICATION

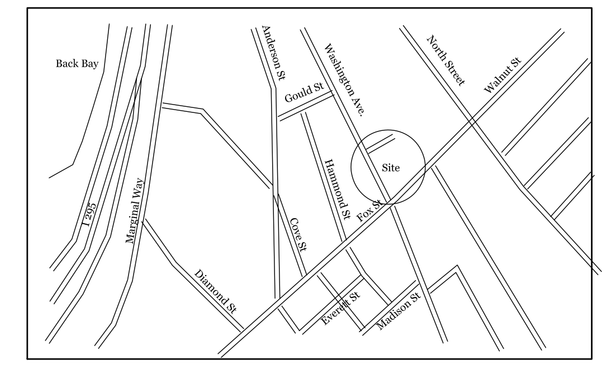
RICHARD W. EATON P.L.S. # 2075



LEGEND

- 5/8" Rebar Set With Cap
- Rebar/Iron Pipe Found
- Utility Pole
- N.F. Now or Formerly
- 1324/98 Book & Page
- Chain Link Fence
- Water Valve

Location



NTS

PLAN REFERENCE

1) Munjoy Heights Subdivision By Nadeau Land Surveys Dated 12/6/2013
Recorded in Plan Book 214 Page 48
2) Plan of Property of W H Baxter ESQ By Anderson Bonnell Co. Dated July 1866
Recorded in Plan Book 2 Page 54
3) Street Line Sheets From Portland Engineering Office Dated March 1926
4) Sewer Plan Washington Ave and East Cove St Dated 1902 on File at Engineering Vault

General Notes:

1) Area of Subject parcel 13,111 Square feet or 0.30 Acres
2) Basis of Bearing, Maine State Plane NAD 1983 1802 West Zone Base Point, Granite Monument With DH at Walnut Street and North Street T112-18-07, N304585,2090 E2930285.5270 Azimuth Point, Monument on Washinton Ave. L749-76-3000, N305080.3090, E2929308.2410 Azimuth N63-07'-58"W 1095.54' Feet
3) Vertical Datum is NGVD 1929 Benchmark is City Monument T112-18-107 Elevation = 145.08'
4) Subject Tax Map 012 Block G Lot 001,002,003,008
5) East Cove Street an unaccepted street deemed vacated by omission from City Council order #84
6) Subject not in Special Flood Hazard Area per FEMA Flood Rate Map Panel # 230051 0013B and 0014B Dated December 8th, 1998 Parcel in C Zone
7) Zoneing B-1 Zone

Space & Bulk Standards:

Zone. B1 Neighborhood Business Zone

Mimium Lot Size	435 S.F.
Minimum Frontage	20'
Minimum Yard Dimensions	
Width	None
Rear Yard	None
Side Yard	None
Maximum Impervious Area	90%
Maximum Floor Area	10.000 S.F.
Minimun Lot Width	None
Maximum Building Height	45'

GRAPHIC SCALE

10 0 5 10 20 40

(IN FEET)
1 inch = 10 ft.

Boundary Survey & Topographical Map With Existing Conditions

Land Located at:	149-155 Washington Ave. Portland, Maine 04101
Land Owned By:	Diving Rock LLC
Address:	15 Howard Street Portland, Maine 04101
Deed Reference:	Book 33456 Page 304 Book 34423 Page 221

SCALE:	1:10
DRAWN BY:	R.W.E.
CHECKED BY:	R. W. E.
CAD FILE:	478.DWG
PROJ #:	688
ORIG DATE:	03-31-14
0 REV DATE:	01-15-18
1 REV DATE:	02-12-18
2 REV DATE:	00-00-00
3 REV DATE:	00-00-00

R. W. EATON ASSOCIATES
LAND SURVEYING & REAL ESTATE
58 PLEASANT STREET, WESTBROOK, MAINE 04092
PHONE: 207-854-2402 FAX: 856-7167 E-MAIL: RWEATON@MAINE.RR.COM

March 31st 2014

GENERAL NOTES:

1. EXISTING ASPHALT TO BE REMOVED SHALL BE STRIPPED AND PROPERLY DISPOSED OF OFFSITE.
2. ALL DISPOSAL OF DEMOLITION DEBRIS OR WASTE SHALL BE IN ACCORDANCE WITH ALL LOCAL, STATE, & FEDERAL REGULATIONS. CONTRACTOR SHALL PROVIDE OWNER WITH APPROPRIATE "BILLS OF LADING" TO DEMONSTRATE PROPER DISPOSAL OF ALL MATERIALS.
3. SITE DEMOLITION SHALL NOT OCCUR UNTIL PROPER ABATEMENT PROCEDURES HAVE OCCURRED. ABATEMENT, IF NECESSARY, SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
4. THE CONTRACTOR SHALL CALL THE APPROPRIATE UTILITY COMPANIES AND DIG SAFE AT LEAST 72 HOURS PRIOR TO EXCAVATION TO REQUEST EXACT FIELD LOCATION FOR UTILITIES. OTHERWISE IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE LOCATION OF UNDERGROUND UTILITIES AND LOCATE POTENTIAL CONFLICT WITH THE APPROVED PLANS PRIOR TO CONSTRUCTION.
5. ALL CONSTRUCTION SIGNAGE AND CROSSWALK STRIPING IS TEMPORARY AND WILL BE REMOVED AT PROJECT COMPLETION. FINAL SIGNAGE WORDING AND PLACEMENT, AND CROSSWALK STRIPING AND LOCATION TO BE ACCEPTED BY THE CITY.
6. SEDIMENT BARRIERS TO BE PLACED DIRECTLY ON THE FRONT AND SIDE PROPERTY LINES, DOWN GRADIENT OF THE PROPOSED PROJECT WORK PER DETAIL; FENCES ARE OFFSET OF THE PROPERTY LINES AS SHOWN ON THE PLAN FOR CLARITY PURPOSES AND DO NOT NECESSARILY DEPICT THE PHYSICAL LOCATION.
7. CONTRACTOR SHALL PLACE CATCH BASIN INLET PROTECTION ON CATCH BASINS AND FIELD INLETS DOWN-GRADIENT OF ALL NON-STABILIZED SURFACES, PER DETAIL.
8. DEMOLITION PLAN IS NOT INCLUSIVE OF ALL EXISTING ITEMS TO BE REMOVED AS PART OF SITE CONSTRUCTION INCLUDING BUT NOT LIMITED TO LANDSCAPING, UTILITIES, WORK WITHIN THE ROW, ETC. ALL DEMOLITION WORK SHALL BE IN ACCORDANCE WITH THE CITY OF PORTLAND REGULATIONS.
9. CONTRACTOR TO BE RESPONSIBLE FOR PROVIDING OFF-SITE PARKING TO EMPLOYEES; ON-SITE PARKING WILL NOT BE PROVIDED OR GUARANTEED. CONTRACTOR TO BE RESPONSIBLE FOR OBTAINING THE APPROPRIATE PERMITS FROM THE CITY FOR CLOSING ANY ON-STREET PARKING SPACES DURING THE CONSTRUCTION PERIOD.
10. CONTRACTOR SHALL BE RESPONSIBLE FOR SNOW REMOVAL ALONG CONSTRUCTION FENCE AND GATE.

EAST COVE ST.
(UNACCEPTED CITY STREET)

WALNUT ST.
(ACCEPTED CITY STREET)

WASHINGTON AVE.
(ACCEPTED CITY STREET)

N.F. Phillip Rando
15029/300

N.F. Sarah Coburn
& Brenden O'Neil
30898/23

N.F. Jean Ruminski
15572/347
30246/60

N.F. Michele Perejda
30936/292

N.F. Patty Jo Walton
29683/243

EXISTING BUILDING
200 SF WORKSHOP
870 SF STORAGE
740 SF RETAIL

EXISTING STRUCTURE TO REMAIN

EXISTING WALL TO REMAIN

MAINTAIN PUBLIC ENTRANCE AND ENSURE FUNCTIONALITY OF EXISTING BUILDING DURING CONSTRUCTION

EXISTING RAMP AND NEW PAVEMENT ADJACENT TO RAMP TO REMAIN.

APPROX. LOCATION OF DIRECT-BURIED COMMUNICATIONS CABLE. TEST PIT TO CONFIRM

REROUTE OVERHEAD LINES UNDERGROUND BETWEEN UTILITY POLES PER SHEET C-20. COORDINATE WITH UTILITY COMPANIES

REMOVE EXISTING PAVEMENT

REMOVE EXISTING TREE IN COORDINATION WITH ABUTTER

SILT FENCE PER DETAIL

COORDINATE WITH ABUTTER REGARDING THE REMOVAL OR MAINTENANCE OF EXISTING CHAIN LINK FENCE WITHIN THEIR PROPERTY

CONTRACTOR TO MAINTAIN ACCESS TO MAILBOXES DURING CONSTRUCTION. WHEN NECESSARY, REMOVE AND RESET MAILBOXES IN COORDINATION WITH LANDOWNERS

TEMPORARY CONSTRUCTION ENTRANCE PER DETAIL

REMOVE CHAIN LINK FENCE WITHIN PROPERTY LINE, TYP

DO NOT DISTURB OVERHEAD SERVICES LINES

TEMPORARY CONSTRUCTION FENCE WITH GATED ACCESS

WHEN FEASIBLE, MAINTAIN MIN. 42" CLEARANCE FOR ACCESSIBLE SIDEWALK DURING CONSTRUCTION

Brick Sidewalk
Granite Curb

Paved Parking Lot

Parcel 1
Parcel 2
Parcel 3

Concrete Garage

Cedar Trees

Retaining Wall

deck

Garage

Top of Wall 81.3'
Bottom of Wall 76.3'

6" Drain Pipe Elv. 88.5'

Top of Wall 92.0'
Bottom of Wall 83.1'

5/8" Rebar Found With Cap

Width Per Plan Ref. #2

Status See Note #5

Water Line Per dig Safe

Gas Line Per dig Safe March 2016

Gas Line Per dig Safe Sept 2017

8" Vitrified Pipe 6.7 % slope Per Plan Ref #4

Mail Box

Paved Drive Way

RIM Elev. 67.1
Invert 60.8'

RIM Elev. 71.5'
Invert 64.2'

Washington Avenue
Accepted March 1797
Book 1 Pg 226

To Congress Street

66'

SCALE: 1" = 10'

PERMIT LEVEL
NOT ISSUED FOR CONSTRUCTION

ISSUED FOR	BY	DATE
CITY APP.	WHS	12/4/17

DRAWING NAME: CONSTRUCTION MANAGEMENT PLAN

PROJECT NAME: 151 WASHINGTON AVE. REDEVELOPMENT

CLIENT: DIVING ROCK, LLC
15 HOWARD STREET, PORTLAND, ME 04101

ACORN ENGINEERING, INC.
158 DANFORTH STREET, PORTLAND, MAINE 04102
(207) 775-2855

ACORN ENGINEERING, INC. — THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM ACORN ENGINEERING, INC. AND ANY MODIFICATIONS MADE TO THIS PLAN, WITH OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

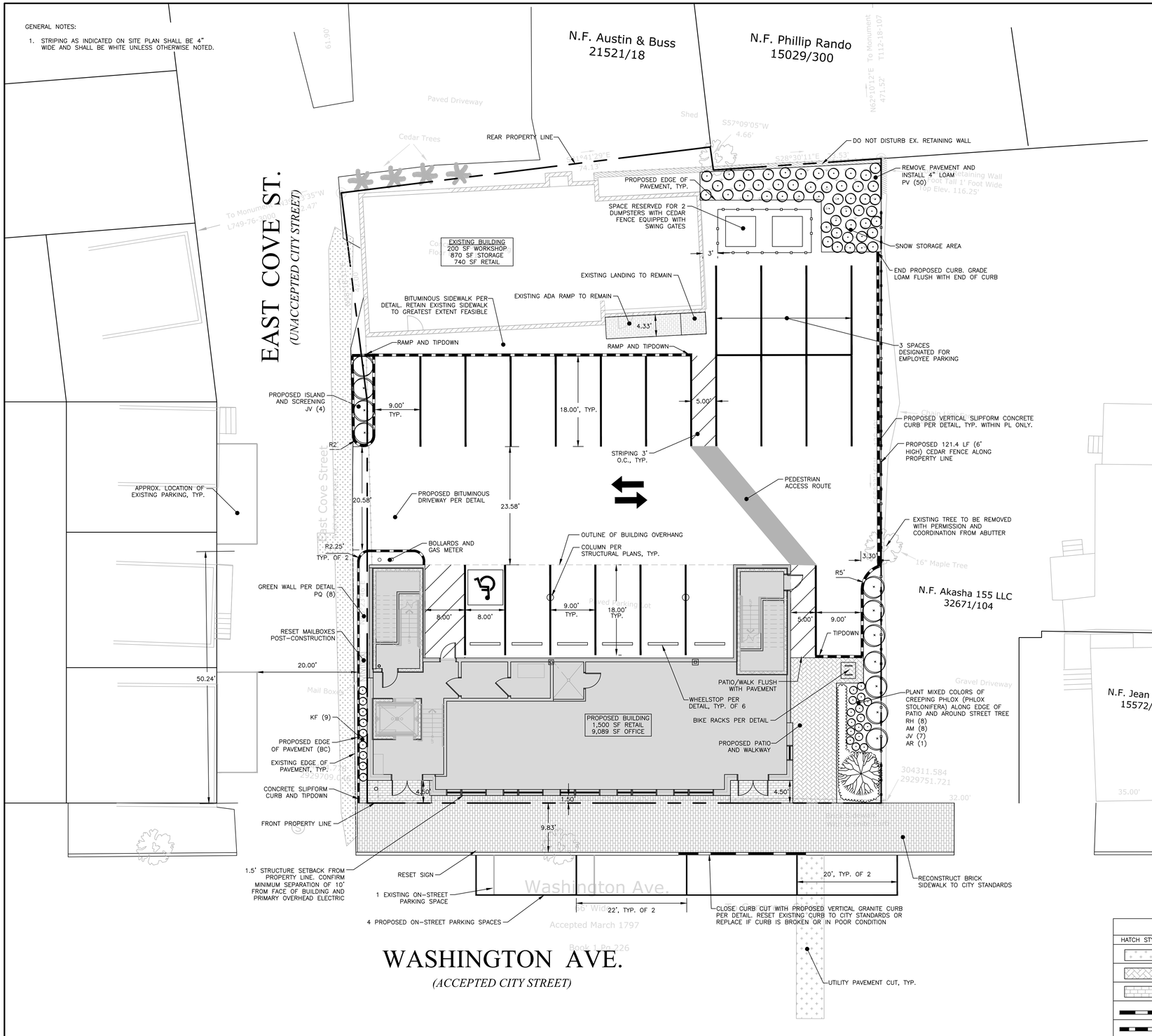
FILE:	1090_CIVIL
JN:	1090
SCALE:	1"=10'
DESIGNED BY:	SJL
DRAWN BY:	SJL
CHECKED BY:	WHS

STATE OF MAINE — WILLIAM H. SAVAGE — No. 11611 — 12-4-17 — REGISTERED PROFESSIONAL ENGINEER

DRAWING NO.
C-03

GENERAL NOTES:

1. STRIPING AS INDICATED ON SITE PLAN SHALL BE 4" WIDE AND SHALL BE WHITE UNLESS OTHERWISE NOTED.



SPACE AND BULK STANDARDS			
ZONE: B-1	REQUIRED	EXISTING	PROPOSED
MINIMUM LOT SIZE	NONE	8,851 SF	13,111 SF
MINIMUM STREET FRONTAGE	20 FT.	69 FT.	102.5 FT.
MAXIMUM FRONT YARD SETBACK	10 FT.	> 10 FT.	1.5 FT.
MINIMUM REAR YARD SETBACK	10 FT.	0.5 FT.	0.5 FT.
MAXIMUM SIDE YARD SETBACK	10 FT.	1.3 FT.	0 FT.
STRUCTURE STEPBACK	NONE	NONE	NONE
MAXIMUM LOT COVERAGE	90%	99%	93%
MINIMUM LOT WIDTH	NONE	69 FT.	102.5 FT.
MAXIMUM BUILDING HEIGHT	45 FT.	< 45 FT.	44 FT.
PARKING	1 PER 400 SF OFFICE SPACE = 23*	13	20
PERMANENT BICYCLE PARKING	2 PER 10 VEHICLES SPACES = 4 SPACES	0	8
*BASED UPON 9,089 SF OF OFFICE SPACE			

PARKING SUMMARY	
PARKING DIMENSION	# PARKING SPACES
9'X18'	19
8'X18'	1
TOTAL SPACES	20

PLANT SCHEDULE				
ID	BOTANICAL NAME	COMMON NAME	QTY (TBD)	SIZE
TREES				
AR	ACER RUBRUM	RED MAPLE	1	2" CA. BB
JV	JUNIPERUS VIRGINIANA	EASTERN JUNIPER	11	5 GAL.
PERENNIALS				
RH	RUDBECKIA HIRTA	BLACK EYED SUSAN	8	1 GAL.
PQ	PARTHENOCISSUS QUINQUEFOLIA	VIRGINIA CREEPER	8	2 GAL.
AM	ASTRANTIA MAJOR 'ABBEY ROAD'	ABBEY ROAD MASTERWORT	8	1 GAL.
KF	CALAMSGROSTIS ACUTIFLORA	KARL FORESTOR	9	1 GAL.
PV	PANICUM VIRGATUM	SWITCH GRASS	50	1 GAL.

SITE LEGEND	
HATCH STYLE	ASSOCIATED AREAS
	UTILITY PAVEMENT CUT
	PATIO/WALK
	BRICK
	GRANITE CURB
	CONCRETE SLIPFORM CURB

10 0 10 20

SCALE: 1" = 10'

PERMIT LEVEL
NOT ISSUED FOR CONSTRUCTION

ISSUED FOR	BY	DATE
CITY APP.	WHS	12/4/17
BLDG REV.	WHS	3/27/18

DRAWING NAME: SITE & LANDSCAPE PLAN

PROJECT NAME: 151 WASHINGTON AVE. REDEVELOPMENT

CLIENT: DIVING ROCK, LLC
15 HOWARD STREET, PORTLAND, ME 04101

ACORN ENGINEERING, INC.
ENGINEERING, INC.
158 DANFORTH STREET, PORTLAND, MAINE 04102
(207) 775-2655

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

FILE:	1090_CIVIL
JN:	1090
SCALE:	1"=10'
DESIGNED BY:	SJL
DRAWN BY:	SJL
CHECKED BY:	WHS

STATE OF MAINE
WILLIAM H. SAVAGE
No. 11418
2-20-18
LICENSED PROFESSIONAL ENGINEER

DRAWING NO.
C-10

N.F. Austin & Buss
21521/18

N.F. Phillip Rando
15029/300

EAST COVE ST.
(UNACCEPTED CITY STREET)

Paved Driveway

Shed

Cedar Trees

61.90'

S57°09'05"W
4.66'

S31°41'29"E
47.47'

S28°30'11"E 33.53'

N62°10'12"E
471.52'

To Monument
T112-18-107

To Monument
L749-7602000
N35°35'W
47.47'

Concrete Retaining Wall
5' Foot Tall 1' Foot Wide
Top Elev. 116.25'

EXISTING BUILDING
200 SF WORKSHOP
870 SF STORAGE
740 SF RETAIL

EXISTING UTILITY SERVICES TO REMAIN

Chain Link Fence
Bent Over

REMOVE AERIAL UTILITIES IN BETWEEN POLES AND ROUTE UNDERGROUND. COORDINATE WITH UTILITY COMPANIES AND TEST PIT FOR DIRECT-BURIED COMMUNICATIONS CABLE

PROPOSED GAS SERVICE AND METER WITH 2 BOLLARDS. REFER TO NOTE 7

Water Line Per dig Safe

East Cove Street

Gas Line Per dig Safe

8" Vitrified Pipe 6.7 % slpoe Per Plan Ref #4

Gas Line Per dig Safe Sept 2017

Mail Box

Paved Parking Lot

16" Maple Tree

N.F. Akasha 155 LLC
32671/104

FIRE DEPARTMENT CONNECTION TO SPRINKLER SYSTEM

RPZ BACKFLOW DEVICE SHALL BE INSTALLED IN THE BUILDING AFTER THE METER

PROPOSED BUILDING
1,500 SF RETAIL
9,089 SF OFFICE

PROPOSED 2" DOMESTIC LINE

PROPOSED 4" SPRINKLER LINE

18" FACE TO FACE SEPARATION

DO NOT DISTURB OVERHEAD SERVICES LINES

304404.784
2929709.721

304311.584
2929751.721

PROPOSED 6" SEWER SERVICE. INSTALL BACKFLOW VALVE WITHIN PROPERTY LINE PER DETAIL. REFER TO NOTE 5

EXISTING 8" VC SEWER MAIN

TEST PIT TO FINALIZE CONNECTION INVERT, TYP.

MIN. 10' SEPARATION BETWEEN PRIMARY OVERHEAD ELECTRIC AND FACE OF BUILDING

APPROX INV. INTO MAIN: 62.04'

POTENTIAL LOCATION FOR CMP METER BOX

PROPOSED UNDERGROUND ELECTRIC, TELEPHONE, CABLE SERVICES. REFER TO NOTES 8 & 9

4" AND 2" GATE VALVES WITH BOXES AND COVERS WITHIN PUBLIC RIGHT-OF-WAY

RETROFIT EX. POLE PER CMP DESIGN

EXISTING GAS MAIN

Brick Sidewalk
With Granite Curb

102.50'

32.00'

35.00'

35.50'

38.50'

Rim Elev. 102.00'
Invert 95.75'

Rim Elev. 106.41'
Invert 99.11'

Monument Found
Flush with Sidewalk
3' Offset

Washington Ave.
66' Wide
To Congress Street
Accepted March 1797
Book 1 Pg 326

WASHINGTON AVE.
(ACCEPTED CITY STREET)

APPROXIMATE LOCATION OF EXISTING WATER MAIN

PROPOSED 4" PARENT WATER CONNECTION. REFER TO NOTE 6

CONTRACTOR TO TEST PIT SPECIFICALLY FOR WATER MAIN AND COMMUNICATIONS CONFLICTS BEFORE CONSTRUCTION OCCURS. REPORT RESULTS TO ENGINEER

PROPOSED GATE VALVE AND TAPPING SADDLE. VERIFY WATER MAIN DIA. AND SIZE TAPPING SADDLE ACCORDINGLY.

APPROX. LOCATION OF EXISTING FIRE HYDRANT

N.F. Jean Ruminski
15572/347

N.F. Michele Perejda
30936/292

N.F. Patty Jo Walton
29683/243

Gravel Driveway

Walnut Street

N62°19'16"E
32.00'

N12°52'37"E
4.94'

WALNUT ST.
(ACCEPTED CITY STREET)

MINIMUM HORIZONTAL UTILITY SEPARATION					
UTILITY	UGE/T/C	WATER	SEWER	GAS	STORMWATER
UGE/T/C	–	6'	5'	4'	6'
WATER	6'	–	5'*	6'	3'
SEWER	5'	5'*	–	5'	10'
GAS	4'	6'	5'	–	3'
STORMWATER	6'	3'	10'	3'	–

*PERMISSIBLE ONLY IF SEWER IS LAID MIN. 18" BELOW WATER SERVICE; OTHERWISE, 10' OF HORIZONTAL SEPARATION MUST BE MAINTAINED.

GENERAL NOTES:

1. LOCATION OF PROPOSED CONNECTIONS ARE APPROXIMATE. CONTRACTOR TO CONTACT ENGINEER IF FIELD INFORMATION VARIES FROM INFORMATION ON PLANS.
2. CONTRACTOR IS TO BE CAUTIONED THAT CERTAIN LOCATIONS AND/OR ELEVATIONS OF EXISTING UTILITIES HAVE BEEN PROVIDED THROUGH UTILITY COORDINATION OR OTHER OBSERVATIONS. INFORMATION IS NOT TO BE RELIED UPON AS EXACT OR COMPLETE. CONTRACTOR TO FIELD VERIFY AND COORDINATE WITH UTILITY COMPANY AND DIG SAFE NO LESS THAN 72 HOURS PRIOR TO ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF ALL UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS INDICATED IN THE CONTRACT DOCUMENTS. CONTRACTOR TO NOTIFY ENGINEER OF ANY DIFFERENTIATIONS FROM EXISTING CONDITIONS, INCLUDING UTILITY SURVEY, PRIOR TO ANY CHANGES.
3. FOR ALL UTILITIES, ACORN ENGINEERING DESIGN LIMITS EXTEND TO OUTSIDE WALL OF BUILDING. METERING OF UTILITIES TO BE COMPLETED BY M.E.P. UNLESS SPECIFIED OTHERWISE.
4. CONTRACTOR TO COORDINATE WITH ARCHITECT ON FINAL UTILITY CONNECTIONS WITHIN THE BUILDING.
5. SEWER UTILITIES: CONTRACTOR TO COORDINATE WITH ARCHITECT FOR FINAL SERVICE CONNECTION. SEWER UTILITIES TO BE CONSTRUCTED IN ACCORDANCE WITH CITY OF PORTLAND TECHNICAL STANDARDS. VALVE FOR BACKFLOW PREVENTION SHALL BE INSTALLED WITHIN THE THE PROPERTY LINES FOR EACH CITY SEWER CONNECTION. CONTACT ENGINEER IF FIELD CONDITIONS FROM INVERT VARY FROM DESIGN.
6. WATER UTILITIES: FINAL PIPE SIZING PROVIDED BY M.E.P. ENGINEER AND FIRE PROTECTION DESIGNER. INTERNAL METERING, BACKFLOW PREVENTION, AND PRESSURE REDUCERS TO BE COMPLETED BY M.E.P. ENGINEER. DOMESTIC WATER PIPE SIZES WILL DETERMINE THE FINAL WATER METERING OPTIONS. METER MAY BE SMALLER THAN PROPOSED WATER MAIN. WATER METERING, PRESSURE REDUCER AND BACKFLOW PREVENTION TO BE IN ACCORDANCE WITH THE PORTLAND WATER DISTRICT STANDARDS. CONTRACTOR TO FOLLOW METERING GUIDELINES OF THE PORTLAND WATER DISTRICT AND CITY OF PORTLAND.
7. GAS UTILITIES: PROJECT GAS LOAD, GAS UTILITY DESIGN, AND FINAL GAS SERVICE LOCATION AND METERS TO BE DEFINED BY M.E.P. AND IN ACCORDANCE WITH UNITIL.
8. ELECTRIC UTILITIES: ELECTRIC DESIGN TO BE FINALIZED BY M.E.P. ENGINEER. ELECTRICAL LOAD TO BE DETERMINED BY M.E.P. ENGINEER. METER LOCATION AND TRANSFORMER SIZE, IF NECESSARY DEFINED BY M.E.P. M.E.P. TO FINALIZE SERVICE CONNECTION TO BUILDING. ALL ELECTRIC CONSTRUCTION SHALL CONFORM TO CMP GUIDEBOOK OF STANDARD REQUIREMENTS, MOST RECENT EDITION. DESIGN SUBJECT TO FINAL APPROVAL FROM CMP.
9. CABLE AND TELEPHONE PULLBOXES AND PEDESTAL LOCATIONS TO BE DETERMINED BY CHARTER COMMUNICATIONS AND FAIRPOINT PRIOR TO CONSTRUCTION. CONTRACTOR TO COORDINATE INSTALLATION OF UNDERGROUND UTILITIES WITH ALL UTILITY COMPANIES INVOLVED.

10 0 10 20
SCALE: 1" = 10'

PERMIT LEVEL
NOT ISSUED FOR CONSTRUCTION

ISSUED FOR	BY	DATE
ABILITY TO SERVE	WHS	11/8/17
CITY APP.	WHS	12/4/17
BLDG REV.	WHS	2/26/18

DRAWING NAME: UTILITY PLAN

PROJECT NAME: 151 WASHINGTON AVE. REDEVELOPMENT

CLIENT: DIVING ROCK, LLC
15 HOWARD STREET, PORTLAND, ME 04101

ACORN ENGINEERING, INC.
ENGINEERING
158 DANFORTH STREET PORTLAND, MAINE 04102
(207) 775-2855

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM ACORN ENGINEERING, INC. ANY MODIFICATIONS MADE BY ANY PARTY, OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

FILE:	1090_CIVIL
JN:	1090
SCALE:	1"=10'
DESIGNED BY:	SJL
DRAWN BY:	SJL
CHECKED BY:	WHS

STATE OF MAINE
WILLIAM H. SAVAGE
No. 11459
2-26-18
REGISTERED PROFESSIONAL ENGINEER

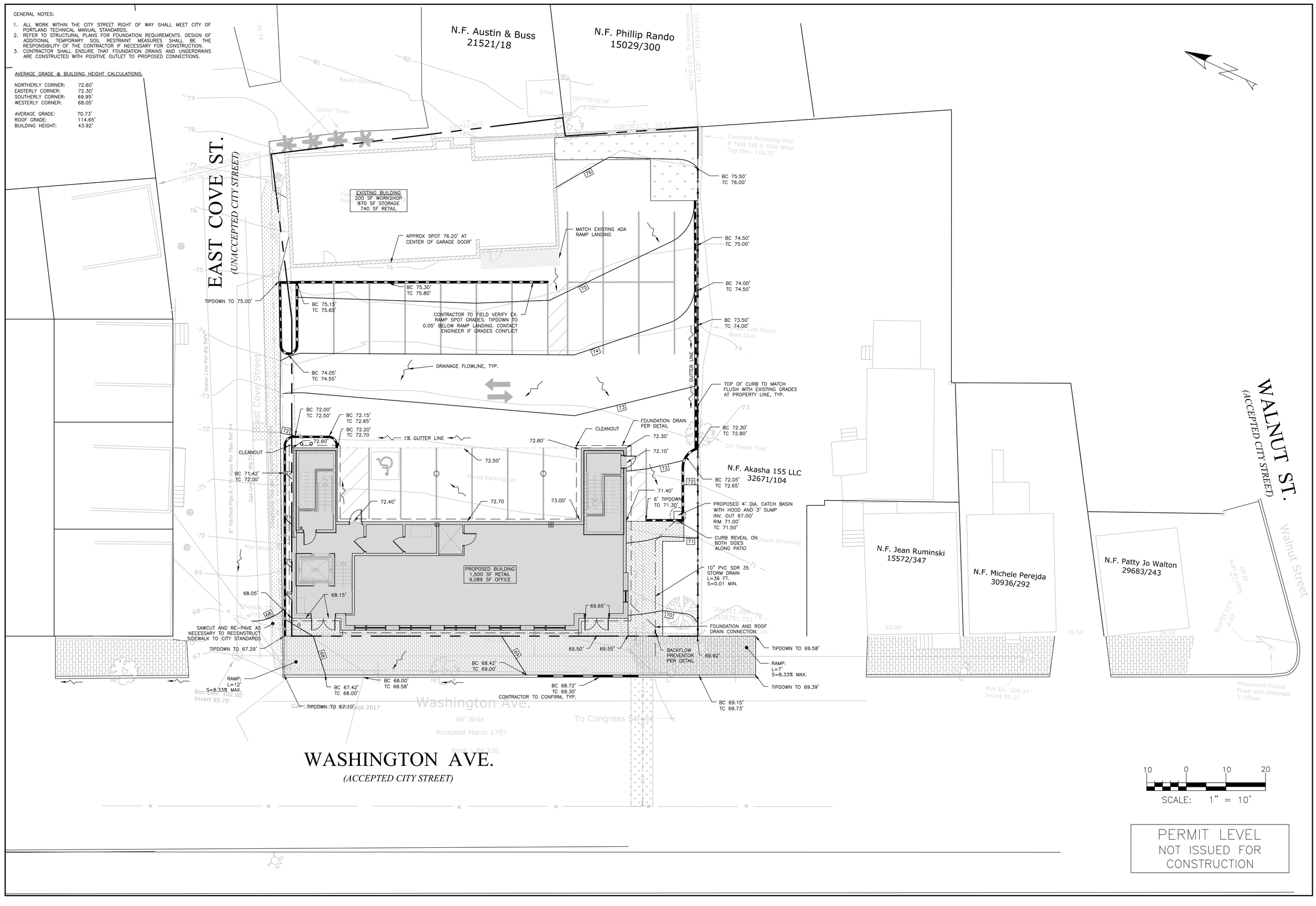
DRAWING NO.
C-20

GENERAL NOTES:

1. ALL WORK WITHIN THE CITY STREET RIGHT OF WAY SHALL MEET CITY OF PORTLAND TECHNICAL MANUAL STANDARDS.
2. REFER TO STRUCTURAL PLANS FOR FOUNDATION REQUIREMENTS. DESIGN OF ADDITIONAL TEMPORARY SOIL RESTRAINT MEASURES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR IF NECESSARY FOR CONSTRUCTION.
3. CONTRACTOR SHALL ENSURE THAT FOUNDATION DRAINS AND UNDERDRAINS ARE CONSTRUCTED WITH POSITIVE OUTLET TO PROPOSED CONNECTIONS.

AVERAGE GRADE & BUILDING HEIGHT CALCULATIONS:

NORTHERLY CORNER:	72.60'
EASTERLY CORNER:	72.30'
SOUTHERLY CORNER:	69.95'
WESTERLY CORNER:	68.05'
AVERAGE GRADE:	70.73'
ROOF GRADE:	114.65'
BUILDING HEIGHT:	43.92'



PERMIT LEVEL
NOT ISSUED FOR CONSTRUCTION

ISSUED FOR	BY	DATE
CITY APP.	WHS	12/4/17
BLDG REV.	WHS	3/26/18

DRAWING NAME: GRADING & DRAINAGE PLAN

PROJECT NAME: 151 WASHINGTON AVE. REDEVELOPMENT

CLIENT: DIVING ROCK, LLC
15 HOWARD STREET, PORTLAND, ME 04101

ACORN ENGINEERING, INC.
158 DANFORTH STREET, PORTLAND, MAINE 04102
(207) 775-2655

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM ACORN ENGINEERING, INC. AND ANY MODIFICATIONS MADE OR OTHERWISE SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

FILE:	1090_CIVIL
JN:	1090
SCALE:	1"=10'
DESIGNED BY:	SJL
DRAWN BY:	SJL
CHECKED BY:	WHS

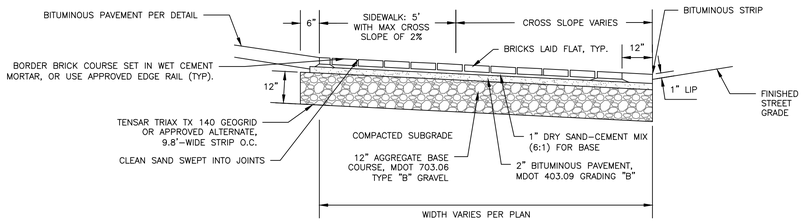
STATE OF MAINE
WILLIAM H. SAVAGE
No. 11405
2-20-18
REGISTERED PROFESSIONAL ENGINEER

DRAWING NO.
C-30

BRICKS TO BE USED:

NEW CONSTRUCTION:
4"X8" PINE HALL PATHWAY PAVER BRICK; MFG. BY PINE HALL BRICK CO., MADISON, NORTH CAROLINA. LACHANCE ITEM #193623;. PINE HALL PATHWAY PAVER BRICK.

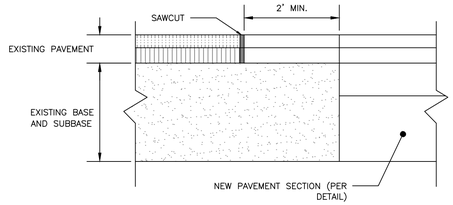
REPAIR/MAINTENANCE TO EXISTING BRICK SIDEWALKS:
VERMONT PAVER; SUPPLIED BY GAGNE AND SONS, SPECIFICATION NUMBER: "VERMONT BACKER BRIC", ITEM NUMBER # VBBB



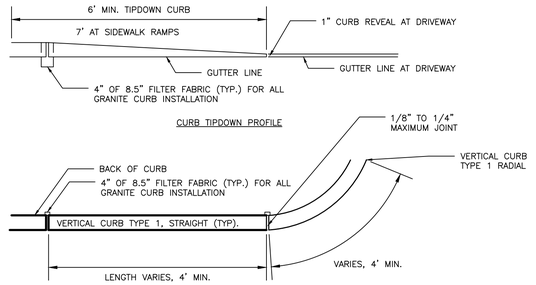
BRICK DRIVEWAY APRON WITH BITUMINOUS BASE DETAIL
NOT TO SCALE

NOTES:

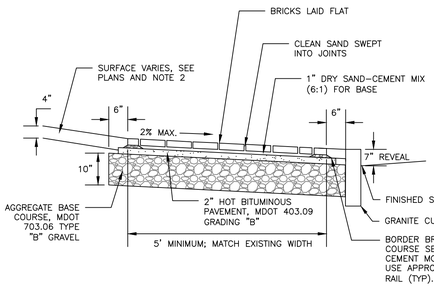
1. SAWCUT EXISTING PAVEMENT AND REMOVE 2' STRIP OF EXISTING PAVEMENT. APPLY BITUMINOUS TACK COAT PRIOR TO PLACEMENT OF NEW BITUMINOUS PAVEMENT.
2. THE NEW PAVEMENT SECTION SHALL MEET THE CITY OF PORTLAND ARTERIAL BITUMINOUS PAVEMENT SECTION DETAIL AT A MINIMUM OR THE THE EXISTING PAVEMENT AND AGGREGATE BASE AND SUBBASE DEPTH WHICHEVER IS GREATER.



PAVEMENT SAWCUT DETAIL
NOT TO SCALE



VERTICAL GRANITE CURB AND TIPDOWN INSTALLATION
NOT TO SCALE



NOTES:

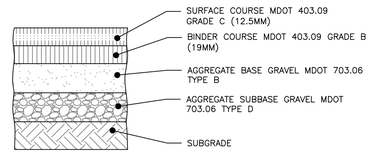
1. BRICKS TO BE USED:

   NEW CONSTRUCTION:
   4"X8" PINE HALL PATHWAY PAVER BRICK; MFG. BY PINE HALL BRICK CO., MADISON, NORTH CAROLINA. LACHANCE ITEM #193623;. PINE HALL PATHWAY PAVER BRICK.

   REPAIR/MAINTENANCE TO EXISTING BRICK SIDEWALKS:
   VERMONT BACKER SUPPLIED BY GAGNE AND SONS SPECIFICATION NUMBER: "VERMONT PAVER BRICK", ITEM NUMBER #VBBB

2. INSTALL BRICK FLUSH UP TO BUILDING, PAVEMENT, STAIRS, CONCRETE SURFACES, CURB OR LANDSCAPED AREAS.

BRICK SIDEWALK WITH BITUMINOUS BASE DETAIL
NOT TO SCALE



NOTES:

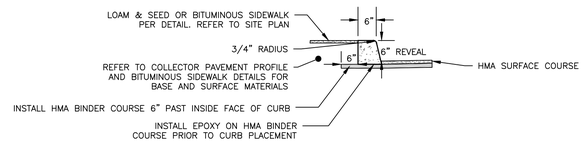
1. COMPACT SUBGRADE TO 95% MAXIMUM DRY DENSITY IN ACCORDANCE WITH ASTM D-1557
2. SURFACE AND AGGREGATE MATERIALS SHALL MEET THE CITY OF PORTLAND STANDARDS IN ADDITION TO MDOT STANDARDS.

THICKNESS OF LAYERS	
STANDARD	LAYERS
2"	SURFACE COURSE MDOT 403.09 GRADE C (12.5mm)
3"	BINDER COURSE MDOT 403.09 GRADE B (19mm)
6"	AGGREGATE BASE GRAVEL MDOT 703.06 TYPE B
18"	AGGREGATE SUBBASE GRAVEL MDOT 703.06 TYPE D

CITY OF PORTLAND ARTERIAL BITUMINOUS PAVEMENT PROFILE: WASHINGTON AVENUE
NOT TO SCALE

NOTE:

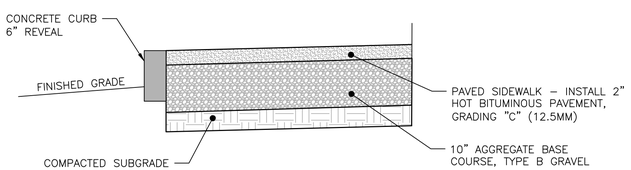
1. TIPDOWNS 7' IN LENGTH SHALL BE PROVIDED AS SEEN ON PLANS



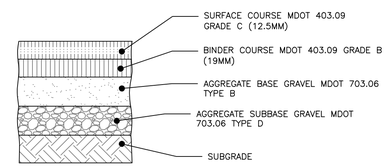
SLIPFORM CONCRETE CURB DETAIL
NOT TO SCALE

NOTE:

COMPACT SUBGRADE TO 95% MAXIMUM DRY DENSITY IN ACCORNDANCE WITH ASTM D-1557



BITUMINOUS SIDEWALK DETAIL
NOT TO SCALE



NOTE:

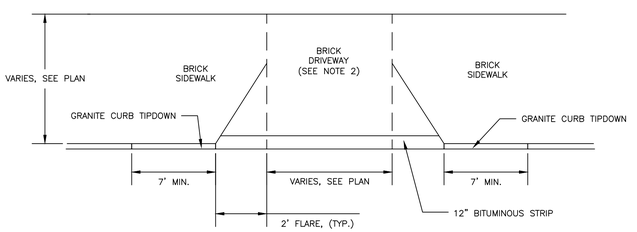
COMPACT SUBGRADE TO 95% MAXIMUM DRY DENSITY IN ACCORDANCE WITH ASTM D-1557

THICKNESS OF LAYERS	
STANDARD	LAYERS
1-1/2"	SURFACE COURSE MDOT 403.09 GRADE C (12.5mm)
2"	BINDER COURSE MDOT 403.09 GRADE B (19mm)
3"	AGGREGATE BASE GRAVEL MDOT 703.06 TYPE B
15"	AGGREGATE SUBBASE GRAVEL MDOT 703.06 TYPE D

BITUMINOUS PAVEMENT PROFILE: EAST COVE ST. & INTERNAL PARKING LOT
NOT TO SCALE

NOTES:

1. REFER TO GRADING & DRAINAGE PLAN FOR SITE GRADING
2. REFER TO BRICK DRIVEWAY APRON WITH BITUMINOUS BASE DETAIL FOR APRON CROSS-SECTION
3. MATERIALS/DETAILS OF DRIVEWAY APRON TO BE APPROVED BY CITY (DPW AND PLANNING) PRIOR TO IMPLEMENTATION



DRIVEWAY APRON LAYOUT DETAIL
NOT TO SCALE

PERMIT LEVEL
NOT ISSUED FOR CONSTRUCTION

ISSUED FOR	BY	DATE
CITY APP.	WHS	12/4/17

DRAWING NAME: SITE DETAILS - 1

PROJECT NAME: 151 WASHINGTON AVE. REDEVELOPMENT

CLIENT: DIVING ROCK, LLC
15 HOWARD STREET, PORTLAND, ME 04101

ACORN ENGINEERING, INC.
158 DANFORTH STREET, PORTLAND, MAINE 04102
(207) 775-2855

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM ACORN ENGINEERING, INC. AND ANY MODIFICATIONS MADE, OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

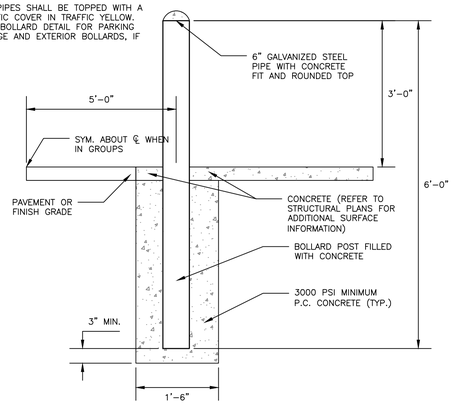
FILE:	1090_CIVIL
JN:	1090
SCALE:	NTS
DESIGNED BY:	WHS
DRAWN BY:	SJL
CHECKED BY:	WHS

STATE OF MAINE — WILLIAM H. SAVAGE — No. 11415 — 12-4-17 — REGISTERED PROFESSIONAL ENGINEER

DRAWING NO.
C-40

NOTES:

1. ALL PIPES SHALL BE TOPPED WITH A PLASTIC COVER IN TRAFFIC YELLOW.
2. PIPE BOLLARD DETAIL FOR PARKING GARAGE AND EXTERIOR BOLLARDS, IF ANY.

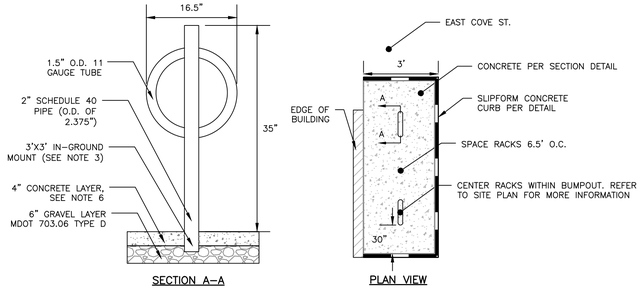


PIPE BOLLARD

NOT TO SCALE

NOTES:

1. EACH BICYCLE RACK SHALL HAVE CAPACITY FOR TWO BICYCLES.
2. BICYCLE RACK PARTS SHALL BE OF UNIFORM COLOR AND SHALL BE FINISHED IN ACCORDANCE WITH PRODUCT SPECIFICATION.
3. BICYCLE RACK SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S MOST RECENT INSTALLATION RECOMMENDATIONS, AND SHALL BE INSTALLED WITH AN IN-GROUND MOUNT UNLESS OTHERWISE APPROVED BY ENGINEER.
4. BICYCLE RACK SHALL BE "DERO BIKE HITCH", AS MANUFACTURED BY DERO BIKE RACKS OR APPROVED EQUIVALENT.
5. MINIMUM OFFSETS SHOWN. MANUFACTURER'S RECOMMENDED OFFSETS SHALL BE ENFORCED WHERE POSSIBLE.
6. CONCRETE SHALL BE 4000 PSI @28 DAYS.

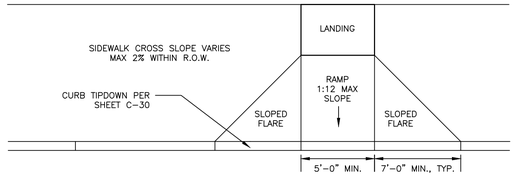


BICYCLE RACK DETAIL

NOT TO SCALE

NOTES:

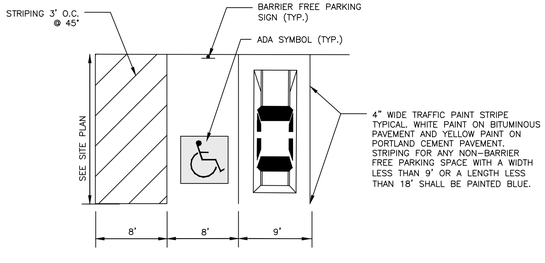
1. FLARED SECTIONS SHALL MATCH SURFACE MATERIAL USED FOR SIDEWALK CONSTRUCTION.



DESIGN ELEMENT	SLOPE IN DIRECTION OF TRAVEL	CROSS SLOPE
APPROACH	8.33% MAX	2%
LANDING	2%	2%
RAMP	8.33% MAX	MATCH STREET GRADE
FLARE	10% MAX AT CURB FACE	–
SIDEWALK	MATCH STREET GRADE	2%

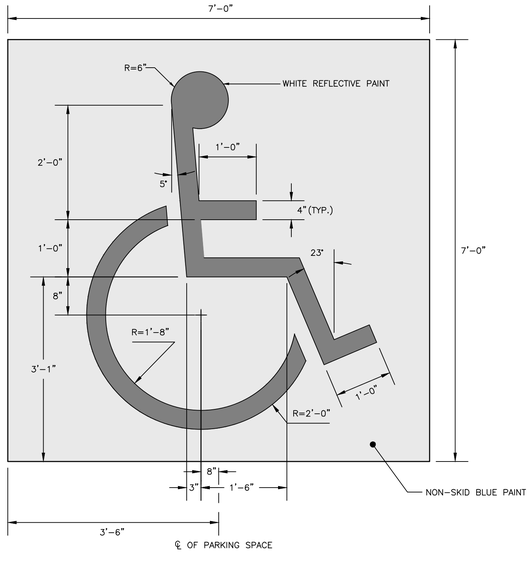
TYPICAL SIDEWALK RAMP

NOT TO SCALE



TYPICAL PARKING SPACE DIMENSIONS

NOT TO SCALE

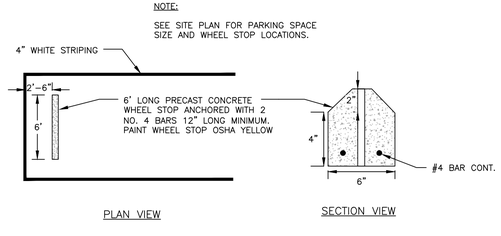


INTERNATIONAL BARRIER FREE SYMBOL

NOT TO SCALE

NOTE:

SEE SITE PLAN FOR PARKING SPACE SIZE AND WHEEL STOP LOCATIONS.



CONCRETE WHEEL STOP

NOT TO SCALE

PERMIT LEVEL
NOT ISSUED FOR CONSTRUCTION

ISSUED FOR	BY	DATE
CITY APP.	WHS	12/4/17

DRAWING NAME: SITE DETAILS - 2

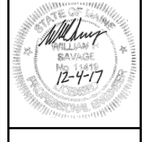
PROJECT NAME: 151 WASHINGTON AVE. REDEVELOPMENT

CLIENT: DIVING ROCK, LLC
15 HOWARD STREET, PORTLAND, ME 04101

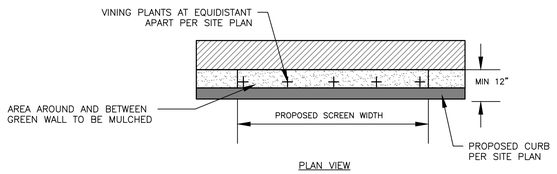
ACORN ENGINEERING, INC.
THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM ACORN ENGINEERING, INC. AND ANY MODIFICATIONS MADE, AS AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

ACORN ENGINEERING, INC.
158 DANFORTH STREET, PORTLAND, MAINE 04102
(207) 775-2655

FILE:	1090_CIVIL
JN:	1090
SCALE:	NTS
DESIGNED BY:	WHS
DRAWN BY:	SJL
CHECKED BY:	WHS



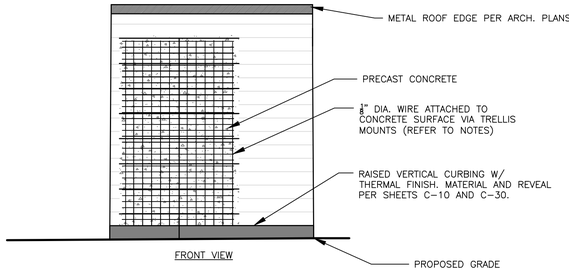
DRAWING NO.
C-41



PLAN VIEW

NOTES:

1. WIRE CABLES ARE TO BE ATTACHED PERPENDICULAR TO EACH OTHER FORMING A GRID PATTERN; DUAL-LOCKING TRELLIS CROSS CLAMPS OR AN APPROVED ALTERNATIVE SHALL BE USED AT EACH INTERSECTION
2. FINAL LOCATION OF TRELLIS MOUNTS WILL BE DEFINED BY THE CONTRACTOR AND APPROVED BY THE ARCHITECT
3. ALL TRELLIS COMPONENTS TO BE MADE OF SAE 316 STAINLESS STEEL AND MANUFACTURED BY HAYN LINES OR AN APPROVED EQUAL
4. CONTRACTOR TO INSTALL TRELLIS STRUCTURE IN ACCORDANCE TO MANUFACTURER'S RECOMMENDATIONS
5. REFER TO ARCHITECTURAL DETAILS FOR ADDITIONAL INFORMATION.



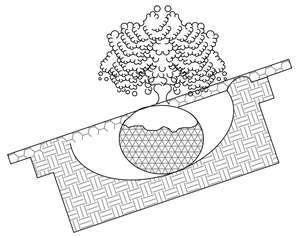
FRONT VIEW

STAINLESS STEEL GREEN WALL TRELLIS SYSTEM

NOT TO SCALE

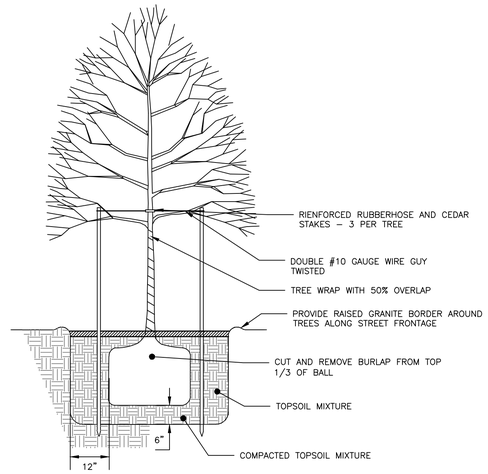
NOTES:

1. DIG HOLE AT LEAST 2 TIMES THE DIAMETER OF THE ROOT BALL AND AS DEEP AS THE ROOT BALL (NO DEEPER). SET ROOT BALL CENTERED, WITH THE TOP AT DOWNHILL EDGE OF THE HOLE.
2. TOPSOIL BACKFILL SHALL BE NATURAL FRIABLE, FERTILE, FINE LOAMY SOIL POSSESSING THE CHARACTERISTICS OF TOPSOIL IN THE VICINITY WHICH PRODUCE A HEAVY GROWTH. TOPSOIL SHALL CONTAIN NOT LESS THAN 6% NOR MORE THAN 20% ORGANIC MATTER. TOP SOIL SHALL HAVE A pH VALUE OF NOT LESS THAN 5.5 NOR MORE THAN 7.0.
3. CONTAINER GROWN STOCK – REMOVE CONTAINER PROTECTING THE ROOT BALL. GENTLY COMB OUT THE ROOTS. PRUNE DAMAGED ROOTS.
4. BACKFILL THE HOLE WITH TOPSOIL TO A DEPTH NOT TO EXCEED 8" THEN WATER SUFFICIENTLY TO SETTLE TOPSOIL. REPEAT SOIL BACKFILL, WATER, DRAIN. TOPSOIL SHALL BE TAMPED UNDER EDGES OF THE BALLED PLANTS. BACKFILL TO FINISH GRADE AND CREATE AN EARTHEN SAUCER. SOAK PLANTS TWICE WITHIN THE FIRST TWENTY-FOUR HOURS OF PLANTING.



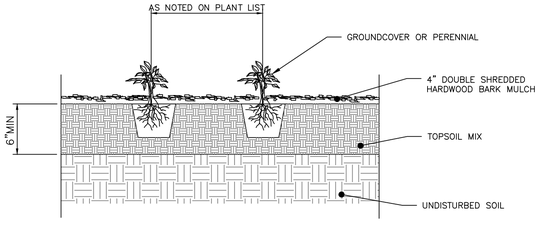
TYPICAL PLANTING

NOT TO SCALE



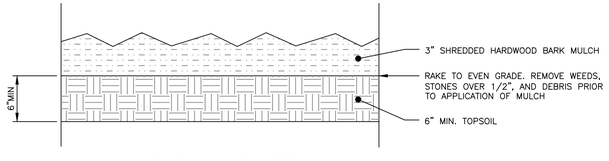
TREE PLANTING DETAIL

NOT TO SCALE



PERENNIAL PLANTING DETAIL

NOT TO SCALE



BARK MULCH DETAIL

NOT TO SCALE

PLANTING NOTES:

1. ALL PLANT SELECTION AND INSTALLATION WILL BE IN COMPLIANCE WILL THE CITY OF PORTLAND TECHNICAL MANUAL (SECTION 4).
2. CONTRACTOR TO VERIFY ALL UTILITIES ON PROPERTY AND TO PROTECT ALL UTILITIES DURING EXCAVATION FOR PLANTS.
3. IF THERE IS A DISCREPANCY BETWEEN THE NUMBER OF PLANTS SHOWN ON THE PLAN AND THE NUMBER OF PLANTS SHOWN IN PLANT LIST (IF ANY), THE NUMBER OF PLANTS SHOWN ON PLAN WILL TAKE PRECEDENCE.
4. ALL MATERIAL SHALL COMPLY WITH THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK, AMERICAN ASSOCIATION OF NURSERYMAN.
5. THE ENGINEER MAY TAG ALL PLANTS AT THE NURSERY AND INSPECT THEM AFTER DELIVERY TO THE SITE. ALL PLANT MATERIALS SHALL BE INSPECTED BY THE ENGINEER ON SITE PRIOR TO INSTALLATION.
6. ALL PROPOSED PLANTS SHALL BE LOCATED CAREFULLY AS SHOWN ON THE PLANS AND THE PLACEMENTS SHALL BE APPROVED BY ENGINEER BEFORE THE PLANTS ARE INSTALLED.
7. ALL DISTURBED AREAS NOT TO BE PAVED OR PLANTED SHALL BE LOAMED AND SEEDED AS SHOWN. THE SEED MIX SPECIFICATIONS ARE AS FOLLOWS: LESCO FINE FESCUE LINKS BLEND OF 35% HARD FESCUE, 35% CREEPING RED FESCUE, 20% CHEWINGS FESCUE AND 10% SHEEP FESCUE. ADD 5% LITTLE BLUESTEM AND 5% NORTHEAST WILDFLOWER SEED MIXTURE BY WEIGHT TO THE LINKS BLEND.
8. STAKING AND GUYING SHALL BE DETERMINED BY THE ENGINEER ON A TREE BY TREE BASIS. FOR PRICING PURPOSES, PROVIDE A PER TREE UNIT COST FOR STAKING AND GUYING. IF STAKING AND GUYING IS REQUIRED, REMOVE TREE WRAP, STAKES, AND GUY WIRES AT END OF FIRST GROWING SEASON.
9. FOR TREE PLANTING IN LAWN AREAS, ANY DISTURBED LAWN SHALL BE LOAMED AND SEEDED AS NECESSARY.

PERMIT LEVEL
NOT ISSUED FOR CONSTRUCTION

ISSUED FOR	BY	DATE
CITY APP.	WHS	12/4/17

DRAWING NAME: **LANDSCAPING DETAILS**

PROJECT NAME: **151 WASHINGTON AVE. REDEVELOPMENT**

CLIENT: DIVING ROCK, LLC
15 HOWARD STREET, PORTLAND, ME 04101

ACORN ENGINEERING, INC.

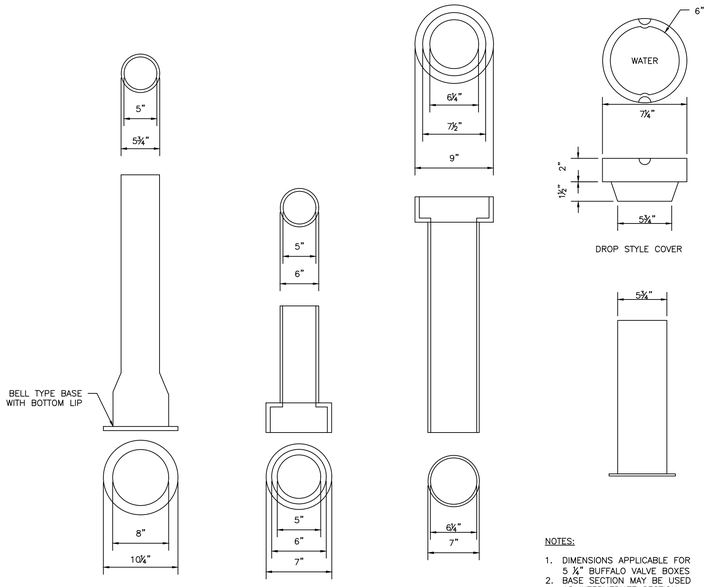
THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM ACORN ENGINEERING, INC. ANY MODIFICATIONS MADE BY ANYONE OTHER THAN ACORN ENGINEERING, INC. SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

ACORN ENGINEERING, INC.
158 DANFORTH STREET, PORTLAND, MAINE 04102
(207) 775-2655

FILE:	1090_CIVIL
JN:	1090
SCALE:	NTS
DESIGNED BY:	WHS
DRAWN BY:	SJL
CHECKED BY:	WHS

STATE OF MAINE
WILLIAM SAVAGE
No. 11455
12-4-17
REGISTERED PROFESSIONAL ENGINEER

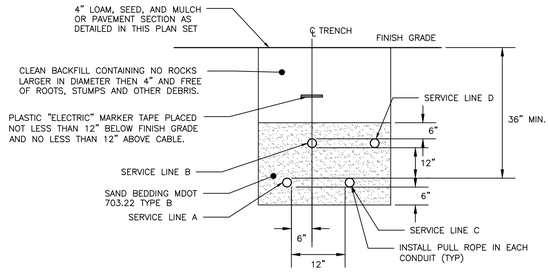
DRAWING NO.
C-42



NOTES:

1. DIMENSIONS APPLICABLE FOR 5 ¼" BUFFALO VALVE BOXES
2. BASE SECTION MAY BE USED AS INTERMEDIATE SECTION

VALVE BOX & COVER
NOT TO SCALE



CONDUIT TYPE				
SERVICE	CONDUIT SIZE	GRASS AND PAVED AREAS	UTILITY	REMARKS
A	2–5"	SCHEDULE 40 PVC ELECTRICAL GRADE	PRIMARY POWER	SEE NOTE 1
B	2–4"	SCHEDULE 40 PVC	COMMUNICATION	–
C	2–4"	SCHEDULE 40 PVC ELECTRICAL GRADE	SPARE	IF REQUIRED
D	2–4"	SCHEDULE 40 PVC	CABLE	–

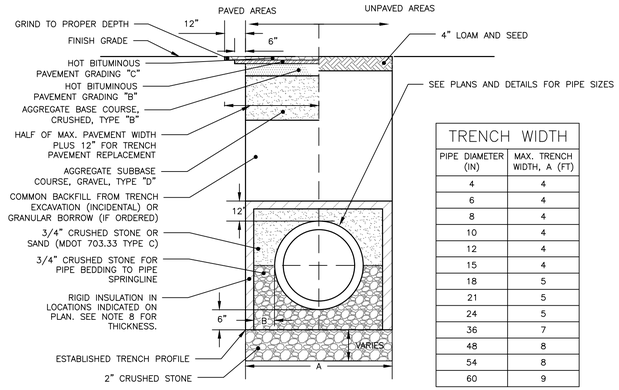
NOTES:

1. ONE CONDUIT CAPPED FOR SPARE, PROVIDE GALVANIZED STEEL LONG SWEEP AT RISER POLE AND EXTEND GALVANIZED CONDUIT TO 10" ABOVE GRADE AT POLE WITH STAND–OFF BRACKETS.
2. MINIMUM SEPARATION OF 24 INCHES BETWEEN PRIMARY CABLE/CONDUIT AND GAS LINES SHALL BE MAINTAINED.

UTILITY TRENCH:
PRIMARY AND SECONDARY POWER, TELEPHONE, AND CABLE
NOT TO SCALE

DESIGN NOTES:

1. ANY ALTERNATE TRENCHING METHODS SHALL BE APPROVED IN ADVANCE BY THE CITY.
2. ALL CONSTRUCTION METHODS SHALL CONFORM TO THE CITY OF PORTLAND TECHNICAL STANDARDS FIGURE II–2.
3. BRACING & SHEETING OR OTHER TRENCH PROTECTION TO BE PROVIDED TO MEET APPLICABLE STATE AND O.S.H.A SAFETY STANDARDS. ALL SUCH TRENCH PROTECTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
4. WHERE APPLICABLE, PERFORATIONS IN STORM DRAIN (PERF. SD) SHALL BE ORIENTED UP.
5. ALL STORM DRAINS SHALL BE PVC SDR 35 MIN PS–46 RATING OR OR IN ACCORDANCE WITH CITY OF PORTLAND TECHNICAL MANUAL , SECTION 2 – SANITARY SEWER AND STORM DRAIN – PART 2.5.2
6. IN PAVED AREAS, DEPTHS OF GRAVEL AND HOT MIX ASPHALT PAVEMENT SHALL MATCH THE GREATER OF EXISTING CONDITIONS OR THE REQUIREMENTS FOR THE CORRESPONDING STREET CLASSIFICATION.
7. THIS DETAIL SHALL BE APPLIED ONLY TO PIPE TRENCHES WITHIN OF THE CITY OF PORTLAND R.O.W.
8. STORM DRAIN COVER BETWEEN 2' AND 3' SHALL INCLUDE 4" OF RIGID INSULATION. COVER BETWEEN 3' AND 4' SHALL INCLUDE 2" RIGID INSULATION. OTHER UTILITIES: ADD 2" OF RIGID INSULATION FOR EACH FOOT ABOVE MINIMUM DEPTH.
9. DEPTH OF BITUMINOUS PAVEMENT AND AGGREGATE COURSES SHALL BE DETERMINED BY STREET CLASSIFICATION.
10. DIMENSION B SHALL BE SUFFICIENT TO ALLOW CRUSHED STONE BEDDING TO BE PLACED AND COMPACTED UNDER THE HAUNCHES OF THE PIPE; BUT IN ALL CASES DIMENSION B SHALL BE AT LEAST 9".
11. DIMENSION A IS THE MAXIMUM WIDTH ALLOWED FOR CALCULATING PAY QUANTITIES UNDER GRANULAR BORROW, CRUSHED STONE, STRUCTURAL EARTH EXCAVATION, AND STRUCTURAL ROCK EXCAVATION. DIMENSION A SHALL BE BASED ON PIPE DIAMETER D, AS SET FORTH IN THE TABLE BELOW.

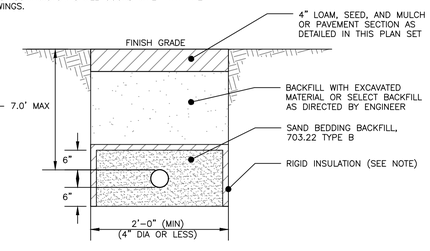


TRENCH WIDTH	
PIPE DIAMETER (IN)	MAX. TRENCH WIDTH, A (FT)
4	4
6	4
8	4
10	4
12	4
15	4
18	5
21	5
24	5
36	7
48	8
54	8
60	9

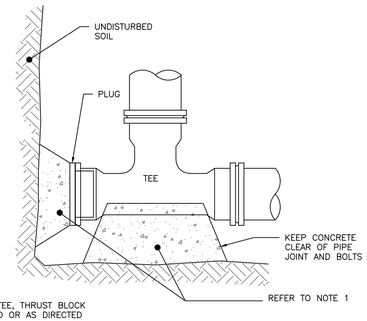
CITY OF PORTLAND TYPICAL PIPE TRENCH DETAIL WITHIN RIGHT–OF–WAY
NOT TO SCALE

NOTES:

1. THE WATER TRENCH SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE PORTLAND WATER DISTRICT STANDARD DETAILS & SPECIFICATIONS.
2. IF LESS THAN 5'–6" OF COVER IS POSSIBLE ADD 1 INCH OF "BLUE DOW" RIGID INSULATION FOR EVERY 12" LESS COVER.
3. ALL PROPOSED TREES PLANTED LESS THAN 10 FEET FROM THE WATER PIPE SHALL BE PLANTED AT A DEPTH NO GREATER THAN 3' DEEP. PERMEABLE LANDSCAPE FABRIC SHALL CREATE A ROOT BARRIER AROUND THE WATER PIPES. CONTRACTOR SHALL COORDINATE WITH THE LANDSCAPE DRAWINGS.

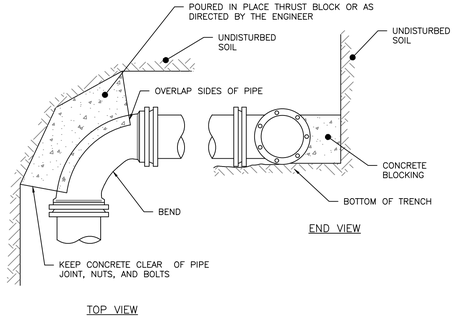


WATER SERVICE TRENCH SECTION DETAIL
NOT TO SCALE



NOTES:
1. IF DEAD END WITH TEE, THRUST BLOCK WOULD BE REQUIRED OR AS DIRECTED BY THE ENGINEER
2. SEE THRUST/RETAINER GLAND SCHEDULE FOR TYPE OF BLOCKING TO BE USED ON BENDS

END SECTION



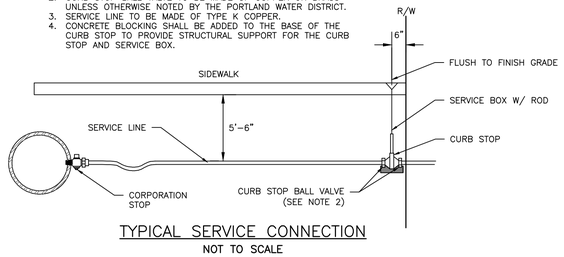
END VIEW

TOP VIEW

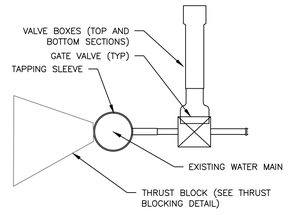
THRUST BLOCKING: REGULAR BEND
NOT TO SCALE

NOTES:

1. ALL MATERIALS AND INSTALLATION PROCEDURES MUST COMPLY WITH THE CITY OF PORTLAND WATER DISTRICT (PWD) SPECIFICATIONS.
2. CURB STOP BALL VALVE TO BE MADE OF COPPER OR BRASS UNLESS OTHERWISE NOTED BY THE PORTLAND WATER DISTRICT.
3. SERVICE LINE TO BE MADE OF TYPE K COPPER.
4. CONCRETE BLOCKING SHALL BE ADDED TO THE BASE OF THE CURB STOP TO PROVIDE STRUCTURAL SUPPORT FOR THE CURB STOP AND SERVICE BOX.

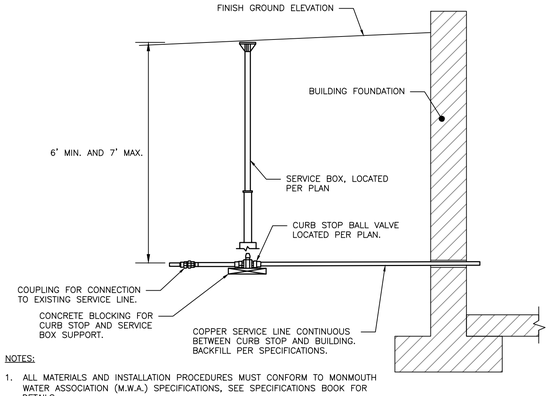


TYPICAL SERVICE CONNECTION
NOT TO SCALE



SIDE VIEW

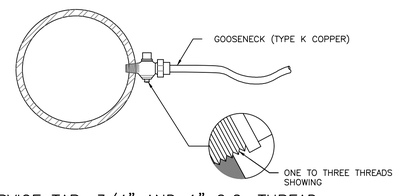
TAPPING SLEEVE AND VALVE
NOT TO SCALE



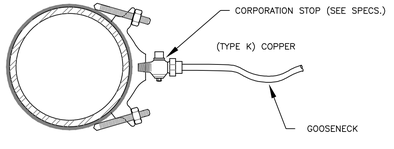
NOTES:

1. ALL MATERIALS AND INSTALLATION PROCEDURES MUST CONFORM TO MONMOUTH WATER ASSOCIATION (M.W.A.) SPECIFICATIONS, SEE SPECIFICATIONS BOOK FOR DETAILS.
2. M.W.A. REQUIRES THE USE OF COPPER FOR THE CUSTOMERS SIDE OF SERVICE.
3. CUSTOMERS PORTION OF SERVICE LINE IS THAT PORTION FROM THE PROPERTY LINE INTO THE BUILDING, IN THIS INSTANCE THE CUSTOMER IS ALSO RESPONSIBLE FOR THE INSTALLATION OF THE CURB STOP BALL VALVE.
4. FOR THE INTERIOR BUILDING PLUMBING REFER TO THE PLUMPING PLAN BY MECHANICAL SYSTEMS ENGINEERS.

SERVICE INSTALLATION DETAIL
NOT TO SCALE



SERVICE TAP: 3/4" AND 1" C.C. THREAD
NOT TO SCALE



SERVICE SADDLE: 1–1/2" AND 2" C.C. THREAD
NOT TO SCALE

PERMIT LEVEL
NOT ISSUED FOR CONSTRUCTION

ISSUED FOR	BY DATE
CITY APP.	WHS 12/4/17

DRAWING NAME: UTILITY DETAILS – 1

PROJECT NAME: 151 WASHINGTON AVE. REDEVELOPMENT

CLIENT: DIVING ROCK, LLC, 15 HOWARD STREET, PORTLAND, ME 04101

ACORN ENGINEERING, INC.

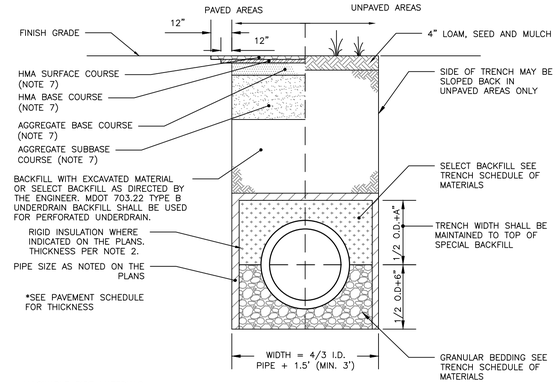
THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION OF ACORN ENGINEERING, INC. AND ANY REUSE OF THIS PLAN SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

ACORN ENGINEERING, INC.
158 DANFORTH STREET, PORTLAND, MAINE 04102
(207) 775–2655

FILE:	1090_CIVIL
JN:	1090
SCALE:	NTS
DESIGNED BY:	WHS
DRAWN BY:	SJL
CHECKED BY:	WHS

STATE OF MAINE WILLIAM H. SAVAGE No. 13178 REGISTERED PROFESSIONAL ENGINEER 12-4-17

DRAWING NO.
C-43



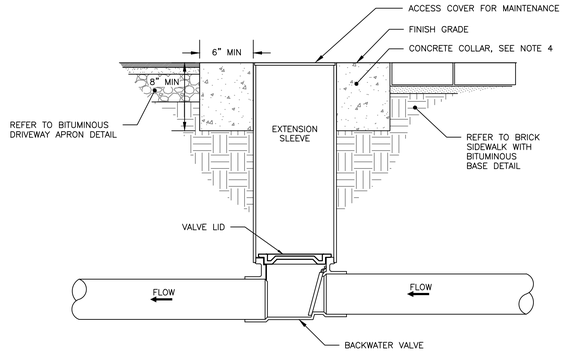
ALLOWABLE PIPE MATERIALS:
- REINFORCED CONCRETE PIPE (RCP) MIN. STRENGTH OF CLASS III
- PVC RING TYPE SEWER (SDR 35) OR EQUIVALENT, MIN PS-46 RATING
- PVC RING TYPE SEWER PIPE MEETING ASTM F 789
- DUCTILE IRON PIPE (DIP)
- ADS N-12 HP TRIPLE-WALL MIN PS-46 RATING
- ADS SANITITE HP MIN. PS-46

SCHEDULE OF MATERIALS		
TYPE OF PIPE	GRANULAR BEDDING	SELECT BACKFILL
CMP DUCTILE IRON RCP	MDOT 703.22 TYPE B UD BACKFILL	MDOT 703.22 TYPE B UD BACKFILL
PVC/HDPE	MDOT 703.22 TYPE C 3/4" CRUSHED STONE	MDOT 703.22 TYPE B UD BACKFILL
CMP	MDOT 703.22 TYPE C 3/4" CRUSHED STONE	MDOT 703.22 TYPE C 3/4" CRUSHED STONE

NOTES:
1. BRACING AND SHEETING OR OTHER TRENCH PROTECTION TO BE PROVIDED TO MEET APPLICABLE STATE AND O.S.H.A. SAFETY STANDARDS. ALL SUCH TRENCH PROTECTION TO BE THE RESPONSIBILITY OF THE CONTRACTOR.
2. STORM DRAIN COVER BETWEEN 2' AND 3' SHALL INCLUDE 4" OF RIGID INSULATION. COVER BETWEEN 3' AND 4' SHALL INCLUDE 2" RIGID INSULATION. OTHER UTILITIES: ADD 2" OF RIGID INSULATION FOR EACH FOOT ABOVE MINIMUM DEPTH.
3. INSTALL WARNING TAPE DIRECTLY ABOVE UTILITIES AT THE TOP OF SUBGRADE.
4. MINIMUM COVER
   4.1. 2'-0" – STORM DRAIN
   4.2. 5'-0" – SEWER
5. NO TREES SHALL BE PLANTED WITHIN 5' OF A SEWER PIPE OR SERVICE
6. THIS DETAIL SHALL BE APPLIED ONLY TO DRAINAGE PIPE TRENCHES OUTSIDE OF THE CITY OF PORTLAND ROW.
7. THICKNESS AS NOTED BY SURFACE DETAILS
8. ALL PROPOSED TREES PLANTED WITHIN 10' OF A STORM OR SEWER PIPE SHALL BE PLANTED AT A DEPTH NO GREATER THAN 3' DEEP. PERMEABLE LANDSCAPE FABRIC SHALL CREATE A ROOT BARRIER AROUND THE PIPES. CONTRACTOR SHALL COORDINATE WITH THE LANDSCAPE DRAWINGS.

STORM DRAIN AND SEWER TYPICAL TRENCH SECTION WITHIN PROPERTY

NOT TO SCALE

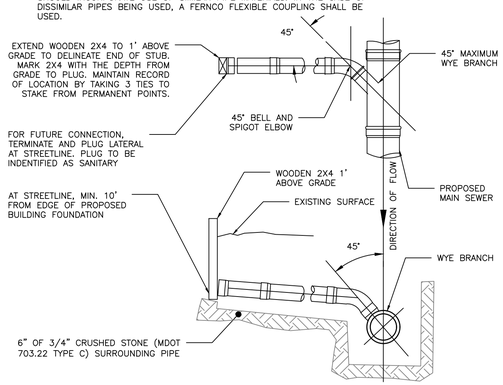


NOTES:
1. BACKFLOW VALVE TO BE PROVIDED BY AGRI DRAIN CORPORATION OR AN APPROVED EQUAL.
2. VALVE TO BE INSTALLED TO MANUFACTURER'S SPECIFICATIONS AND COMPLY WITH RULES AND REGULATIONS AS OUTLINED IN SECTION 2 OF THE CITY OF PORTLAND TECHNICAL MANUAL.
3. VALVE SHALL BE INSTALLED WITH A VALVE BOX AND COVER TO PROVIDE EASY ACCESS AND MAINTENANCE; VALVE COVER SHALL STATE 'SEWER' ON LID FLUSH TO SURFACE. REFER TO VALVE & BOX COVER DETAIL FOR ADDITIONAL INFORMATION.
4. CONCRETE COLLAR AT A MINIMUM 24-HOUR COMPRESSIVE STRENGTH OF 3,000 PSI.

BACKFLOW VALVE ASSEMBLY

NOT TO SCALE

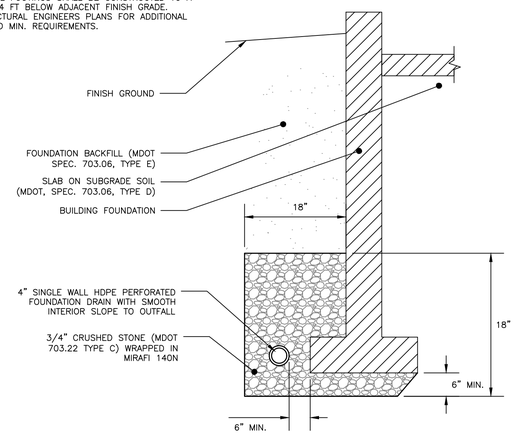
NOTES:
1. LOCATION WITH WARNING TAPE SHALL BE INSTALLED OVER CENTERLINE OF PIPE AT A MAXIMUM OF 24 INCHES BELOW FINISH GRADE.
2. SITE CONTRACTOR TO COORDINATE CONNECTION OF SEWER LATERAL TO HOUSEHOLD PLUMBING WITH ARCHITECTURAL CONTRACTOR.
3. CONNECTION OF PROPOSED SEWER LATERAL TO HOUSEHOLD PLUMBING SHOULD INCORPORATE USE OF SIMILAR PIPE MATERIALS. IN THE CASE OF DISSIMILAR PIPES BEING USED, A FERNCO FLEXIBLE COUPLING SHALL BE USED.



SEWER TEE/WYE CONNECTION DETAIL

NOT TO SCALE

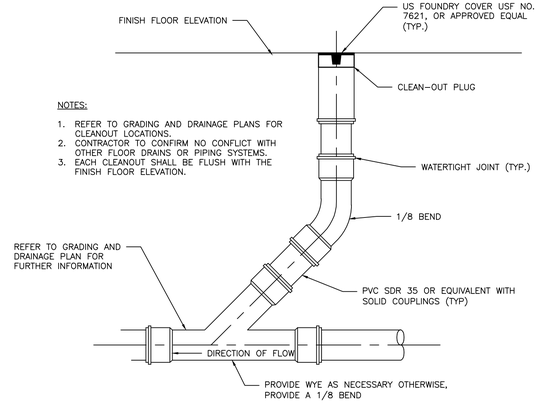
NOTES:
1. REFER TO THE BUILDING ARCHITECTS PLANS FOR THE BUILDING FOUNDATION, BACKFILL, ROOF DRAIN, SIDEWALK AND OTHER DETAILS.
2. PERFORATIONS IN UNDERDRAIN PIPE SHALL BE ORIENTED DOWN.
3. FOUNDATION WALL FOOTINGS SHALL BE CONSTRUCTED TO A MIN. DEPTH OF 4 FT BELOW ADJACENT FINISH GRADE. REFER TO STRUCTURAL ENGINEERS PLANS FOR ADDITIONAL INFORMATION AND MIN. REQUIREMENTS.



FOUNDATION DRAIN DETAIL

NOT TO SCALE

NOTES:
1. REFER TO GRADING AND DRAINAGE PLANS FOR CLEANOUT LOCATIONS.
2. CONTRACTOR TO CONFIRM NO CONFLICT WITH OTHER FLOOR DRAINS OR PIPING SYSTEMS.
3. EACH CLEANOUT SHALL BE FLUSH WITH THE FINISH FLOOR ELEVATION.



CLEANOUT DETAIL

NOT TO SCALE

PERMIT LEVEL
NOT ISSUED FOR CONSTRUCTION

ISSUED FOR	BY	DATE
CITY APP.	WHS	12/4/17

DRAWING NAME: UTLITY DETAILS – 2

PROJECT NAME: 151 WASHINGTON AVE. REDEVELOPMENT

CLIENT: DIVING ROCK, LLC
15 HOWARD STREET, PORTLAND, ME 04101

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM ACORN ENGINEERING, INC. ANY MODIFICATIONS MADE TO THIS PLAN, WHETHER OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

ACORN ENGINEERING, INC.
158 DANFORTH STREET, PORTLAND, MAINE 04102
(207) 775-2855

FILE:	1090_CIVIL
JN:	1090
SCALE:	NTS
DESIGNED BY:	WHS
DRAWN BY:	SJL
CHECKED BY:	WHS

STATE OF MAINE — WILLIAM H. SAVAGE — No. 11619 — 12-4-17 — REGISTERED PROFESSIONAL ENGINEER

DRAWING NO.
C-44

1.0 EROSION CONTROL MEASURES AND SITE STABILIZATION

AS PART OF THE SITE DEVELOPMENT, THE FOLLOWING TEMPORARY AND PERMANENT EROSION AND SEDIMENTATION CONTROL DEVICES SHALL BE IMPLEMENTED. DEVICES SHALL BE INSTALLED AS DESCRIBED IN THIS REPORT OR WITHIN THE PLAN SET. SEE THE MAINE EROSION AND SEDIMENT CONTROL HANDBOOK FOR CONSTRUCTION: BEST MANAGEMENT PRACTICES FOR FURTHER REFERENCE.

1.1 TEMPORARY EROSION CONTROL MEASURES

THE FOLLOWING TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES ARE PLANNED FOR THE PROJECT'S CONSTRUCTION PERIOD:

1.1.1 CRUSHED STONE STABILIZED CONSTRUCTION ENTRANCES SHALL BE PLACED AT ALL ACCESS POINTS TO THE PROJECT SITE WHERE THERE ARE DISTURBED AREAS. THE FOLLOWING SPECIFICATIONS SHALL BE FOLLOWED AT A MINIMUM:
- STONE SIZE SHALL BE 2–3 INCHES, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
- THE THICKNESS OF THE ENTRANCE STONE LAYER SHALL BE NO LESS THAN 6 INCHES.
- THE ENTRANCE SHALL NOT BE LESS THAN 20 FEET WIDE, HOWEVER NOT LESS THAN THE FULL WIDTH OF POINTS WHERE INGRESS OR EGRESS OCCURS. THE LENGTH SHALL NOT BE LESS THAN 50 FEET IN LENGTH.
- GEOTEXTILE FABRIC (WOVEN OR NON–WOVEN) SHALL BE PLACED OVER THE ENTIRE ENTRANCE AREA.
- THE ENTRANCE/EXIT SHALL BE MAINTAINED TO THE EXTENT THAT IT WILL PREVENT THE TRACKING OF SEDIMENT ONTO PUBLIC ROAD WAYS.

1.1.2 SILTATION FENCE OR EROSION CONTROL BERM SHALL BE INSTALLED DOWN GRADIENT OF ANY DISTURBED AREAS TO TRAP RUNOFF BORNE SEDIMENTS UNTIL PERMANENT STABILIZATION IS ACHIEVED. THE SILT FENCE OR EROSION CONTROL BERM SHALL BE INSTALLED PER THE DETAILS PROVIDED IN THE PLAN SET AND INSPECTED BEFORE AND IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. REPAIRS SHALL BE MADE IF THERE ARE ANY SIGNS OF EROSION OR SEDIMENTATION BELOW THE FENCE LINE OR BERM. IF THERE ARE SIGNS OF UNDERCUTTING AT THE CENTER OR THE EDGES, OR IMPOUNDING OF LARGE VOLUMES OF WATER BEHIND THE FENCE OR BERM, THE BARRIER SHALL BE REPLACED WITH A STONE CHECK DAM.

1.1.3 HAY MULCH INCLUDING HYDRO SEEDING IS INTENDED TO PROVIDE COVER FOR DENUDED OR SEEDED AREAS UNTIL REVEGETATION IS ESTABLISHED. MULCH PLACED BETWEEN APRIL 15TH AND NOVEMBER 1ST ON SLOPES OF LESS THAN 15 PERCENT SHALL BE COVERED BY FABRIC NETTING AND ANCHORED WITH STAPLES IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION. MULCH PLACED BETWEEN NOVEMBER 1ST AND APRIL 15TH ON SLOPES EQUAL TO OR STEEPER THAN 8 PERCENT AND EQUAL TO OR FLATTER THAN 2:1 SHALL USE MATS OR FABRIC NETTING AND ANCHORED WITH STAPLES IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION.

1.1.4 AT ANY TIME OF THE YEAR, ALL SLOPES GREATER THAN 3:1 SHALL BE STABILIZED WITH DOUBLE NET EROSION CONTROL BLANKET BIONET SC150BN BY NORTH AMERICAN GREEN OR APPROVED EQUAL, OR EROSION CONTROL MIX SLOPE PROTECTION AS DETAILED WITHIN THE PLANS.

1.1.5 YORK STREET AND GUILFORD COURT SHALL BE SWEPT TO CONTROL MUD AND DUST FROM THE CONSTRUCTION SITE AS NECESSARY. ADD ADDITIONAL STONE TO THE STABILIZED CONSTRUCTION ENTRANCE TO MINIMIZE THE TRACKING OF MATERIAL OFF THE SITE AND ONTO THE SURROUNDING ROADWAYS.

1.1.6 DURING DEMOLITION, CLEARING AND GRUBBING OPERATIONS, STONE CHECK DAMS SHALL BE INSTALLED AT ANY AREAS OF CONCENTRATED FLOW. THE MAXIMUM HEIGHT OF THE CHECK DAM SHALL NOT EXCEED 2 FEET. THE CENTER OF THE CHECK DAM SHALL BE 6 INCHES BELOW THE OUTER EDGES OF THE DAM. THE CONTRACTOR SHALL MULCH THE SIDE SLOPES AND INSTALL STONE CHECK DAMS FOR ALL NEWLY EXCAVATED DITCH LINES WITHIN 24 HOURS OF THEIR CREATION.

1.1.7 SILT FENCE STAKE SPACING SHALL NOT EXCEED 6 FEET UNLESS THE FENCE IS SUPPORTED WITH 14 GAUGE WIRE IN WHICH CASE THE MAXIMUM SPACING SHALL NOT EXCEED 10 FEET. THE SILT FENCE SHALL BE "TOED" INTO THE GROUND.

1.1.8 STORMDRAIN INLET PROTECTION SHALL BE PROVIDED TO STORMDRAINS THROUGH THE USE OF ANY OF THE FOLLOWING: HAY BALE DROP INLET STRUCTURES, SILT FENCE DROP INLET SEDIMENT FILTER, GRAVEL AND WIRE MESH DROP INLET SEDIMENT FILTER, OR CURB INLET SEDIMENT FILTER. BARRIERS SHALL BE INSPECTED AFTER EVERY RAINFALL EVENT AND REPAIRED AS NECESSARY. SEDIMENTS SHALL BE REMOVED WHEN ACCUMULATION HAS REACHED ½ THE DESIGN HEIGHT.

1.1.9 DUST CONTROL SHALL BE ACCOMPLISHED BY THE USE OF ANY OF THE FOLLOWING: WATER, CALCIUM CHLORIDE, STONE, OR AN APPROVED MDEP PRODUCT. DUST CONTROL SHALL BE APPLIED AS NEEDED TO ACCOMPLISH DUST CONTROL.

1.1.10 TEMPORARY LOAM, SEED, AND MULCHING SHALL BE USED IN AREAS WHERE NO OTHER EROSION CONTROL MEASURE IS USED. APPLICATION RATES FOR SEEDING ARE PROVIDED AT THE END OF THIS REPORT.

1.1.11 STOCKPILES SHALL BE STABILIZED WITHIN 7 DAYS OF FORMATION UNLESS A SCHEDULED RAIN EVENT OCCURS PRIOR TO THE 7 DAY WINDOW, IN WHICH CASE THE STOCKPILE SHALL BE STABILIZED PRIOR TO THE RAIN EVENT. METHODS OF STABILIZATION SHALL BE MULCH, EROSION CONTROL MIX, OR EROSION CONTROL BLANKETS/MATS. SILT FENCE OR A WOOD WASTE COMPOST FILTER BERM SHALL BE PLACED DOWNHILL OF ANY SOIL STOCKPILE LOCATION.

1.1.12 FOR DISTURBANCE BETWEEN NOVEMBER 1 AND APRIL 15, PLEASE REFER TO WINTER STABILIZATION PLAN IN THIS REPORT AND THE MAINE EROSION AND SEDIMENT CONTROL BMP MANUAL FOR FURTHER INFORMATION.

1.1.13 IT IS OF THE UTMOST IMPORTANCE THAT STORMWATER RUNOFF AND POTENTIAL SEDIMENT FROM THE CONSTRUCTION SITE BE DIVERTED AROUND THE PROPOSED UNDERDRAINS UNTIL THE TRENCH IS BACKFILLED.

1.2 PERMANENT EROSION CONTROL MEASURES

THE FOLLOWING PERMANENT EROSION CONTROL MEASURES ARE INTENDED FOR POST DISTURBANCE AREAS OF THE PROJECT.

1.2.1 ALL DISTURBED AREAS DURING CONSTRUCTION, NOT SUBJECT TO OTHER PROPOSED CONDITIONS, SHALL RECEIVE A MINIMUM 4" OF LOAM, LIMED, AND MULCHED. EROSION CONTROL BLANKETS OR MATS SHALL BE PLACED OVER THE MULCH IN AREAS NOTED IN PARAGRAPH 4.1 OF THIS REPORT.

1.2.2 ALL STORMWATER DEVICES SHALL BE INSTALLED AND TRIBUTARY AREAS STABILIZED PRIOR RECEIVING STORMWATER.

1.2.3 REFER TO THE MAINE EROSION AND SEDIMENT CONTROL BMP MANUAL FOR ADDITIONAL INFORMATION.

2.0 EROSION AND SEDIMENTATION CONTROL PLAN

2.1 THE EROSION AND SEDIMENTATION CONTROL PLAN IS INCLUDED WITHIN THE PLAN SET.

3.0 DETAILS AND SPECIFICATIONS

3.1 EROSION CONTROL DETAILS AND SPECIFICATIONS ARE INCLUDED IN THE PLAN SET.

4.0 STABILIZATION PLAN FOR WINTER CONSTRUCTION

WINTER CONSTRUCTION CONSISTS OF EARTHWORK DISTURBANCE BETWEEN THE DATES OF NOVEMBER 1 AND APRIL 15. IF A CONSTRUCTION SITE IS NOT STABILIZED WITH PAVEMENT, A ROAD GRAVEL BASE, 75% MATURE VEGETATION COVER OR RIPRAP BY NOVEMBER 15, THEN THE SITE SHALL BE PROTECTED WITH OVER–WINTER STABILIZATION. ANY AREA NOT STABILIZED WITH PAVEMENT, VEGETATION, MULCHING, EROSION CONTROL MIX, EROSION CONTROL MATS, RIPRAP, OR GRAVEL BASE ON A ROAD SHALL BE CONSIDERED OPEN.

THE CONTRACTOR SHALL LIMIT THE WORK AREA TO AREAS THAT WORK WILL OCCUR IN DURING THE SUBSEQUENT 15 DAYS AND SO THAT IT CAN BE MULCHED ONE DAY PRIOR TO A SNOW EVENT. THE CONTRACTOR SHALL STABILIZE WORK AREAS PRIOR TO OPENING ADDITIONAL WORK AREAS TO MINIMIZE AREAS WITHOUT EROSION CONTROL MEASURES.

THE FOLLOWING MEASURES SHALL BE IMPLEMENTED DURING WINTER CONSTRUCTION PERIODS:

4.1 SEDIMENT BARRIERS

DURING FROZEN CONDITIONS, SEDIMENT BARRIERS MAY CONSIST OF EROSION CONTROL MIX BERMS OR ANY OTHER RECOGNIZED SEDIMENT BARRIERS AS FROZEN SOIL PREVENTS THE PROPER INSTALLATION OF HAY BALES OR SILT FENCES.

4.2 MULCHING

ALL AREAS SHALL BE CONSIDERED TO BE DENUDED UNTIL SEEDED AND MULCHED. HAY AND STRAW MULCH SHALL BE APPLIED AT A RATE OF 150 LB. PER 1,000 SQUARE FEET OR 3 TONS/ACRE (TWICE THE NORMAL ACCEPTED RATE OF 75–LBS./1,000 S.F. OR 1.5 TONS/ACRE) AND SHALL BE PROPERLY ANCHORED. EROSION CONTROL MIX MUST BE APPLIED WITH A MINIMUM 4 INCH THICKNESS. MULCH SHALL NOT BE SPREAD ON TOP OF SNOW. THE SNOW SHALL BE REMOVED DOWN TO A ONE–INCH DEPTH OR LESS PRIOR TO APPLICATION. AFTER EACH DAY OF FINAL GRADING, THE AREA SHALL BE PROPERLY STABILIZED WITH ANCHORED HAY OR STRAW OR EROSION CONTROL MATTING. AN AREA SHALL BE CONSIDERED TO HAVE BEEN STABILIZED WHEN EXPOSED SURFACES HAVE BEEN EITHER MULCHED OR ADEQUATELY ANCHORED SO THAT GROUND SURFACE IS NOT VISIBLE THROUGH THE MULCH. BETWEEN THE DATES OF NOVEMBER 1 AND APRIL 15, ALL MULCH SHALL BE ANCHORED BY EITHER MULCH NETTING, TRACKING OR WOOD CELLULOSE FIBER. THE COVER WILL BE CONSIDERED SUFFICIENT WHEN THE GROUND SURFACE IS NOT VISIBLE THROUGH THE MULCH. AFTER NOVEMBER 1ST, MULCH AND ANCHORING OF ALL EXPOSED SOIL SHALL OCCUR AT THE END OF EACH FINAL GRADING WORKDAY.

4.3 SOIL STOCKPILING

STOCKPILES OF SOIL OR SUBSOIL SHALL BE MULCHED FOR OVER WINTER PROTECTION WITH HAY OR STRAW AT TWICE THE NORMAL RATE OR WITH A FOUR–INCH LAYER OF EROSION CONTROL MIX. THIS SHALL BE DONE WITHIN 24 HOURS OF STOCKING AND RE–ESTABLISHED PRIOR TO ANY RAINFALL OR SNOWFALL.

4.4 SEEDING

BETWEEN THE DATES OF OCTOBER 15TH AND APRIL 1ST, LOAM OR SEED SHALL NOT BE REQUIRED. DURING PERIODS OF ABOVE FREEZING TEMPERATURES FINISHED AREAS SHALL BE FINE GRADED AND EITHER PROTECTED WITH MULCH OR TEMPORARILY SEEDED AND MULCHED UNTIL SUCH TIME AS THE FINAL TREATMENT CAN BE APPLIED. IF THE DATE IS AFTER NOVEMBER 1ST AND IF THE EXPOSED AREA HAS NOT BEEN LOAMED, FINAL GRADING WITH A UNIFORM SURFACE, THEN THE AREA MAY BE DORMANT SEEDED AT A RATE OF 3 TIMES HIGHER THAN SPECIFIED FOR PERMANENT SEED AND THEN MULCHED.

DORMANT SEEDING MAY BE PLACED PRIOR TO THE PLACEMENT OF MULCH OR EROSION CONTROL BLANKETS. IF DORMANT SEEDING IS USED FOR THE SITE, ALL DISTURBED AREAS SHALL RECEIVE 4" OF LOAM AND SEED AT AN APPLICATION RATE OF 5 LBS/1,000 S.F. ALL AREAS SEEDED DURING THE WINTER SHALL BE INSPECTED IN THE SPRING FOR ADEQUATE CATCH. ALL AREAS INSUFFICIENTLY VEGETATED (LESS THAN 75% CATCH) SHALL BE REVEGETATED BY REPLACING LOAM, SEED AND MULCH. IF DORMANT SEEDING IS NOT USED FOR THE SITE, ALL DISTURBED AREAS SHALL BE REVEGETATED IN THE SPRING.

4.5 OVER WINTER STABILIZATION OF DISTURBED SOILS

BY SEPTEMBER 15TH, ALL DISTURBED SOILS ON AREAS HAVING A SLOPE LESS THAN 15% SHALL BE SEEDED AND MULCHED. IF THE DISTURBED AREAS ARE NOT STABILIZED BY THIS DATE, THEN ONE OF THE FOLLOWING ACTIONS SHALL BE TAKEN TO STABILIZE THE SOIL FOR LATE FALL AND WINTER:

- STABILIZE THE SOIL WITH TEMPORARY VEGETATION – BY OCTOBER 1ST, SEED THE DISTURBED SOIL WITH WINTER RYE AT A SEEDING RATE OF 3LBS PER 1,000 S.F., LIGHTLY MULCH THE SEEDED SOIL WITH HAY OR STRAW AT 75 LBS PER 1,000 S.F., AND ANCHOR THE MULCH WITH PLASTIC NETTING. MONITOR GROWTH OF THE RYE OVER THE NEXT 30 DAYS. IF THE RYE FAILS TO GROW AT LEAST THREE INCHES OR FAILS TO COVER AT LEAST 75% OF THE DISTURBED SOIL BEFORE NOVEMBER 1ST, THEN MULCH THE AREA FOR OVER–WINTER PROTECTION.
- STABILIZE THE SOIL WITH SOD – STABILIZE THE DISTURBED SOIL WITH PROPERLY INSTALLED SOD BY OCTOBER 1ST. PROPER INSTALLATION INCLUDES PINNING THE SOD ONTO THE SOIL WITH WIRE PINS, ROLLING THE SOD TO GUARANTEE CONTACT BETWEEN THE SOD AND UNDERLYING SOIL, AND WATERING THE SOD TO PROMOTE ROOT GROWTH INTO THE DISTURBED SOIL.
- STABILIZE THE SOIL WITH MULCH – BY NOVEMBER 15TH, MULCH THE DISTURBED SOIL BY SPREADING HAY OR STRAW AT A RATE OF AT LEAST 150 LBS PER 1,000 S.F. ON THE AREA SO THAT NO SOIL IS VISIBLE THROUGH THE MULCH. IMMEDIATELY AFTER APPLYING THE MULCH, ANCHOR THE MULCH WITH PLASTIC NETTING TO PREVENT WIND FROM MOVING THE MULCH OFF THE DISTURBED SOIL.

4.6 OVER WINTER STABILIZATION OF DISTURBED SLOPES

ALL STONE–COVERED SLOPES SHALL BE CONSTRUCTED AND STABILIZED BY NOVEMBER 15TH. ALL SLOPES TO BE VEGETATED SHALL BE SEEDED AND MULCHED BY SEPTEMBER 1ST. A SLOPE IS CONSIDERED A GRADE GREATER THAN 15%. IF A SLOPE TO BE VEGETATED IS NOT STABILIZED BY SEPTEMBER 1ST, THEN ONE OF THE FOLLOWING ACTION SHALL BE TAKEN TO STABILIZE THE SLOPE FOR LATE FALL AND WINTER:

- STABILIZE THE SOIL WITH TEMPORARY VEGETATION AND EROSION CONTROL MATS – BY OCTOBER 1ST THE DISTURBED SLOPE SHALL BE SEEDED WITH WINTER RYE AT A SEEDING RATE OF 3 LBS PER 1,000 S.F. AND THEN INSTALL EROSION CONTROL MATS OR ANCHORED MULCH OVER THE SEEDING. IF THE RYE FAILS TO GROW AT LEAST THREE INCHES OR FAILS TO COVER AT LEAST 75% F THE SLOPE BY NOVEMBER 1ST, THEN THE CONTRACTOR SHALL COVER THE SLOPE WITH A LAYER OF EROSION CONTROL MIX OR WITH STONE RIPRAP.
- STABILIZE THE SOIL WITH SOD – THE DISTURBED SLOPE SHALL BE STABILIZED WITH PROPERLY INSTALLED SOD BY OCTOBER 1ST. PROPER INSTALLATION INCLUDES THE CONTRACTOR PINNING THE SOD ONTO THE SLOPE WITH WIRE PINS, ROLLING THE SOD TO GUARANTEE CONTACT BETWEEN THE SOD AND UNDERLYING SOIL, AND WATERING THE SOD TO PROMOTE ROOT GROWTH INTO THE DISTURBED SOIL. THE CONTRACTOR SHALL NOT USE LATE–SEASON SOD INSTALLATION TO STABILIZE SLOPES HAVING A GRADE GREATER THAN 3H:1V OR HAVING GROUNDWATER SEEPS ON THE SLOPE FACE.
- STABILIZE THE SOIL WITH EROSION CONTROL MIX – EROSION CONTROL MIX SHALL BE PROPERLY INSTALLED BY NOVEMBER 15TH. THE CONTRACTOR SHALL NOT USE EROSION CONTROL MIX TO STABILIZE SLOPES HAVING GRADES GREATER THAN 2H:1V OR HAVING GROUNDWATER SEEPS ON THE SLOPE FACE.
- STABILIZE THE SOIL WITH STONE RIPRAP – PLACE A LAYER OF STONE RIPRAP ON THE SLOPE BY NOVEMBER 15TH. A REGISTERED PROFESSIONAL ENGINEER SHALL BE HIRED TO DETERMINE THE STONE SIZE NEEDED FOR STABILITY ON THE SLOPE AND TO DESIGN A FILTER LAYER FOR UNDERNEATH THE RIPRAP.

5.0 INSPECTION AND MAINTENANCE

A PERSON WITH KNOWLEDGE OF EROSION AND STORMWATER CONTROL, INCLUDING THE STANDARDS AND CONDITIONS IN THE PERMIT, SHALL CONDUCT PERIODIC VISUAL INSPECTIONS OF INSTALLED EROSION CONTROL MEASURES. THE FREQUENCY OF INSPECTION SHALL OCCUR AT LEAST ONCE EVERY TWO WEEKS, AS WELL AS AFTER A "STORM EVENT". A "STORM EVENT" SHALL CONSIST 0.5 INCHES OF RAIN WITHIN A 24 HOUR PERIOD. THE FOLLOWING EROSION AND SEDIMENT CONTROL – BEST MANAGEMENT PRACTICES (BMP'S) SHALL INSPECTED IN THE MANNER AS DESCRIBED.

5.1 SEDIMENT BARRIERS

HAY BALE BARRIERS, SILT FENCES AND FILTER BERMS SHALL BE INSPECTED AND REPAIRED FOR THE FOLLOWING IF THERE ARE ANY SIGNS OF EROSION OR SEDIMENTATION BELOW THEM. IF THERE ARE SIGNS OF UNDERCUTTING AT THE CENTER OR THE EDGES OF THE BARRIER, OR IMPOUNDING OF LARGE VOLUMES OF WATER BEHIND THEM, SEDIMENT BARRIERS SHALL BE REPLACED WITH A TEMPORARY CHECK DAM. SHOULD THE FABRIC ON A SILT FENCE OR FILTER BARRIER DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER IS STILL NECESSARY, THE FABRIC SHALL BE REPLACED PROMPTLY. SEDIMENT DEPOSITS SHOULD BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE–HALF THE HEIGHT OF THE BARRIER. FILTER BERMS SHOULD BE RESHAPED AS NEEDED. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE OR FILTER BARRIER IS NO LONGER REQUIRED SHOULD BE DRESSED TO CONFORM TO THE EXISTING GRADE, PREPARED AND SEEDED.

5.2 STABILIZED STONE CONSTRUCTION ENTRANCES

THE EXIT SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OF SEDIMENT ONTO PUBLIC RIGHTS–OF–WAY. WHEN THE CONTROL PAD BECOMES INEFFECTIVE, THE STONE SHALL BE REMOVED ALONG WITH THE COLLECTED SOIL MATERIAL AND REDISTRIBUTED ON SITE IN A STABLE MANNER. THE ENTRANCE SHOULD THEN BE RECONSTRUCTED. THE CONTRACTOR SHALL SWEEP OR WASH PAVEMENT AT EXITS, WHICH HAVE EXPERIENCED MUD–TRACKING ON TO THE PAVEMENT OR TRAVELED WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH AGGREGATE, WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING STORM DRAINS, DITCHES, OR WATERWAYS.

5.3 MULCHED AREAS

ALL MULCHES MUST BE INSPECTED PERIODICALLY, IN PARTICULAR AFTER RAINSTORMS, TO CHECK FOR RILL EROSION. IF LESS THAN 90% OF THE SOIL SURFACE IS COVERED BY MULCH, ADDITIONAL MULCH SHALL BE IMMEDIATELY APPLIED. NETS MUST BE INSPECTED AFTER RAIN EVENTS FOR DISLOCATION OR FAILURE. IF WASHOUTS OR BREAKAGE OCCUR, RE–INSTALL THE NETS AS NECESSARY AFTER REPAIRING DAMAGE TO THE SLOPE. WHERE MULCH IS USED IN CONJUNCTION WITH ORNAMENTAL PLANTINGS, INSPECT PERIODICALLY THROUGHOUT THE YEAR TO DETERMINE IF MULCH IS MAINTAINING COVERAGE OF THE SOIL SURFACE. REPAIR AS NEEDED.

5.4 DUST CONTROL

WHEN TEMPORARY DUST CONTROL MEASURES ARE USED, REPETITIVE TREATMENT SHALL BE APPLIED AS NEEDED TO ACCOMPLISH CONTROL.

5.5 STORMWATER APPURTENANCES

ALL UNDERDRAINS, STORM DRAINS, AND CATCH BASINS NEED TO BE OPERATING EFFECTIVELY AND FREE OF DEBRIS.

5.6 EROSION AND SEDIMENTATION CONTROL INSPECTIONS:

ACORN ENGINEERING HAS PERSONNEL QUALIFIED TO CONDUCT EROSION AND SEDIMENTATION CONTROL INSPECTIONS. FOR FURTHER INFORMATION CONTACT:

CONTACT: WILL SAVAGE, PE
TELEPHONE: (207) 775–2655

QUALIFICATIONS:

- MAINE PROFESSIONAL ENGINEERING LICENSE #11419
- MAINE DEP – CERTIFIED IN MAINTENANCE & INSPECTION OF STORMWATER BMP'S CERT #14
- CERTIFIED EROSION, SEDIMENT AND STORM WATER INSPECTOR (CESSWI) CERT #0293
- CERTIFIED PROFESSIONAL IN EROSION AND SEDIMENT CONTROL (CPESC) CERT. #4620

THE CONTRACTOR HAS SOLE RESPONSIBILITY FOR COMPLYING WITH THE EROSION AND SEDIMENTATION REPORT/PLAN, INCLUDING CONTROL OF FUGITIVE DUST. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY MONETARY PENALTIES RESULTING FROM FAILURE TO COMPLY WITH THESE STANDARDS.

6.0 IMPLEMENTATION SCHEDULE

THE FOLLOWING IMPLEMENTATION SEQUENCE IS INTENDED TO MAXIMIZE THE EFFECTIVENESS OF THE ABOVE DESCRIBED EROSION CONTROL MEASURES. CONTRACTORS SHOULD AVOID OVEREXPOSING DISTURBED AREAS AND LIMIT THE AMOUNT OF STABILIZATION AREA.

1. INSTALL A STABILIZED CONSTRUCTION ENTRANCE IN ALL LOCATIONS WHERE CONSTRUCTION TRAFFIC WILL ENTER AND EXIT THE SITE.
2. INSTALL PERIMETER SILT FENCE OR EROSION CONTROL BERM.
3. INSTALL ALL OTHER EROSION CONTROL DEVICES AS NECESSARY THROUGHOUT THE REMAINDER OF THIS SCHEDULE.
4. COMMENCE INSTALLATION OF DRAINAGE INFRASTRUCTURE.
5. PRIORITIZE THE DOWNHILL RETAINING AND FOUNDATION WALLS TO CONTAIN RUNOFF WITHIN THE SITE WHILE PROVIDING AN ENGINEERED OUTLET WITH SILTATION BARRIER.
6. COMMENCE EARTHWORK OPERATIONS, WALL AND FOUNDATION INSTALLATION.
7. COMMENCE INSTALLATION OF UTILITIES.
8. CONTINUE EARTHWORK AND GRADING TO SUBGRADE AS NECESSARY FOR CONSTRUCTION.
9. COMPLETE INSTALLATION OF DRAINAGE INFRASTRUCTURE, AS WELL AS OTHER UTILITY WORK.
10. COMPLETE REMAINING EARTHWORK OPERATIONS.
11. INSTALL SUB–BASE AND BASE GRAVELS IN PAVED AREAS.
12. INSTALL PAVING, CURBING AND BRICKWORK.
13. LOAM, LIME, FERTILIZE, SEED AND MULCH DISTURBED AREAS AND COMPLETE ALL LANDSCAPING.
14. ONCE THE SITE IS STABILIZED, 90% CATCH OF GRASS HAS BEEN OBTAINED, OR MULCHING OF LANDSCAPE AREAS IS COMPLETE REMOVE ALL TEMPORARY EROSION CONTROL MEASURES.
15. TOUCH UP AREAS WITHOUT A VIGOROUS CATCH OF GRASS WITH LOAM AND SEED.
16. COMPLETE SITE SIGNAGE AND STRIPING.
17. EXECUTE PROPER MAINTENANCE OF ALL TEMPORARY AND PERMANENT EROSION CONTROL MEASURES THROUGHOUT THE PROJECT.

THE ABOVE IMPLEMENTATION SEQUENCE SHOULD BE GENERALLY FOLLOWED BY THE SITE CONTRACTOR. HOWEVER, THE CONTRACTOR MAY CONSTRUCT SEVERAL ITEMS SIMULTANEOUSLY. THE CONTRACTOR SHALL SUBMIT TO THE OWNER A SCHEDULE OF THE COMPLETION OF THE WORK. IF THE CONTRACTOR IS TO COMMENCE THE CONSTRUCTION OF MORE THAN ONE ITEM ABOVE, THEY SHALL LIMIT THE AMOUNT OF EXPOSED AREAS TO THOSE AREAS IN WHICH WORK IS EXPECTED TO BE UNDERTAKEN DURING THE FOLLOWING 30 DAYS.

THE CONTRACTOR SHALL RE–VEGETATE DISTURBED AREAS AS RAPIDLY AS POSSIBLE. ALL AREAS SHALL BE PERMANENTLY STABILIZED WITHIN 7 DAYS OF FINAL GRADING OR BEFORE A STORM EVENT. THE CONTRACTOR SHALL INCORPORATE PLANNED INLETS AND DRAINAGE SYSTEMS AS EARLY AS POSSIBLE INTO THE CONSTRUCTION PHASE.

7.0 CONCLUSION

THE ABOVE EROSION CONTROL NARRATIVE IS INTENDED TO MINIMIZE THE DEVELOPMENT IMPACT BY IMPLEMENTING TEMPORARY AND PERMANENT EROSION CONTROL MEASURES. THE CONTRACTOR SHALL ALSO REFER TO THE MAINE EROSION AND SEDIMENT CONTROL BMP MANUAL FOR ADDITIONAL INFORMATION.

SEEDING PLAN

SITE PREPARATION

THE SEEDED AREAS SHALL BE FEASIBLY GRADED OUT TO PROVIDE THE USE OF EQUIPMENT FOR SEEDBED PREPARATION, SEEDING, MULCH APPLICATION, AND MULCH ANCHORING. IF NECESSARY, THE SITE MAY REQUIRE ADDITIONAL TEMPORARY EROSION CONTROL MEASURES OUTLINED IN THE EROSION CONTROL REPORT.

SEEDBED PREPARATION

FERTILIZER SHALL BE APPLIED TO THE SITE AT A RATE OF 13.8 POUNDS PER 1,000 SQUARE FEET. THE COMPOSITION OF THE FERTILIZER SHALL BE 10–10–10 (N–P205–K20) OR EQUIVALENT.

LIMESTONE SHALL BE APPLIED TO THE SITE AT A RATE OF 138 POUNDS PER 1,000 SQUARE FEET.

SEEDING

THE COMPOSITION AND AMOUNT OF TEMPORARY SEED APPLIED TO A SITE SHALL BE DETERMINED BY THE FOLLOWING TABLE:

TEMPORARY SEED APPLICATION RATES

SEED	LBS / ACRE	RECOMMENDED SEEDING DATES
WINTER RYE	2.57	8/15 TO 10/1
OATS	1.84	4/1 TO 7/1 8/15 TO 9/15
ANNUAL RYGRASS	0.92	4/1 TO 7/1
SUDANGRASS	0.92	5/15 TO 8/15
PERENNIAL	0.92	8/15 TO 9/15
TOTAL	7.17 LBS/ACRE	

PERMANENT SEED APPLICATION RATES

SEED	LBS / ACRE
KENTUCKY BLUEGRASS	20.00
CREEPING RED FESCUE	20.00
PERENNIAL RYEGRASS	4.80
TOTAL	44.8 LBS/ACRE

MULCHING

MULCH SHALL BE APPLIED AT A RATE OF 70 LBS – 90 LBS PER 1,000 SQUARE FEET. THE MULCH SHALL BE INSTALLED AT A MINIMUM DEPTH OF 4 INCHES. THE SEEDED AREA SHALL BE MULCHED IMMEDIATELY AFTER SEED IS APPLIED. MULCHING DURING THE WINTER SEASON SHALL BE DOUBLE THE NORMAL AMOUNT.

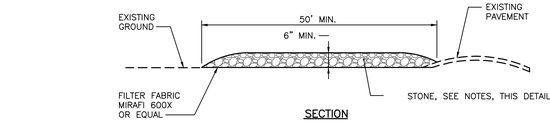
CONCLUSION

PLEASE REFER TO THE MAINE EROSION AND SEDIMENT CONTROL BMP MANUAL FOR ADDITIONAL INFORMATION PERTAINING TO TEMPORARY SEEDING AND MULCHING.

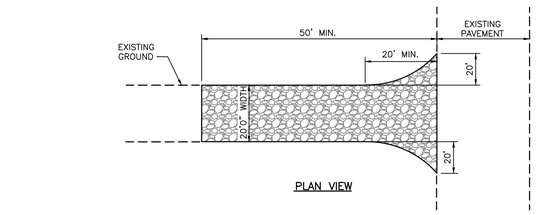
PERMIT LEVEL
NOT ISSUED FOR
CONSTRUCTION

NOTES:

1. CONTRACTOR SHALL ADD STONE TO ENTRANCE AS MUD/SILT MATERIAL ACCUMULATES
2. STONE SHALL BE 2"–3" COARSE AGGREGATE
3. CONSTRUCTION ENTRANCE SHALL BE GRADED TO NOT ALLOW ANY STORMWATER TO BE CONVEYED OFF SITE. IN SITUATIONS WHERE THIS IS NOT POSSIBLE, ANY STORMWATER CONVEYED OFFSITE SHALL BE TREATED OR RETAINED IN A MANNER APPROVED BY ENGINEER.
4. WHEN NECESSARY, ON–SITE VEHICLES SHALL HAVE THEIR WHEELS CLEANED PRIOR TO LEAVING SITE.
5. CONSTRUCTION ENTRANCE SHALL BE GRADED IN A MANNER THAT PREVENTS TRACKING OF SEDIMENTS ONTO PUBLIC RIGHT–OF–WAY

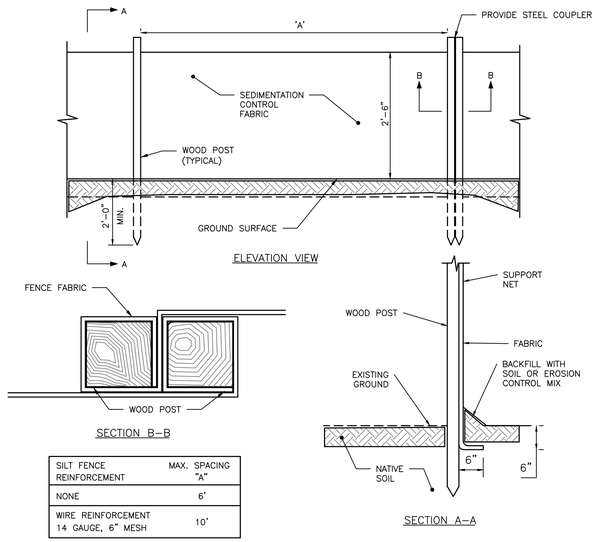


SECTION



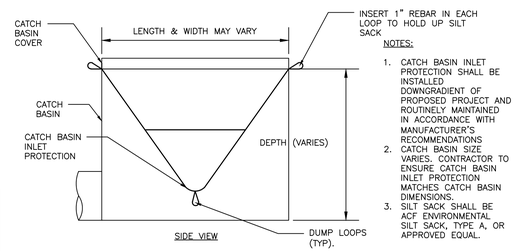
PLAN VIEW

STABILIZED CONSTRUCTION ENTRANCE
NOT TO SCALE



SILT FENCE REINFORCEMENT	MAX. SPACING "A"
NONE	6'
WIRE REINFORCEMENT 14 GAUGE, 6" MESH	10'

SILTATION FENCE DETAIL
NOT TO SCALE



NOTES:

1. CATCH BASIN INLET PROTECTION SHALL BE INSTALLED DOWNGRADIENT OF PROPOSED PROJECT AND ROUTINELY MAINTAINED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS
2. CATCH BASIN SIZE VARIES. CONTRACTOR TO ENSURE CATCH BASIN INLET PROTECTION MATCHES CATCH BASIN DIMENSIONS.
3. SILT SACK SHALL BE ACF ENVIRONMENTAL SILT SACK, TYPE A, OR APPROVED EQUAL.

CATCH BASIN INLET PROTECTION
NOT TO SCALE

ISSUED FOR

CITY APP.	BY DATE WHS 12/14/17

DRAWING NAME: EROSION & SEDIMENTATION CONTROL DETAILS

PROJECT NAME: 151 WASHINGTON AVE. REDEVELOPMENT

CLIENT: DIVING ROCK, LLC
15 HOWARD STREET, PORTLAND, ME 04101

ACORN ENGINEERING, INC.
158 DANFORTH STREET, PORTLAND, MAINE 04102
(207) 775–2655

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION OF ACORN ENGINEERING, INC. ANY MODIFICATIONS MADE BY ANY PERSON OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

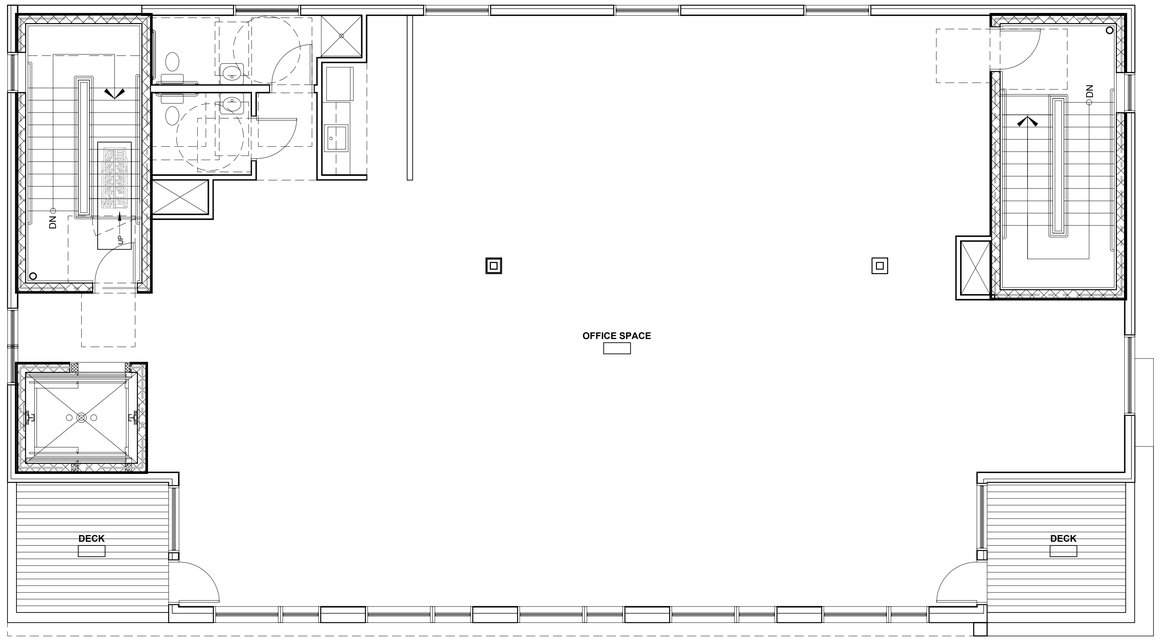
FILE:	1090_CIVIL
JN:	1090

155 WASHINGTON - MULTI-USE BUILDING

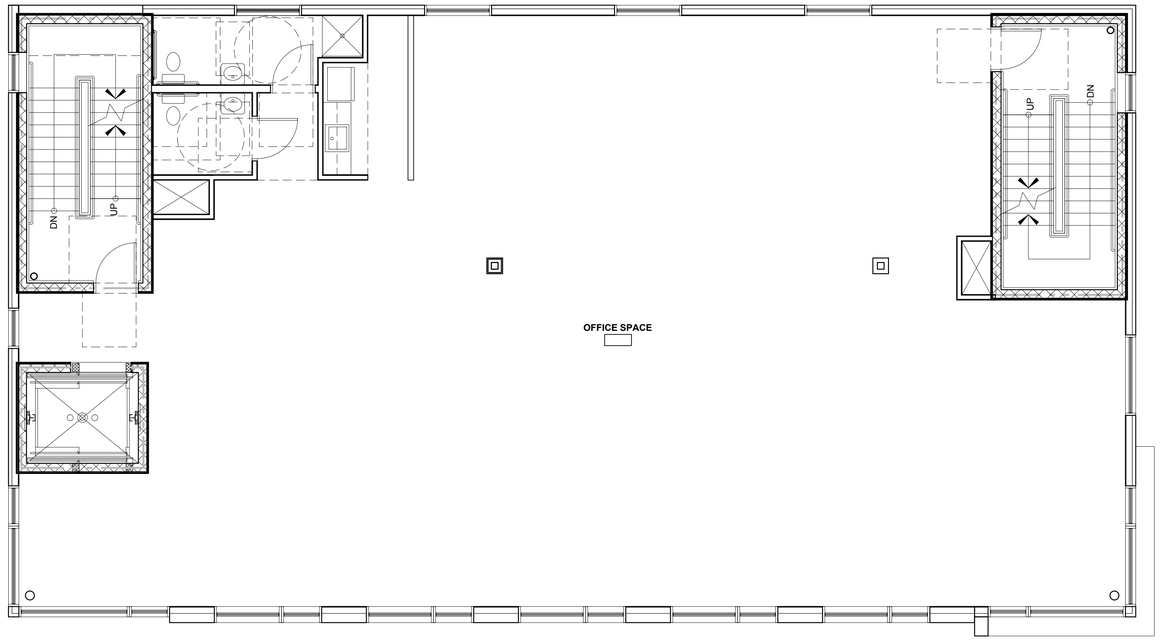
PORTLAND, MAINE

PROGRESS PRINT ONLY
Not for Construction

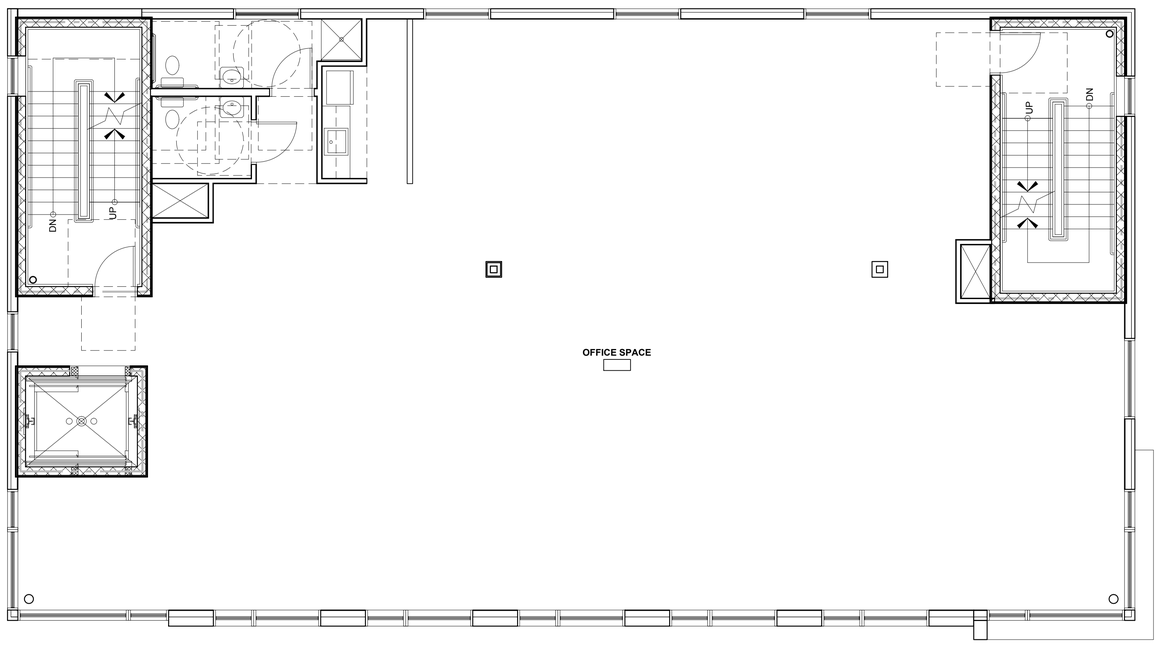
FEBRUARY 21, 2018



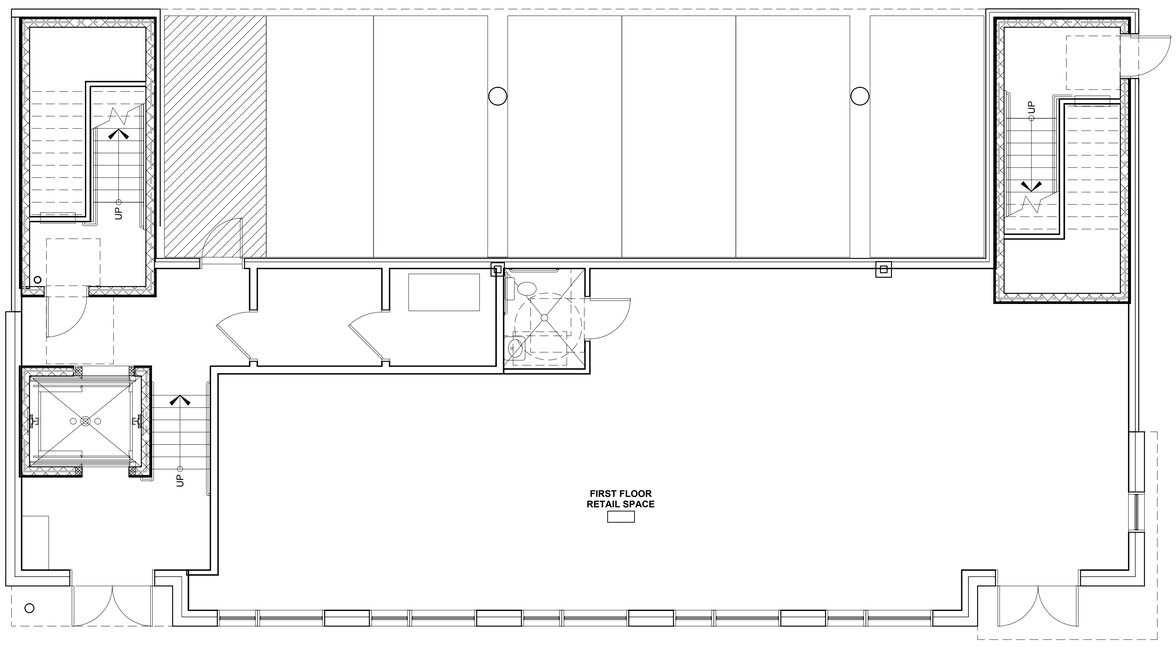
4 FOURTH FLOOR PLAN
3/16" = 1'-0"



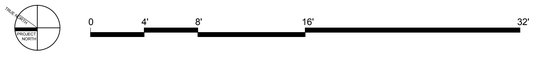
2 SECOND FLOOR PLAN
3/16" = 1'-0"



3 THIRD FLOOR PLAN
3/16" = 1'-0"



1 FIRST FLOOR PLAN
3/16" = 1'-0"



RYAN SENATORE **ARCHITECTURE**

155 WASHINGTON - MULTI-USE BUILDING

PORTLAND, MAINE

PROGRESS PRINT ONLY
Not for Construction

FEBRUARY 21, 2018



1 WEST EXTERIOR ELEVATION
N.T.S.

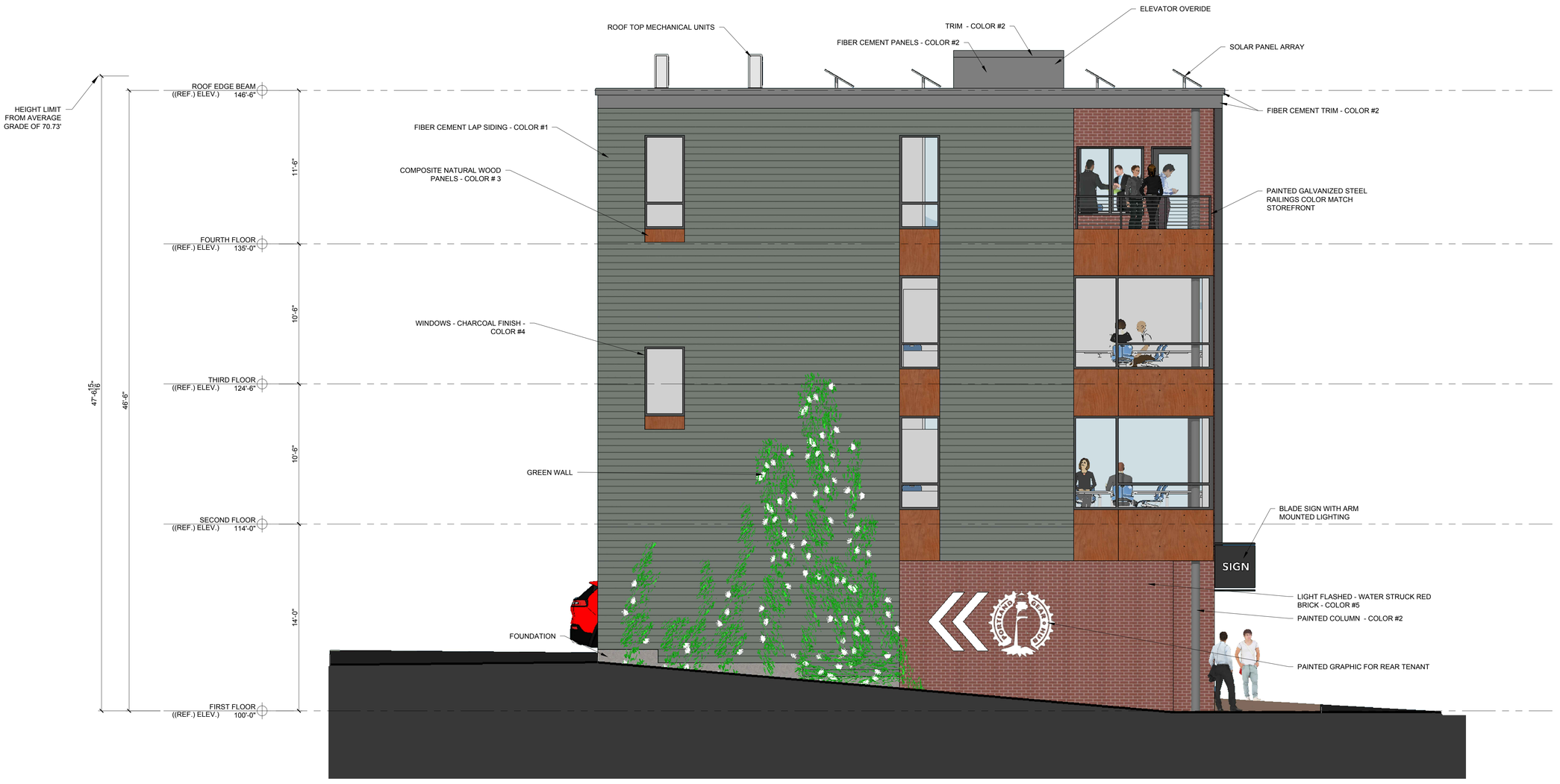
RYAN SENATORE **ARCHITECTURE**

155 WASHINGTON - MULTI-USE BUILDING

PORTLAND, MAINE

PROGRESS PRINT ONLY
Not for Construction

FEBRUARY 21, 2018



1 NORTH EXTERIOR ELEVATION
N.T.S.

RYAN SENATORE **ARCHITECTURE**

155 WASHINGTON - MULTI-USE BUILDING

PORTLAND, MAINE

PROGRESS PRINT ONLY
Not for Construction

FEBRUARY 21, 2018



1 EAST EXTERIOR ELEVATION
N.T.S.

RYAN SENATORE **ARCHITECTURE**

155 WASHINGTON - MULTI-USE BUILDING

PORTLAND, MAINE

PROGRESS PRINT ONLY
Not for Construction

FEBRUARY 21, 2018



1 SOUTH EXTERIOR ELEVATION
N.T.S.

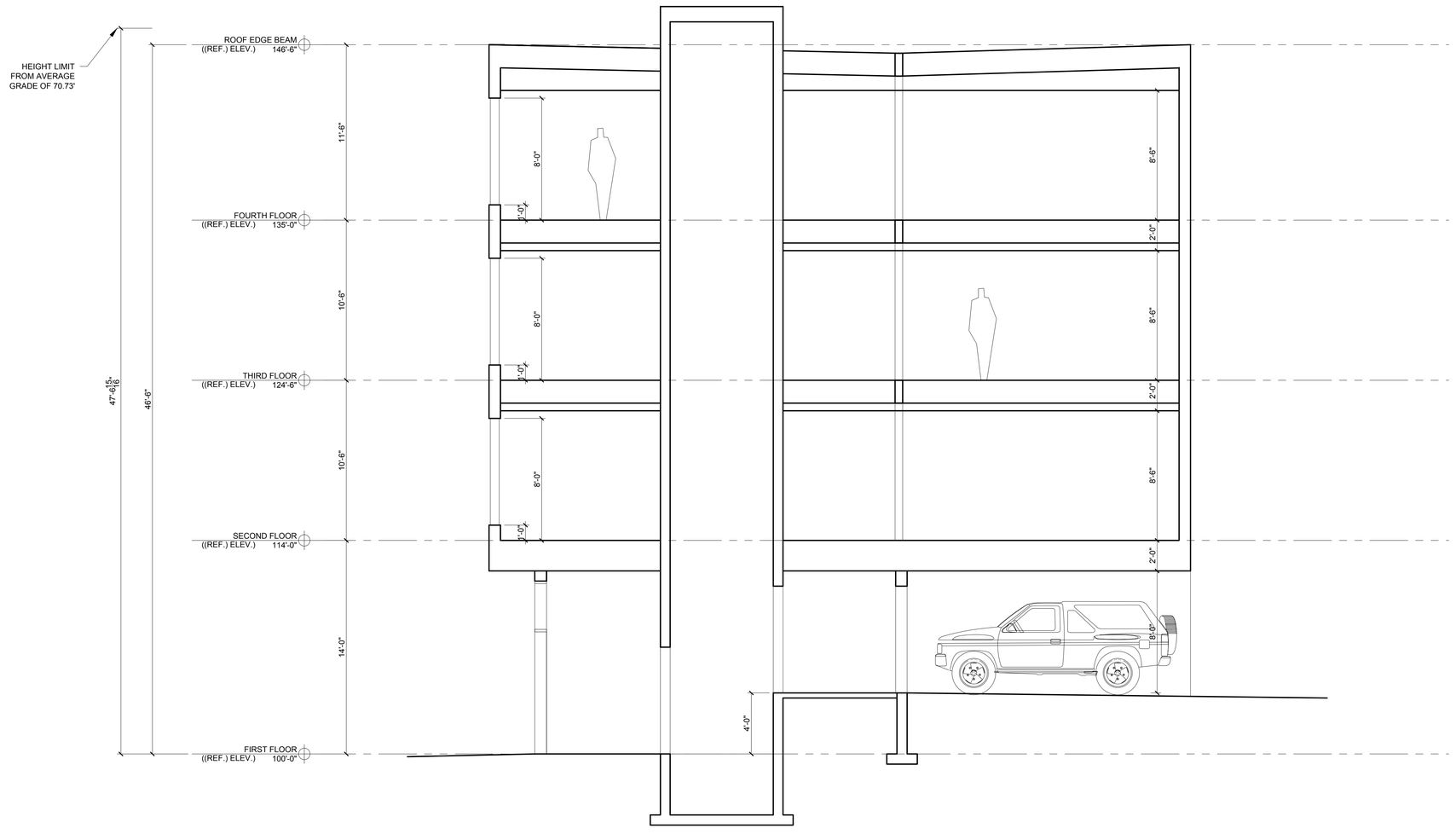
RYAN SENATORE **ARCHITECTURE**

155 WASHINGTON - MULTI-USE BUILDING

PORTLAND, MAINE

PROGRESS PRINT ONLY
Not for Construction

FEBRUARY 21, 2018



1 SECTION VIEW
1/4" = 1'-0"

RYAN SENATORE **ARCHITECTURE**

155 WASHINGTON - MULTI-USE BUILDING

PORTLAND, MAINE

PROGRESS PRINT ONLY
Not for Construction

FEBRUARY 21, 2018



1 VIEW LOOKIN EAST ON WASHINGTON AVENUE
3/32" = 1'-0"

RYAN SENATORE **ARCHITECTURE**

155 WASHINGTON - MULTI-USE BUILDING

PORTLAND, MAINE

PROGRESS PRINT ONLY
Not for Construction

FEBRUARY 21, 2018



1 VIEW LOOKING NORTH-WEST ON WASHINGTON AVENUE
3/32" = 1'-0"

RYAN SENATORE **ARCHITECTURE**

155 WASHINGTON - MULTI-USE BUILDING

PORTLAND, MAINE

PROGRESS PRINT ONLY
Not for Construction

FEBRUARY 21, 2018



1 VIEW LOOKIN WEST ON WASHINGTON AVENUE
3/32" = 1'-0"

RYAN SENATORE **ARCHITECTURE**

Google Groups

149-155 Washington Ave

Eldon Mayer <vixenskipper@gmail.com> Mar 26, 2018 10:35 AM
Posted in group: **Planning Board**

We are residents of Munjoy Heights, on Sheridan Street above 149-155 Washington Avenue. If this four story building obstructs our views of Back Cove and the city of Portland it will negatively impact the value of the 29 condominiums in Munjoy Heights.

Betts and Eldon Mayer

Memorandum
Planning and Urban Development Department
Planning Division

To: Sean Dundon, Chair and Members of the Portland Planning Board

From: Jean Fraser, Planner

Date: March 9, 2018

Re: Westerlea View Lofts: Amendment to previous approval for 54 unit residential development and commercial space
75 Chestnut Street
A&M Partners Inc, Applicant

Project #: 2018-046 CBL: 026 E010002

Meeting Date: March 13, 2018

I. INTRODUCTION

The applicant received approval for this project on December 13, 2016, subject to a condition of approval that the design be revised and reviewed by the Planning Board (Attachment 1). The Planning Board considered revised plans on February 14, 2017 and approved the project based on the final designs (Attachment 2). The applicant has now submitted an amendment to the project that involves relatively substantial revisions to the design, along with some minor site plan amendments.

The previously approved project comprises a new 7 story building of 54 units at the corner of Oxford and Chestnut Streets, located over the Chestnut Street garage access and abutting the garage. The site will be divided into two condos, one for the parking garage and one for the proposed residential building. Parking for the new residential units is proposed to be located in the garage, and the approved proposals include a raingarden and amenity area to the north of the building. The site is located in the B7 zone which has extensive design standards both in the Zoning ordinance and in the Design Standards.

The current amendment includes the following revisions to the approved project; staff understand most of these are proposed at the request of a potential buyer:

- Reduction in the unit count to 52 dwellings, resulting from the omission of two one-BR units;
- Design changes as summarized in the cover letter from the architects, which include:
  - Smaller window openings
  - Modifications to the Oxford Street elevation (placement of balconies, massing)
  - Revisions to the garage opening
  - Revised entrance locations
- Revisions to the site plan, including revised footprint, relocation of street trees, revised patio and some utilities - some of these also address conditions of approval from the 2016 review.

Staff have brought the amendment to the Planning Board as the design amendments are considered to be substantial; they change a number of design features that were considered and approved by the Planning Board under the Condition 1 of the previous approval. Condition 1 states:

> *i. That final proposals shall comply with the B7 Design Standards A-2, A-5, C-2, E-1 and E-3, particularly addressing:*
> *a. Articulated roofline;*
> *b. Massing and scale to transition and integrate with the residential context on Chestnut Street;*
> *c. Pedestrian experience on Chestnut Street; and*
> *d. Materiality;*
> *to be reviewed and approved by the Planning Board.*

This Memo and first Workshop will focus on the design amendments, as the site plan revisions are more minor and are still under review. The Board is requested to provide direction regarding the design amendments.

Applicant: Lou Wood, A & M Partners, Inc
Agent and Engineer: Tom Greer, Walsh Engineering Associates, Inc
Architect: William Hopkins, Archetype

This Workshop was noticed to 154 neighbors and interested parties, and the public notice appeared in the *Portland Press-Herald* on March 5th and 6th, 2018. As of the completion of this PB Memo the Planning Division has not received any public comments.

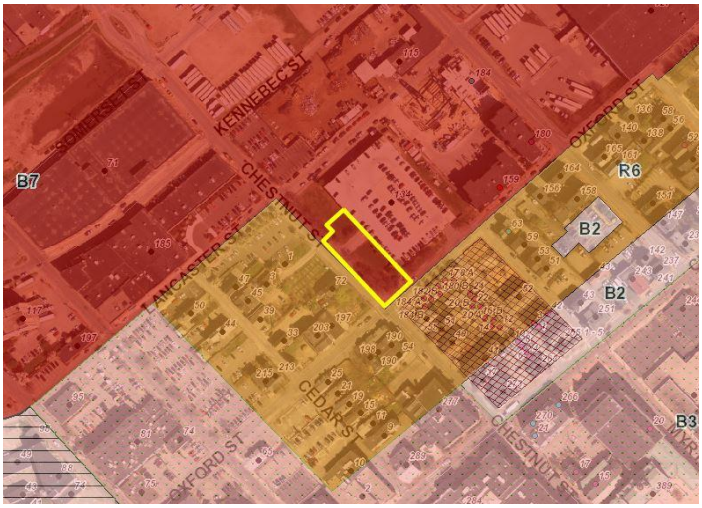
II. BACKGROUND

The December 13, 2016 Planning Board Report includes a comprehensive description of the existing conditions, zoning and site plan and height/design analysis - it can be found at:
https://www.portlandmaine.gov/AgendaCenter/ViewFile/Agenda/_12132016-1879?html=true.

The February 14, 2017 Planning Board Report that reviewed the final design in the context of Condition 1 of the December 2016 approval can be found at:
https://www.portlandmaine.gov/AgendaCenter/ViewFile/Agenda/_02142017-1950?html=true

The site is located within the B7 zone and abuts the R6 zone along Chestnut and Oxford Streets. It is currently a grassed amenity area comprising 10 mature locust street trees and an access drive to the middle level of the parking garage. The proposed building would be constructed over the garage access.







Corner of Oxford and Chestnut Streets

III. DESIGN EVOLUTION

This section provides an overview of the proposed design amendments compare to the approved design, including extracts from:

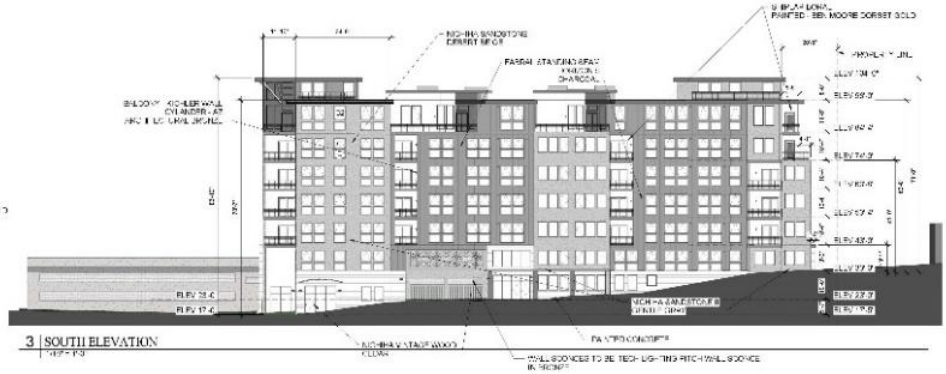
- **A.** February 2017 - when the PB approved a design that addressed the condition of the December 2016 Approval
- **B.** March 2018 proposed amended design

A. February 2017 as approved (meeting condition 1 of December approval) (see additional renderings and plans in Plan Set A)





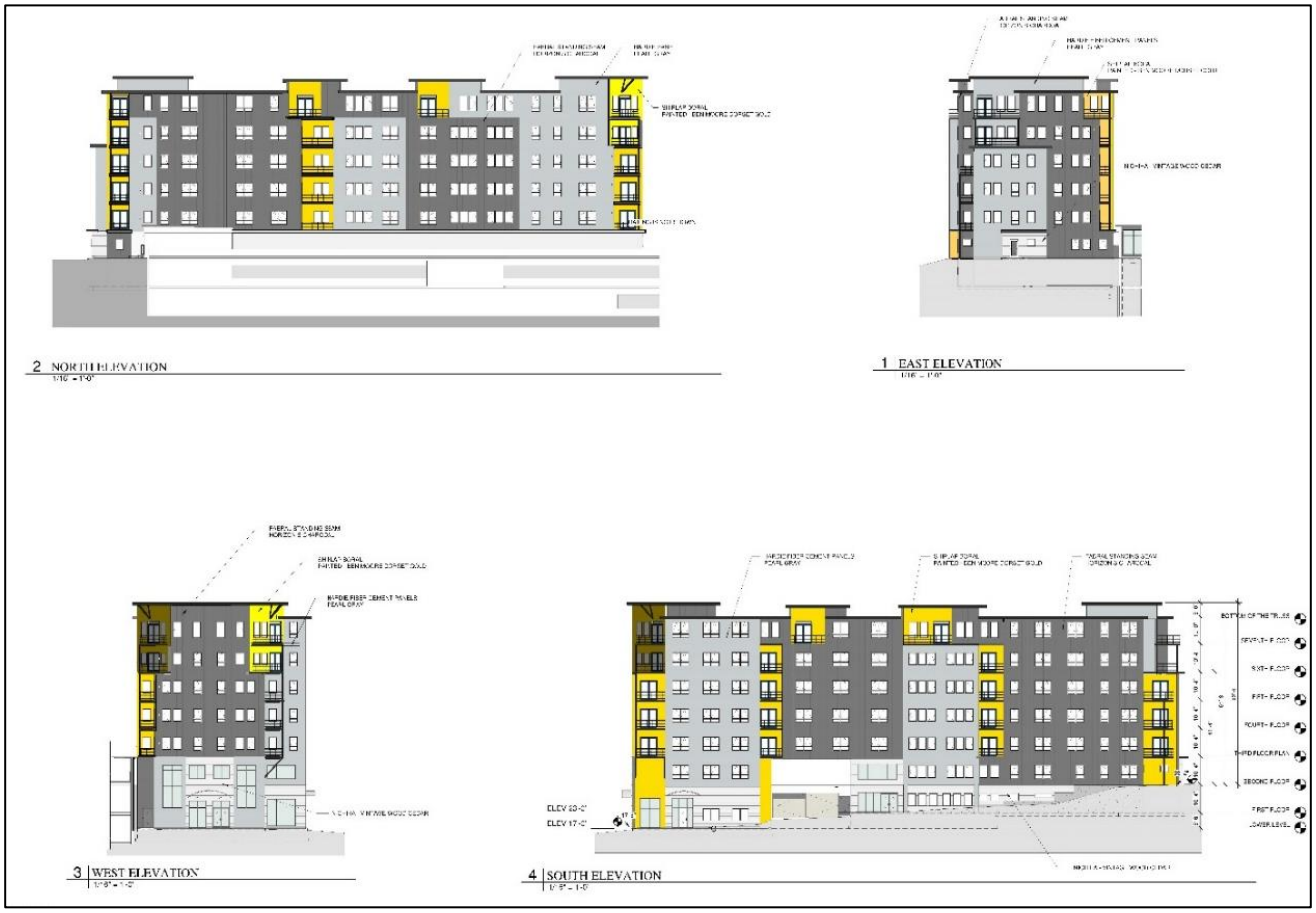






From Lancaster Street looking south up Chestnut Street

B. March 2018, as amended: Amended 2018: (see additional renderings and plans in Plan Set B)





From Lancaster Street looking south up Chestnut Street

IV. DESIGN REVIEW OF AMENDMENTS

The design review discussions in 2016/2017 centered on the integration of the building at street level, the roof line and compatibility with the surrounding residential area. Some neighbors considered the building too high.

The attachments include a description of the design changes (Attachment 2) between the 2017 approved plans, elevations and rendering (Plan Set A) and the 2018 amended plans and renderings (Plan Set B); some are extracted below to allow for comparison. The height has been reduced in absolute terms by about 5 feet and the footprint enlarged slightly. Windows, decks and roofline have been modified.

OXFORD STREET FRONTAGE

AS APPROVED 2017



AS AMENDED 2018







CHESTNUT STREET FRONTAGE

AS APPROVED 2017



AS AMENDED 2018



(See renderings of this frontage above in Section III)

The City's Urban Designer, Caitlin Cameron, has provided the following comments that update on the previous comments to illustrate how the design has evolved (Attachment 3): (Caitlin Cameron will be at the PB Workshop to elaborate or answer questions)

Design Review Criteria:
The project must meet the B-*7 Mixed Use Urban District Zone Design Principles & Standards* (Appendix 4 of the Design Manual).

In addition, the project approval included a condition:

That final proposals shall comply with the B7 Design Standards A-2, A-5, C-2, E-1, E-3 particularly:

a. *Articulated roofline;*
b. *Massing and scale to transition and integrate with the residential context on Chestnut Street;*
c. *Pedestrian experience on Chestnut Street; and*
d. *Materiality;*

To be reviewed and approved by the Planning Board.

This approval was granted at a February 14th, 2017 Planning Board hearing. Those approved designs are provided for comparison with the proposed changes.

Findings of the Design Review:
Staff finds the proposal submitted February 27, 2018 meets these design standards as well as the Planning Board comments and areas of concern covered by the condition of approval – refer to comments below.

Summary of 2018 design changes (see also the narrative provided by applicant):

- The window openings are smaller with more space between them resulting in a different solid to void ratio on all the facades. The result is a visual simplification of the building and less transparency.
- The top floor mezzanine is reduced in height and the windows eliminated. The result is a shorter building and the "pop-up" or roof plane changes become more pronounced.
- The Oxford Street side of the building has been modified – the placement of the balconies, the depth and style of the cornice lines, some of the massing relationship. The result is slightly smaller scale masses at the street with increased emphasis on overhanging cornices and balconies to bring articulation, scale, and visual interest.
- The screen at the garage is stepped back from the front façade. The result is the garage opening at the street is larger and has less articulation and human-scale elements. Staff are uncertain whether these changes may have CPTED implications.

Principle A: Urban Design
All development in Bayside shall be designed to create a strong urban identity and sense of place. Buildings may be a variety of architectural styles, particularly those that are innovative and express the aesthetic of the time in which they were built, and shall be organized according to principles of urban design that integrate with the urban fabric of surrounding neighborhoods and Portland as a whole. These principles shall . . . ensure sensitive transitions to surrounding neighborhoods, enhance the physical amenities of the neighborhood, and create a pedestrian oriented environment with safe and vital streets.

A-2: Edges and Transitions – *Transitions between larger scale, mixed use buildings and smaller-scale residential uses shall be designed so that there is a seamless connection to adjacent residential neighborhoods to ensure that these zones remain stable, quiet, and secure. This shall be achieved through the mitigation of height, massing, stepbacks, materials, and details and design of the façade at the pedestrian level. . . . Larger scale developments may use public open spaces to provide transitions to lower scale uses.*

(2/14/17) To address the standard and the board comment, the applicant modified the Chestnut Street façade to provide variation and scale through material placement and building massing. The revised design mitigates height by breaking the overall façade into smaller scale components – the base, middle, and top of the building are defined through materials, fenestration pattern, and articulation details.

The design of the façade at the pedestrian level includes street-facing entrances with canopies, windows at eye level where appropriate, material change delineating the "base" of the building, and massing variation to break up the building face.

(3/7/18) The revisions modify the window placement, type, and size but the overall intent of transparency and human scale are kept. The massing variation on Oxford Street is maintained – the building scale is mitigated through the same elements employed by the approved design. The overall height of the building is reduced.

A-5: Pedestrian Environment – *Development on public streets or public spaces shall be human scale at the pedestrian level and enhance the pedestrian environment through the use of elements at the first floor such as . . . fully functioning entries oriented to the street; active windows and storefronts; awnings and weather protection; outdoor seating and sales displays; adequately sized sidewalks; gathering spaces; trees and landscaping; street furniture; . . .*

(2/14/17) The project uses fenestration at the ground levels, entrances emphasize with canopies and material change, and open space at the end of the block.

(3/7/18) This aspect of the project has not changed – though some of the window, door, and canopy placement and details have revised, the overall goals around activation, visibility, pedestrian-scale are kept.

(2/14/17) The detail and design of the façade at the pedestrian level is strengthened by the massing variation on Chestnut and Oxford streets which create more scale and sense of enclosure. Revisions to material placement provide a 'base' material which differentiates the ground floor and creates a human-scaled pedestrian realm experience.

(3/7/18) These components have not significantly changed.

(2/14/17) These comments also apply to Standard E-1 Architectural Design, E-3 Massing, and E-4 Articulation.

Principle C: Parking, Loading and Service Areas

C-2: Parking Entrances – *The entrance to parking garages shall respect the pedestrian realm and minimize the visual impact of the garage . . .*

(2/14/17) The applicant clarified that the design of that gate and vehicle entrance/exit does not encroach on the sidewalk/pedestrian path. Car stacking is also considered in the placement of the gate.

(3/7/18) The screen placement has changed – it was pushed back from the front façade plane. The opening at the street now looks and feels bigger.

Principle E: Architectural Design

New development shall create a mixed-use, pedestrian-friendly setting that contributes to the context of the surrounding urban fabric and provides a sensitive transition to adjacent residential neighborhoods. . . . The scale, massing, and fenestration of new development shall reflect its context, . . .

E-1: Architectural Design – *New development in Bayside may be a variety of architectural styles, . . . and shall be organized according to principles of urban design that integrate with the urban fabric of surrounding neighborhoods and Portland as a whole. A respectful integration of contemporary design within the existing context shall complement, reinforce, and enhance the prevailing patterns and proportions of adjacent buildings without requiring imitation or repetition.*

(2/14/17) The placement of materials was simplified to be more contextual. The material placement now better correspond to the massing or use. The base of the building is now differentiated with a consistent material applied across the ground floor.

(3/7/18) The material placement is mostly unchanged. The materials correspond to plane changes and highlight architectural features. The ground floor has a differentiated base through materials.

E-3: Massing – *Large expanses of undifferentiated façade or uniform cladding is not allowed along public rights of way. . . . The composition of a proposed building façade shall be defined by horizontal and vertical articulation, with vertical articulation being predominant, in keeping with the local context of the urban form.*

(2/14/17) As stated above, additional massing and façade variation was added to the Chestnut Street façade differentiate the ground floor – the result is an alleviation of what was previously a flat façade for the full 6 stories of the building.

(3/7/18) No significant changes. The Oxford Street façade continues to use massing variation to transition the larger scale building to better relate to the smaller scale residential buildings in the context of the street.

New buildings that are four stories or higher shall have three components: base, middle, and top.

(2/14/17) The "base, middle, top" is better defined through the material placement, massing, a reveal at the top floor, and a strengthened cornice providing more enclosure to the top of the building. The base of the building is now consistently defined, especially on the Chestnut Street side with material placement and window types.

(3/7/18) Base continues to be expressed through material placement. Top is defined by cornice line, and variation to the roofline.

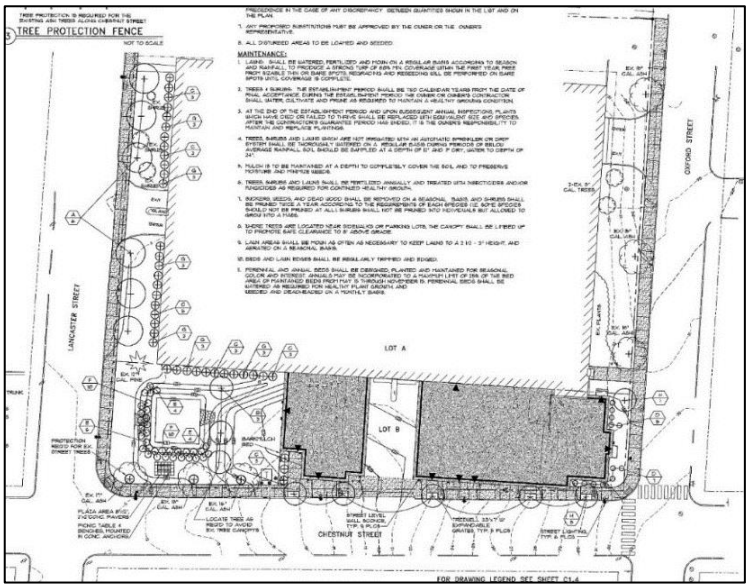
(2/14/17) The level of detail and articulation on the Chestnut Street has been revised – a stronger "top" to the building is created with a deeper cornice, a reveal in the material, and the placement of the massing.

(3/7/18) The most significant change to the base, middle, top composition is the loss of a clear line delineating the top floor (through material, massing, balcony railings). The result is that there is a less definitive distinction between the "middle" and "top."

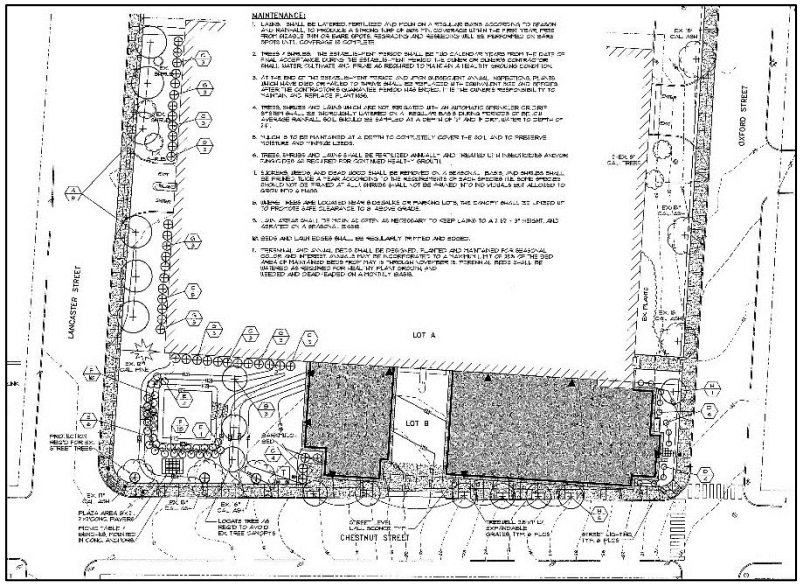
V. SITE PLAN AMENDMENTS

The amendments are summarized in Attachment 3 and include revisions to the footprint at the corners nearest Oxford and Chestnut Streets, although overall it remains in compliance with the zoning requirements for setbacks. The street trees have been relocated and a sketch plan (Attachment 4) shows how these have been revised in front of the south-most building. There is a total of 6 street trees to be installed along Chestnut Street - the renderings and some plans are not updated in respect of the street trees. These are welcomed in light of previous Planning Board concerns regarding the loss of many existing mature street trees at this location.

Minor revisions to the patio fronting Oxford Street and the amenity area to the north are illustrated in the amended civil plans (Plans 17-21). These have not been reviewed in detail.



As approved 2017 subject to conditions



Proposed amendment

ATTACHMENTS

Attachments to the Memorandum

1. Approval letter dated 12.16.2016 (except Design)
2. Approval letter 2.14.2017 (RE Cond 1 Design)
3. Design Review comments on Amendments

Public Comments (none received at the time report was prepared)

Applicants Amendment Submittal

A. Amendment Applications
B. Cover letter describing design amendments (Archtype)
C. Cover letter describing Site Plan amendments (Walsh Engineering)
D. Street Tree amendments

A. Plans/Renderings as approved 2017

P1. Approved 2017 Elevations
P2. Approved 2017 Elevations Rendered
P3. Approved 2017 Lancaster/Chestnut revised rendering
P4. Approved 2017 Oxford /Chestnut revised rendering
P5. Approved 2017 Upper Chestnut rendering
P6. Approved 2017 Street View of Chestnut Street revised
P7. Approved 2017 Massing
P8. Approved subject to Conditions Draft Subdivision Plan
P9. Approved subject to Conditions 2017 Site Plan
P10. Approved subject to conditions 2017 Landscape Plan
P11. Line Axon of approved - two views

B. Plans/Renderings as amended 2018

P12. Amended Elevations
P13. Amended Lancaster/Chestnut Rendering
P14. Amended Upper Chestnut Rendering
P15. Amended Floor Plans
P16. Exterior Details
P17. Existing Conds & Demolition
P18. Amended Draft Subdivision Plan
P19. Amended Site Plan
P20. Amended Landscape Plan
P21. Amended Grading and Utilities Plan
P22. Line Axon of amended – two views

CITY OF PORTLAND, MAINE
PLANNING BOARD

Elizabeth Boepple, Chair
Sean Dundon, Vice Chair
Carol Morrissette
David Eaton
Kristien Nichols
Lisa Whited
Maggie Stanley

December 16, 2016

Lou Woods
A&M Partners Inc
120 Exchange Street
Portland ME 04101

Thomas S Greer, P.E.
Pinkham & Greer, Civil Engineers
28 Vannah Avenue
Portland ME 04103

Project Name: **Westerlea View Lofts: 54 unit residential development plus 1 commercial space**
Project ID: #2016-184 (Subdivision & Site Plan) and
#2016-185 (Conditional Use Inclusionary Zoning)
Address: 75 Chestnut Street CBL: 26/E/10
Applicant: A&M Partners Inc
Planner: Jean Fraser

Dear Sirs:

On December 13, 2016, the Planning Board considered a proposal for a new 7 story building comprising 54 residential apartments (rental), and one commercial unit, totaling approximately 75,800 sq ft, located at 75 Chestnut Street. One parking space per residential unit is proposed to be located in the existing abutting parking garage for the tenants of the new building, and the project also includes a landscaped amenity area. The Planning Board reviewed the proposal for conformance with the standards of the Subdivision, Site Plan, B-7 Zone and Inclusionary Zoning.

The Planning Board voted 7-0 to approve the application with the following waiver and conditions as presented below:

A. WAIVER
On the basis of the application, plans, reports and other information submitted by the applicant; findings and recommendations contained in the planning board report for the public hearing on December 13, 2016 for application 2016-184 (75 Chestnut Street) relevant to Portland's technical and design standards and other regulations; and the testimony presented at the planning board hearing:

1. The planning board voted 7-0 that it finds that the applicant has demonstrated that site constraints prevent the planting of all required street trees in the right-of-way. The planning board waives the site plan standard (*Section 14-526 (b) (iii)* requiring one street tree per unit for multi-family development and concludes that the applicant shall contribute $6,400 to Portland's tree fund.

B. SUBDIVISION

On the basis of the application, plans, reports and other information submitted by the applicant; findings and recommendations contained in the planning board report for the public hearing on December 13, 2016 for application 2016-184 (75 Chestnut Street) relevant to the subdivision regulations; and the testimony presented at the planning board hearing, the planning board voted 7-0 that the plan is in conformance with the subdivision standards of the land use code and approves the application, subject to the following conditions of approval, which must be met prior to the signing of the plat:

i. The applicant shall submit a final subdivision plat for review and approval by Corporation Counsel, the Department of Public Works, and the Planning Authority;

ii. The applicant shall provide drafts of all necessary easements, including but not limited to:

   a. Temporary construction easement from the City of Portland to Westerlea View Lofts;

   b. License from the City of Portland to Westerlea View Lofts for building footings;

   c. Easement(s) for the deck extensions above the existing parking garage structures (air rights);

   d. Access easement for sidewalks that are on the site property;

   e. Easement or other legal document to secure required parking for the residential units;

   for review and approval by Corporation Counsel, the Department of Public Works, and the Planning Authority, with evidence of executed easements to be submitted prior to the issuance of a building permit.

C. SITE PLAN

On the basis of the application, plans, reports and other information submitted by the applicant, findings and recommendations contained in planning board report for the public hearing on December 13, 2016 for application 2016-184 (75 Chestnut Street) relevant to the Site Plan Ordinance and other regulations and the testimony presented at the Planning Board hearing:

The Planning Board voted 7-0 that the plan is in conformance with the site plan standards of the land use code, subject to the following conditions:

i. That final proposals shall comply with the B7 Design Standards A-2, A-5, C-2, E-1 and E-3, particularly addressing:

   a. Articulated roofline;

   b. Massing and scale to transition and integrate with the residential context on Chestnut Street;

   c. Pedestrian experience on Chestnut Street; and

   d. Materiality;

   to be reviewed and approved by the Planning Board.

ii. That the project is subject to the submitted Transportation Demand Management Plan dated October 2016, to include annual monitoring studies that comply with the requirements set out in the comments of the Traffic Engineering reviewer Tom Errico dated 12.9.2016; and

iii. That the applicant submit a revised and more detailed plan for the amenity area between the building and Lancaster Street that demonstrates that the safety and security of the area meets CPTED standards eg re lighting, visual surveillance and similar issues including landscape features; and

iv. That the applicant and all assigns shall comply with the conditions of Chapter 32 stormwater including Article III, post-construction storm water management, which specifies the annual inspections and reporting requirements. The developer/contractor/subcontractor must comply with conditions of the submitted construction stormwater management plan and sediment and erosion control plan dated 9.30.2016 based on City standards and State guidelines. A Maintenance Agreement for the stormwater drainage system shall be approved by Corporation Counsel and the Department of Public Works, and submitted, signed and recorded prior to the issuance of a Certificate of Occupancy with a copy to the Department of Public Works; and

v. That plans showing details for the areas listed below shall be submitted to the Planning Authority for review and approval prior to the issuance of a building permit:

   a. Patio/entrances on Oxford Street

   b. Doors for entrance to parking garage on Chestnut Street

   c. Decks over parking lot

   d. Live-work unit

   e. Parking layout (dimensioned) for ADA spaces and demonstration that it meets applicable state and federal standards regarding ADA van parking.

vi. That the applicant shall revise plans and provide design details for the following elements in the City's Right of Way, for review and approval prior to the issuance of a building permit:

   a. Driveway aprons on Oxford Street and Lancaster Street, noting a pedestrian accessibility route with a maximum 2% cross-slope, and whether full or partial adjustment to the grade of the driveway apron is required;

   b. Grading adjustments for the sidewalk ramp construction at the corner of Chestnut Street and Lancaster Street to address the ponding of water that currently impacts the pedestrian walking route; and

   c. The provision of an underground lighting conduit as part of the sidewalk reconstruction along the lot frontage on Oxford Street.

vii. That the applicant shall submit details of the location, design and screening of façade and rooftop external heating, ventilation and other mechanical equipment, and associated information to document the sound levels meet the City's Site Plan, Zoning and Technical Standards, for review and approval by the Planning Authority; and

viii. That the applicant address the Fire Department comments dated 9.7.2016; and

ix. That the proposed building mounted wall sconces shall be installed so that the light is directed downward.

D. INCLUSIONARY ZONING CONDITIONAL USE

On the basis of the application, plans, reports and other information submitted by the applicant; findings and recommendations contained in the Planning Board Report for the public hearing on December 13, 2016 for application 2016-185 (75 Chestnut Street) relevant to the Conditional Use as authorized by Division 30, Section 14-487 Ensuring Workforce Housing; and the testimony presented at the planning board hearing, the planning board voted 7-0 that the Conditional Use is in conformance with the standards of the land use code and approves the application, subject to the following conditions of approval: *(continued)*

i. Provided the Applicant and the City enter into an Affordable Housing Agreement (AHA) before a Building Permit may be issued.

ii. The AHA will outline the details of the affordability restrictions placed on the workforce units and will be filed as a covenant to the 75 Chestnut Street property's deed with the Cumberland County Registry of Deeds before a Certificate of Occupancy may be issued.

The approval is based on the submitted plans and the findings related to site plan review standards as contained in the Planning Report for application #2016-184 and #2016-185, which is attached.

STANDARD CONDITIONS OF APPROVAL
Please note the following standard conditions of approval and requirements for all approved site plans:

1. **Subdivision Recording Plat** A revised recording plat listing all conditions of subdivision approval must be submitted for review and signature prior to the issuance of a performance guarantee. The performance guarantee must be issued prior to the release of the recording plat for recording at the Cumberland County Registry of Deeds.

2. **Subdivision Waivers** Pursuant to 30-A MRSA section 4406(B)(1), any waiver must be specified on the subdivision plan or outlined in a notice and the plan or notice must be recorded in the Cumberland County Registry of Deeds within 90 days of the final subdivision approval).

3. **Develop Site According to Plan** The site shall be developed and maintained as depicted on the site plan and in the written submission of the applicant. Modification of any approved site plan or alteration of a parcel which was the subject of site plan approval after May 20, 1974, shall require the prior approval of a revised site plan by the Planning Board or Planning Authority pursuant to the terms of Chapter 14, Land Use, of the Portland City Code.

4. **Separate Building Permits Are Required** This approval does not constitute approval of building plans, which must be reviewed and approved by the City of Portland's Permitting and Inspection Division.

5. **Site Plan Expiration** The site plan approval will be deemed to have expired unless work has commenced within one (1) year of the approval or within a time period up to three (3) years from the approval date as agreed upon in writing by the City and the applicant. Requests to extend approvals must be received before the one (1) year expiration date.

6. **Subdivision Plan Expiration** The subdivision approval is valid for up to three years from the date of Planning Board approval.

7. **Performance Guarantee and Inspection Fees** A performance guarantee covering the site improvements, inspection fee payment of 2.0% of the guarantee amount and six (6) final sets of plans must be submitted to and approved by the Planning Division and Public Works Department prior to the release of a subdivision plat for recording at the Cumberland County Registry of Deeds, and prior to the release of a building permit, street opening permit or certificate of occupancy for site plans. If you need to make any modifications to the approved plans, you must submit a revised site plan application for staff review and approval.

8. **Defect Guarantee** A defect guarantee, consisting of 10% of the performance guarantee, must be posted before the performance guarantee will be released.

9. **Preconstruction Meeting** Prior to the release of a building permit or site construction, a pre-construction meeting shall be held at the project site. This meeting will be held with the contractor, Development Review Coordinator, Public Work's representative and owner to review the construction schedule and critical aspects of the site work. At that time, the Development Review Coordinator will confirm that the contractor is working from the approved site plan. The site/building contractor shall provide three (3) copies of a detailed construction schedule to the attending City representatives. It shall be the contractor's responsibility to arrange a mutually agreeable time for the pre-construction meeting.

10. **Department of Public Works Permits** If work will occur within the public right-of-way such as utilities, curb, sidewalk and driveway construction, a street opening permit(s) is required for your site. Please contact Carol Merritt at 874-8300, ext. 8828. (Only excavators licensed by the City of Portland are eligible.)

11. **As-Built Final Plans** Final sets of as-built plans shall be submitted digitally to the Planning Division, on a CD or DVD, in AutoCAD format (*,dwg), release AutoCAD 2005 or greater.

12. **Mylar Copies** Mylar copies of the as-built drawings for the public streets and other public infrastructure in the subdivision must be submitted to the Public Works Department prior to the issuance of a certificate of occupancy.

The Development Review Coordinator must be notified five (5) working days prior to the date required for final site inspection. The Development Review Coordinator can be reached at the Planning Division at 874-8632. All site plan requirements must be completed and approved by the Development Review Coordinator prior to issuance of a Certificate of Occupancy. Please schedule any property closing with these requirements in mind.

If there are any questions, please contact Jean Fraser at (207) 874- 8728.

Sincerely,



Elizabeth Boepple, Chair
Portland Planning Board

Attachments:
1. Final B7 Design Review comments dated December 5, 2016
2. Fire Department comments dated December 13, 2016
3. Planning Board Report
4. City Code, Chapter 32
5. Sample Stormwater Maintenance Agreement
6. Performance Guarantee Packet

Electronic Distribution:

Jeff Levine, AICP, Director of Planning and Urban Development
Stuart O'Brien, City Planning Director
Barbara Barhydt, Development Review Services Manager
Jean Fraser, Planner
Philip DiPierro, Development Review Coordinator, Planning
Mike Russell, Director of Permitting and Inspections
Ann Machado, Zoning Administrator, Inspections Division
Jonathan Rioux, Inspections Division Deputy Director
Jeanie Bourke, Plan Reviewer/CEO, Inspections Division
Chris Branch, Director of Public Works
Katherine Earley, Engineering Services Manager, Public Works
Bill Clark, Project Engineer, Public Works
Doug Roncarati, Stormwater Coordinator, Public Works
Greg Vining, Associate Engineer, Public Works Michelle
Sweeney, Associate Engineer, Public Works John Low,
Associate Engineer, Public Works
Rhonda Zazzara, Field Inspection Coordinator, Public Works
Jeff Tarling, City Arborist, Public Works
Jeremiah Bartlett, Public Works
Keith Gautreau, Fire Department
Danielle West-Chuhta, Corporation Counsel
Thomas Errico, P.E., TY Lin Associates
Lauren Swett, P.E., Woodard and Curran
Rick Blackburn, Assessor's Department
Approval Letter File

Planning and Urban Development Department
Planning Division

Subject: B7 Design Review – 75 Chestnut Street

Written by: Caitlin Cameron, Urban Designer

Date of Review: Monday, December 5, 2016

Design Review Criteria:
The project must meet the B-*7 Mixed Use Urban District Zone Design Principles & Standards* (Appendix 4 of the Design Manual).

Findings of the Design Review:
Below are the standards relevant to the Planning Board comments from the September 13, 2016 and October 18, 2016 workshops with staff comment. Those standards not listed in this memo are either met or not applicable.

Staff recommends a condition of approval that states: That final compliance with Design Standards A-2, A-5, C-2, D-1, D-4, E-1, E-3, E-4 shall be reviewed and approved by Planning staff to address the staff design comments dated 12.9.16 which primarily relate to material placement and design of the pedestrian realm.

Principle A: Urban Design
All development in Bayside shall be designed to create a strong urban identity and sense of place. Buildings may be a variety of architectural styles, particularly those that are innovative and express the aesthetic of the time in which they were built, and shall be organized according to principles of urban design that integrate with the urban fabric of surrounding neighborhoods and Portland as a whole. These principles shall . . . ensure sensitive transitions to surrounding neighborhoods, enhance the physical amenities of the neighborhood, and create a pedestrian oriented environment with safe and vital streets.

A-2: Edges and Transitions – *Transitions between larger scale, mixed use buildings and smaller-scale residential uses shall be designed so that there is a seamless connection to adjacent residential neighborhoods to ensure that these zones remain stable, quiet, and secure. This shall be achieved through the mitigation of height, massing, stepbacks, materials, and details and design of the façade at the pedestrian level. . . . Larger scale developments may use public open spaces to provide transitions to lower scale uses.*

- To address the standard and the board comment, the applicant modified the massing on the Oxford Street façade. The revisions result in a graduated massing that places a four-story mass at the street, of similar scale and proportion to the residential architecture around it. The changes in plane are accentuated with changes in material. The façade continues to have a "secondary" presence on the street – Chestnut Street being the principal façade with the primary residential entrance. The secondary aspect of the façade is reflected in the design of the door and the smaller, elevated windows at the street to indicate the private use.
- On Chestnut Street, the detail and design of the façade at the pedestrian level should be strengthened to improve the sense of scale through revisions to material placement and the addition of articulation elements that relate to the pedestrian realm experience (Standards E-1, E-3, E-4).

A-5: Pedestrian Environment – *Development on public streets or public spaces shall be human scale at the pedestrian level and enhance the pedestrian environment through the use of elements at the first floor such as . . . fully functioning entries oriented to the street; active windows and storefronts; awnings and weather protection; outdoor seating and sales displays; adequately sized sidewalks; gathering spaces; trees and landscaping; street furniture; . . .*

- The project uses fenestration at the ground levels, entrances emphasize with canopies and material change, and open space at the end of the block.
- Where the standard is still not met is the detail and design of the building façade at the ground level. Little to no massing or façade variation is used to differentiate the ground floor – the result is a flat façade for the full 6 stories of the building. The staff recommends that the architecture team further articulate and detail the pedestrian level to create a sense of enclosure and the placement of materials to reflect the uses rather than arbitrary placement. These comments also apply to Standard E-1 Architectural Design, E-3 Massing, and E-4 Articulation.

A-7: Building Orientation – *The primary facades and entrances of buildings shall be oriented to streets, major pedestrian routes, or open spaces in order enhance the pedestrian-oriented environment.*

- The project faces onto two streets and is set close to the property line.
- Chestnut Street is treated like the primary façade with the primary residential entrance. Oxford Street is the secondary façade but addresses the street with a minor residential entrance, some visual interest and massing variation, and a maintenance of the street wall.

Principle C: Parking, Loading and Service Areas

C-2: Parking Entrances – *The entrance to parking garages shall respect the pedestrian realm and minimize the visual impact of the garage . . .*

- For CPTED concerns, staff recommended that the design of the "tunnel" to the garage entrance on Chestnut Street be revised – the applicant has addressed the concern by adding a gate at the façade. However, the design of that gate and vehicle entrance/exit should be clarified so as to not encroach on the sidewalk/pedestrian path. Car stacking should also be considered in the placement of the gate.

Principle D: Open Space and the Public Realm

D-1: Open Space Design – *Publicly-accessible parks, plazas, and other open space shall be accessible from sidewalks and surrounding buildings. . . . Pedestrian amenities such as seating, lighting, artwork, trash receptacles, etc. shall be compatible with the City's Streetscape Standards for Bayside. . . . Solar access, wind protection, and landscaping shall be considered to enhance pedestrian comfort and provide a variety of sunny and shaded areas.*

- It is not clear whether the open space provided is accessible from the sidewalk. The space shown as plaza and seating is visible from the sidewalks, streets, and buildings as required by the standard. The amenity provided appears to be a paved area with seating that is under shade, and additional landscaping throughout the space. No lighting is proposed.

D-4: Pedestrian Amenities – *Pedestrian amenities shall comply with the City's Technical Manual at a minimum, and also with the streetscape standards selected for Bayside.*

- *Seating: One linear foot of seating for each thirty (30) square feet of open space, or 30 linear feet of pedestrian route shall be provided within publicly accessible open space.*
- It is not clear whether the seating proposed in the open space meets this standard – what kind of seating and what linear feet of seating are proposed?

Principle E: Architectural Design

New development shall create a mixed-use, pedestrian-friendly setting that contributes to the context of the surrounding urban fabric and provides a sensitive transition to adjacent residential neighborhoods. . . . The scale, massing, and fenestration of new development shall reflect its context, . . .

E-1: Architectural Design – *New development in Bayside may be a variety of architectural styles, . . . and shall be organized according to principles of urban design that integrate with the urban fabric of surrounding neighborhoods and Portland as a whole. A respectful integration of contemporary design within the existing context shall complement, reinforce, and enhance the prevailing patterns and proportions of adjacent buildings without requiring imitation or repetition.*

- Overall, staff does not find the placement of materials to be contextual. In some cases, the materials correspond to the massing or use, but in other cases, materials change at corners or in arbitrary ways that result in a patchwork quilt effect that does not benefit the overall design nor does it relate to the pattern or use of materials in the context. Staff recommends a simplification of material placement (example below). Visual interest should be achieved through articulation rather than a material pastiche.

E-2: Height –*Heights along the edges of the B-7 Zone shall transition to the scale of adjacent neighborhood development through design elements such as variations in massing; articulation of the facades in intervals that reflect exiting structures or platting pattern, stepping the architecture to adjacent buildings and/or contextual proportions of building elements, use of architectural style and details such as roof lines, belt courses, cornices, or fenestration, and color or materials that derive from the less intensive zone.*

- The Planning Board's concerns regarding transition of height have been addressed by the revisions to the Oxford Street façade.

E-3: Massing – *Large expanses of undifferentiated façade or uniform cladding is not allowed along public rights of way. . . . The composition of a proposed building façade shall be defined by horizontal and vertical articulation, with vertical articulation being predominant, in keeping with the local context of the urban form.*

- As stated above, little to no massing or façade variation is used to differentiate the ground floor – the result is a flat façade for the full 6 stories of the building.

New buildings that are four stories or higher shall have three components: base, middle, and top.

- The base of the building should be more consistently defined, especially on the Chestnut Street side. At this point, that can best be achieved through articulation, material placement and detailing. The corner, double-height live-work unit could also be more substantially differentiated from the other masses of the building.

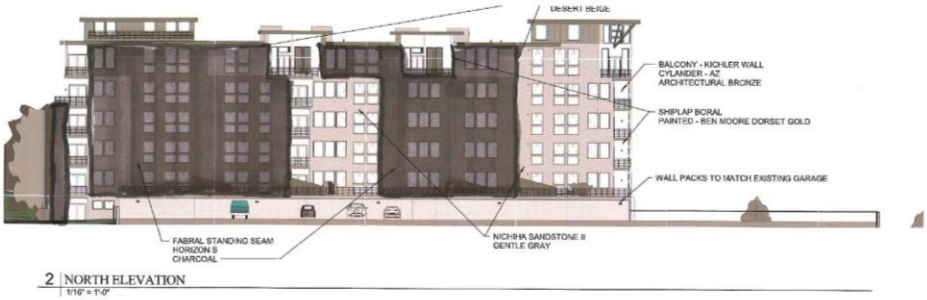
E-4: Articulation – *Façades visible from public rights of way shall incorporate design elements that break the facades into components scaled to the pedestrian, and to the context of other buildings on the street. This may be accomplished through an expression of the building's base, middle and top, vertical fenestration, variation in the planes of the façade, architectural details such as windows, doors, bays, balconies, cornices, reveals, expansion joints, trim, changes in color, texture, and material, permanent artwork, etc.*

- The project uses fenestration at the ground levels, entrances emphasize with canopies and material change, recessed bays at the upper floors, and open space at the end of the block.

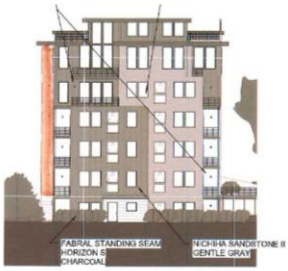
The base of the building which relates to the pedestrian realm shall be designed with a high level of detailing and material quality utilizing the options listed above. . . . Buildings which are six and seven stories shall meet this standard on the firs. t 24 feet, or the first two floors at a minimum.

- The level of detail and articulation on the Chestnut Street elevation is not sufficient, especially at the street level. Material changes are mostly arbitrary and other than at the entrance, do not correspond to uses or plane changes. Revisions to meet this standard could come in form of enclosure; articulation and detail (reveals, dimensional trim, material transitions, detail); placement of material that corresponds with uses

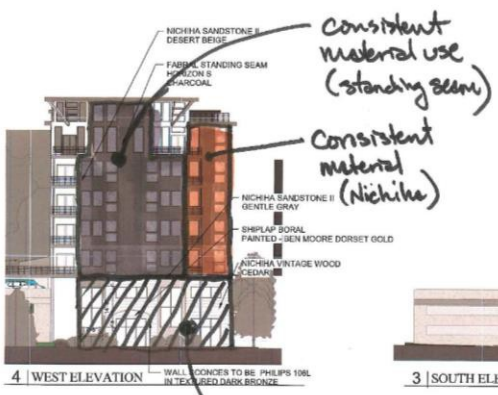
[see sketch next page]



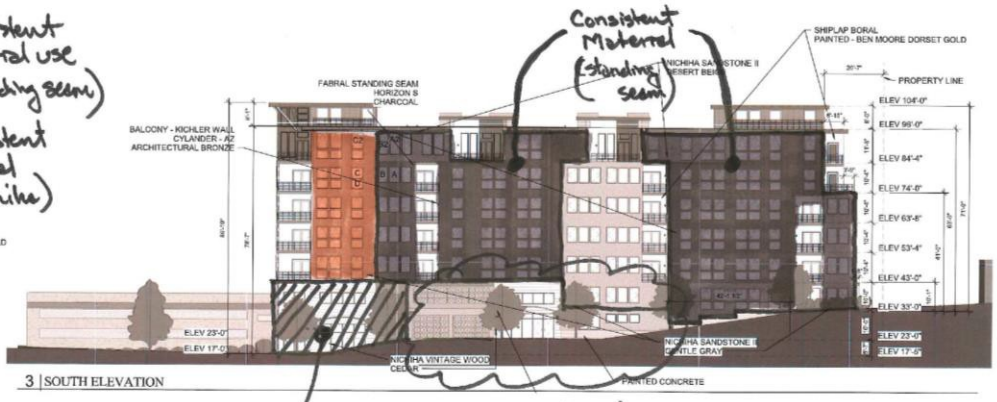
2 | NORTH ELEVATION
1/16" = 1'-0"



1 | EAST ELEVATION
1/16" = 1'-0"



4 | WEST ELEVATION



3 | SOUTH ELEVATION

Consistent material use differentiating this corner unit

Ped level articulation + match floor plans

MEMORANDUM

To: FILE

From: Jean Fraser

Subject: Application ID: 2016-184

Date: 12/13/2016

Comments Submitted by: Keith Gautreau/Fire on 9/7/2016

:ire Department Access shall have an unobstructed vertical clearance of not less than 13 ft 6 in. We will NOT be requiring this vertical clearance as emergency vehicles will not be entering the parking garage

Comments Submitted by: Keith Gautreau/Fire on 9/7/2016

Premises Identification
The main entrance of the building must be the address for the property. This should be consistent with 911, tax assessor, Inspections Division and future mailing address.
Street addresses shall be marked on the structure and shall be as approved by the City E-911 Addressing Officer.
If the building entry faces a different street, both the street name and number should be large enough to read from the street
Address numbers must be a minimum of 4 inches high.
The number should be in Arabic numerals rather than spelled out (for example, "130" instead of "One Hundred and Thirty')
Color: Addresses should be in a color that contrasts with the background.
Whenever possible, should be illuminated.
Provide additional address signs at entrances to the property when the building address is not legible from the public street.

Comments Submitted by: Keith Gautreau/Fire on 9/7/2016

Emergency vehicle access is two sides only, Chestnut and Oxford. This is acceptable to the Fire Dept although because of the arrangement and height of the building I would like to require the overhead power line on Chestnut Street going to the transformer to be underground. This will drastically restrict the Aerial Ladder trucks operation at this proposed site.

Comments Submitted by: Keith Gautreau/Fire on 9/7/2016

I would like to see a letter from the Portland Water District of their ability to serve domestic and fire protection demand for the proposed high rise building.

Comments Submitted by: Keith Gautreau/Fire on 12/12/2016

I have received the Abilitiy to Serve letter from PWD and the Authority Having Jurisdiction accepts.

CITY OF PORTLAND, MAINE
PLANNING BOARD

Elizabeth Boepple, Chair
Sean Dundon, Vice Chair
Carol Morrissette
David Eaton
Kristien Nichols
Lisa Whited
Maggie Stanley

February 15, 2017

Lou Woods
A&M Partners Inc
120 Exchange Street
Portland ME 04101

Thomas S Greer, P.E.
Pinkham & Greer, Civil Engineers
28 Vannah Avenue
Portland ME 04103

Project Name: **Site Plan Condition i: Westerlea View Lofts: 54 unit residential development plus 1 commercial space**
Project ID: #2016-184 (Subdivision & Site Plan) and
#2016-185 (Conditional Use Inclusionary Zoning)
Address: 75 Chestnut Street CBL: 26/E/10
Applicant: A&M Partners Inc
Planner: Jean Fraser

Dear Sirs:

On February 14, 2017 the Planning Board voted unanimously that the applicant has met Site Plan condition of approval (i) from the approval letter dated December 16, 2016, requiring that the final proposals shall comply with the B7 Design Standards A-2, A-5, C-2, E-1, E-3 particularly addressing: a. Articulated roofline; b. Massing and scale to transition and integrate with the residential context on Chestnut Street; c. Pedestrian experience on Chestnut Street; and d. Materiality; To be reviewed and approved by the Planning Board.

The Board also voted unanimously that a revised Landscape Plan shall be submitted for review and approval by the Planning Authority that shows a replacement street tree. Please address this condition prior to the issuance of a building permit.

Please note that the conditions of approval and requirements for your approved Subdivision, Site Plan, and Inclusionary Zoning enumerated in your original approval letter dated December 16, 2016, still apply. This letter is attached for reference.

If there are any questions, please contact Jean Fraser at (207) 874-8728.

Sincerely,

Elizabeth Boepple, Chair
Portland Planning Board

Attachments: 1. Original Approval Letter (12/16/16)

cc. *Archetype* (attn. Bill Hopkins), 48 Union Wharf, Portland, ME 04101

Electronic Distribution:

cc.

Jeff Levine, AICP, Director of Planning and Urban Development
Stuart O'Brien, City Planning Director
Barbara Barhydt, Development Review Services Manager
Jean Fraser, Planner
Philip DiPierro, Development Review Coordinator, Planning
Mike Russell, Director of Permitting and Inspections
Ann Machado, Zoning Administrator, Inspections Division
Jonathan Rioux, Inspections Division Deputy Director
Jeanie Bourke, Plan Reviewer/CEO, Inspections Division
Chris Branch, Director of Public Works
Katherine Earley, Engineering Services Manager, Public Works
Bill Clark, Project Engineer, Public Works
Doug Roncarati, Stormwater Coordinator, Public Works
Greg Vining, Associate Engineer, Public Works Michelle
Sweeney, Associate Engineer, Public Works John Low,
Associate Engineer, Public Works
Rhonda Zazzara, Field Inspection Coordinator, Public Works
Jeff Tarling, City Arborist, Public Works
Jeremiah Bartlett, Public Works
Keith Gautreau, Fire Department
Danielle West-Chuhta, Corporation Counsel
Thomas Errico, P.E., TY Lin Associates
Lauren Swett, P.E., Woodard and Curran
Rick Blackburn, Assessor's Department
Approval Letter File

Planning and Urban Development Department
Planning Division

Subject: B7 Design Review Site Plan Amendment – 75 Chestnut Street

Written by: Caitlin Cameron, Urban Designer

Date of Review: Wednesday, March 7, 2018

Design Review Criteria:
The project must meet the B-*7 Mixed Use Urban District Zone Design Principles & Standards* (Appendix 4 of the Design Manual).

In addition, the project approval included a condition:

That final proposals shall comply with the B7 Design Standards A-2, A-5, C-2, E-1, E-3 particularly:

a. *Articulated roofline;*
b. *Massing and scale to transition and integrate with the residential context on Chestnut Street;*
c. *Pedestrian experience on Chestnut Street; and*
d. *Materiality;*

To be reviewed and approved by the Planning Board.

This approval was granted at a February 14th, 2017 Planning Board hearing. Those approved designs are provided for comparison with the proposed changes.

Findings of the Design Review:
Staff finds the proposal submitted February 27, 2018 meets these design standards as well as the Planning Board comments and areas of concern covered by the condition of approval – refer to comments below.

Summary of 2018 design changes (see also the narrative provided by applicant):

- The window openings are smaller with more space between them resulting in a different solid to void ratio on all the facades. The result is a visual simplification of the building and less transparency.
- The top floor mezzanine is reduced in height and the windows eliminated. The result is a shorter building and the "pop-up" or roof plane changes become more pronounced.
- The Oxford Street side of the building has been modified – the placement of the balconies, the depth and style of the cornice lines, some of the massing relationship. The result is slightly smaller scale masses at the street with increased emphasis on overhanging cornices and balconies to bring articulation, scale, and visual interest.
- The screen at the garage is stepped back from the front façade. The result is the garage opening at the street is larger and has less articulation and human-scale elements. Staff are uncertain whether these changes may have CPTED implications.

Principle A: Urban Design

All development in Bayside shall be designed to create a strong urban identity and sense of place. Buildings may be a variety of architectural styles, particularly those that are innovative and express the aesthetic of the time in which they were built, and shall be organized according to principles of urban design that integrate with the urban fabric of surrounding neighborhoods and Portland as a whole. These principles shall . . . ensure sensitive transitions to surrounding neighborhoods, enhance the physical amenities of the neighborhood, and create a pedestrian oriented environment with safe and vital streets.

A-2: Edges and Transitions – *Transitions between larger scale, mixed use buildings and smaller-scale residential uses shall be designed so that there is a seamless connection to adjacent residential neighborhoods to ensure that these zones remain stable, quiet, and secure. This shall be achieved through the mitigation of height, massing, stepbacks, materials, and details and design of the façade at the pedestrian level. . . . Larger scale developments may use public open spaces to provide transitions to lower scale uses.*

(2/14/17) To address the standard and the board comment, the applicant modified the Chestnut Street façade to provide variation and scale through material placement and building massing. The revised design mitigates height by breaking the overall façade into smaller scale components – the base, middle, and top of the building are defined through materials, fenestration pattern, and articulation details. The design of the façade at the pedestrian level includes street-facing entrances with canopies, windows at eye level where appropriate, material change delineating the "base" of the building, and massing variation to break up the building face.

(3/7/18) The revisions modify the window placement, type, and size but the overall intent of transparency and human scale are kept. The massing variation on Oxford Street is maintained – the building scale is mitigated through the same elements employed by the approved design. The overall height of the building is reduced.

A-5: Pedestrian Environment – *Development on public streets or public spaces shall be human scale at the pedestrian level and enhance the pedestrian environment through the use of elements at the first floor such as . . . fully functioning entries oriented to the street; active windows and storefronts; awnings and weather protection; outdoor seating and sales displays; adequately sized sidewalks; gathering spaces; trees and landscaping; street furniture; . . .*

(2/14/17) The project uses fenestration at the ground levels, entrances emphasize with canopies and material change, and open space at the end of the block.

(3/7/18) This aspect of the project has not changed – though some of the window, door, and canopy placement and details have revised, the overall goals around activation, visibility, pedestrian-scale are kept.

(2/14/17) The detail and design of the façade at the pedestrian level is strengthened by the massing variation on Chestnut and Oxford streets which create more scale and sense of enclosure. Revisions to material placement provide a 'base' material which differentiates the ground floor and creates a human-scaled pedestrian realm experience.

(3/7/18) These components have not significantly changed.

(2/14/17) These comments also apply to Standard E-1 Architectural Design, E-3 Massing, and E-4 Articulation.

Principle C: Parking, Loading and Service Areas

C-2: Parking Entrances – *The entrance to parking garages shall respect the pedestrian realm and minimize the visual impact of the garage . . .*

(2/14/17) The applicant clarified that the design of that gate and vehicle entrance/exit does not encroach on the sidewalk/pedestrian path. Car stacking is also considered in the placement of the gate.

(3/7/18) The screen placement has changed – it was pushed back from the front façade plane. The opening at the street now looks and feels bigger.

Principle E: Architectural Design

New development shall create a mixed-use, pedestrian-friendly setting that contributes to the context of the surrounding urban fabric and provides a sensitive transition to adjacent residential neighborhoods. . . . The scale, massing, and fenestration of new development shall reflect its context, . . .

E-1: Architectural Design – *New development in Bayside may be a variety of architectural styles, . . . and shall be organized according to principles of urban design that integrate with the urban fabric of surrounding neighborhoods and Portland as a whole. A respectful integration of contemporary design within the existing context shall complement, reinforce, and enhance the prevailing patterns and proportions of adjacent buildings without requiring imitation or repetition.*

(2/14/17) The placement of materials was simplified to be more contextual. The material placement now better correspond to the massing or use. The base of the building is now differentiated with a consistent material applied across the ground floor.

(3/7/18) The material placement is mostly unchanged. The materials correspond to plane changes and highlight architectural features. The ground floor has a differentiated base through materials.

E-3: Massing – *Large expanses of undifferentiated façade or uniform cladding is not allowed along public rights of way. . . . The composition of a proposed building façade shall be defined by horizontal and vertical articulation, with vertical articulation being predominant, in keeping with the local context of the urban form.*

(2/14/17) As stated above, additional massing and façade variation was added to the Chestnut Street façade differentiate the ground floor – the result is an alleviation of what was previously a flat façade for the full 6 stories of the building.

(3/7/18) No significant changes. The Oxford Street façade continues to use massing variation to transition the larger scale building to better relate to the smaller scale residential buildings in the context of the street.

New buildings that are four stories or higher shall have three components: base, middle, and top.

(2/14/17) The "base, middle, top" is better defined through the material placement, massing, a reveal at the top floor, and a strengthened cornice providing more enclosure to the top of the building. The base of the building is now consistently defined, especially on the Chestnut Street side with material placement and window types.

(3/7/18) Base continues to be expressed through material placement. Top is defined by cornice line, and variation to the roofline.

(2/14/17) The level of detail and articulation on the Chestnut Street has been revised – a stronger "top" to the building is created with a deeper cornice, a reveal in the material, and the placement of the massing.

(3/7/18) The most significant change to the base, middle, top composition is the loss of a clear line delineating the top floor (through material, massing, balcony railings). The result is that there is a less definitive distinction between the "middle" and "top."

Level III – Preliminary and Final Site Plans
Development Review Application
Portland, Maine

Planning and Urban Development Department
Planning Division

Portland's Planning and Urban Development Department coordinates the development review process for site plan, subdivision and other applications under the City's Land Use Code. Attached is the application form for a Level III: Preliminary or Final Site Plan. Please note that Portland has delegated review from the State of Maine for reviews under the Site Location of Development Act, Chapter 500 Stormwater Permits, and Traffic Movement Permits.

Level III: Site Plan Development includes:

- New structures with a total floor area of 10,000 sq. ft. or more except in Industrial Zones.
- New structures with a total floor area of 20,000 sq. ft. or more in Industrial Zones.
- New temporary or permanent parking area(s) or paving of existing unpaved parking areas for more than 75 vehicles.
- Building addition(s) with a total floor area of 10,000 sq. ft. or more (cumulatively within a 3 year period) except in Industrial Zones.
- Building addition(s) with a total floor area of 20,000 sq. ft. or more in Industrial Zones.
- A change in the use of a total floor area of 20,000 sq. ft. or more in any existing building (cumulatively within a 3 year period).
- Multiple family development (3 or more dwelling units) or the addition of any additional dwelling unit if subject to subdivision review.
- Any new major or minor auto business in the B-2 or B-5 Zone, or the construction of any new major or minor auto business greater than 10,000 sq. ft. of building area in any other permitted zone.
- Correctional prerelease facilities.
- Park improvements: New structures greater than 10,000 sq. ft. and/or facilities encompassing 20,000 sq. ft. or more (excludes rehabilitation or replacement of existing facilities); new nighttime outdoor lighting of sports, athletic or recreation facilities not previously illuminated.
- Land disturbance of 3 acres or more (includes stripping, grading, grubbing, filling or excavation).

Portland's development review process and requirements are outlined in the Land Use Code (Chapter 14), Design Manual and Technical Manual.

Planning Division
Fourth Floor, City Hall
389 Congress Street
(207) 874-8719
planning@portlandmaine.gov

Office Hours
Monday thru Friday
8:00 a.m. – 4:30 p.m.

I. Project Information (Please enter n/a on those fields that are not applicable)

Project Name:	Westerlea View Lofts
Proposed Development Address:	75 Chestnut Street
Project Description:	Construction of a seven story building for 52 residential units
Chart/Block/Lot:	26/E/10
Preliminary Plan	x
Final Plan	

II. Contact Information (Please enter n/a on those fields that are not applicable)

APPLICANT

Name:	Lou Woods
Business Name:	A & M Partners, Inc
Address:	120 Exchange Street
City/State:	Portland, ME
Zip Code:	04101
Work #:	207-8789-1358
Home #:	
Cell #:	
Fax #:	
E-mail:	lcwood@ampartners.me

OWNER

Name:	Same as applicant
Address:	
City/State:	
Zip Code:	
Work #:	
Home #:	
Cell #:	
Fax #:	
E-mail:	

AGENT/REPRESENTATIVE

Name:	Bill Hopkins - Archetype Architects
Address:	48 Union Wharf
City/State:	Portland, ME
Zip Code:	04101
Work #:	207-772-6022
Home #:	
Cell #:	
Fax #:	
E-mail:	hopkins@archetypepa.com

BILLING (to whom invoices will be forwarded to)

Name:	Same as applicant
Address:	
City/State:	
Zip Code:	
Work #:	
Home #:	
Cell #:	
Fax #:	
E-mail:	

ENGINEER

Name:	Thomas S. Greer - Walsh Engineering Associates, Inc.
Address:	1 Karen Drive #2a
City/State:	Westbrook, ME
Zip Code:	04092
Work #:	207-553-9898
Home #:	
Cell #:	
Fax #:	
E-mail:	tgreer@walsh-eng.com

SURVEYOR

Name:	Del Maxfield - Maine Survey Consultants
Address:	PO Box 485
City/State:	Harrison, ME
Zip Code:	04040
Work #:	207-583-6159
Home #:	
Cell #:	
Fax #:	207-583-6159
E-mail:	dmaxfield@mainesurveyconsultants.com

ARCHITECT

Name:	Bill Hopkins - Archetype Architects
Address:	48 Union Wharf
City/State:	Portland, ME
Zip Code:	04101
Work #:	207-772-6022
Home #:	
Cell #:	
Fax #:	
E-mail:	hopkins@archetypepa.com

ATTORNEY

Name:	
Address:	
City/State:	
Zip Code:	
Work #:	
Home #:	
Cell #:	
Fax #:	
E-mail:	

DESIGNATED PERSON(S) FOR UPLOADING INTO e-PLAN

Name:	Katherine Detmer
E-mail:	detmer@archetypepa.com
Name:	Jody Cady
E-mail:	jody@walsh-eng.com
Name:	Tom Greer
E-mail:	tgreer@walsh-eng.com

III. APPLICATION FEES

LEVEL III DEVELOPMENT (check applicable review)

☐	Less than 50,000 sq. ft.	$750.00
☐	50,000 – 100,000 sq. ft.	$1,000.00
☐	100,000 – 200,000 sq. ft.	$2,000.00
☐	200,000 – 300,000 sq. ft.	$3,000.00
☐	Over 300,000 sq. ft.	$5,000.00
☐	Parking lots over 100 spaces	$1,000.00
☐	After-the-fact Review	$1,000.00 + applicable application fee above

PLAN AMENDMENTS (check applicable review)

☐	Planning Staff Review	$250.00
☑	Planning Board Review	$500.00

OTHER REVIEWS (check applicable review)

☐	Traffic Movement	$1,500.00
☐	Stormwater Quality	$250.00
☐	Subdivision	$500.00 + applicable fee for lots/units below
	# of Subdivision Lots/Units [ ] x $25.00 each	$
☐	Site Location	$3,500.00 + applicable fee for lots/units below
	# of Site Location Lots/Units [ ] x $200.00 each	$
☐	Change of Use	
☐	Flood Plain	
☐	Shoreland	
☐	Design Review	
☐	Housing Replacement	
☐	Historic Preservation	
	TOTAL APPLICATION FEE DUE:	$ 500.00

IV. FEES ASSESSED AND INVOICED SEPARATELY

- Notices to abutters (receipt of application, workshop and public hearing meetings) ($.75 each)
- Legal Ad in the Newspaper (% of total ad)
- Planning Review ($52.00 hour)
- Legal Review ($75.00 hour)
- Third Party Review (all outside reviews or analysis, eg. Traffic/Peer Engineer, are the responsibility of the applicant and will be assessed and billed separately)

V. PROJECT DATA (Please enter n/a on those fields that are not applicable)

TOTAL AREA OF SITE	92,202	sq. ft.
PROPOSED DISTURBED AREA OF THE SITE	22,309	sq. ft.
If the proposed disturbance is greater than one acre, then the applicant shall apply for a Maine Construction General Permit (MCGP) with DEP and a Stormwater Management Permit, Chapter 500, with the City of Portland.		
IMPERVIOUS SURFACE AREA		
Impervious Area (Total Existing)	53,832	sq. ft.
Impervious Area (Total Proposed)	64,796	sq. ft.
Building Ground Floor Area and Total Floor		
Building Footprint (Total Existing)	49,326	sq. ft.
Building Footprint (Total Proposed)	59,089	sq. ft.
Building Floor Area (Total Existing)	147,978	sq. ft.
Building Floor Area (Total Proposed)	223,328	sq. ft.
ZONING		
Existing	B7	
Proposed, if applicable		
LAND USE		
Existing	Parking Garage	
Proposed	Parking Garage & Residential	
RESIDENTIAL, IF APPLICABLE		
# of Residential Units (Total Existing)		
# of Residential Units (Total Proposed)	52	
# of Lots (Total Proposed)	2	
# of Affordable Housing Units (Total Proposed)	6	
PROPOSED BEDROOM MIX		
# of Efficiency Units (Total Proposed)	2	
# of One-Bedroom Units (Total Proposed)	12	
# of Two-Bedroom Units (Total Proposed)	38	
# of Three-Bedroom Units (Total Proposed)	0	
PARKING SPACES		
# of Parking Spaces (Total Existing)	450	
# of Parking Spaces (Total Proposed)	446	
# of Handicapped Spaces (Total Proposed)	3	
BICYCLE PARKING SPACES		
# of Bicycle Spaces (Total Existing)	0	
# of Bicycle Spaces (Total Proposed)	44	
ESTIMATED COST OF THE PROJECT	$5,850,000	

VI. APPLICANT SIGNATURE

By digitally signing the attached document(s), you are signifying your understanding this is a legal document and your electronic signature is considered a ***legal signature*** per Maine state law.

I hereby certify that I am the Owner of record of the named property, or that the owner of record authorizes the proposed work and that I have been authorized by the owner to make this application as his/her authorized agent. I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in this application is issued, I certify that the Planning Authority and Code Enforcement's authorized representative shall have the authority to enter all areas covered by this permit at any reasonable hour to enforce the provisions of the codes applicable to this permit.

This application is for a Level III Site Plan review. It is not a permit to begin construction. An approved site plan, a Performance Guarantee, Inspection Fee, Building Permit, and associated fees will be required prior to construction. Other Federal, State or local permits may be required prior to construction, which are the responsibility of the applicant to obtain.

Signature of Applicant:	
Date:	3/1/2018

PRELIMINARY PLAN (Optional) - Level III Site Plan			
Applicant Checklist	Planner Checklist	# of Copies	**GENERAL WRITTEN SUBMISSIONS CHECKLIST**
x		1	Completed Application form
		1	Application fees
x		1	Written description of project
		1	Evidence of right, title and interest
		1	Evidence of state and/or federal approvals, if applicable
x		1	Written assessment of proposed project's compliance with applicable zoning requirements
x		1	Summary of existing and/or proposed easement, covenants, public or private rights-of-way, or other burdens on the site
x		1	Written requests for waivers from site plan or technical standards, if applicable.
n/a		1	Evidence of financial and technical capacity
x		1	Traffic Analysis (may be preliminary, in nature, during the preliminary plan phase)
Applicant Checklist	Planner Checklist	# of Copies	**SITE PLAN SUBMISSIONS CHECKLIST**
x		1	Boundary Survey meeting the requirements of Section 13 of the City of Portland's Technical Manual
		1	**Preliminary Site Plan including the following: (information provided may be preliminary in nature during preliminary plan phase)**
x		Proposed grading and contours;	
x		Existing structures with distances from property line;	
x		Proposed site layout and dimensions for all proposed structures (including piers, docks or wharves in Shoreland Zone), paved areas, and pedestrian and vehicle access ways;	
x		Preliminary design of proposed stormwater management system in accordance with Section 5 of the Technical Manual (note that Portland has a separate applicability section);	
x		Preliminary infrastructure improvements;	
x		Preliminary Landscape Plan in accordance with Section 4 of the Technical Manual;	
x		Location of significant natural features (including wetlands, ponds, watercourses, floodplains, significant wildlife habitats and fisheries or other important natural features) located on the site as defined in Section 14-526 (b) (1);	
n/a		Proposed buffers and preservation measures for significant natural features, as defined in Section 14-526 (b) (1);	
x		Location , dimensions and ownership of easements, public or private rights of way, both existing and proposed;	
x		Exterior building elevations.	

FINAL PLAN - Level III Site Plan			
Applicant Checklist	Planner Checklist	# of Copies	**GENERAL WRITTEN SUBMISSIONS CHECKLIST (* If applicant chooses to submit a Preliminary Plan, then the * items were submitted for that phase and only updates are required)**
		1	* Completed Application form
		1	* Application fees
		1	* Written description of project
		1	* Evidence of right, title and interest
		1	* Evidence of state and/or federal permits
		1	* Written assessment of proposed project's specific compliance with applicable Zoning requirements
		1	* Summary of existing and/or proposed easements, covenants, public or private rights-of-way, or other burdens on the site
		1	* Evidence of financial and technical capacity
		1	Construction Management Plan
		1	A traffic study and other applicable transportation plans in accordance with Section 1 of the technical Manual, where applicable.
		1	Written summary of significant natural features located on the site (Section 14-526 (b) (a))
		1	Stormwater management plan and stormwater calculations
		1	Written summary of project's consistency with related city master plans
		1	Evidence of utility capacity to serve
		1	Written summary of solid waste generation and proposed management of solid waste
		1	A code summary referencing NFPA 1 and all Fire Department technical standards
		1	Where applicable, an assessment of the development's consistency with any applicable design standards contained in Section 14-526 and in City of Portland Design Manual
		1	Manufacturer's verification that all proposed HVAC and manufacturing equipment meets applicable state and federal emissions requirements.

Applicant Checklist	Planner Checklist	# of Copies	**SITE PLAN SUBMISSIONS CHECKLIST** **(* If applicant chooses to submit a Preliminary Plan, then the * items were submitted for that phase and only updates are required)**
		1	* Boundary Survey meeting the requirements of Section 13 of the City of Portland's Technical Manual
		1	**Final Site Plans including the following:**
		Existing and proposed structures, as applicable, and distance from property line (including location of proposed piers, docks or wharves if in Shoreland Zone);	
		Existing and proposed structures on parcels abutting site;	
		All streets and intersections adjacent to the site and any proposed geometric modifications to those streets or intersections;	
		Location, dimensions and materials of all existing and proposed driveways, vehicle and pedestrian access ways, and bicycle access ways, with corresponding curb lines;	
		Engineered construction specifications and cross-sectional drawings for all proposed driveways, paved areas, sidewalks;	
		Location and dimensions of all proposed loading areas including turning templates for applicable design delivery vehicles;	
		Existing and proposed public transit infrastructure with applicable dimensions and engineering specifications;	
		Location of existing and proposed vehicle and bicycle parking spaces with applicable dimensional and engineering information;	
		Location of all snow storage areas and/or a snow removal plan;	
		A traffic control plan as detailed in Section 1 of the Technical Manual;	
		Proposed buffers and preservation measures for significant natural features, where applicable, as defined in Section 14-526(b)(1);	
		Location and proposed alteration to any watercourse;	
		A delineation of wetlands boundaries prepared by a qualified professional as detailed in Section 8 of the Technical Manual;	
		Proposed buffers and preservation measures for wetlands;	
		Existing soil conditions and location of test pits and test borings;	
		Existing vegetation to be preserved, proposed site landscaping, screening and proposed street trees, as applicable;	
		A stormwater management and drainage plan, in accordance with Section 5 of the Technical Manual;	
		Grading plan;	
		Ground water protection measures;	
		Existing and proposed sewer mains and connections;	

- Continued on next page -

		Location of all existing and proposed fire hydrants and a life safety plan in accordance with Section 3 of the Technical Manual;
		Location, sizing, and directional flows of all existing and proposed utilities within the project site and on all abutting streets;
		Location and dimensions of off-premises public or publicly accessible infrastructure immediately adjacent to the site;
		Location and size of all on site solid waste receptacles, including on site storage containers for recyclable materials for any commercial or industrial property;
		Plans showing the location, ground floor area, floor plans and grade elevations for all buildings;
		A shadow analysis as described in Section 11 of the Technical Manual, if applicable;
		A note on the plan identifying the Historic Preservation designation and a copy of the Application for Certificate of Appropriateness, if applicable, as specified in Section Article IX, the Historic Preservation Ordinance;
		Location and dimensions of all existing and proposed HVAC and mechanical equipment and all proposed screening, where applicable;
		An exterior lighting plan in accordance with Section 12 of the Technical Manual;
		A signage plan showing the location, dimensions, height and setback of all existing and proposed signs;
		Location, dimensions and ownership of easements, public or private rights of way, both existing and proposed.

PORTLAND FIRE DEPARTMENT
SITE REVIEW
FIRE DEPARTMENT CHECKLIST

A separate drawing[s] shall be provided as part of the site plan application for the Portland Fire Department's review.

1. Name, address, telephone number of applicant
2.
3. Name address, telephone number of architect

4. Proposed uses of any structures [NFPA and IBC classification]
5.
6. Square footage of all structures [total and per story]

7. Elevation of all structures

8. Proposed fire protection of all structures
   - ***As of September 16, 2010 all new construction of one and two family homes are required to be sprinkled in compliance with NFPA 13D. This is required by City Code. (NFPA 101 2009 ed.)***

9. Hydrant locations

10. Water main[s] size and location

11. Access to all structures [min. 2 sides]

12. A code summary shall be included referencing NFPA 1 and all fire department. Technical standards.

Some structures may require Fire flows using annex H of NFPA 1

CITY OF PORTLAND WASTEWATER CAPACITY APPLICATION

Department of Public Services,
55 Portland Street,
Portland, Maine 04101-2991

Bradley Roland, P.E.
Water Resources Division

Date: _____

1. Please, Submit Utility, Site, and Locus Plans.

Site Address: _____

Chart Block Lot Number: _____

Proposed Use: _____
Previous Use: _____
Existing Sanitary Flows: _____GPD
Existing Process Flows: _____GPD
Description and location of City sewer that is to receive the proposed building sewer lateral.

_____

_____

Site Category		
	Commercial *(see part 4 below)*	☐
	Industrial *(complete part 5 below)*	☐
	Governmental	☐
	Residential	☐
	Other *(specify)*	☐

Clearly, indicate the proposed connections, on the submitted plans.

2. Please, Submit Contact Information.

City Planner's Name: _____ Phone: _____
Owner/Developer Name: _____
Owner/Developer Address: _____
Phone: _____ Fax: _____ E-mail: _____
Engineering Consultant Name: _____
Engineering Consultant Address: _____
Phone: _____ Fax: _____ E-mail: _____

Note: Consultants and Developers should allow +/- 15 days, for capacity status, prior to Planning Board Review.

3. Please, Submit Domestic Wastewater Design Flow Calculations.

Estimated Domestic Wastewater Flow Generated: _____ GPD
Peaking Factor/ Peak Times: _____
Specify the source of design guidelines: *(i.e.__"Handbook of Subsurface Wastewater Disposal in Maine," __ "Plumbers and Pipe Fitters Calculation Manual," __ Portland Water District Records, Other (specify)* _____

Note: Please submit calculations showing the derivation of your design flows, either on the following page, in the space provided, or attached, as a separate sheet.

4. Please, Submit External Grease Interceptor Calculations.

Total Drainage Fixture Unit (DFU) Values: _____

Size of External Grease Interceptor: _____

Retention Time: _____

Peaking Factor/ Peak Times: _____

Note: In determining your restaurant process water flows, and the size of your external grease interceptor, please use The Uniform Plumbing Code. Note: In determining the retention time, sixty (60) minutes is the minimum retention time. Note: Please submit detailed calculations showing the derivation of your restaurant process water design flows, and please submit detailed calculations showing the derivation of the size of your external grease interceptor, either in the space provided below, or attached, as a separate sheet.

5. Please, Submit Industrial Process Wastewater Flow Calculations

Estimated Industrial Process Wastewater Flows Generated: _____ GPD

Do you currently hold Federal or State discharge permits? Yes ____ No ____

Is the process wastewater termed categorical under CFR 40? Yes ____ No ____

OSHA Standard Industrial Code (SIC): *(http://www.osha.gov/oshstats/sicser.html)*

Peaking Factor/Peak Process Times: _____

Note: On the submitted plans, please show where the building's domestic sanitary sewer laterals, as well as the building's industrial-commercial process wastewater sewer laterals exits the facility. Also, show where these building sewer laterals enter the city's sewer. Finally, show the location of the wet wells, control manholes, or other access points; and, the locations of filters, strainers, or grease traps.

Note: Please submit detailed calculations showing the derivation of your design flows, either in the space provided, or attached, as a separate sheet.

A Guide to Holding Neighborhood Meetings
Portland, Maine

Planning and Urban Development Department
Planning Division and Planning Board

In order to improve communication between applicants and neighbors, the City of Portland requires applicants who are proposing certain types of development review projects, to hold a neighborhood meeting.

Developments requiring a neighborhood meeting

- Proposed map amendments, contract zones and zoning text amendments that would result in major development;
- Subdivisions of five or more units or lots;
- Master Development Plans; and
- Level III site plan proposals as defined in Section 14-523.

(The Land Use Code, including Article II (Planning Board) and Article V (Site Plan – which contains the neighborhood meeting requirements), are available on the City's web site at www.portlandmaine.gov/citycode/chapter014.pdf)

Timing of meeting

- **Subdivisions of 5 or more units or lots, zone changes, contract zones, zoning text amendments and Level III site plans:**
  - Preliminary Site Plan - The meeting should be held within 30 calendar days of filing the application.
  - Final Site Plan – If only a final plan is submitted, the meeting should be held within 21 calendar days of filing the application and no less than 7 calendar days before the public hearing.
- **Master Plan Development:**
  - The meeting should be held within 30 calendar days of filing the application.
  - The meeting should be held on a date no less than 7 calendar days before a public workshop or public hearing.
  - The meeting shall not be combined with any required neighborhood meeting for the Level III applications.

Location of meeting

- The meeting should be held in the evening, during the week, at a convenient location within the Portland neighborhood surrounding the proposed site. Community meeting spaces at libraries, schools or other places of assembly are recommended. Neighborhood schools are usually available for evening meetings.
- Meetings should not be held on the same day as scheduled Planning Board or City Council meetings. The City Council generally meets on the 1st and 3rd Monday of each month and the Planning Board generally meets on the 2nd and 4th Tuesday of each month; however additional meetings may be scheduled. An updated schedule may be found on the City's website: www.portlandmaine.gov

Invitation List

- Property owners within 500 feet of the proposed development (1000 feet for proposed industrial subdivisions and industrial zone changes)
- Interested citizens and neighborhood groups.

The Planning Division provides the mailing labels. We require at least 48 hours notice to generate the mailing labels and a charge of $1.00 per sheet will be payable upon receipt of the labels. An electronic version (excel or word format) of the labels can also be e-mailed upon request.

A digital copy of the notice must be provided to the Planning Office (jmy@portlandmaine.gov and ldobson@portlandmaine.gov) and the assigned planner, which will then be forwarded to those on the interested citizen list who receive e-mail notices.

When to Send Invitations

- Invitations must be sent **no less than 10 days (to include weekends)** prior to the neighborhood meeting.
- Notices may be sent by regular mail and do not need to be sent by certified mail.

Notice Description

A recommended invitation format is included in this packet of material.

Attendance Sheet and Meeting Minutes

- Sign-in sheet must be circulated for those in attendance.
- Applicant shall take accurate minutes of the meeting.
- The sign-in sheet and minutes shall be submitted to the Planning Division.

A public hearing will not be scheduled until the meeting minutes and sign-up sheet are submitted to the Planning Division.

A Certification form is included with this packet to be completed and signed by the applicant.

Please call the Planning Division at 874-8721 or 874-8719 if you have any questions.

Attachments

1. Neighborhood Meeting Invitation Format
2. Neighborhood Meeting Certification

EXAMPLE: Neighborhood Meeting Invitation Format

Applicant/Consultant
Letterhead

(Date)

Dear Neighbor:

Please join us for a neighborhood meeting to discuss our plans for a (development proposal) located at (location/number and street address).

Meeting Location: _____
Meeting Date: _____
Meeting Time: _____

(The City code requires that property owners within 500 feet (1000 feet for proposed industrial subdivisions and industrial zone changes) of the proposed development and residents on an "interested parties list", be invited to participate in a neighborhood meeting. A sign-in sheet will be circulated and minutes of the meeting will be taken. Both the sign-in sheet and minutes will be submitted to the Planning Board.)

If you have any questions, please call (telephone number of applicant or consultant).

Sincerely,

(Applicant)

Note:
Under Section 14-32(C) and 14-524(a)d of the City Code of Ordinances, an applicant for a Level III development, subdivision of over five lots/units, or zone change is required to hold a neighborhood meeting within 30 days of submitting a preliminary application or 21 days of submitting a final site plan application, if a preliminary plans was not submitted. The neighborhood meeting must be held at least seven days prior to the Planning Board public hearing on the proposal. Should you wish to offer additional comments on this proposed development, you may contact the Planning Division at 874-8721 or send written correspondence to the Planning and Urban Development Department, Planning Division 4th Floor, 389 Congress Street Portland, ME 04101 or by email: to bab@portlandmaine.gov

EXAMPLE: Neighborhood Meeting Certification

I, (applicant/consultant) hereby certify that a neighborhood meeting was held on (date) at (location) at (time).

I also certify that on (date at least ten (10) days prior to the neighborhood meeting), invitations were mailed to the following:

1. All addresses on the mailing list provided by the Planning Division which includes property owners within 500 feet of the proposed development or within 1000 feet of a proposed industrial subdivision or industrial zone change.

2. Residents on the "interested parties" list.

3. A digital copy of the notice was also provided to the Planning Division (jmy@portlandmaine.gov and ldobson@portlandmaine.gov) and the assigned planner to be forwarded to those on the interested citizen list who receive e-mail notices.

Signed,

_____ _____ (date)

Attached to this certification are:

1. Copy of the invitation sent
2. Sign-in sheet
3. Meeting minutes

A R C H E T Y P E

February 28, 2018

Jean Fraser
Planner
Planning & Transportation Division
389 Congress St, Portland, ME 04101

Dear Ms. Fraser,

Since the approval of Westerlea View Lofts at 75 Chestnut Street, there have been modifications made that affect the approved documents. The changes were made for multiple reasons including potential owner requests, structural and code implications of approved items and reconfiguration for interior layout purposes as the project developed. The following list includes the design changes that have occurred that we plan to present at the March 13th Planning Board.

-The windows are shorter and therefore smaller than the approved windows due to the final decision in structural floor framing and a decrease in allowable header height.

-The mezzanine level was removed due to potential owner request and a parapet replaced it to help keep the form of the building in order. This did allow us to lower the building at the east and west end, therefore shortening the overall height which is important as it relates to Oxford Street.

-The decks were reconfigured at the southeast corner of the building because of structural and rating implications. This also made minor changes to the footprint of the building.

-The large bump out on the Chestnut Street elevation towards the west end of the building was widened. This allowed for a much better interior layout and nicer bedrooms for the units. It also caused an adjustment in the footprint of the building. An addition column of windows was added to the bump out to increase light in the space and to balance the exterior penetration pattern.

-Windows were adjusted as the interiors developed.

-The deck at the 3rd floor level over the top of the parking garage has been eliminated and replaced with a small roof with a sprinkler system. It was found the deck was not needed by code and the sprinkler system could replace it.

-The decks on the long elevations of the 7th floor have been reconfigured into rectangular form as opposed to the triangular form that went through planning board. This was done both to solve interior layout problems caused by the angles and it also made for easier to use deck space.

-One material, the Nichiha in sandstone, has been replaced with a similar Hardie panel because of cost.

Sincerely,

William K. Hopkins
Registered Architect

48 Union Wharf, Portland, Maine 04101 (207) 772–6022• Fax (207) 772–4056

WALSH
ENGINEERING ASSOCIATES, INC.

File: 16142

February 27, 2018

Ms. Jean Fraser
City of Portland, Planning Division
389 Congress Street 4th Floor
Portland, ME 04101

RE: Chestnut Street, Westerlea View Lofts

Dear Jean,

As requested, this letter notes the changes to the plans to bring the project into compliance with the Planning Board's Conditions of Approval. We are requesting a building Permit so the project can move forward.

The following changes have been made to the site plans.

1. The building footprint has been revised responding to the Staff comments.
2. The tree wells on Chestnut Street have been revised. We have added an additional tree. The spacing has been revised to ensure that at least 4 feet of walk is available.
3. The easements and licensing have been revised to match the new building footprint.
4. The grading at the entrance door and across the entrance drive off Chestnut Street have been coordinated with the new footprint to ensure a 2% cross slope.
5. The Oxford end of the building has been modified. It includes a vent for the laundry and new plaza area.
6. The utility connections for the building have been revised to match the new utility room location.
7. Additional notes have been added at the corner of Lancaster and Chestnut to eliminate any ponding of water.

Below is a response to the Conditions of Approval for the Subdivision and Site Plan.

B. SUBDIVISION

On the basis of the application, plans, reports and other information submitted by the applicant; findings and recommendations contained in the planning board report for the public hearing on December 13, 2016 for application 2016-184 (75 Chestnut Street) relevant to the subdivision regulations; and the testimony presented at the planning board hearing, the planning board voted 7-0 that the plan is in conformance with the subdivision standards of the land use code and approves the application, subject to the following conditions of approval, which must be met prior to the signing of the plat:

i. The applicant shall submit a final subdivision plat for review and approval by

Corporation Counsel, the Department of Public Works, and the Planning Authority;
Attached is the revised Subdivision Plan for the City review.

ii. *The applicant shall provide drafts of all necessary easements, including but not limited to:*
   a. *Temporary construction easement from the City of Portland to Westerlea View Lofts;*
      To be obtained prior to signing of the PLAT.
   b. *License from the City of Portland to Westerlea View Lofts for building footings;*
      To be obtained prior to signing of the PLAT.
   c. *Easement(s) for the deck extensions above the existing parking garage structures (air rights);*
      To be obtained prior to signing of the PLAT.
   d. *Access easement for sidewalks that are on the site property;*
      To be obtained prior to signing of the PLAT.
   e. *Easement or other legal document to secure required parking for the residential units;*

for review and approval by Corporation Counsel, the Department of Public Works, and the Planning Authority, with evidence of executed easements to be submitted prior to the issuance of a building permit.
Please see attachment – Owner Agreements.

C. SITE PLAN

On the basis of the application, plans, reports and other information submitted by the applicant, findings and recommendations contained in planning board report for the public hearing on December 13, 2016 for application 2016-184 (75 Chestnut Street) relevant to the Site Plan Ordinance and other regulations and the testimony presented at the Planning Board hearing:

The Planning Board voted 7-0 that the plan is in conformance with the site plan standards of the land use code, subject to the following conditions:

i. *That final proposals shall comply with the B7 Design Standards A-2, A-5, C-2, E-1 and E-3, particularly addressing:*
   a. *Articulated roofline;*
      Please see A2.01 – Building Elevations Proposed.
   b. *Massing and scale to transition and integrate with the residential context on Chestnut Street;*
      Please see A2.01 – Building Elevations Proposed, Rendering from Lancaster Proposed.
   c. *Pedestrian experience on Chestnut Street; and*
      Please see A2.01 – Building Elevations Proposed, Rendering from Lancaster Proposed.
   d. *Materiality;*
      Please see A2.01 – Building Elevations Proposed.

to be reviewed and approved by the Planning Board.

ii. *That the project is subject to the submitted Transportation Demand Management Plan dated October 2016, to include annual monitoring studies that comply with the requirements set out in the comments of the Traffic Engineering reviewer Tom Errico dated 12.9.2016; and*
Will be sending in annual monitoring studies.

iii. *That the applicant submit a revised and more detailed plan for the amenity area between the building and Lancaster Street that demonstrates that the safety and security of the area meets CPTED standards eg re lighting, visual surveillance and similar issues including landscape features; and*
The plans have been revised to show the outdoor space with the landscaping.

iv. *That the applicant and all assigns shall comply with the conditions of Chapter 32 stormwater including Article III, post-construction storm water management, which specifies the annual inspections and reporting requirements. The developer/contractor/subcontractor must comply with conditions of the submitted construction stormwater management plan and sediment and erosion control plan dated 9.30.2016 based on City standards and State guidelines. A Maintenance Agreement for the stormwater drainage system shall be approved by Corporation Counsel and the Department of Public Works, and submitted, signed and recorded prior to the issuance of a Certificate of Occupancy with a copy to the Department of Public Works; and*
Not required at this time.

v. *That plans showing details for the areas listed below shall be submitted to the Planning Authority for review and approval prior to the issuance of a building permit:*
   a. *Patio/entrances on Oxford Street*
      Please see Site Plan.
   b. *Doors for entrance to parking garage on Chestnut Street*
      Please see A2.01 – Building Elevations Proposed.
   c. *Decks over parking lot*
      Please see A5.05 – Exterior Details.
   d. *Live-work unit*
      TBD – Will be decided with future tenant permit.
   e. *Parking layout (dimensioned) for ADA spaces and demonstration that it meets applicable state and federal standards regarding ADA van parking.*
      Please see A1.01 – First Floor Plan Proposed.

vi. *That the applicant shall revise plans and provide design details for the following elements in the City's Right of Way, for review and approval prior to the issuance of a building permit:*
   a. *Driveway aprons on Oxford Street and Lancaster Street, noting a pedestrian accessibility route with a maximum 2% cross-slope, and whether full or partial adjustment to the grade of the driveway apron is required;*
      The cross slope is noted on C1.4 and on the detail sheet C2.4.
   b. *Grading adjustments for the sidewalk ramp construction at the corner of Chestnut Street and Lancaster Street to address the ponding of water that currently impacts the pedestrian walking route; and*
      A note was added to C1.4.
   c. *The provision of an underground lighting conduit as part of the sidewalk reconstruction along the lot frontage on Oxford Street.*

A note was added to C1.4.

vii. *That the applicant shall submit details of the location, design and screening of façade and rooftop external heating, ventilation and other mechanical equipment, and associated information to document the sound levels meet the City's Site Plan, Zoning and Technical Standards, for review and approval by the Planning Authority; and*
Please see Roof Plan w/ RTUS, Mitsubishi Cut Sheets and A5.05 – Exterior Details.

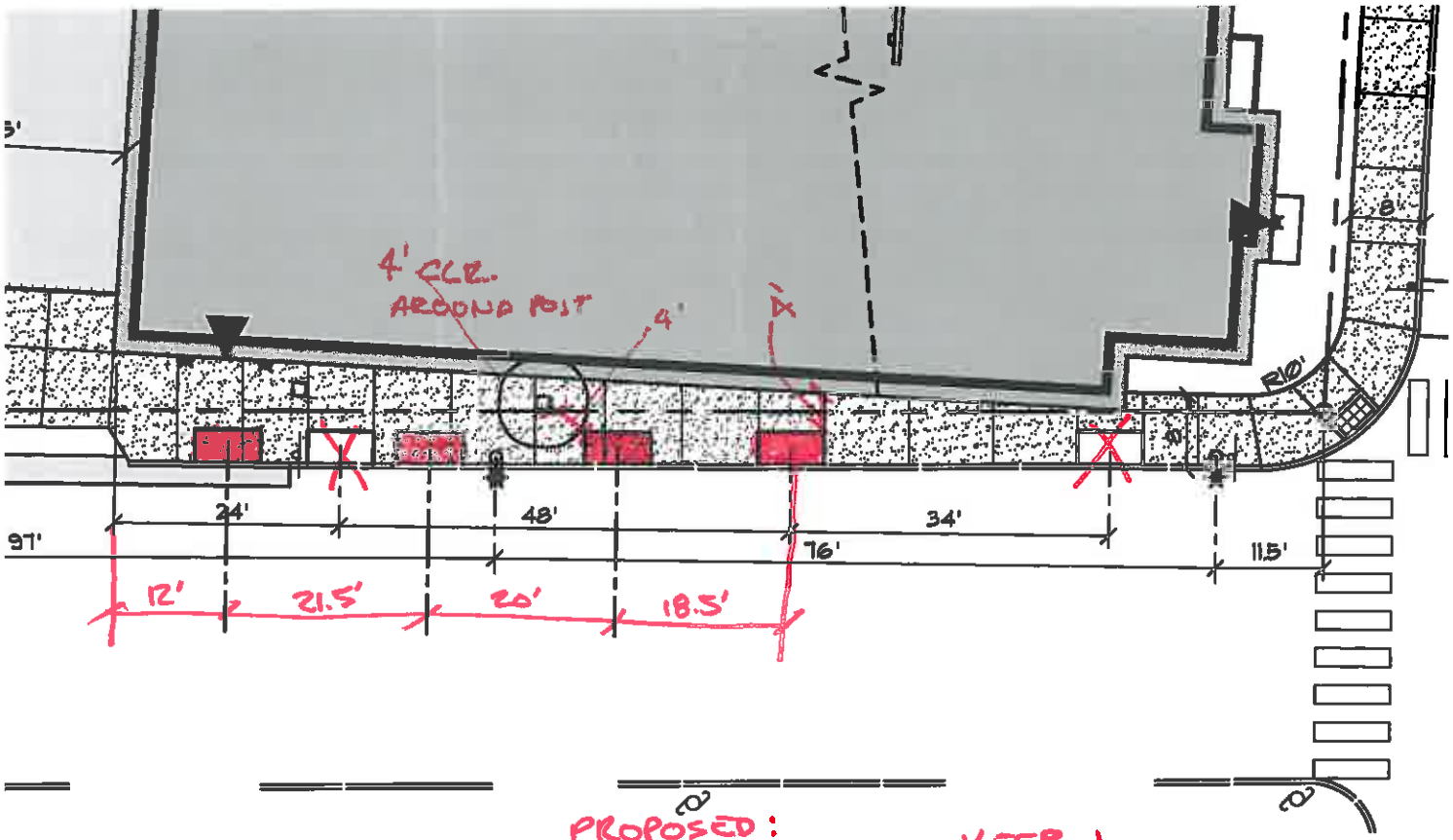
viii. *That the applicant address the Fire Department comments dated 9.7.2016; and*
Please see A2.01 – Building Elevations Proposed.

ix. *That the proposed building mounted wall sconces shall be installed so that the light is directed downward.*
Please see A2.01 – Building Elevations Proposed.

Respectfully,

Thomas S. Greer, PE
Walsh Engineering Associates, Inc.

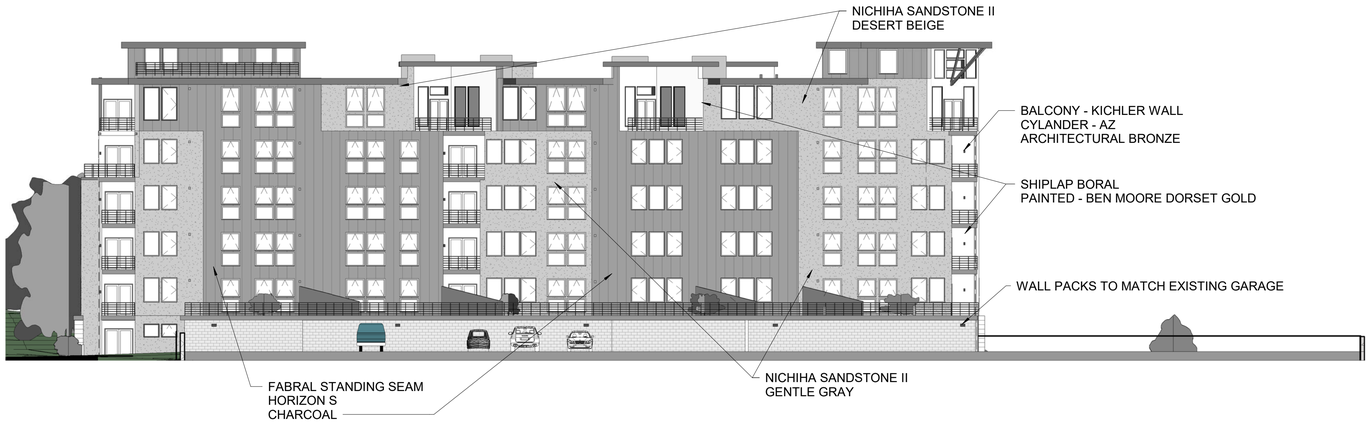
cc: File
Enc.



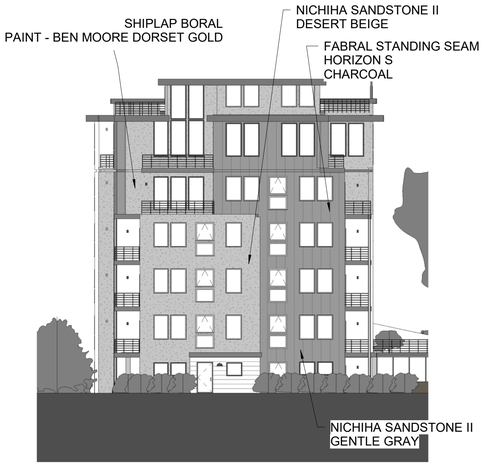
PROPOSED:
4 TREEWELLS

PREVIOUSLY: 3

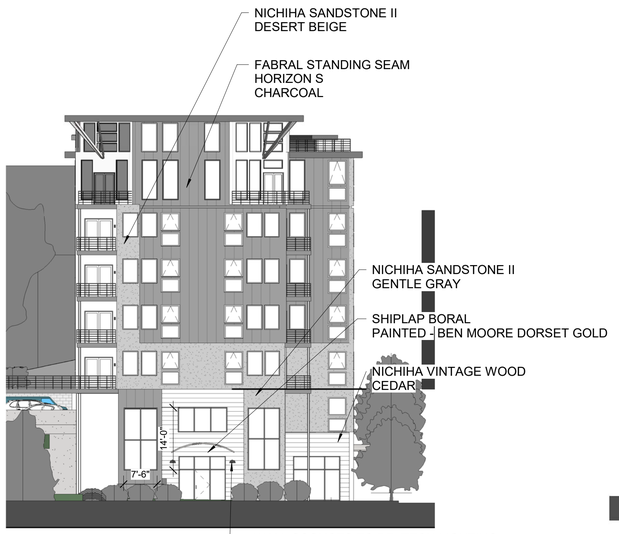
KEEP - 1
DELETE - 1
RELOCATE - 1
ADD - 2



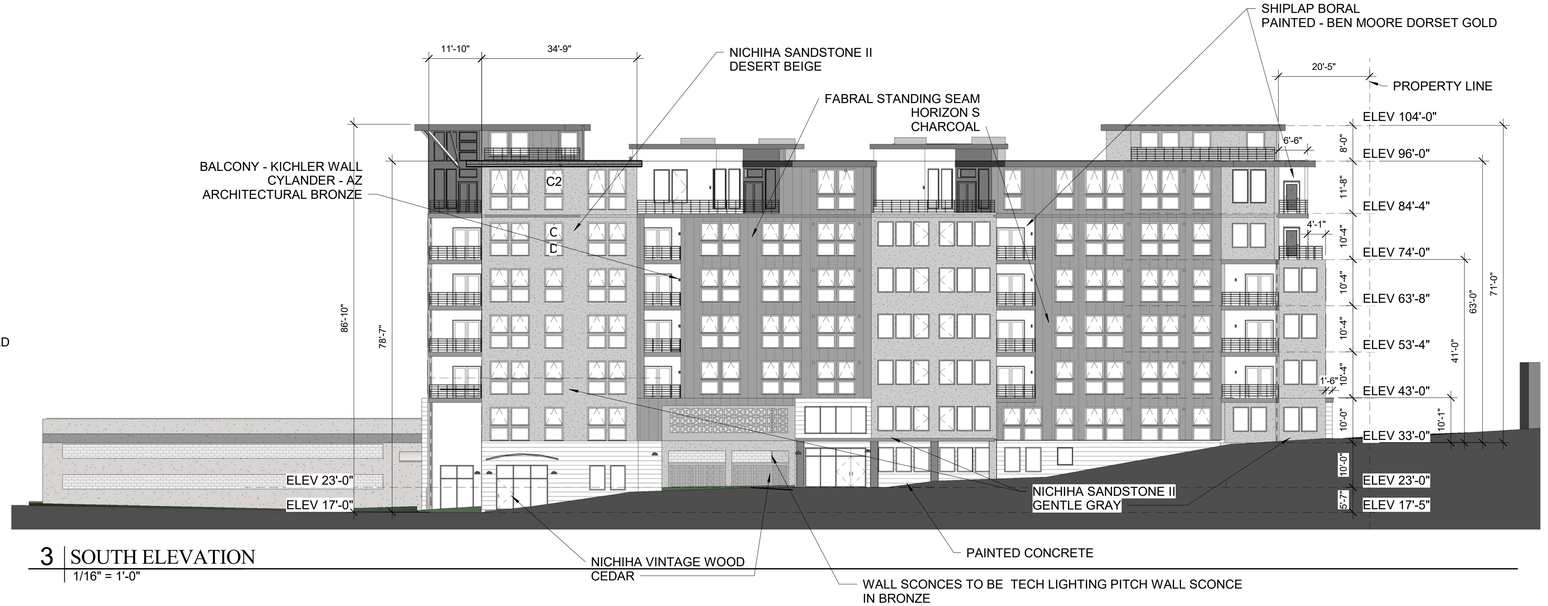
2 | NORTH ELEVATION
1/16" = 1'-0"



1 | EAST ELEVATION
1/16" = 1'-0"



4 | WEST ELEVATION
1/16" = 1'-0"



3 | SOUTH ELEVATION
1/16" = 1'-0"

AVERAGE GRADE ELEVATION CALC
4 CORNERS OF BUILDING (SEE SITE PLAN)
13.8'+17.2'+33.0'+32.5' = 96.5'
96.5'/4= 24.125'

104.0' - 24.125' = 79.875' TO TOP OF MEZZANINE
79.875'-8' = 71.875' TO TOP OF 7TH FLOOR ROOF

Prepared For:
A&M Partners

Consultant:

Architect:
ARCHETYPE architects
48 Union Wharf Portland, Maine 04101
(207) 772-6022 Fax (207) 772-4056

Project:
Westerlea View Lofts
Chestnut Street
Portland, Maine

Revisions:

Scale: 1/16" = 1'-0"

Date: 1-20-2017

Building Elevations

A2.01



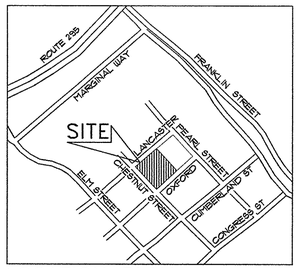












LOCATION PLAN

SCALE: 1"=150'±

SUBDIVISION CONDITIONS OF APPROVAL

1.

SURVEY GENERAL NOTES AND PLAN REFERENCES

GENERAL NOTES:

1) VERTICAL DATUM REFERS TO NATIONAL GEODETIC VERTICAL DATUM OF 1929.

2) HORIZONTAL DATUM REFERS TO MAINE COORDINATE SYSTEM 1983 MAINE WEST ZONE AS DERIVED FROM STATIC GPS OBSERVATIONS MADE ON SITE 07-12-2016.

3) UNDERGROUND UTILITIES SHOWN WERE DERIVED FROM FIELD OBSERVATIONS AND EXISTING PLAN PROVIDED BY PORTLAND PUBLIC WORKS DEPARTMENT.

4) DIGSAFE SHOULD BE CONTACTED FOR ACURATE UTILITY LOCATION BEFORE ANY SITE EXCAVATION WORK IS PERFORMED.

PLAN REFERENCES:

1) AS-BUILT SITE SURVEY FOR AVESTA PEARL STREET TWO LP DATED MARCH 07, 2013 PREPARED BY NORTHEAST CIVIL SOLUTIONS, RECORDED IN CCRD PB 211, PG 362.

2) ALTA /ACSM LAND TITLE SURVEY FOR OXFORD DEVELOPMENT ASSOCIATES DATED 06-28-88 PREPARED BY SMRT SURVEYING RECORDED IN CCRD PB 171, PG 68.

3) PORTLAND RENEWAL AUTHORITY NEIGHBORHOOD DEVELOPEMENT PROJECT ME A-2 DATED MAY 22, 1974 PREPARED BY E.C. JORDAN.

4) CITY PLAN OF LANCASTER STREET DATED 1925 VOL 1, PG 51 ON FILE AT CITY OF PORTLAND DEPT. OF PUBLIC WORKS OFFICE SEE ALSO CITY OF PORTLAND RECORDS 9-48 DATED 9/1/1854.

5) CITY PLAN OF OXFORD STREET DATED 1925 VOL 1, PG 42 ON FILE AT CITY OF PORTLAND DEPT. OF PUBLIC WORKS OFFICE SEE ALSO CITY OF PORTLAND RECORDS 2-342 DATED 3-13-1824.

6) CITY PLAN OF CHESTNUT STREET DATED 1925 VOL 1, PG 44 ON FILE AT CITY OF PORTLAND DEPT. OF PUBLIC WORKS OFFICE SEE ALSO CITY OF PORTLAND RECORDS 1-398 DATED MAY 6, 1805.

WAIVERS

1. ALLOW THE DEVELOPER TO PAY INTO THE STREET TREE FUND IN LIEU OF PLANTING STREET TREES.

CITY OF PORTLAND SITE PLAN AND SUBDIVISION NOTES

1. LANDSCAPING SHALL MEET THE "ARBORICULTURAL SPECIFICATIONS AND STANDARDS OF PRACTICE AND LANDSCAPE GUIDELINES" OF THE CITY OF PORTLAND TECHNICAL AND DESIGN STANDARDS AND GUIDELINES.
2. THE ENTIRE SITE SHALL BE DEVELOPED AND/OR MAINTAINED AS DEPICTED ON THE SITE PLAN. APPROVAL OF THE PLANNING AUTHORITY OR PLANNING BOARD SHALL BE REQUIRED FOR ANY ALTERATION TO OR DEVIATION FROM THE APPROVED SITE PLAN, INCLUDING, WITHOUT LIMITATION: TOPOGRAPHY, DRAINAGE, LANDSCAPING, RETENTION OF WOODED OR LAWN AREAS, ACCESS, SIZE, LOCATION, AND SURFACING OF PARKING AREAS AND LOCATION AND SIZE OF BUILDINGS.
3. ALL POWERLINE UTILITIES SHALL BE UNDERGROUND.
4. SIDEWALKS AND CURBING SHALL BE DESIGNED AND BUILT WITH TIPDOWN RAMPS AT ALL STREET CORNERS, CROSSWALKS AND DRIVEWAYS IN CONFORMANCE WITH THE CITY OF PORTLAND TECHNICAL AND DESIGN STANDARDS AND GUIDELINES.
5. ALL EROSION CONTROL MEASURES SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE MAINE EROSION AND SEDIMENT CONTROL BMPS PUBLISHED BY THE BUREAU OF LAND AND QUALITY, MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION, MARCH 2003.
6. ALL EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO ANY SITE EXCAVATION OR REGRADING.
7. ALL DISTURBED AREAS ON THE SITE NOT COVERED BY BUILDINGS OR PAVED AREAS SHALL BE STABILIZED WITH LOAM AND SEED OR OTHER METHODS AS REQUIRED BY BEST MANAGEMENT PRACTICES (SEE ABOVE).
8. PRIOR TO CONSTRUCTION, A PRECONSTRUCTION MEETING SHALL BE HELD AT THE PROJECT SITE WITH THE CONTRACTOR, DEVELOPMENT REVIEW COORDINATOR, PUBLIC WORKS REPRESENTATIVE AND OWNER TO REVIEW THE CONSTRUCTION SCHEDULE AND CRITICAL ASPECTS OF THE SITE WORK. AT THAT TIME, THE SITE/BUILDING CONTRACTOR SHALL PROVIDE THREE (3) COPIES OF A DETAILED CONSTRUCTION SCHEDULE TO THE ATTENDING CITY REPRESENTATIVE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ARRANGE A MUTUALLY AGREEABLE TIME FOR THE PRECONSTRUCTION MEETING.
9. EXISTING VEGETATION SHALL BE CONSERVED IN AREAS SHOWN ON THIS SITE. FENCING OR OTHER PROTECTIVE BARRIERS SHALL BE ERECTED OUTSIDE THE DRIP-LINE OF INDIVIDUAL GROUPINGS OF TREES DESIGNATED FOR PRESERVATION PRIOR TO THE ONSET OF CONSTRUCTION. REGRADING SHALL NOT TAKE PLACE WITHIN THE DRIP-LINE OF TREES DESIGNATED FOR PRESERVATION. NO STORAGE OR CONSTRUCTION MATERIALS SHALL BE PERMITTED WITHIN THE DRIP-LINE OF TREES TO BE PRESERVED.
10. SUBDIVISION AT THE TIME OF APPROVAL IS DEFINED AS "SUBDIVISION SHALL MEAN THE DIVISION OF A LOT, TRACT OR PARCEL OF LAND INTO THREE (3) OR MORE LOTS, INCLUDING LOTS OF FORTY (40) ACRES OR MORE, WITHIN ANY FIVE-YEAR PERIOD WHETHER ACCOMPLISHED BY SALE, LEASE, DEVELOPMENT, BUILDINGS OR OTHERWISE AND AS FURTHER DEFINED IN 30-A MRSA, SECTION 4401. THE TERM SUBDIVISION SHALL ALSO INCLUDE THE DIVISION OF A NEW STRUCTURE OR STRUCTURES ON A TRACT OR PARCEL OF LAND INTO THREE (3) OR MORE DWELLING UNITS WITHIN A FIVE-YEAR PERIOD AND THE DIVISION OF AN EXISTING STRUCTURE OR STRUCTURES PREVIOUSLY USED FOR COMMERCIAL OR INDUSTRIAL USE INTO THREE (3) OR MORE DWELLING UNITS WITHIN A FIVE-YEAR PERIOD. THE AREA INCLUDED IN THE EXPANSION OF AN EXISTING STRUCTURE IS DEEMED TO BE A NEW STRUCTURE FOR THE PURPOSE OF THIS PARAGRAPH. A DWELLING UNIT SHALL INCLUDE ANY PART OF A STRUCTURE WHICH, THROUGH SALE OR LEASE, IS INTENDED FOR HUMAN HABITATION, INCLUDING SINGLE-FAMILY AND MULTIFAMILY HOUSING CONDOMINIUMS, TIME-SHARE UNITS AND APARTMENTS."

GENERAL NOTES

1. OWNER: A&M PARTNERS, INC. 120 EXCHANGE STREET, PORTLAND MAINE 04101. DEEDS RECORDED IN CUMBERLAND COUNTY REGISTRY OF DEEDS BK. 27183, PG. 53, DATE 8/17/09.
2. ENGINEER: PINKHAM & GREER CIVIL ENGINEERS, 28 VANNAH AVENUE, PORTLAND, MAINE, 04103.
3. ARCHITECT: ARCHETYPE ARCHITECTS, 48 UNION WHARF, PORTLAND, MAINE 04101.
4. TOPOGRAPHIC & BOUNDARY: MAINE SURVEY CONSULTANTS, INC., PO BOX 485, HARRISON, MAINE, 04040.
5. UNDERLYING SOILS MAPPING TAKEN FROM SOIL CONSERVATION STUDY OF CUMBERLAND COUNTY. THE UPPER HALF OF THE SITE IS CLASSIFIED HINCKLEY (HIB), THE LOWER HALF IS CLASSIFIED AS AU GRES (Au). THE SURFACE OF THE SITE IS CURRENT URBAN LAND.
6. TAX MAP REFERENCE: MAP 26 / BLOCK E / LOT 10.
7. ZONE: B-7, MIXED DEVELOPMENT, PROPOSED USE: CONDOMINIUMS
8. EXISTING PARCEL = 2.12 acres
9. UNITS TO BE SERVICED BY PUBLIC WATER, SEWER, AND GAS FROM CHESTNUT STREET. THESE SERVICES, INCLUDING HYDRANTS, ARE AS SHOWN ON SHEET C1.4, GRADING AND UTILITIES PLAN.
10. POWER, TELEPHONE AND CABLE SERVICES ARE TO BE UNDERGROUND FROM AN EXISTING POLE. THESE SERVICES ARE SHOWN ON SHEET C1.4, GRADING AND UTILITIES PLAN.
11. CALL DIG-SAFE PRIOR TO COMMENCING WORK, 1-800-DIG-SAFE.
12. ALL WORK WITHIN THE PUBLIC RIGHT OF WAY SHALL MEET CITY OF PORTLAND TECHNICAL MANUAL STANDARDS.
13. PROPOSED PARKING SPACES: NO NEW SPACES, EXISTING PARKING IS ALREADY ONSITE. 1 PER UNIT PROVIDED IN THE EXISTING GARAGE.
14. THE SUBJECT PARCEL SHOWN AS WESTERLEA VIEW LOFTS IS SUBJECT TO A CITY OF PORTLAND LEVEL III SITE PLAN AND SUBDIVISION PERMIT.
15. DETAILS OF STREET TREES ARE INCLUDED ON THE LANDSCAPE PLAN AS PART OF THE APPROVAL FOR WESTERLEA LOFTS SITE PLAN.
16. FLOODPLAIN: THIS PROPERTY IS IN ZONE C OF THE FLOOD INSURANCE RATE MAP, COMMUNITY PANEL 230051 0013 B, EFFECTIVE DATE JULY 17, 1986. IT IS NOT IN A SPECIAL FLOOD HAZARD ZONE.
17. PROPERTY PINS TO BE SET AT THE EXPENSE OF THE DEVELOPER AT THE END OF CONSTRUCTION ON CORNERS NOT CURRENTLY MARKED.
18. ALL CONSTRUCTION AND SITE ALTERATIONS SHALL BE DONE IN ACCORDANCE WITH THE "MAINE EROSION AND SEDIMENT CONTROL BMPS" PUBLISHED BY THE BUREAU OF LAND AND WATER QUALITY, MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION, LATEST EDITION, MARCH 2003.
19. THE OWNER IS RESPONSIBLE FOR MAINTENANCE OF THE STORMWATER TREATMENT SYSTEM, TRASH REMOVAL AND GROUNDSKEEPING.

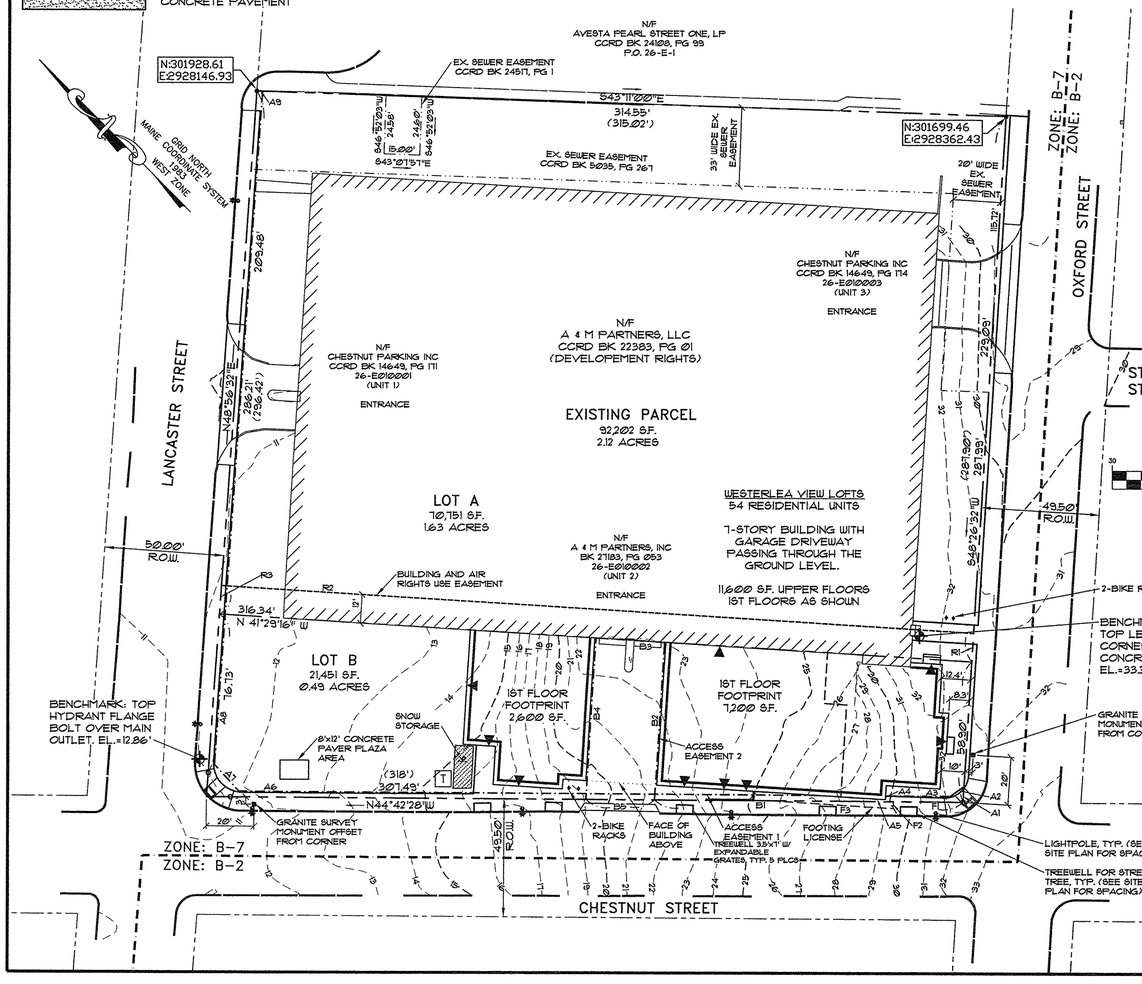
LEGEND

EXISTING

- PROPERTY LINE
- ABUTTERS PROPERTY
- EDGE OF PAVEMENT
- BUILDING
- CURB
- 40 CONTOURS
- ZONING DISTRICT
- IRON PIPE FOUND
- MONUMENT FOUND
- 5/8" IRON ROD W/CAP "1171 SET

PROPOSED

- EDGE OF PAVEMENT
- VERTICAL GRANITE CURB
- BUILDING
- BUILDING ENTRY/EGRESS
- LIGHT POLE
- BOUND TO BE SET
- FOOTING LICENSE
- ACCESS EASEMENT
- AIR RIGHTS EASEMENT
- SNOW STORAGE AREA
- BITUMINOUS PAVEMENT
- CONCRETE PAVEMENT



GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

RESIDENTIAL UNIT INFORMATION

ALL UNITS

UNIT TYPE	QUANTITY	TOTAL BEDS
STUDIO	2	2
1 BEDROOM	14	14
2 BEDROOM	38	76
TOTAL	54	92

WORKFORCE HOUSING

UNIT TYPE	QUANTITY	TOTAL BEDS
STUDIO	2	2
1 BEDROOM	1	1
2 BEDROOM	3	6
TOTAL	6	9

SNOW CLEARANCE NOTES

1. SNOW MAY BE STORED WITHIN THE TEMPORARY SNOW STORAGE AREAS ONLY.
2. ANY SNOW THAT CAN NOT BE STORED ON SITE SHALL BE PHYSICALLY REMOVED AND TRANSPORTED OFFSITE WITHIN 24 TO 48 HOURS FOLLOWING A SNOW STORM.
3. SNOW TRANSPORTED OFFSITE SHALL BE BROUGHT TO A MAINE DEP APPROVED "SNOW DUMP" OR MEET THE EXEMPTION REQUIREMENTS SPECIFIED WITHIN CHAPTER 573 WHEN THE ABOVE REQUIREMENTS CANNOT BE MET DUE TO AN ABBUNDANCE OF SNOW.
4. THE SNOW CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO VEGETATION, LANDSCAPING, CURBING, LIGHTING, FENCING ETC. RESULTING FROM THEIR ACTIVITIES.
5. THE CONDOMINIUM ASSOCIATION IS RESPONSIBLE FOR SNOW REMOVAL BEING UNDERTAKEN IN A TIMELY FASHION.

ZONE INFORMATION

B-7 MIXED DEVELOPMENT DISTRICT ZONE

PERMITTED USE: RESIDENTIAL CONDOMINIUMS

PARKING INFORMATION

OFF STREET PARKING	1 SPACE PER UNIT
BIKE RACKS (NUMBER OF BIKES PARKED)	EXTERIOR: 8 BIKES INTERIOR: 36 BIKES

IMPERVIOUS INFORMATION

EXISTING IMPERVIOUS	53,826 SQ. FT.
PROPOSED IMPERVIOUS	64,844 SQ. FT.
NET IMPERVIOUS	+11,018 SQ. FT.

ZONE INFORMATION

ZONE: B-7, MIXED DEVELOPMENT DISTRICT
PERMITTED USE: RESIDENTIAL CONDOMINIUMS

SPACE STANDARDS	REQUIRED	LOT B PROVIDED
MINIMUM LOT SIZE	NONE	21,451 S.F.
MINIMUM STREET FRONTAGE	NONE	443 FEET
MINIMUM FRONT YARD SETBACK	NONE	0.8 FEET
MINIMUM REAR YARD SETBACK	NONE	NA
MINIMUM SIDE YARD SETBACK	NONE	NA
MAXIMUM STREET SETBACK	10 FEET OR	-
	75% OF BLDG WITHIN 10' OF ft - CHESTNUT	94%
	75% OF BLDG WITHIN 10' OF ft - OXFORD	62%
MINIMUM LENGTH OF BUILDING WALL	25% OF PERIM.	48%
MAXIMUM BUILDING LOT COVERAGE	100%	45%
MAXIMUM RESIDENTIAL DENSITY	NONE	54 UNITS
MAXIMUM BUILDING HEIGHT	75 FEET	79.87 FEET
OFF STREET PARKING	1 PER UNIT	1 PER UNIT
BIKE RACKS	12	22

EASEMENTS & LICENSES

1. PROPOSED TEMPORARY EASEMENT: CONSTRUCTION EASEMENT FROM CITY OF PORTLAND TO WESTERLEA VIEW LOFTS.
2. PROPOSED LICENSE: FROM THE CITY OF PORTLAND TO WESTERLEA VIEW LOFTS FOR BUILDING FOOTINGS.

FOOTING LICENSE

LINE	BEARING	DISTANCE
F1	N 44°42'28" W	29.19'
F2	S 48°30'44" W	2.88'
F3	N 41°31'25" W	51.74'

3. PROPOSED EASEMENT: FROM A & M PARTNERS, INC, CHESTNUT PARKING, INC. AND A & M PARTNERS, LLC TO WESTERLEA VIEW LOFTS FOR DECK EXTENTIONS ABOVE THE EXISTING STRUCTURE.

AIR RIGHTS USE EASEMENT

LINE	BEARING	DISTANCE
R1	N 48°26'32" E	12.00'
R2	N 41°29'16" W	316.34'
R3	S 48°56'32" W	12.00'

4. PROPOSED EASEMENT: ACCESS EASEMENT FROM WESTERLEA VIEW LOFTS TO THE CITY OF PORTLAND FOR SIDEWALKS ON OXFORD, CHESTNUT AND LANCASTER STREETS.

ACCESS EASEMENT 1

LINE	BEARING	DISTANCE
A1	N 48°26'32" E	6.50'
A2	N 80°46'36" W	6.35'
A3	N 44°42'28" W	21.30'
A4	S 48°30'44" W	1.59'
A5	N 41°31'25" W	28.53'
A6	N 44°42'28" W	242.80'
A7	N 02°01'02" E	15.05'
A8	N 48°56'32" E	282.91'
A9	S 43°11'00" E	2.40'

5. PROPOSED EASEMENT: ACCESS EASEMENT FROM WESTERLEA VIEW LOFTS (LOT B) TO A & M PARTNERS, INC. (LOT A)

ACCESS EASEMENT 2

LINE	BEARING	DISTANCE
B1	S 44°42'28" E	128.99'
B2	S 48°29'08" W	66.08'
B3	S 41°30'52" E	29.81'
B4	N 48°29'08" E	67.74'
B5	N 44°42'28" W	29.86'

SUBDIVISION PLAN, APPROVED BY THE CITY OF PORTLAND PLANNING BOARD

DATE

PINKHAM & GREER CIVIL ENGINEERS
28 VANNAH AVE, PORTLAND, ME. 04107
TEL: 207.781.3242 FAX: 207.781.4245

STATE OF MAINE — THOMAS S. GREER No. 4238 — REGISTERED PROFESSIONAL ENGINEER — 12/7/16

REV.	DATE	DESCRIPTION
4	12/7/16	REVD PER STAFF REVIEW
3	11/21/16	REVD PER STAFF REVIEW
2	11/7/16	REVD PER CITY COMMENTS
1	9/30/16	REVD PER CITY REVIEW

A & M PARTNERS, INC.
120 EXCHANGE STREET
PORTLAND, ME 04101

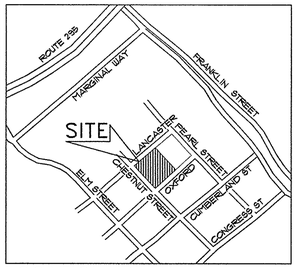
SCALE: AS SHOWN
DATE: JULY 28, 2016
PROJECT: 1614.2
DRN BY: JDC
DESG BY: TSG
CHK BY: TSG

WESTERLEA VIEW LOFTS
75 CHESTNUT STREET
PORTLAND, ME

SUBDIVISION PLAN

C1.1

MAP/LOT 26 / E / 10



LOCATION PLAN

SCALE: 1"=150'±

CITY OF PORTLAND SITE PLAN AND SUBDIVISION NOTES

1. LANDSCAPING SHALL MEET THE "ARBORICULTURAL SPECIFICATIONS AND STANDARDS OF PRACTICE AND LANDSCAPE GUIDELINES" OF THE CITY OF PORTLAND TECHNICAL AND DESIGN STANDARDS AND GUIDELINES.
2. THE ENTIRE SITE SHALL BE DEVELOPED AND/OR MAINTAINED AS DEPICTED ON THE SITE PLAN. APPROVAL OF THE PLANNING AUTHORITY OR PLANNING BOARD SHALL BE REQUIRED FOR ANY ALTERATION TO OR DEVIATION FROM THE APPROVED SITE PLAN, INCLUDING, WITHOUT LIMITATION: TOPOGRAPHY, DRAINAGE, LANDSCAPING, RETENTION OF WOODED OR LAWN AREAS, ACCESS, SIZE, LOCATION, AND SURFACING OF PARKING AREAS AND LOCATION AND SIZE OF BUILDINGS.
3. ALL POWERLINE UTILITIES SHALL BE UNDERGROUND.
4. SIDEWALKS AND CURBING SHALL BE DESIGNED AND BUILT WITH TIPDOWN RAMPS AT ALL STREET CORNERS, CROSSWALKS AND DRIVEWAYS IN CONFORMANCE WITH THE CITY OF PORTLAND TECHNICAL AND DESIGN STANDARDS AND GUIDELINES.
5. ALL EROSION CONTROL MEASURES SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE MAINE EROSION AND SEDIMENT CONTROL BMPS PUBLISHED BY THE BUREAU OF LAND AND QUALITY, MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION, MARCH 2003.
6. ALL EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO ANY SITE EXCAVATION OR REGRADING.
7. ALL DISTURBED AREAS ON THE SITE NOT COVERED BY BUILDINGS OR PAVED AREAS SHALL BE STABILIZED WITH LOAM AND SEED OR OTHER METHODS AS REQUIRED BY BEST MANAGEMENT PRACTICES (SEE ABOVE).
8. PRIOR TO CONSTRUCTION, A PRECONSTRUCTION MEETING SHALL BE HELD AT THE PROJECT SITE WITH THE CONTRACTOR, DEVELOPMENT REVIEW COORDINATOR, PUBLIC WORKS REPRESENTATIVE AND OWNER TO REVIEW THE CONSTRUCTION SCHEDULE AND CRITICAL ASPECTS OF THE SITE WORK. AT THAT TIME, THE SITE/BUILDING CONTRACTOR SHALL PROVIDE THREE (3) COPIES OF A DETAILED CONSTRUCTION SCHEDULE TO THE ATTENDING CITY REPRESENTATIVE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ARRANGE A MUTUALLY AGREEABLE TIME FOR THE PRECONSTRUCTION MEETING.
9. EXISTING VEGETATION SHALL BE CONSERVED IN AREAS SHOWN ON THIS SITE. FENCING OR OTHER PROTECTIVE BARRIERS SHALL BE ERECTED OUTSIDE THE DRIP-LINE OF INDIVIDUAL, GROUPINGS OF TREES DESIGNATED FOR PRESERVATION PRIOR TO THE ONSET OF CONSTRUCTION. REGRADING SHALL NOT TAKE PLACE WITHIN THE DRIP-LINE OF TREES DESIGNATED FOR PRESERVATION. NO STORAGE OR CONSTRUCTION MATERIALS SHALL BE PERMITTED WITHIN THE DRIP-LINE OF TREES TO BE PRESERVED.
10. SUBDIVISION AT THE TIME OF APPROVAL IS DEFINED AS "SUBDIVISION SHALL MEAN THE DIVISION OF A LOT, TRACT OR PARCEL OF LAND INTO THREE (3) OR MORE LOTS, INCLUDING LOTS OF FORTY (40) ACRES OR MORE, WITHIN ANY FIVE-YEAR PERIOD WHETHER ACCOMPLISHED BY SALE, LEASE, DEVELOPMENT, BUILDINGS OR OTHERWISE AND AS FURTHER DEFINED IN 30-A M.R.S.A. SECTION 4401. THE TERM SUBDIVISION SHALL ALSO INCLUDE THE DIVISION OF A NEW STRUCTURE OR STRUCTURES ON A TRACT OR PARCEL OF LAND INTO THREE (3) OR MORE DWELLING UNITS WITHIN A FIVE-YEAR PERIOD AND THE DIVISION OF AN EXISTING STRUCTURE OR STRUCTURES PREVIOUSLY USED FOR COMMERCIAL OR INDUSTRIAL USE INTO THREE (3) OR MORE DWELLING UNITS WITHIN A FIVE-YEAR PERIOD. THE AREA INCLUDED IN THE EXPANSION OF AN EXISTING STRUCTURE IS DEEMED TO BE A NEW STRUCTURE FOR THE PURPOSE OF THIS PARAGRAPH. A DWELLING UNIT SHALL INCLUDE ANY PART OF A STRUCTURE WHICH, THROUGH SALE OR LEASE, IS INTENDED FOR HUMAN HABITATION, INCLUDING SINGLE-FAMILY AND MULTIFAMILY HOUSING CONDOMINIUMS, TIME-SHARE UNITS AND APARTMENTS."

WAIVERS

1. ALLOW THE DEVELOPER TO PAY INTO THE STREET TREE FUND IN LIEU OF PLANTING STREET TREES.

LEGEND

EXISTING

- PROPERTY LINE
- ABUTTERS PROPERTY
- EDGE OF PAVEMENT
- BUILDING
- CURBS
- POLE MOUNTED TRANSFORMER
- UTILITY POLE W/ GUY WIRE
- AREA LIGHT ON POLE
- SIGN
- CONCRETE PAD

PROPOSED

- EDGE OF PAVEMENT
- GRANITE CURB
- BUILDING
- BUILDING ENTRY/EGRESS
- CATCH BASIN
- LIGHT POLE
- WALL MOUNTED LIGHT
- TRANSFORMER
- BOLLARD
- BITUMINOUS PAVEMENT
- CONCRETE PAVEMENT
- CONCRETE PAVERS
- RETAINING WALL & RAILING

NE INFORMATION

: B-7, MIXED DEVELOPMENT DISTRICT
ITTED USE: RESIDENTIAL CONDOMINIUMS

E STANDARDS	REQUIRED	PROVID
UM LOT SIZE	NONE	21,451 S
UM STREET FRONTAGE	NONE	443 FEI
UM FRONT YARD SETBACK	NONE	0.8 FEE
UM REAR YARD SETBACK	NONE	NA
UM SIDE YARD SETBACK	NONE	NA
MUM STREET SETBACK	10 FEET OR	-
	75% OF BLDG WITHIN 10' OF R - CHESTNUT	94%
	75% OF BLDG WITHIN 10' OF R - OXFORD	62%
UM LENGTH OF BUILDING WALL	25% OF PERIM.	48%
MUM BUILDING LOT COVERAGE	100%	45%
MUM RESIDENTIAL DENSITY	NONE	54 UNI
MUM BUILDING HEIGHT	75 FEET	79.87 FE
STREET PARKING	1 PER UNIT	1 PER U

PARKING INFORMATION

OFF STREET PARKING	1 SPACE PER UNIT
BIKE RACKS (NUMBER OF BIKES PARKED)	EXTERIOR: 8 BIKES INTERIOR: 36 BIKES

IMPERVIOUS INFORMATION

EXISTING IMPERVIOUS	53,826 SQ. FT.
PROPOSED IMPERVIOUS	64,844 SQ. FT.
NET IMPERVIOUS	+11,018 SQ. FT.

PROJECT SITE DRAWINGS

C1.1 SUBDIVISION PLAN
C1.2 SITE PLAN
C1.3 EXISTING CONDITIONS AND DEMOLITION PLAN
C1.4 GRADING AND UTILITIES PLAN
C1.5 LANDSCAPE PLAN, NOTES AND DETAILS
C1.6 EROSION CONTROL PLAN

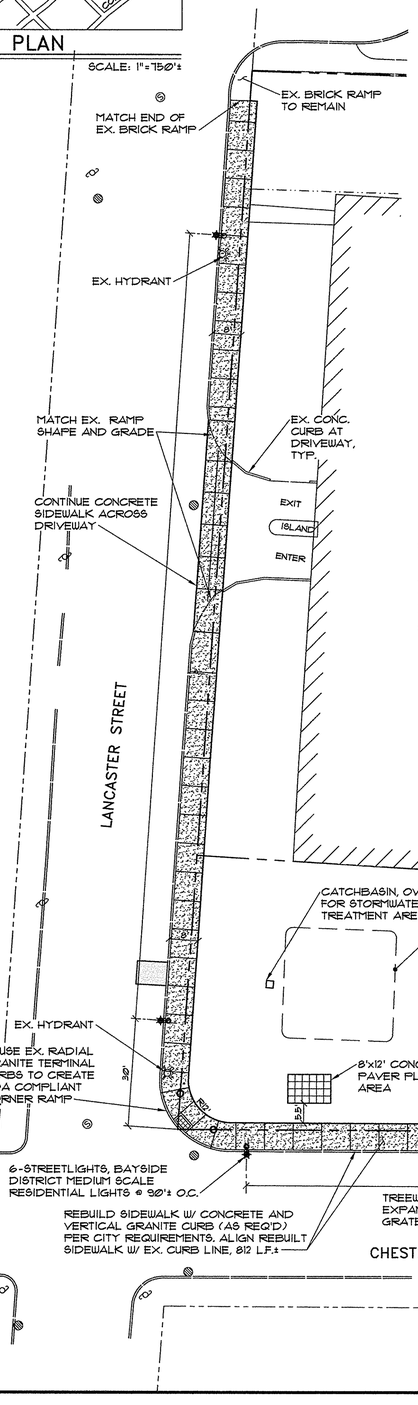
C2.1 DETAILS
C2.2 DETAILS
C2.3 DETAILS
C2.4 DETAILS

D1.1 DRAINAGE ANALYSIS

EXISTING CONDITIONS SURVEY

GENERAL NOTES

1. OWNER: A&M PARTNERS, INC.
   120 EXCHANGE STREET, PORTLAND MAINE 04101. DEEDS RECORDED IN CUMBERLAND COUNTY REGISTRY OF DEEDS BK. 27183, PG. 53, DATE 8/11/09.
2. ENGINEER: PINKHAM & GREER CIVIL ENGINEERS, 28 VANNAH AVENUE, PORTLAND, MAINE, 04103.
3. ARCHITECT: ARCHETYPE ARCHITECTS, 48 UNION WHARF, PORTLAND, MAINE 04101.
4. TOPOGRAPHIC & BOUNDARY: MAINE SURVEY CONSULTANTS, INC., PO BOX 485, HARRISON, MAINE, 04040.
5. UNDERLYING SOILS MAPPING TAKEN FROM SOIL CONSERVATION STUDY OF CUMBERLAND COUNTY. THE UPPER HALF OF THE SITE IS CLASSIFIED HINCKLEY (HIB), THE LOWER HALF IS CLASSIFIED AS AU GRES (Au). THE SURFACE OF THE SITE IS CURRENT URBAN LAND.
6. TAX MAP REFERENCE: MAP 26 / BLOCK E / LOT 10.
7. ZONE: B-7, MIXED DEVELOPMENT, PROPOSED USE: CONDOMINIUMS
8. EXISTING PARCEL = 2.12 acres
9. UNITS TO BE SERVICED BY PUBLIC WATER, SEWER, AND GAS FROM CHESTNUT STREET. THESE SERVICES, INCLUDING HYDRANTS, ARE AS SHOWN ON SHEET C1.4, GRADING AND UTILITIES PLAN.
10. POWER, TELEPHONE AND CABLE SERVICES ARE TO BE UNDERGROUND FROM AN EXISTING POLE. THESE SERVICES ARE SHOWN ON SHEET C1.4, GRADING AND UTILITIES PLAN.
11. CALL DIG-SAFE PRIOR TO COMMENCING WORK, 1-800-DIG-SAFE.
12. ALL WORK WITHIN THE PUBLIC RIGHT OF WAY SHALL MEET CITY OF PORTLAND TECHNICAL MANUAL STANDARDS.
13. PROPOSED PARKING SPACES: NO NEW SPACES, EXISTING PARKING IS ALREADY ONSITE. 1 PER UNIT PROVIDED IN THE EXISTING GARAGE.
14. THE SUBJECT PARCEL SHOWN AS WESTERLEA VIEW LOFTS IS SUBJECT TO A CITY OF PORTLAND LEVEL III SITE PLAN AND SUBDIVISION PERMIT.
15. DETAILS OF STREET TREES ARE INCLUDED ON THE LANDSCAPE PLAN AS PART OF THE APPROVAL FOR WESTERLEA LOFTS SITE PLAN.
16. FLOODPLAIN: THIS PROPERTY IS IN ZONE C OF THE FLOOD INSURANCE RATE MAP, COMMUNITY PANEL 230051 0013 B, EFFECTIVE DATE JULY 17, 1986. IT IS NOT IN A SPECIAL FLOOD HAZARD ZONE.
17. PROPERTY PINS TO BE SET AT THE EXPENSE OF THE DEVELOPER AT THE END OF CONSTRUCTION ON CORNERS NOT CURRENTLY MARKED.
18. ALL CONSTRUCTION AND SITE ALTERATIONS SHALL BE DONE IN ACCORDANCE WITH THE "MAINE EROSION AND SEDIMENT CONTROL BMPS" PUBLISHED BY THE BUREAU OF LAND AND WATER QUALITY, MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION, LATEST EDITION, MARCH 2003.
19. THE OWNER IS RESPONSIBLE FOR MAINTENANCE OF THE STORMWATER TREATMENT SYSTEM, TRASH REMOVAL AND GROUNDSKEEPING.



FOR DRAWING LEGEND SEE SHEET C1.4

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

PINKHAM & GREER
CIVIL ENGINEERS
28 VANNAH AVE. PORTLAND, ME. 04103
TEL: 207.781.2242 FAX: 207.781.4245

STATE OF MAINE — THOMAS S. GREER No. 4268 — REGISTERED PROFESSIONAL ENGINEER

12/1/16

REV.	DATE	DESCRIPTION
5	12/1/16	ADDED WALL SCONCE LOCATIONS
4	12/1/16	REVD PER STAFF REVIEW
3	11/21/16	REVD PER STAFF REVIEW
2	11/7/16	REVD PER CITY COMMENTS
1	9/30/16	REVD PER CITY REVIEW

A & M PARTNERS, INC.
120 EXCHANGE STREET
PORTLAND, ME 04101

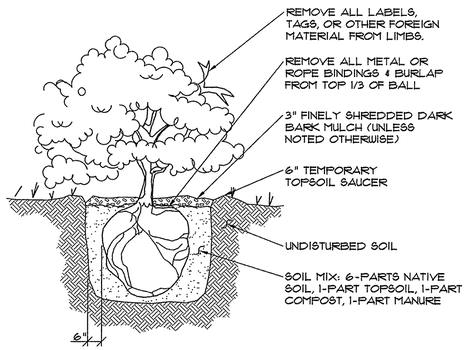
SCALE: AS SHOWN
DATE: JULY 28, 2016
PROJECT: 16142
DRN BY: JDC
DESG BY: TSG
CHK BY:

WESTERLEA VIEW LOFTS
75 CHESTNUT STREET
PORTLAND, ME

SITE PLAN

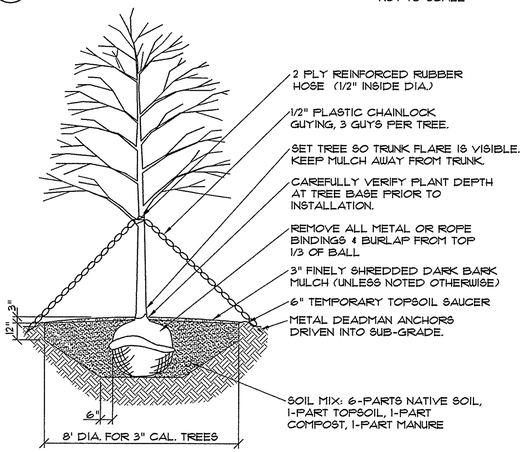
C1.2

MAP/LOT 28 / E / 10



1 SHRUB PLANTING DETAIL

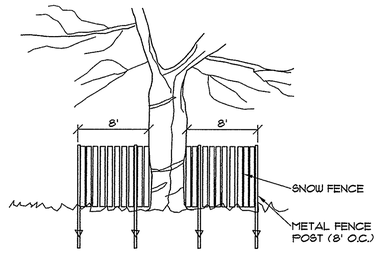
NOT TO SCALE



NOTES:
1. PRUNE ALL DEAD AND BROKEN BRANCHES. RETAIN NATURAL SHAPE, NEVER CUT LEADER.
2. IN LEDGE CONDITIONS, BLASTING SHALL BE 10' DIA AND 4' BELOW TREE HOLE BOTTOM GRADE.

2 DECIDUOUS TREE PLANTING DETAIL

NOT TO SCALE



TREE PROTECTION IS REQUIRED FOR THE EXISTING ASH TREES ALONG CHESTNUT STREET

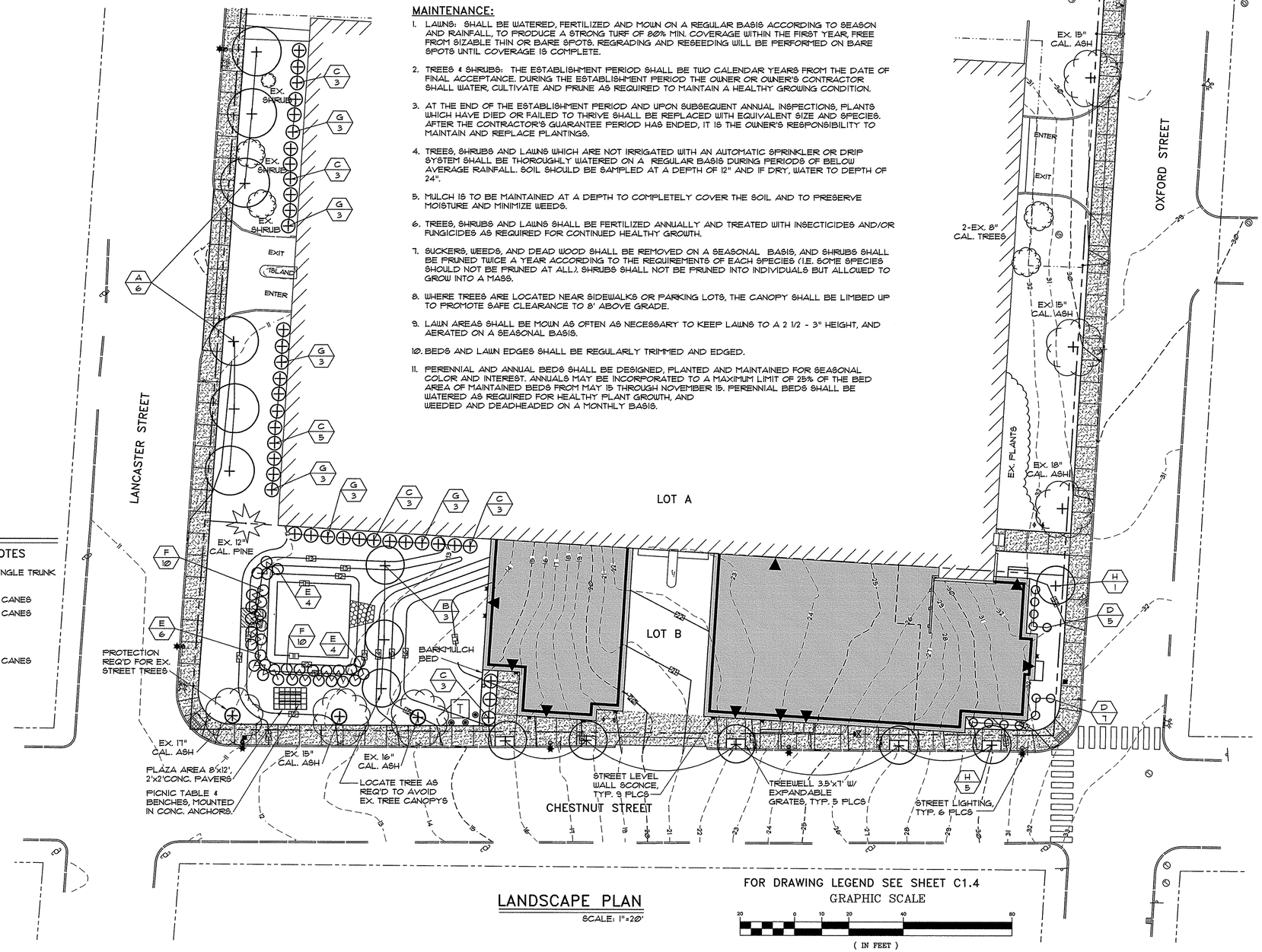
3 TREE PROTECTION FENCE

NOT TO SCALE

PLANT LIST

(A 12 = SYMBOL / QUANTITY)

KEY	COMMON NAME/BOTANICAL NAME	SIZE	ROOT	QUAN.	NOTES
A	HONEY LOCUST / g. triacanthos 'Inermis' Streetkeeper	2" cal.	B&B	6	SINGLE TRUNK
B	HORNBEAM / carpinus caroliniana	2" cal.	B&B	3	
C	SHASTA VIBURNUM / v. plicatum tomentosum 'shasta'	3-4' tall	B&B	20	3 CANES
D	SHOSHONI VIBURNUM / v. plicatum var. tomentosum 'Summer Snowflake'	18" tall	B&B	11	3 CANES
E	SWITCH GRASS / panicum virgatum 'Northwind'	--	POTTED	14	
F	SWITCH GRASS / panicum virgatum 'Shenandoah'	--	POTTED	20	
G	MOHICAN VIBURNUM / v. lantana 'mohican'	3-4' tall	B&B	18	3 CANES
H	ARMSTRONG MAPLE / a. freemanii 'Armstrong'	2 1/2" cal.	B&B	6	



LANDSCAPE PLAN

SCALE: 1"=20'

FOR DRAWING LEGEND SEE SHEET C1.4

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

LANDSCAPE NOTES

GENERAL:

1. SAVE EXISTING TREES AS SHOWN. DO NOT CUT OR CLEAR ANY VEGETATION BEYOND THE IMPACT LIMIT LINE.
2. ALL PLANT MATERIALS INSTALLED ARE TO MEET THE SPECIFICATIONS OF THE "AMERICAN STANDARDS FOR NURSERY STOCK" BY THE AMERICAN ASSOCIATION OF NURSERYMEN.
3. ALL PROPOSED PLANT LOCATIONS SHALL BE AS SHOWN ON PLANS. CONTRACTOR SHALL VERIFY LOCATION OF ALL UTILITIES PRIOR TO PLANTING AND WILL NOTIFY OWNER'S REPRESENTATIVE IN THE EVENT OF CONFLICTS.
4. PLANT LOCATIONS ARE TO BE SCALED FROM THELANDSCAPE PLAN UNLESS NOTED OTHERWISE.
5. NO PLANT MATERIAL SHALL BE INSTALLED UNTIL FINAL GRADING AND CONSTRUCTION HAS BEEN COMPLETED IN THE IMMEDIATE AREA.
6. FINAL QUANTITY FOR EACH PLANT TYPE IS NOTED IN THE PLANT LIST. THIS NUMBER SHALL TAKE PRECEDENCE IN THE CASE OF ANY DISCREPANCY BETWEEN QUANTITIES SHOWN IN THE LIST AND ON THE PLAN.
7. ANY PROPOSED SUBSTITUTIONS MUST BE APPROVED BY THE OWNER OR THE OWNER'S REPRESENTATIVE.
8. ALL DISTURBED AREAS TO BE LOAMED AND SEEDED.

MAINTENANCE:

1. LAWNS: SHALL BE WATERED, FERTILIZED AND MOWN ON A REGULAR BASIS ACCORDING TO SEASON AND RAINFALL, TO PRODUCE A STRONG TURF OF 80% MIN. COVERAGE WITHIN THE FIRST YEAR, FREE FROM SIZABLE THIN OR BARE SPOTS. REGRADING AND RESEEDING WILL BE PERFORMED ON BARE SPOTS UNTIL COVERAGE IS COMPLETE.
2. TREES & SHRUBS: THE ESTABLISHMENT PERIOD SHALL BE TWO CALENDAR YEARS FROM THE DATE OF FINAL ACCEPTANCE. DURING THE ESTABLISHMENT PERIOD THE OWNER OR OWNER'S CONTRACTOR SHALL WATER, CULTIVATE AND PRUNE AS REQUIRED TO MAINTAIN A HEALTHY GROWING CONDITION.
3. AT THE END OF THE ESTABLISHMENT PERIOD AND UPON SUBSEQUENT ANNUAL INSPECTIONS, PLANTS WHICH HAVE DIED OR FAILED TO THRIVE SHALL BE REPLACED WITH EQUIVALENT SIZE AND SPECIES. AFTER THE CONTRACTOR'S GUARANTEE PERIOD HAS ENDED, IT IS THE OWNER'S RESPONSIBILITY TO MAINTAIN AND REPLACE PLANTINGS.
4. TREES, SHRUBS AND LAWNS WHICH ARE NOT IRRIGATED WITH AN AUTOMATIC SPRINKLER OR DRIP SYSTEM SHALL BE THOROUGHLY WATERED ON A REGULAR BASIS DURING PERIODS OF BELOW AVERAGE RAINFALL. SOIL SHOULD BE SAMPLED AT A DEPTH OF 12" AND IF DRY, WATER TO DEPTH OF 24".
5. MULCH IS TO BE MAINTAINED AT A DEPTH TO COMPLETELY COVER THE SOIL AND TO PRESERVE MOISTURE AND MINIMIZE WEEDS.
6. TREES, SHRUBS AND LAWNS SHALL BE FERTILIZED ANNUALLY AND TREATED WITH INSECTICIDES AND/OR FUNGICIDES AS REQUIRED FOR CONTINUED HEALTHY GROWTH.
7. SUCKERS, WEEDS, AND DEAD WOOD SHALL BE REMOVED ON A SEASONAL BASIS, AND SHRUBS SHALL BE PRUNED TWICE A YEAR ACCORDING TO THE REQUIREMENTS OF EACH SPECIES (I.E. SOME SPECIES SHOULD NOT BE PRUNED AT ALL). SHRUBS SHALL NOT BE PRUNED INTO INDIVIDUALS BUT ALLOWED TO GROW INTO A MASS.
8. WHERE TREES ARE LOCATED NEAR SIDEWALKS OR PARKING LOTS, THE CANOPY SHALL BE LIMBED UP TO PROMOTE SAFE CLEARANCE TO 8' ABOVE GRADE.
9. LAWN AREAS SHALL BE MOWN AS OFTEN AS NECESSARY TO KEEP LAWNS TO A 2 1/2 - 3" HEIGHT, AND AERATED ON A SEASONAL BASIS.
10. BEDS AND LAWN EDGES SHALL BE REGULARLY TRIMMED AND EDGED.
11. PERENNIAL AND ANNUAL BEDS SHALL BE DESIGNED, PLANTED AND MAINTAINED FOR SEASONAL COLOR AND INTEREST. ANNUALS MAY BE INCORPORATED TO A MAXIMUM LIMIT OF 25% OF THE BED AREA OF MAINTAINED BEDS FROM MAY 15 THROUGH NOVEMBER 15. PERENNIAL BEDS SHALL BE WATERED AS REQUIRED FOR HEALTHY PLANT GROWTH, AND WEEDED AND DEADHEADED ON A MONTHLY BASIS.

PINKHAM & GREER
CIVIL ENGINEERS
28 VANNAH AVE., PORTLAND, ME. 04103
TEL: 207.781.5242 FAX: 207.781.4245

STATE OF MAINE — THOMAS GREER No. 4206 — LICENSED PROFESSIONAL ENGINEER

12/1/16

REV.	DATE	DESCRIPTION
5	12/1/16	ADDED WALL SCONCE LOCATIONS
4	12/1/16	REV'D PER STAFF REVIEW
3	11/21/16	REV'D PER STAFF REVIEW
2	11/7/16	REV'D PER CITY COMMENTS
1	9/20/16	REV'D PER CITY REVIEW

A & M PARTNERS, INC.
120 EXCHANGE STREET
PORTLAND, ME 04101

SCALE: AS SHOWN — DRN BY: JDC
DATE: JULY 28, 2016 — DESG BY: TSG
PROJECT: 16142 — CHK BY:

WESTERLEA VIEW LOFTS
75 CHESTNUT STREET
PORTLAND, ME

LANDSCAPE PLAN, NOTES AND DETAILS

C1.5

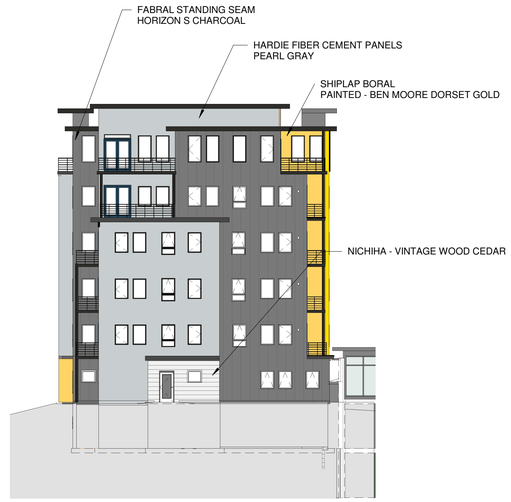
MAP/LOT 26 / E / 10



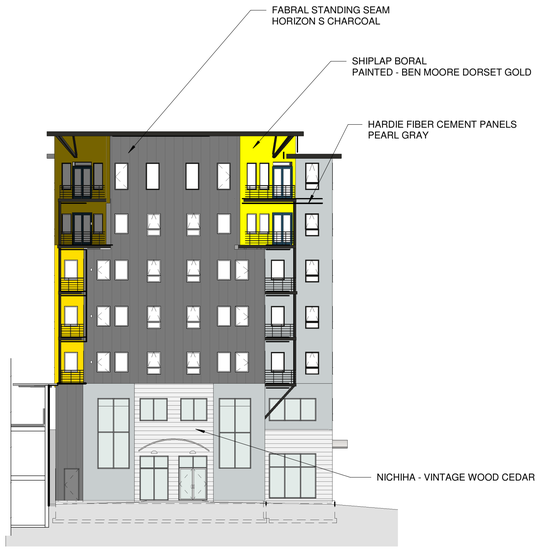




2 NORTH ELEVATION
1/16" = 1'-0"



1 EAST ELEVATION
1/16" = 1'-0"



3 WEST ELEVATION
1/16" = 1'-0"



4 SOUTH ELEVATION
1/16" = 1'-0"

PROPOSED

Prepared For:
SAULNIER
DEVELOPMENT LLC

Consultant:

Architect:
ARCHETYPE architects
48 Union Wharf Portland, Maine 04101
(207) 772-6022 Fax (207) 772-4056

Project:
Westerlea View
Lofts
Chestnut Street
Portland, Maine

Revisions:
1 2-5-18 SUBMITTED FOR PERMIT

Scale: 1/16" = 1'-0"

Date: 02/21/2018

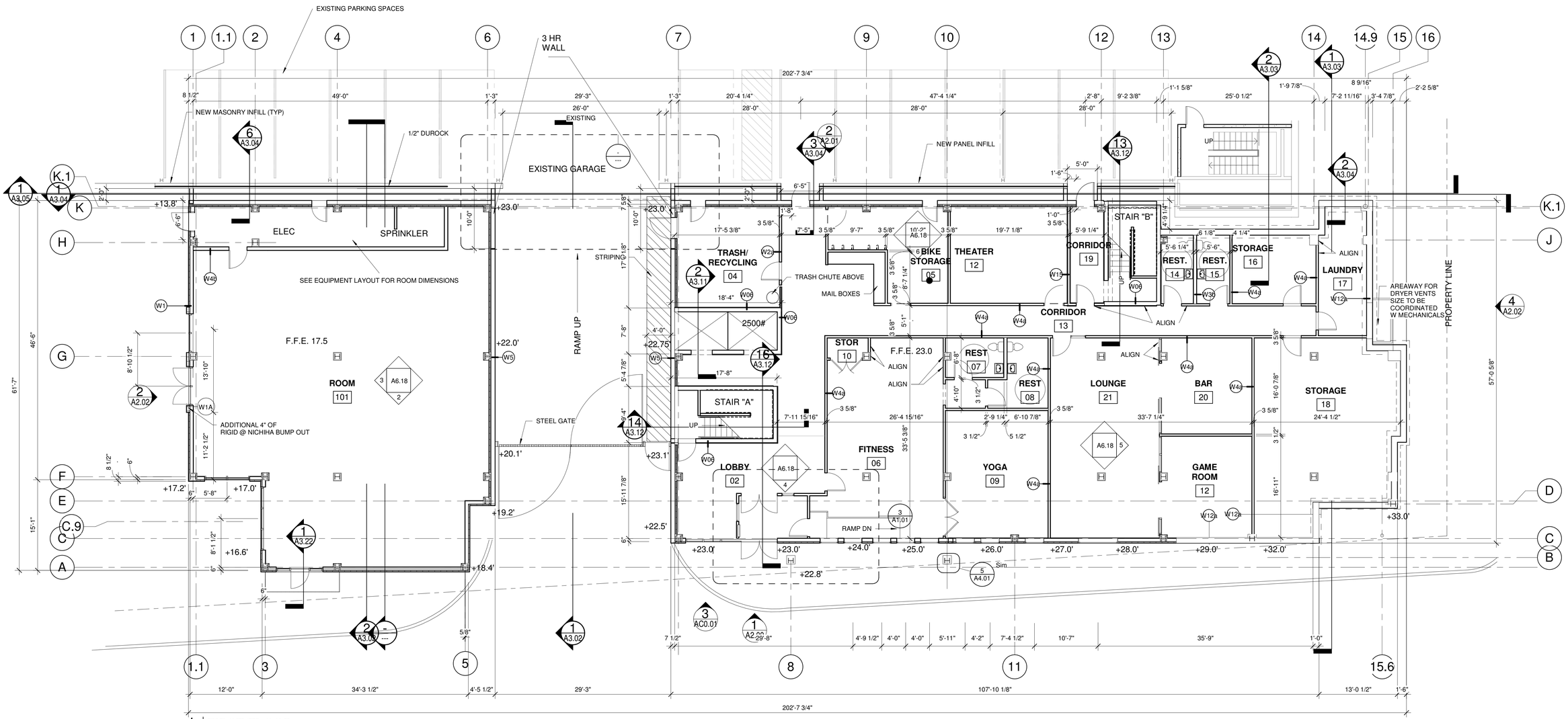
BUILDING
ELEVATIONS

A2.0

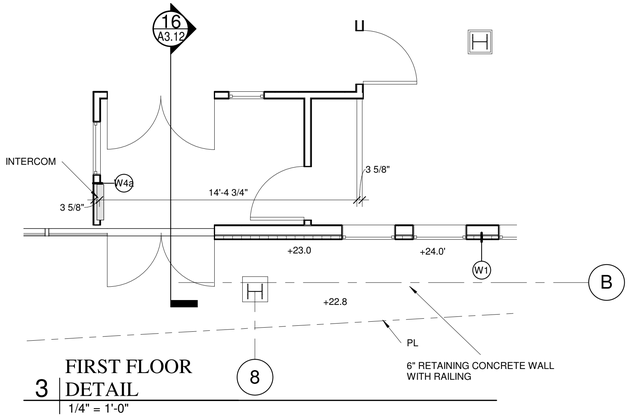
2/21/2018 9:39:40 AM


PROPOSED

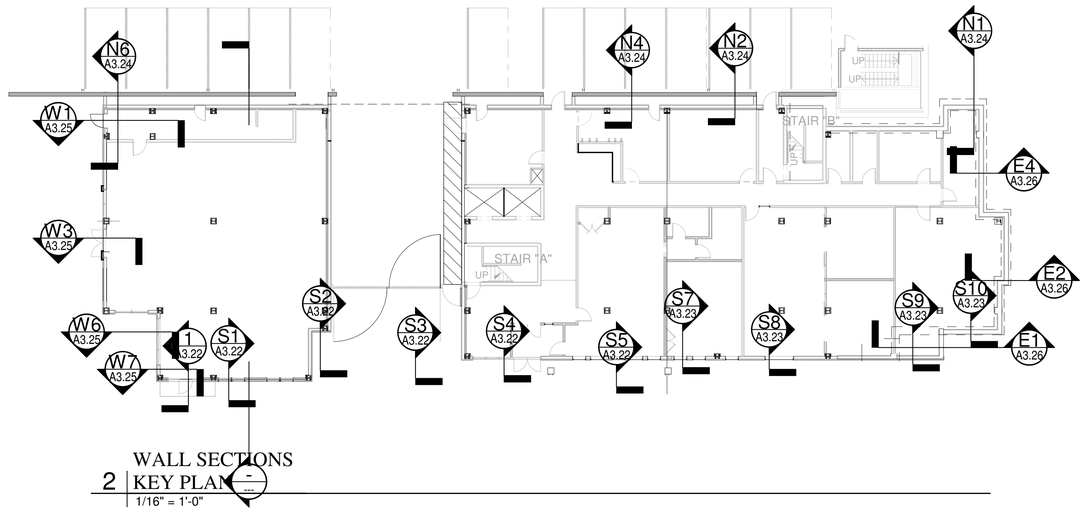
PROPOSED



1 FIRST FLOOR
1/8" = 1'-0"



3 FIRST FLOOR DETAIL
1/4" = 1'-0"



2 WALL SECTIONS KEY PLAN
1/16" = 1'-0"

LICENSED ARCHITECT
WILLIAM K. HOPKINS
No. 1050
STATE OF MAINE

Prepared For:
SAULNIER DEVELOPMENT LLC
100 MAIN ST, SUITE 1214
SACO, ME 04072

Consultant:

Architect:
ARCHETYPE architects
48 Union Wharf Portland, Maine 04101
(207) 772-6022 Fax (207) 772-4056

Project:
Westerlea View Lofts
Chestnut Street
Portland, Maine

Revisions:
1 2-5-18 SUBMITTED FOR PERMIT

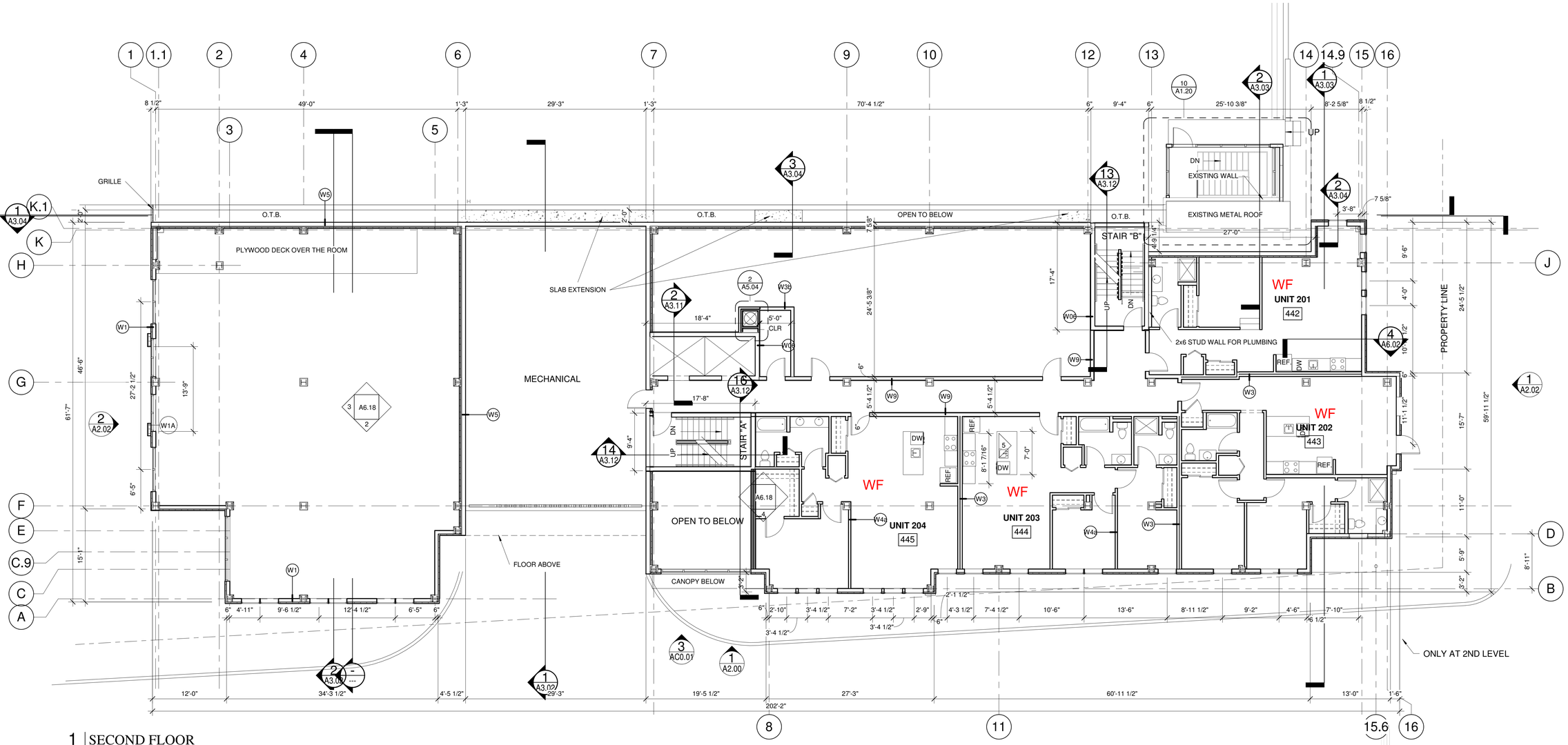
Scale: As indicated

Date: 02/01/2018

FIRST FLOOR PLAN

A1.01

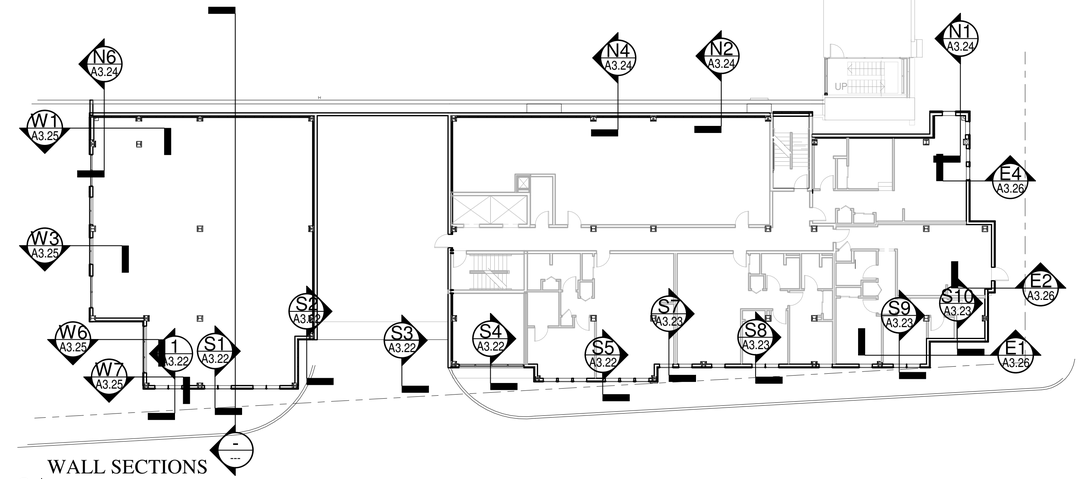
2/21/2018 2:20:43 PM



1 SECOND FLOOR
1/8" = 1'-0"

BUILDING TOTAL - 52 UNITS
2 STUDIOS
12 1-BEDROOMS
38 2-BEDROOMS
TOTAL - 90 BEDS

WORK FORCE - UNITS DENOTED BY WF
BED COUNT - 9 TOTAL
6 ON SECOND FLOOR
1 ON THIRD FLOOR
2 ON FIFTH FLOOR



WALL SECTIONS
2 KEY PLAN
1/16" = 1'-0"

LICENSED ARCHITECT WILLIAM K. HOPKINS No. 1050 STATE OF MAINE

Prepared For:
SAULNIER DEVELOPMENT LLC
100 MAIN ST, SUITE 1214
SACO, MAINE 04072

Consultant:

Architect:
ARCHETYPE architects
48 Union Wharf Portland, Maine 04101
(207) 772-6022 Fax (207) 772-4056

Project:
Westerlea View Lofts
Chestnut Street
Portland, Maine

Revisions:
1 2-5-18 SUBMITTED FOR PERMIT

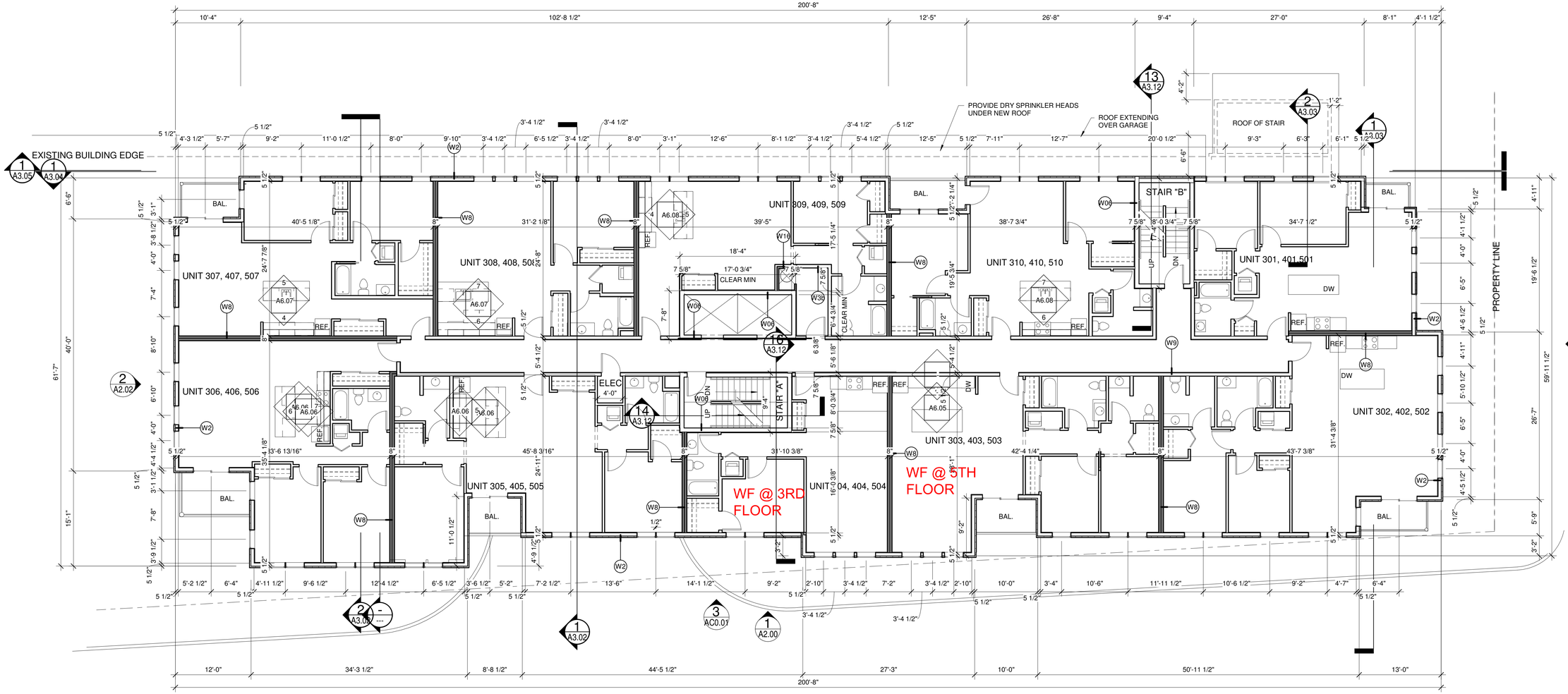
Scale: As indicated

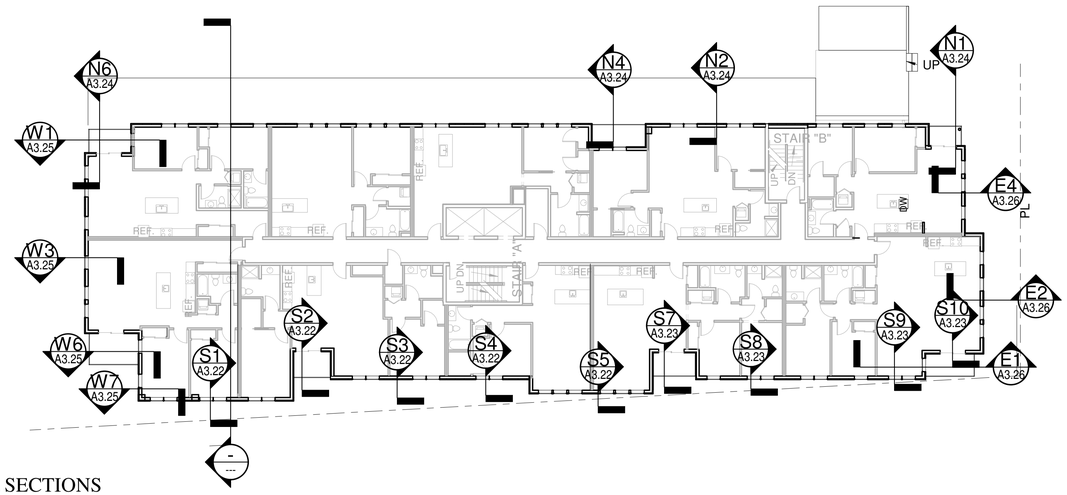
Date: 02/01/2018

SECOND FLOOR PLAN

A1.02

2/21/2018 2:21:24 PM





2 WALL SECTIONS
KEY PLAN
1/16" = 1'-0"

AREA CALCULATION

UNITS:	9,193 SF
CIRCULATION:	1,457 SF
EXTERIOR WALL THICKNESS:	654 SF
BALCONIES:	393 SF
GROSS AREA:	+-11,697 SF

LICENSED ARCHITECT WILLIAM K. HOSKINS No. 1050 STATE OF MAINE

Prepared For:
SAULNIER DEVELOPMENT LLC
100 MAIN ST. SUITE 1214
SACO, ME 04072

Consultant:

Architect:
ARCHETYPE architects
48 Union Wharf Portland, Maine 04101
(207) 772-6022 Fax (207) 772-4056

Project:
Westerlea View Lofts
Chestnut Street
Portland, Maine

Revisions:
1 2-5-18 SUBMITTED FOR PERMIT

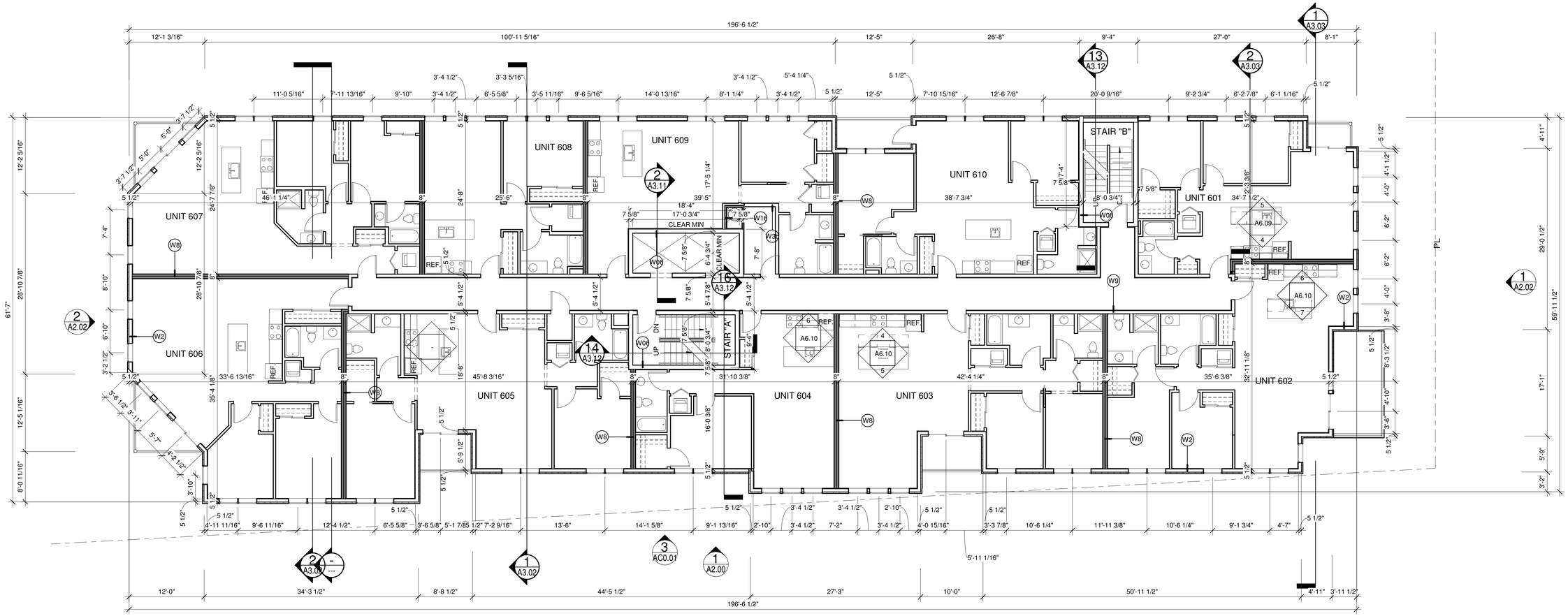
Scale: As indicated

Date: 02/01/2018

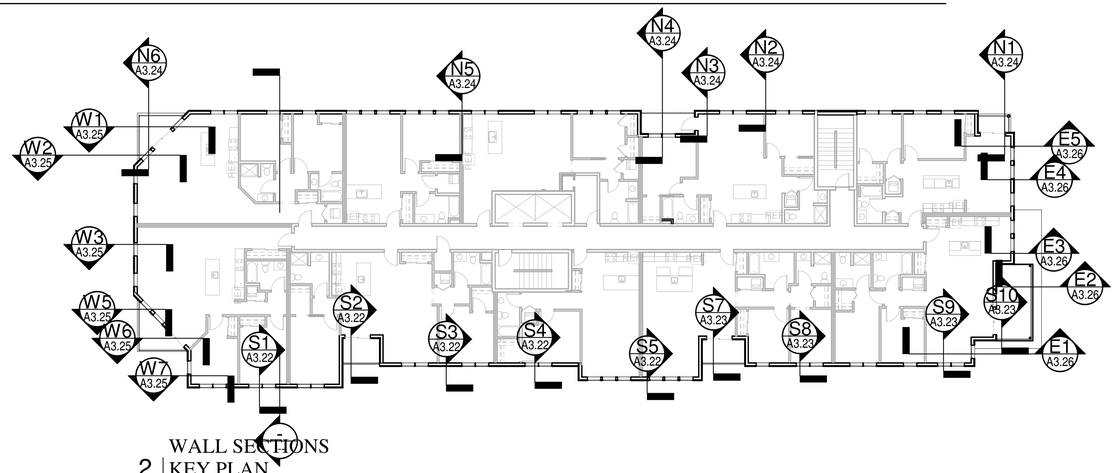
THIRD THROUGH FIFTH FLOOR PLANS

A1.04

2/21/2018 2:21:55 PM



1 | SIXTH FLOOR
1/8" = 1'-0"



WALL SECTIONS
2 | KEY PLAN
1/16" = 1'-0"

LICENSED ARCHITECT
WILLIAM K. HUSCHLE
No. 1050
STATE OF MAINE

Prepared For:
SAULNIER DEVELOPMENT LLC
100 MAIN ST. SUITE 1214
SACO, ME 04072

Consultant:

Architect:
ARCHETYPE architects
48 Union Wharf Portland, Maine 04101
(207) 772-6022 Fax (207) 772-4056

Project:
Westerlea View Lofts
Chestnut Street
Portland, Maine

Revisions:
1 | 2-5-18 | SUBMITTED FOR PERMIT

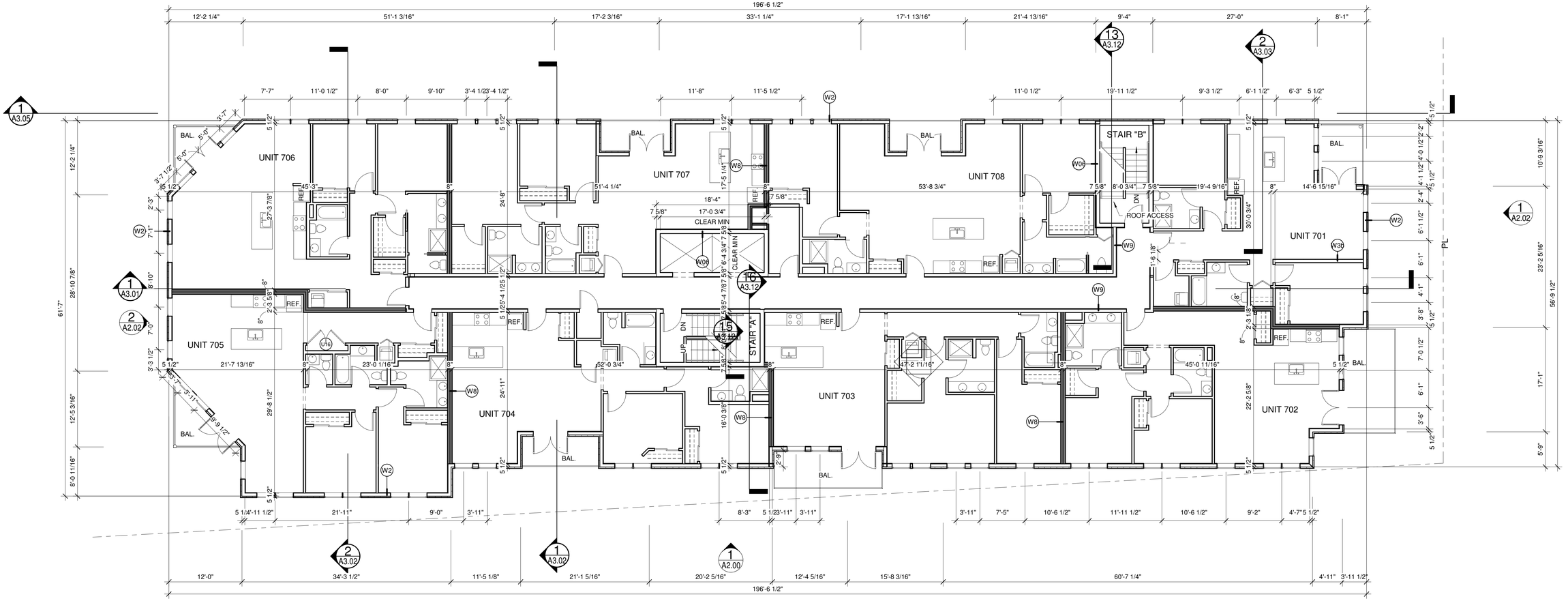
Scale: As indicated

Date: 02/01/2018

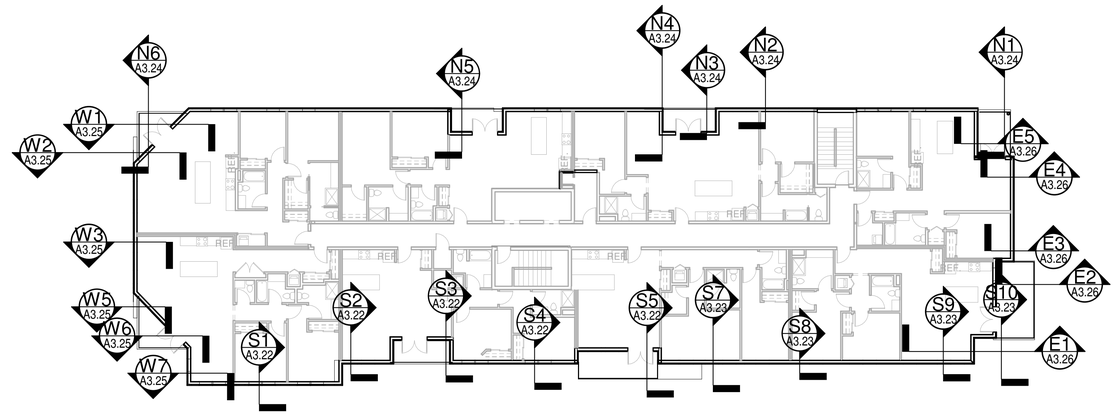
SIXTH FLOOR PLAN

A1.05

2/21/2018 2:22:26 PM



1 | SEVENTH FLOOR
1/8" = 1'-0"



2 | WALL SECTIONS
KEY PLAN
1/16" = 1'-0"

LICENSED ARCHITECT
WILLIAM K. HUSCHLE
No. 1050
STATE OF MAINE

Prepared For:
SAULNIER DEVELOPMENT LLC
100 MAIN ST. SUITE 1214
SACO, ME 04072

Consultant:

Architect:
ARCHETYPE architects
48 Union Wharf Portland, Maine 04101
(207) 772-6022 Fax (207) 772-4056

Project:
Westerlea View Lofts
Chestnut Street
Portland, Maine

Revisions:
1 | 2-5-18 | SUBMITTED FOR PERMIT

Scale: As indicated

Date: 02/21/2018

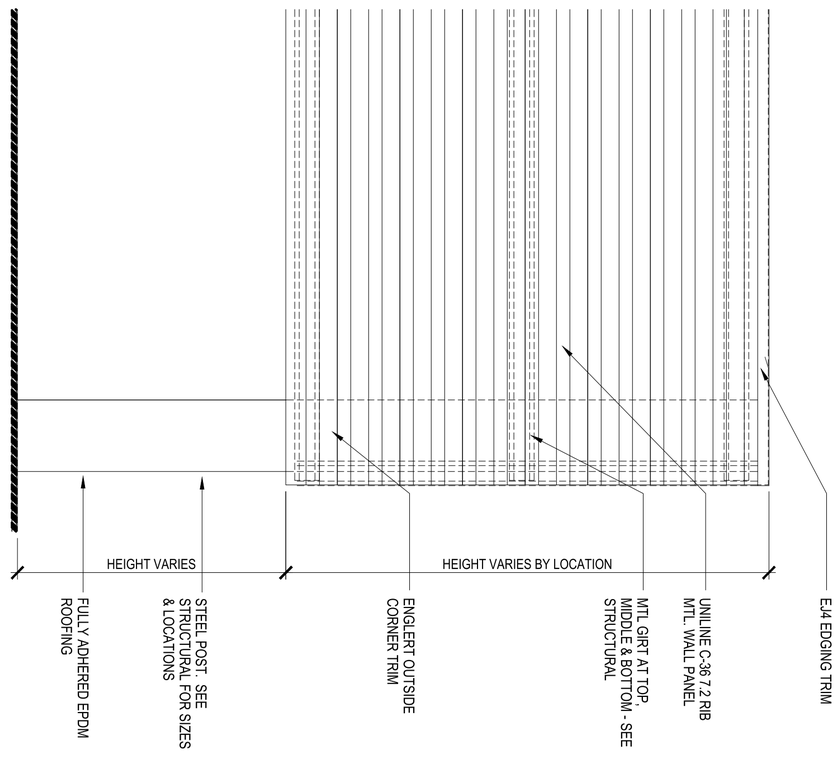
SEVENTH FLOOR PLAN

A1.06

2/21/2018 3:15:03 PM

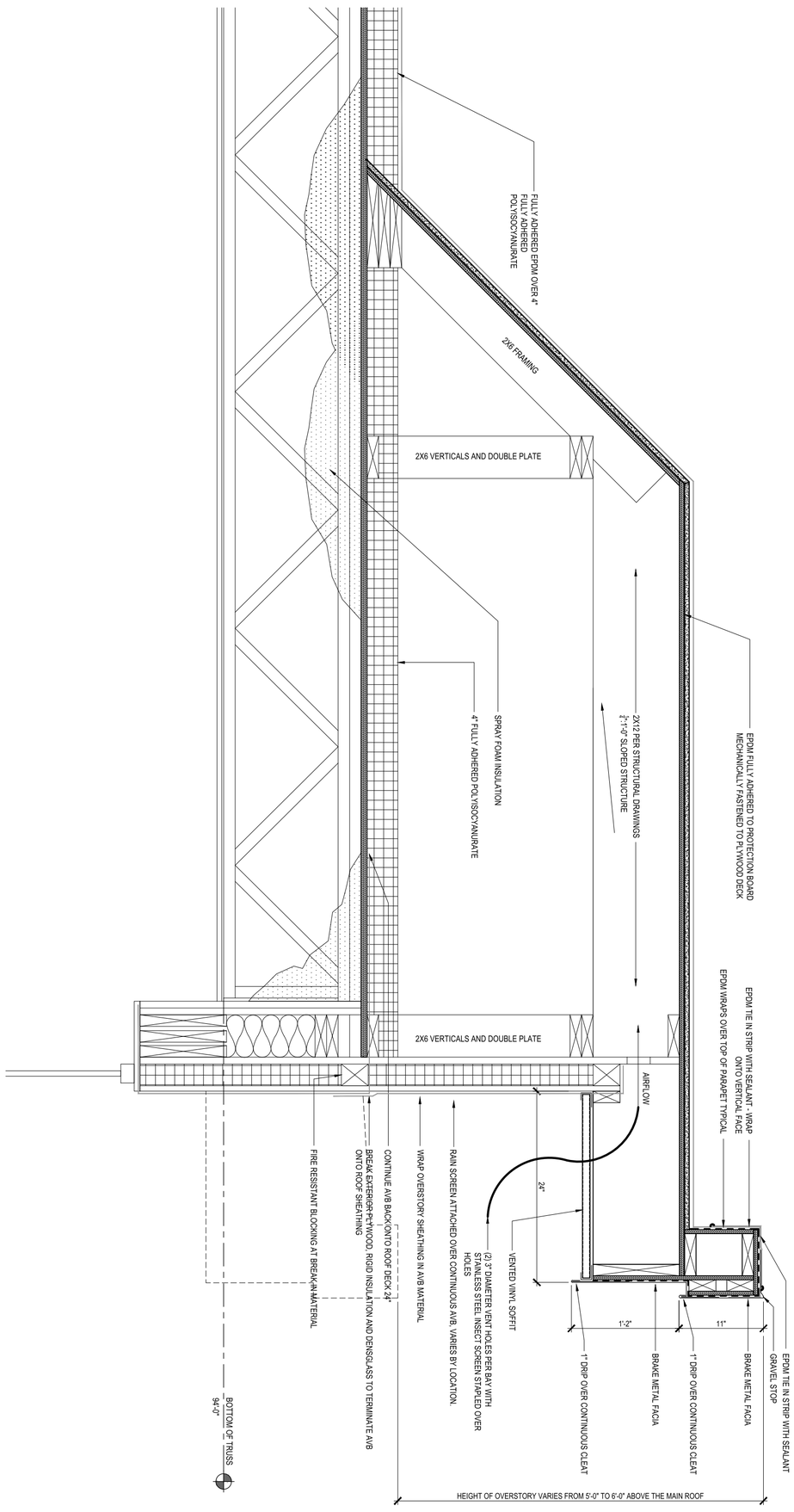
3 PREFABRICATED METAL ROOFTOP SCREEN OPTION

NOT TO SCALE



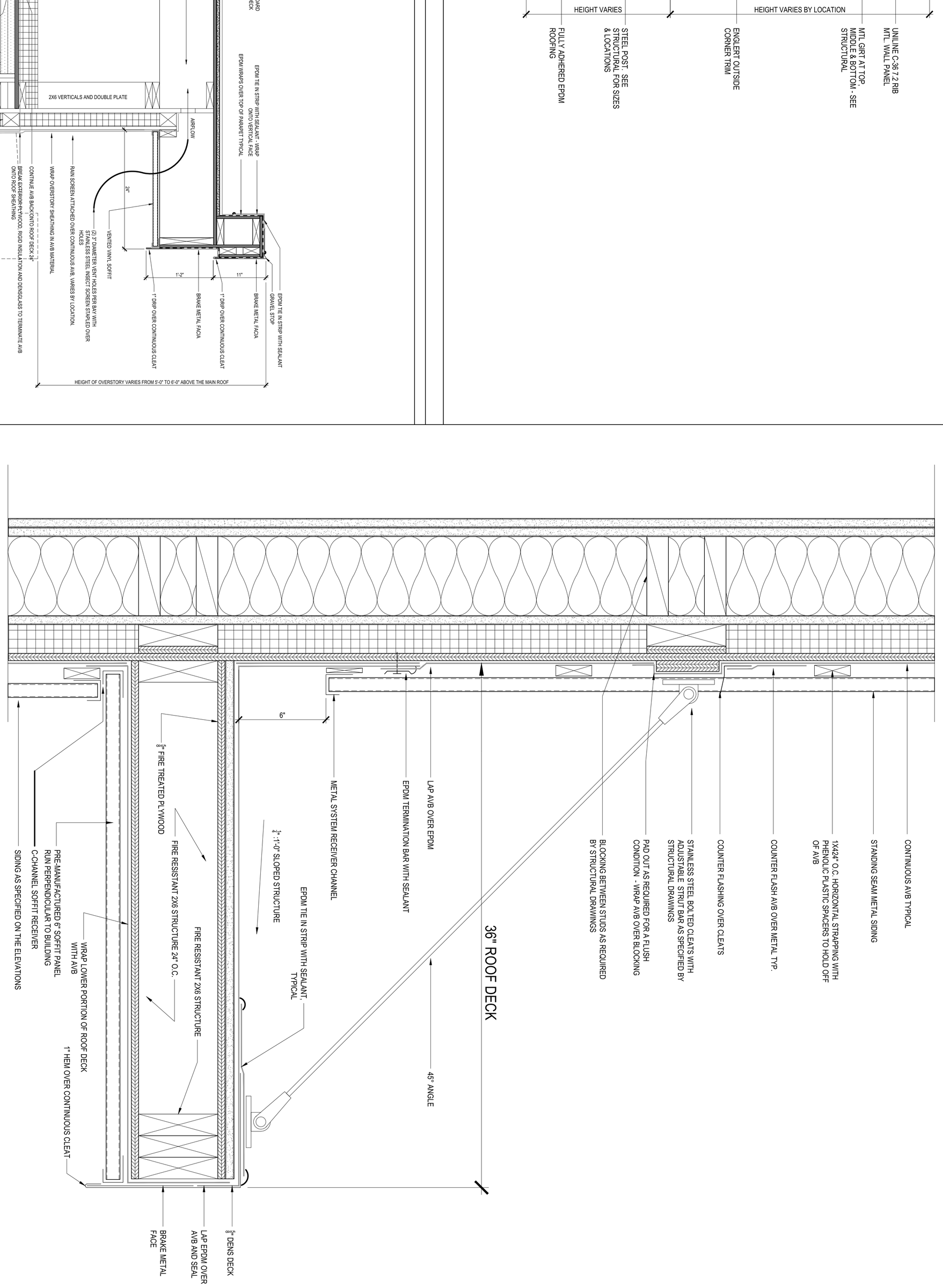
2 TYPICAL SECTION AT OVERSTORY ROOFS

1" = 1'-0"



1 ROOF DECK AT EXISTING GARAGE

3" = 1'-0"

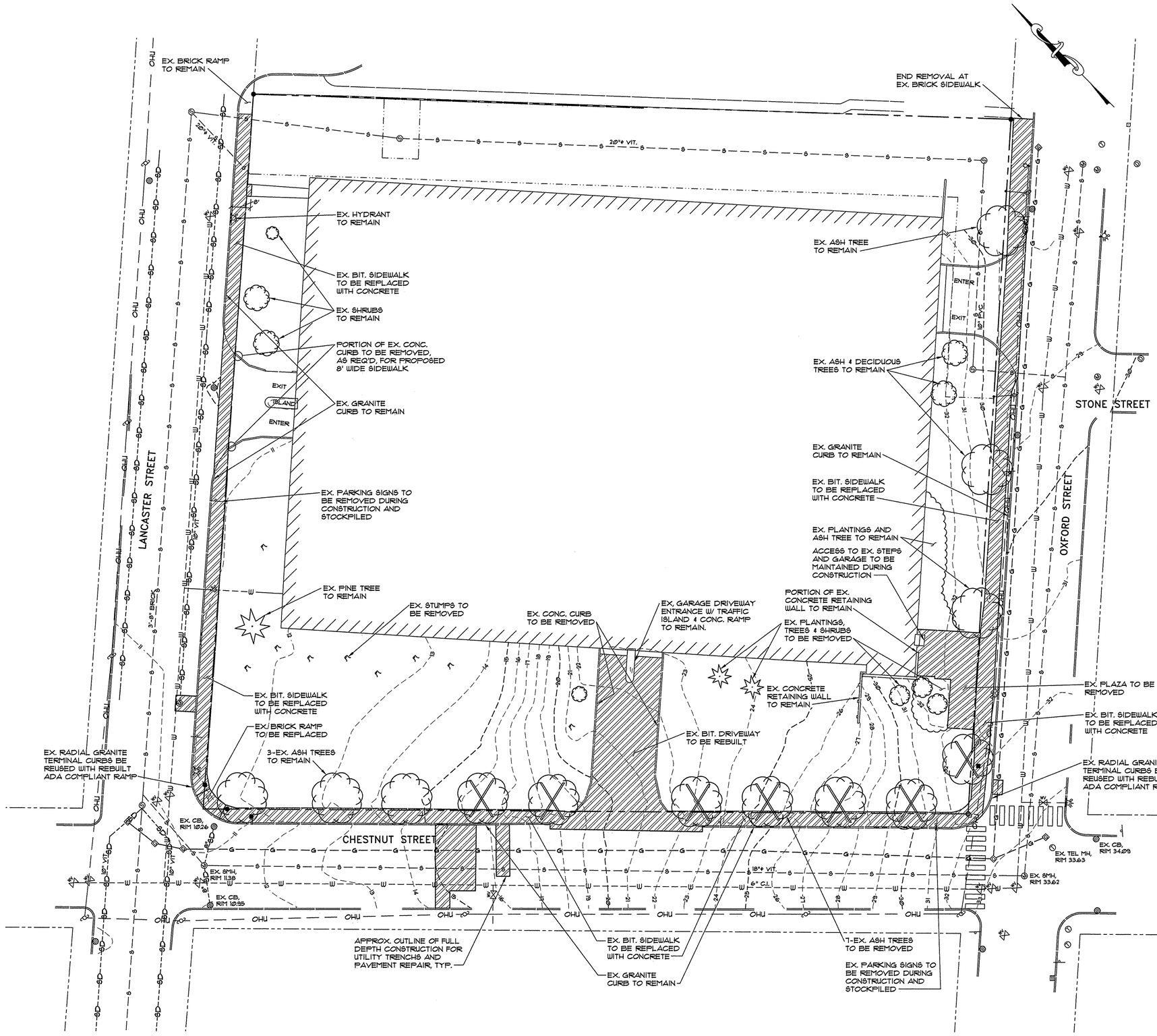


A5.05	Date: 2/5/18	Scale: As indicated	Revisions: 1 — 2-5-18 — SUBMITTED FOR PERMIT	Project: Westerlea View Lofts, Chestnut Street, Portland, Maine	Architect: ARCHETYPE architects, 48 Union Wharf Portland, Maine 04101, (207) 772-6022 ARCHETYPE@ARCHETYPEPA.COM	Consultant: ENVELOPE ARCHITECTURE & CONSULTING, Building Envelope Design Consulting, Investigation and Commissioning - Windham, ME, 207-807-6661	Prepared For: SAULNIER DEVELOPMENT LLC, 100 MAIN ST. SUITE 1214, SACO, MAINE 04072

EXTERIOR DETAILS

LICENSED ARCHITECT — STATE OF MAINE — WILLIAM K. HORKAN No. 7020

C:\Envelope Architecture and Consulting\2018\Chestnut Street\Drawings\Chestnut Details A501.dwg, 2/27/2018 2:56:34 PM



LEGEND

EXISTING

- PROPERTY LINE
- ABUTTERS PROPERTY
- EDGE OF PAVEMENT
- 20 CONTOURS
- BUILDING
- EDGE OF GRAVEL
- CURB
- G GAS LINE
- S SANITARY SEWER
- SD STORMDRAIN
- OHU OVERHEAD UTILITY
- W WATER LINE
- CATCH BASIN
- COMBINED SYSTEM MANHOLE
- SEWER MANHOLE
- ELECTRIC MANHOLE
- EM ELECTRIC METER
- G GAS METER
- HYDRANT
- WATER VALVE
- GAS VALVE
- POLE MOUNTED TRANSFORMER
- UTILITY POLE W/ GUY WIRE
- SIGN
- TREE
- IMPERVIOUS TO BE REMOVED
- BENCHMARK

DEMOLITION NOTES

1. ANY UNUSED SERVICE LINES ARE TO BE PROPERLY REMOVED TO THE MAIN. CAP EACH IN ACCORDANCE WITH THE APPROPRIATE UTILITY REQUIREMENTS.

PINKHAM & GREER
CIVIL ENGINEERS
28 VANNAH AVE. PORTLAND, ME. 04103
TEL: 207.781.2242 FAX: 207.781.4245

STATE OF MAINE — THOMAS S GREER No. 4206 — REGISTERED PROFESSIONAL ENGINEER
2/23/18

REV.	DATE	DESCRIPTION
4	2/21/18	REVD FOR BUILDING PERMIT
3	11/21/16	REVD PER STAFF REVIEW
2	11/7/16	REVD PER CITY COMMENTS
1	9/30/16	REVD PER CITY REVIEW

A & M PARTNERS, INC.
120 EXCHANGE STREET
PORTLAND, ME 04101

SCALE: AS SHOWN
DATE: JULY 28, 2016
PROJECT: 16142
DRN BY: JDC
DESG BY: TSG
CHK BY: TSG

WESTERLEA VIEW LOFTS
75 CHESTNUT STREET
PORTLAND, ME

EXISTING CONDITIONS AND DEMOLITION PLAN

C1.3

MAP/LOT 26 / E / 10

LEGEND

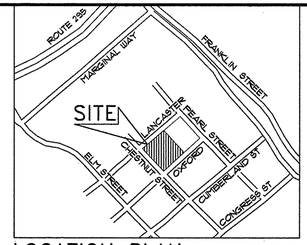
EXISTING

- PROPERTY LINE
- ABUTTERS PROPERTY
- EDGE OF PAVEMENT
- BUILDING
- CURB
- 40 CONTOURS
- ZONING DISTRICT
- IRON PIPE FOUND
- MONUMENT FOUND
- 5/8" IRON ROD W/CAP #1177 SET

PROPOSED

- EDGE OF PAVEMENT
- VERTICAL GRANITE CURB
- BUILDING
- BUILDING ENTRY/EGRESS
- BOUND TO BE SET
- FOOTING LICENSE
- ACCESS EASEMENT
- AIR RIGHTS EASEMENT
- SNOW STORAGE AREA
- BITUMINOUS PAVEMENT
- CONCRETE PAVEMENT

MAINE GRID NORTH COORDINATE SYSTEM NAD83 WEST ZONE



LOCATION PLAN

SCALE: 1"=750'±

N:301928.61
E:2928146.93

EX. SEWER EASEMENT
CCRD BK 24517, PG 1

N/F
AVESTA PEARL STREET ONE, LP
CCRD BK 24108, PG 99
P.O. 26-E-1

S43°14'28"E
314.56'
(315.02')

S46°52'03"W
24.41'

24.44'
S46°52'03"W

15.00'

S43°07'57"E

EX. SEWER EASEMENT
CCRD BK 5035, PG 267

33' WIDE EX. SEWER EASEMENT

N:301699.46
E:2928362.43

20' WIDE EX. SEWER EASEMENT

ZONE: B-7
ZONE: B-2

115.12'

219.10'

ACCESS EASEMENT 2

N/F
CHESTNUT PARKING INC
CCRD BK 14649, PG 174
26-E010003
(UNIT 3)

ENTRANCE

229.09'

OXFORD STREET

STONE STREET

N/F
A & M PARTNERS, LLC
CCRD BK 22383, PG 21
(DEVELOPEMENT RIGHTS)

N/F
CHESTNUT PARKING INC
CCRD BK 14649, PG 171
26-E010001
(UNIT 1)

ENTRANCE

N48°56'32"E
286.21'
(286.42')

LANCASTER STREET

EXISTING PARCEL
92,202 S.F.
2.12 ACRES

(287.90')
287.99'

LOT A
70,751 S.F.
1.63 ACRES

WESTERLEA VIEW LOFTS
54 RESIDENTIAL UNITS

7-STORY BUILDING WITH GARAGE DRIVEWAY PASSING THROUGH THE GROUND LEVEL.

11,600 S.F. UPPER FLOORS
1ST FLOORS AS SHOWN

N/F
A & M PARTNERS, INC
BK 27183, PG 053
26-E010002
(UNIT 2)

ENTRANCE

50.00'
R.O.W.

BUILDING AND AIR RIGHTS USE EASEMENT

316.34'
N 41°29'16" W

12'

S48°26'32"W

49.50'
R.O.W.

2-BIKE RACKS

BENCHMARK: TOP LEFT FRONT CORNER LOWER CONCRETE STEP. EL.=33.35'

MECHANICAL VENT FOR LOWER FLOOR, COORD. WITH MECH. & ARCH. PLANS

GRANITE SURVEY MONUMENT OFFSET FROM CORNER. CONTRACTOR IS TO COORDINATE INSTALLATION WITH OWNER'S SURVEYOR DURING SIDEWALK RECONSTRUCTION.

LOT B
21,451 S.F.
0.49 ACRES

N48°56'32"E
16.13'

1ST FLOOR FOOTPRINT 2,685 S.F.

1ST FLOOR FOOTPRINT 6,838 S.F.

12.3'

6.7'

58.39'
S48°26'32"W

8.2'

3'

20'

BENCHMARK: TOP HYDRANT FLANGE BOLT OVER MAIN OUTLET. EL.=12.86'

2-BIKE RACKS

SNOW STORAGE

8'x12' CONCRETE PAVER PLAZA AREA

ACCESS EASEMENT 3

(318')
307.49'
N44°42'28"W

3'

20'

GRANITE SURVEY MONUMENT OFFSET FROM CORNER. CONTRACTOR IS TO COORDINATE INSTALLATION WITH OWNER'S SURVEYOR DURING SIDEWALK RECONSTRUCTION.

FACE OF BUILDING ABOVE

ACCESS EASEMENT 1

FOOTING LICENSE

LIGHTPOLE, TYP. (SEE SITE PLAN FOR SPACING)

TREEWELL FOR STREET TREE, TYP. (SEE SITE PLAN FOR SPACING)

ZONE: B-7
ZONE: B-2

49.50'
R.O.W.

CHESTNUT STREET

NOTE: SEE SUBDIVISION PLAN SHEET 2 of 2 FOR EASEMENTS & LICENSES LAYOUT.

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

GENERAL NOTES

1. OWNER: A&M PARTNERS, INC. 120 EXCHANGE STREET, PORTLAND MAINE 04101. DEEDS RECORDED IN CUMBERLAND COUNTY REGISTRY OF DEEDS BK 27183, PG. 53, DATE 8/17/09.
2. ENGINEER: PINKHAM & GREER CIVIL ENGINEERS, 28 VANNAH AVENUE, PORTLAND, MAINE, 04103.
3. ARCHITECT: ARCHETYPE ARCHITECTS, 48 UNION WHARF, PORTLAND, MAINE 04101.
4. TOPOGRAPHIC & BOUNDARY: MAINE SURVEY CONSULTANTS, INC., PO BOX 485, HARRISON, MAINE, 04040.
5. UNDERLYING SOILS MAPPING TAKEN FROM SOIL CONSERVATION STUDY OF CUMBERLAND COUNTY. THE UPPER HALF OF THE SITE IS CLASSIFIED HINCKLEY (HIB), THE LOWER HALF IS CLASSIFIED AS AU GRES (Au). THE SURFACE OF THE SITE IS CURRENT URBAN LAND.
6. TAX MAP REFERENCE: MAP 26 / BLOCK E / LOT 10.
7. ZONE: B-7, MIXED DEVELOPMENT, PROPOSED USE: CONDOMINIUMS
8. EXISTING PARCEL = 2.12 acres
9. UNITS TO BE SERVICED BY PUBLIC WATER, SEWER, AND GAS FROM CHESTNUT STREET. THESE SERVICES, INCLUDING HYDRANTS, ARE AS SHOWN ON SHEET C1.4, GRADING AND UTILITIES PLAN.
10. POWER, TELEPHONE AND CABLE SERVICES ARE TO BE UNDERGROUND FROM AN EXISTING POLE. THESE SERVICES ARE SHOWN ON SHEET C1.4, GRADING AND UTILITIES PLAN.
11. CALL DIG-SAFE PRIOR TO COMMENCING WORK, 1-800-DIG-SAFE.
12. ALL WORK WITHIN THE PUBLIC RIGHT OF WAY SHALL MEET CITY OF PORTLAND TECHNICAL MANUAL STANDARDS.
13. PROPOSED PARKING SPACES: NO NEW SPACES, EXISTING PARKING IS ALREADY ONSITE. 1 PER UNIT PROVIDED IN THE EXISTING GARAGE.
14. THE SUBJECT PARCEL SHOWN AS WESTERLEA VIEW LOFTS IS SUBJECT TO A CITY OF PORTLAND LEVEL III SITE PLAN AND SUBDIVISION PERMIT.
15. DETAILS OF STREET TREES ARE INCLUDED ON THE LANDSCAPE PLAN AS PART OF THE APPROVAL FOR WESTERLEA LOFTS SITE PLAN.
16. FLOODPLAIN: THIS PROPERTY IS IN ZONE C OF THE FLOOD INSURANCE RATE MAP, COMMUNITY PANEL 230051 0013 B, EFFECTIVE DATE JULY 17, 1986. IT IS NOT IN A SPECIAL FLOOD HAZARD ZONE.
17. PROPERTY PINS TO BE SET AT THE EXPENSE OF THE DEVELOPER AT THE END OF CONSTRUCTION ON CORNERS NOT CURRENTLY MARKED.
18. ALL CONSTRUCTION AND SITE ALTERATIONS SHALL BE DONE IN ACCORDANCE WITH THE "MAINE EROSION AND SEDIMENT CONTROL BMPS" PUBLISHED BY THE BUREAU OF LAND AND WATER QUALITY, MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION, LATEST EDITION, MARCH 2003.
19. THE OWNER IS RESPONSIBLE FOR MAINTENANCE OF THE STORMWATER TREATMENT SYSTEM, TRASH REMOVAL AND GROUNDSKEEPING.

SUBDIVISION PLAN
APPROVED BY THE CITY OF PORTLAND PLANNING BOARD

_____ _____
_____ _____
_____ _____
_____ _____ DATE

PINKHAM & GREER
CIVIL ENGINEERS
28 VANNAH AVE. PORTLAND, ME. 04103
TEL: 207.781.2242 FAX: 207.781.4245

STATE OF MAINE · THOMAS S GREER No. 4206 · REGISTERED PROFESSIONAL ENGINEER · LICENSED SURVEYOR

2/23/16

REV.	DATE	DESCRIPTION
6	2/21/18	REVD FOR BUILDING PERMIT
5	3/8/17	REVD EASEMENTS & LICENSES, ADD CONDITIONS OF APPROVAL
4	12/1/16	REVD PER STAFF REVIEW
3	11/21/16	REVD PER STAFF REVIEW
2	11/7/16	REVD PER CITY COMMENTS
1	9/30/16	REVD PER CITY REVIEW

A & M PARTNERS, INC.
120 EXCHANGE STREET
PORTLAND, ME 04101

SCALE: AS SHOWN
DATE: JULY 28, 2016
PROJECT: 16142
DRN BY: JDC
DESG BY: TSG
CHK BY:

WESTERLEA VIEW LOFTS
75 CHESTNUT STREET
PORTLAND, ME

SUBDIVISION PLAN SHEET 1 of 2

C1.1

MAP/LOT 26 / E / 10

ZONE INFORMATION

B-7 MIXED DEVELOPMENT DISTRICT ZONE

PERMITTED USE: RESIDENTIAL CONDOMINIUMS

PARKING INFORMATION

OFF STREET PARKING	1 SPACE PER UNIT
BIKE RACKS (NUMBER OF BIKES PARKED)	EXTERIOR: 8 BIKES INTERIOR: 36 BIKES

IMPERVIOUS INFORMATION

EXISTING IMPERVIOUS	53,826 SQ. FT.
PROPOSED IMPERVIOUS	64,844 SQ. FT.
NET IMPERVIOUS	+11,018 SQ. FT.

SNOW CLEARANCE NOTES

1. SNOW MAY BE STORED WITHIN THE TEMPORARY SNOW STORAGE AREAS ONLY.
2. ANY SNOW THAT CAN NOT BE STORED ON SITE SHALL BE PHYSICALLY REMOVED AND TRANSPORTED OFFSITE WITHIN 24 TO 48 HOURS FOLLOWING A SNOW STORM.
3. SNOW TRANSPORTED OFFSITE SHALL BE BROUGHT TO A MAINE DEP APPROVED "SNOW DUMP" OR MEET THE EXEMPTION REQUIREMENTS SPECIFIED WITHIN CHAPTER 573 WHEN THE ABOVE REQUIREMENTS CANNOT BE MET DUE TO AN ABUNDANCE OF SNOW.
4. THE SNOW CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO VEGETATION, LANDSCAPING, CURBING, LIGHTING, FENCING ETC. RESULTING FROM THEIR ACTIVITIES.
5. THE CONDOMINIUM ASSOCIATION IS RESPONSIBLE FOR SNOW REMOVAL BEING UNDERTAKEN IN A TIMELY FASHION.

WAIVERS

1. ALLOW THE DEVELOPER TO PAY INTO THE STREET TREE FUND IN LIEU OF PLANTING STREET TREES.

SURVEY GENERAL NOTES AND PLAN REFERENCES

GENERAL NOTES:

1) VERTICAL DATUM REFERS TO NATIONAL GEODETIC VERTICAL DATUM OF 1929.
2) HORIZONTAL DATUM REFERS TO MAINE COORDINATE SYSTEM 1983 MAINE WEST ZONE AS DERIVED FROM STATIC GPS OBSERVATIONS MADE ON SITE 07-12-2016.
3) UNDERGROUND UTILITIES SHOWN WERE DERIVED FROM FIELD OBSERVATIONS AND EXISTING PLAN PROVIDED BY PORTLAND PUBLIC WORKS DEPARTMENT.
4) DIGSAFE SHOULD BE CONTACTED FOR ACURATE UTILITY LOCATION BEFORE ANY SITE EXCAVATION WORK IS PERFORMED.

PLAN REFERENCES:

1) AS-BUILT SITE SURVEY FOR AVESTA PEARL STREET TWO LP DATED MARCH 07, 2013 PREPARED BY NORTHEAST CIVIL SOLUTIONS, RECORDED IN CCRD PB 211, PG 362.
2) ALTA /ACSM LAND TITLE SURVEY FOR OXFORD DEVELOPMENT ASSOCIATES DATED 06-28-88 PREPARED BY SMRT SURVEYING RECORDED IN CCRD PB 111, PG 68.
3) PORTLAND RENEWAL AUTHORITY NEIGHBORHOOD DEVELOPEMENT PROJECT ME A-2 DATED MAY 22, 1974 PREPARED BY E.C. JORDAN.
4) CITY PLAN OF LANCASTER STREET DATED 1925 VOL 1, PG 57 ON FILE AT CITY OF PORTLAND DEPT. OF PUBLIC WORKS OFFICE SEE ALSO CITY OF PORTLAND RECORDS 9-48 DATED 9/11/1854.
5) CITY PLAN OF OXFORD STREET DATED 1925 VOL 1, PG 42 ON FILE AT CITY OF PORTLAND DEPT. OF PUBLIC WORKS OFFICE SEE ALSO CITY OF PORTLAND RECORDS 2-342 DATED 3-13-1824.
6) CITY PLAN OF CHESTNUT STREET DATED 1925 VOL 1, PG 44 ON FILE AT CITY OF PORTLAND DEPT. OF PUBLIC WORKS OFFICE SEE ALSO CITY OF PORTLAND RECORDS 1-398 DATED MAY 6, 1805.

EASEMENTS & LICENSES

1. PROPOSED TEMPORARY EASEMENT: CONSTRUCTION EASEMENT FROM CITY OF PORTLAND TO WESTERLEA VIEW LOFTS.
2. PROPOSED LICENSE: FROM THE CITY OF PORTLAND TO WESTERLEA VIEW LOFTS FOR BUILDING FOOTINGS.

FOOTING LICENSE

LINE	BEARING	DISTANCE
F1	N 44°42'28" W	17.77'
F2	S 48°29'24" W	3.53'
F3	N 41°30'36" W	61.72'
F4	S 48°29'24" W	2.99'
F5	N 41°30'36" W	33.40'
F6	N 48°29'24" E	1.21'
F7	S 44°42'28" E	113.04'

3. PROPOSED EASEMENT: FROM A & M PARTNERS, INC. CHESTNUT PARKING, INC. AND A & M PARTNERS, LLC TO WESTERLEA VIEW LOFTS FOR DECK EXTENTIONS ABOVE THE EXISTING STRUCTURE.

AIR RIGHTS USE EASEMENT

LINE	BEARING	DISTANCE
R1	N 48°26'32" E	58.90'
R2	N 48°26'32" E	12.00'
R3	N 41°29'16" W	316.24'
R4	S 48°56'32" W	12.00'
R5	S 41°29'16" E	316.34'

4. PROPOSED EASEMENT: ACCESS EASEMENT FROM WESTERLEA VIEW LOFTS TO THE CITY OF PORTLAND FOR SIDEWALKS ON OXFORD, CHESTNUT AND LANCASTER STREETS.

ACCESS EASEMENT 1

LINE	BEARING	DISTANCE
A1	N 48°26'32" E	6.50'
A2	N 80°46'36" W	6.95'
A3	N 44°42'28" W	15.88'
A4	S 48°29'24" W	2.24'
A5	N 40°30'36" W	40.11'
A6	N 44°42'28" W	242.62'
A7	N 02°07'02" E	15.06'
A8	N 48°56'32" E	63.13'
A9	N 41°29'16" W	2.40'
A10	S 48°56'32" W	76.73'
A11	S 44°42'28" E	317.49'

5. PROPOSED EASEMENT: ACCESS EASEMENT FROM A & M PARTNERS, INC. TO THE CITY OF PORTLAND FOR SIDEWALKS ON LANCASTER STREET.

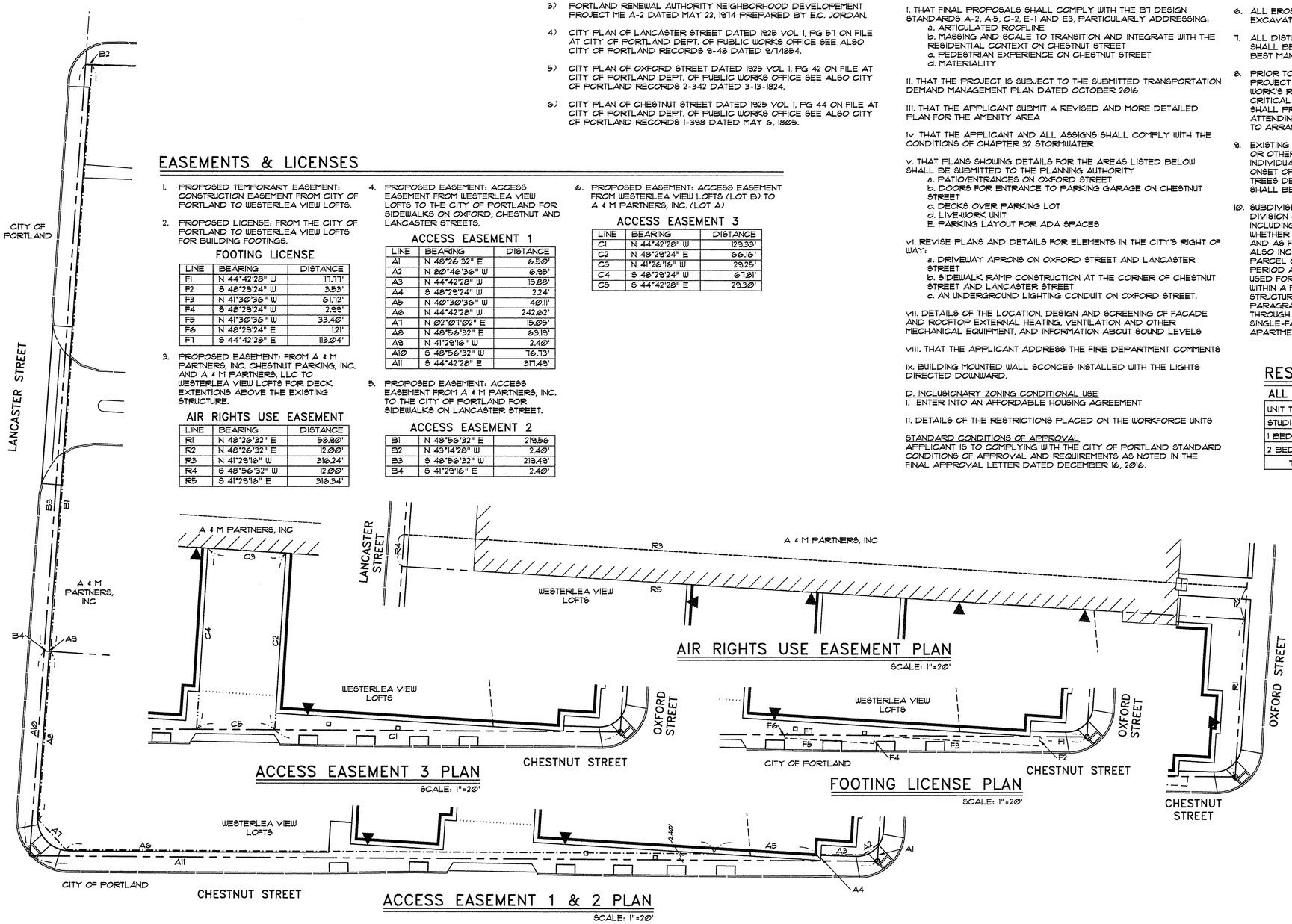
ACCESS EASEMENT 2

LINE	BEARING	DISTANCE
B1	N 48°56'32" E	219.56
B2	N 43°14'28" W	2.40'
B3	S 48°56'32" W	219.49'
B4	S 41°29'16" E	2.40'

6. PROPOSED EASEMENT: ACCESS EASEMENT FROM WESTERLEA VIEW LOFTS (LOT B) TO A & M PARTNERS, INC. (LOT A)

ACCESS EASEMENT 3

LINE	BEARING	DISTANCE
C1	N 44°42'28" W	129.33'
C2	N 48°29'24" E	66.16'
C3	N 41°26'16" W	29.25'
C4	S 48°29'24" W	67.81'
C5	S 44°42'28" E	29.30'



SUBDIVISION CONDITIONS OF APPROVAL

ON DECEMBER 13, 2016 THE PLANNING BOARD VOTED TO APPROVE THE APPLICATION WITH THE FOLLOWING WAIVER AND CONDITIONS (FOR FULL TEXT OF THE WAIVERS AND CONDITIONS SEE THE CITY OF PORTLAND APPROVAL LETTER DATED DECEMBER 16, 2016 SIGNED BY ELIZABETH BOEPPLE, CHAIR PORTLAND PLANNING BOARD.):

A. WAIVER

I. SITE CONSTRAINTS PREVENT THE PLANTING OF ALL REQUIRED STREET TREES IN THE RIGHT-OF-WAY. THE APPLICANT SHALL CONTRIBUTE $6,400 TO PORTLAND'S TREE FUND.

B. SUBDIVISION

I. THE APPLICANT SHALL SUBMIT A FINAL SUBDIVISION PLAT FOR REVIEW AND APPROVAL BY CORPORATION COUNSEL, THE DEPARTMENT OF PUBLIC WORKS, AND THE PLANNING AUTHORITY

II. THE APPLICANT SHALL PROVIDE DRAFTS OF ALL NECESSARY EASEMENTS,
- a.-d. SEE THE EASEMENTS AND LICENSES LIST ON SUBDIVISION PLAN, SHEET 1 OF 2
- e. EASEMENT OR OTHER LEGAL DOCUMENT TO SECURE REQUIRED PARKING FOR THE RESIDENTIAL UNITS

C. SITE PLAN

I. THAT FINAL PROPOSALS SHALL COMPLY WITH THE B7 DESIGN STANDARDS A-2, A-5, C-2, E-1 AND E3, PARTICULARLY ADDRESSING:
- a. ARTICULATED ROOFLINE
- b. MASSING AND SCALE TO TRANSITION AND INTEGRATE WITH THE RESIDENTIAL CONTEXT ON CHESTNUT STREET
- c. PEDESTRIAN EXPERIENCE ON CHESTNUT STREET
- d. MATERIALITY

II. THAT THE PROJECT IS SUBJECT TO THE SUBMITTED TRANSPORTATION DEMAND MANAGEMENT PLAN DATED OCTOBER 2016

III. THAT THE APPLICANT SUBMIT A REVISED AND MORE DETAILED PLAN FOR THE AMENITY AREA

IV. THAT THE APPLICANT AND ALL ASSIGNS SHALL COMPLY WITH THE CONDITIONS OF CHAPTER 32 STORMWATER

V. THAT PLANS SHOWING DETAILS FOR THE AREAS LISTED BELOW SHALL BE SUBMITTED TO THE PLANNING AUTHORITY
- a. PATIO/ENTRANCES ON OXFORD STREET
- b. DOORS FOR ENTRANCE TO PARKING GARAGE ON CHESTNUT STREET
- c. DECKS OVER PARKING LOT
- d. LIVE-WORK UNIT
- E. PARKING LAYOUT FOR ADA SPACES

VI. REVISE PLANS AND DETAILS FOR ELEMENTS IN THE CITY'S RIGHT OF WAY:
- a. DRIVEWAY APRONS ON OXFORD STREET AND LANCASTER STREET
- b. SIDEWALK RAMP CONSTRUCTION AT THE CORNER OF CHESTNUT STREET AND LANCASTER STREET
- c. AN UNDERGROUND LIGHTING CONDUIT ON OXFORD STREET.

VII. DETAILS OF THE LOCATION, DESIGN AND SCREENING OF FACADE AND ROOFTOP EXTERNAL HEATING, VENTILATION AND OTHER MECHANICAL EQUIPMENT, AND INFORMATION ABOUT SOUND LEVELS

VIII. THAT THE APPLICANT ADDRESS THE FIRE DEPARTMENT COMMENTS

IX. BUILDING MOUNTED WALL SCONCES INSTALLED WITH THE LIGHTS DIRECTED DOWNWARD.

D. INCLUSIONARY ZONING CONDITIONAL USE
1. ENTER INTO AN AFFORDABLE HOUSING AGREEMENT

II. DETAILS OF THE RESTRICTIONS PLACED ON THE WORKFORCE UNITS

STANDARD CONDITIONS OF APPROVAL
APPLICANT IS TO COMPLYING WITH THE CITY OF PORTLAND STANDARD CONDITIONS OF APPROVAL AND REQUIREMENTS AS NOTED IN THE FINAL APPROVAL LETTER DATED DECEMBER 16, 2016.

CITY OF PORTLAND SITE PLAN AND SUBDIVISION NOTES

1. LANDSCAPING SHALL MEET THE "ARBORICULTURAL SPECIFICATIONS AND STANDARDS OF PRACTICE AND LANDSCAPE GUIDELINES" OF THE CITY OF PORTLAND TECHNICAL AND DESIGN STANDARDS AND GUIDELINES.
2. THE ENTIRE SITE SHALL BE DEVELOPED AND/OR MAINTAINED AS DEPICTED ON THE SITE PLAN. APPROVAL OF THE PLANNING AUTHORITY OR PLANNING BOARD SHALL BE REQUIRED FOR ANY ALTERATION TO OR DEVIATION FROM THE APPROVED SITE PLAN, INCLUDING, WITHOUT LIMITATION: TOPOGRAPHY, DRAINAGE, LANDSCAPING, RETENTION OF WOODED OR LAWN AREAS, ACCESS, SIZE, LOCATION, AND SURFACING OF PARKING AREAS AND LOCATION AND SIZE OF BUILDINGS.
3. ALL POWERLINE UTILITIES SHALL BE UNDERGROUND.
4. SIDEWALKS AND CURBING SHALL BE DESIGNED AND BUILT WITH TIPDOWN RAMPS AT ALL STREET CORNERS, CROSSWALKS AND DRIVEWAYS IN CONFORMANCE WITH THE CITY OF PORTLAND TECHNICAL AND DESIGN STANDARDS AND GUIDELINES.
5. ALL EROSION CONTROL MEASURES SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE MAINE EROSION AND SEDIMENT CONTROL BMPS PUBLISHED BY THE BUREAU OF LAND AND QUALITY, MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION, MARCH 2003.
6. ALL EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO ANY SITE EXCAVATION OR REGRADING.
7. ALL DISTURBED AREAS ON THE SITE NOT COVERED BY BUILDINGS OR PAVED AREAS SHALL BE STABILIZED WITH LOAM AND SEED OR OTHER METHODS AS REQUIRED BY BEST MANAGEMENT PRACTICES (SEE ABOVE).
8. PRIOR TO CONSTRUCTION, A PRECONSTRUCTION MEETING SHALL BE HELD AT THE PROJECT SITE WITH THE CONTRACTOR, DEVELOPMENT REVIEW COORDINATOR, PUBLIC WORK'S REPRESENTATIVE AND OWNER TO REVIEW THE CONSTRUCTION SCHEDULE AND CRITICAL ASPECTS OF THE SITE WORK. AT THAT TIME, THE SITE/BUILDING CONTRACTOR SHALL PROVIDE THREE (3) COPIES OF A DETAILED CONSTRUCTION SCHEDULE TO THE ATTENDING CITY REPRESENTATIVE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ARRANGE A MUTUALLY AGREEABLE TIME FOR THE PRECONSTRUCTION MEETING.
9. EXISTING VEGETATION SHALL BE CONSERVED IN AREAS SHOWN ON THIS SITE. FENCING OR OTHER PROTECTIVE BARRIERS SHALL BE ERECTED OUTSIDE THE DRIP-LINE OF INDIVIDUAL, GROUPINGS OF TREES DESIGNATED FOR PRESERVATION PRIOR TO THE ONSET OF CONSTRUCTION. REGRADING SHALL NOT TAKE PLACE WITHIN THE DRIP-LINE OF TREES DESIGNATED FOR PRESERVATION. NO STORAGE OR CONSTRUCTION MATERIALS SHALL BE PERMITTED WITHIN THE DRIP-LINE OF TREES TO BE PRESERVED.
10. SUBDIVISION AT THE TIME OF APPROVAL IS DEFINED AS "SUBDIVISION SHALL MEAN THE DIVISION OF A LOT, TRACT OR PARCEL OF LAND INTO THREE (3) OR MORE LOTS, INCLUDING LOTS OF FORTY (40) ACRES OR MORE, WITHIN ANY FIVE-YEAR PERIOD WHETHER ACCOMPLISHED BY SALE, LEASE, DEVELOPMENT, BUILDINGS OR OTHERWISE AND AS FURTHER DEFINED IN 30-A M.R.S.A. SECTION 4401. THE TERM SUBDIVISION SHALL ALSO INCLUDE THE DIVISION OF A NEW STRUCTURE OR STRUCTURES ON A TRACT OR PARCEL OF LAND INTO THREE (3) OR MORE DWELLING UNITS WITHIN A FIVE-YEAR PERIOD AND THE DIVISION OF AN EXISTING STRUCTURE OR STRUCTURES PREVIOUSLY USED FOR COMMERCIAL OR INDUSTRIAL USE INTO THREE (3) OR MORE DWELLING UNITS WITHIN A FIVE-YEAR PERIOD. THE AREA INCLUDED IN THE EXPANSION OF AN EXISTING STRUCTURE IS DEEMED TO BE A NEW STRUCTURE FOR THE PURPOSE OF THIS PARAGRAPH. A DWELLING UNIT SHALL INCLUDE ANY PART OF A STRUCTURE WHICH, THROUGH SALE OR LEASE, IS INTENDED FOR HUMAN HABITATION, INCLUDING SINGLE-FAMILY AND MULTIFAMILY HOUSING CONDOMINIUMS, TIME-SHARE UNITS AND APARTMENTS."

RESIDENTIAL UNIT INFORMATION

ALL UNITS

UNIT TYPE	QUANTITY	TOTAL BEDS
STUDIO	2	2
1 BEDROOM	14	14
2 BEDROOM	38	76
TOTAL	54	92

WORKFORCE HOUSING

UNIT TYPE	QUANTITY	TOTAL BEDS
STUDIO	2	2
1 BEDROOM	1	1
2 BEDROOM	3	6
TOTAL	6	9

ZONE INFORMATION

ZONE: B-7, MIXED DEVELOPMENT DISTRICT
PERMITTED USE: RESIDENTIAL CONDOMINIUMS

SPACE STANDARDS	REQUIRED	LOT B PROVIDED
MINIMUM LOT SIZE	NONE	21,451 S.F.
MINIMUM STREET FRONTAGE	NONE	443 FEET
MINIMUM FRONT YARD SETBACK	NONE	0.8 FEET
MINIMUM REAR YARD SETBACK	NONE	NA
MINIMUM SIDE YARD SETBACK	NONE	NA
MAXIMUM STREET SETBACK	10 FEET OR	-
	75% OF BLDG WITHIN 10' OF ST. - CHESTNUT	94%
	75% OF BLDG WITHIN 10' OF ST. - OXFORD	62%
MINIMUM LENGTH OF BUILDING WALL	25% OF PERIM.	48%
MAXIMUM BUILDING LOT COVERAGE	100%	45%
MAXIMUM RESIDENTIAL DENSITY	NONE	54 UNITS
MAXIMUM BUILDING HEIGHT	75 FEET	79.87 FEET
OFF STREET PARKING	1 PER UNIT	1 PER UNIT
BIKE RACKS	12	22

SUBDIVISION PLAN
APPROVED BY THE CITY OF PORTLAND PLANNING BOARD

_____ _____
_____ _____
_____ _____
_____ _____ DATE

PINKHAM & GREER
CIVIL ENGINEERS
28 VAUGHAN AVE, PORTLAND, ME. 04103
TEL: 207.878.5262 FAX: 207.761.4263

STATE OF MAINE · THOMAS S. GREER No. 4206 · REGISTERED PROFESSIONAL ENGINEER · LICENSED

2/23/18

REV.	DATE	DESCRIPTION
2	2/21/18	REVD FOR BUILDING PERMIT
1	3/8/17	REVD EASEMENTS & LICENSES, ADD CONDITIONS OF APPROVAL

A & M PARTNERS, INC.
120 EXCHANGE STREET
PORTLAND, ME 04101

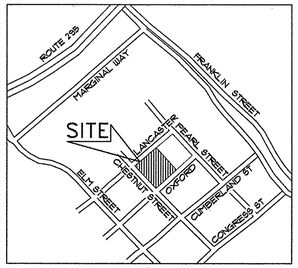
SCALE: AS SHOWN
DATE: JULY 28, 2016
PROJECT: 16142
DRN BY: JDC
DESG BY: TSG
CHK BY: TSG

WESTERLEA VIEW LOFTS
75 CHESTNUT STREET
PORTLAND, ME

SUBDIVISION PLAN SHEET 2 of 2

C1.1a

MAP/LOT 26/E/10



LOCATION PLAN

CITY OF PORTLAND SITE PLAN AND SUBDIVISION NOTES

1. LANDSCAPING SHALL MEET THE "ARBORICULTURAL SPECIFICATIONS AND STANDARDS OF PRACTICE AND LANDSCAPE GUIDELINES" OF THE CITY OF PORTLANDTECHNICAL AND DESIGN STANDARDS AND GUIDELINES.
2. THE ENTIRE SITE SHALL BE DEVELOPED AND/OR MAINTAINED AS DEPICTED ON THE SITE PLAN. APPROVAL OF THE PLANNING AUTHORITY OR PLANNING BOARD SHALL BE REQUIRED FOR ANY ALTERATION TO OR DEVIATION FROM THE APPROVED SITE PLAN, INCLUDING, WITHOUT LIMITATION: TOPOGRAPHY, DRAINAGE, LANDSCAPING, RETENTION OF WOODED OR LAWN AREAS, ACCESS, SIZE, LOCATION, AND SURFACING OF PARKING AREAS AND LOCATION AND SIZE OF BUILDINGS.
3. ALL POWERLINE UTILITIES SHALL BE UNDERGROUND.
4. SIDEWALKS AND CURBING SHALL BE DESIGNED AND BUILT WITH TIPDOWN RAMPS AT ALL STREET CORNERS, CROSSWALKS AND DRIVEWAYS IN CONFORMANCE WITH THE CITY OF PORTLAND TECHNICAL AND DESIGN STANDARDS AND GUIDELINES.
5. ALL EROSION CONTROL MEASURES SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE MAINE EROSION AND SEDIMENT CONTROL BMPS PUBLISHED BY THE BUREAU OF LAND AND QUALITY, MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION, MARCH 2003.
6. ALL EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO ANY SITE EXCAVATION OR REGRADING.
7. ALL DISTURBED AREAS ON THE SITE NOT COVERED BY BUILDINGS OR PAVED AREAS SHALL BE STABILIZED WITH LOAM AND SEED OR OTHER METHODS AS REQUIRED BY BEST MANAGEMENT PRACTICES (SEE ABOVE).
8. PRIOR TO CONSTRUCTION, A PRECONSTRUCTION MEETING SHALL BE HELD AT THE PROJECT SITE WITH THE CONTRACTOR, DEVELOPMENT REVIEW COORDINATOR, PUBLIC WORK'S REPRESENTATIVE AND OWNER TO REVIEW THE CONSTRUCTION SCHEDULE AND CRITICAL ASPECTS OF THE SITE WORK. AT THAT TIME, THE SITE/BUILDING CONTRACTOR SHALL PROVIDE THREE (3) COPIES OF A DETAILED CONSTRUCTION SCHEDULE TO THE ATTENDING CITY REPRESENTATIVE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ARRANGE A MUTUALLY AGREEABLE TIME FOR THE PRECONSTRUCTION MEETING.
9. EXISTING VEGETATION SHALL BE CONSERVED IN AREAS SHOWN ON THIS SITE. FENCING OR OTHER PROTECTIVE BARRIERS SHALL BE ERECTED OUTSIDE THE DRIP-LINE OF INDIVIDUAL, GROUPINGS OF TREES DESIGNATED FOR PRESERVATION PRIOR TO THE ONSET OF CONSTRUCTION. REGRADING SHALL NOT TAKE PLACE WITHIN THE DRIP-LINE OF TREES DESIGNATED FOR PRESERVATION. NO STORAGE OR CONSTRUCTION MATERIALS SHALL BE PERMITTED WITHIN THE DRIP-LINE OF TREES TO BE PRESERVED.

PROJECT SITE DRAWINGS

C1.1	SUBDIVISION PLAN SHEET 1 of 2
C1.1a	SUBDIVISION PLAN SHEET 2 of 2
C1.2	SITE PLAN
C1.3	EXISTING CONDITIONS AND DEMOLITION PLAN
C1.4	GRADING AND UTILITIES PLAN
C1.5	LANDSCAPE PLAN, NOTES AND DETAILS
C1.6	EROSION CONTROL PLAN
C2.1	DETAILS
C2.2	DETAILS
C2.3	DETAILS
C2.4	DETAILS
D1.1	DRAINAGE ANALYSIS
	EXISTING CONDITIONS SURVEY

PARKING INFORMATION

OFF STREET PARKING	1 SPACE PER UNIT
BIKE RACKS (NUMBER OF BIKES PARKED)	EXTERIOR: 8 BIKES INTERIOR: 36 BIKES

IMPERVIOUS INFORMATION

EXISTING IMPERVIOUS	53,826 SQ. FT.
PROPOSED IMPERVIOUS	64,844 SQ. FT.
NET IMPERVIOUS	+11,018 SQ. FT.

GENERAL NOTES

1. OWNER: A4M PARTNERS, INC. 120 EXCHANGE STREET, PORTLAND MAINE Ø4101. DEEDS RECORDED IN CUMBERLAND COUNTY REGISTRY OF DEEDS BK. 27183, PG. 53, DATE 8/17/09.
2. ENGINEER: PINKHAM & GREER CIVIL ENGINEERS, 28 VANNAH AVENUE, PORTLAND, MAINE, Ø4101.
3. ARCHITECT: ARCHETYPE ARCHITECTS, 48 UNION WHARF, PORTLAND, MAINE Ø4101.
4. TOPOGRAPHIC & BOUNDARY: MAINE SURVEY CONSULTANTS, INC., PO BOX 485, HARRISON, MAINE, Ø4040.
5. UNDERLYING SOILS MAPPING TAKEN FROM SOIL CONSERVATION STUDY OF CUMBERLAND COUNTY. THE UPPER HALF OF THE SITE IS CLASSIFIED HINCKLEY (HIB), THE LOWER HALF IS CLASSIFIED AS AU GRES (Au). THE SURFACE OF THE SITE IS CURRENT URBAN LAND.
6. TAX MAP REFERENCE: MAP 26 / BLOCK E / LOT 10.
7. ZONE: B-7, MIXED DEVELOPMENT, PROPOSED USE: CONDOMINIUMS
8. EXISTING PARCEL = 2.12 acres
9. UNITS TO BE SERVICED BY PUBLIC WATER, SEWER, AND GAS FROM CHESTNUT STREET. THESE SERVICES, INCLUDING HYDRANTS, ARE AS SHOWN ON SHEET C1.4, GRADING AND UTILITIES PLAN.
10. POWER, TELEPHONE AND CABLE SERVICES ARE TO BE UNDERGROUND FROM AN EXISTING POLE. THESE SERVICES ARE SHOWN ON SHEET C1.4, GRADING AND UTILITIES PLAN.
11. CALL DIG-SAFE PRIOR TO COMMENCING WORK, 1-800-DIG-SAFE.
12. ALL WORK WITHIN THE PUBLIC RIGHT OF WAY SHALL MEET CITY OF PORTLAND TECHNICAL MANUAL STANDARDS.
13. PROPOSED PARKING SPACES: NO NEW SPACES, EXISTING PARKING IS ALREADY ONSITE. 1 PER UNIT PROVIDED IN THE EXISTING GARAGE.
14. THE SUBJECT PARCEL SHOWN AS WESTERLEA VIEW LOFTS IS SUBJECT TO A CITY OF PORTLAND LEVEL III SITE PLAN AND SUBDIVISION PERMIT.
15. DETAILS OF STREET TREES ARE INCLUDED ON THE LANDSCAPE PLAN AS PART OF THE APPROVAL FOR WESTERLEA LOFTS SITE PLAN.
16. FLOODPLAIN: THIS PROPERTY IS IN ZONE C OF THE FLOOD INSURANCE RATE MAP, COMMUNITY PANEL 230051 0013 B, EFFECTIVE DATE JULY 17, 1986. IT IS NOT IN A SPECIAL FLOOD HAZARD ZONE.
17. PROPERTY PINS TO BE SET AT THE EXPENSE OF THE DEVELOPER AT THE END OF CONSTRUCTION ON CORNERS NOT CURRENTLY MARKED.
18. ALL CONSTRUCTION AND SITE ALTERATIONS SHALL BE DONE IN ACCORDANCE WITH THE "MAINE EROSION AND SEDIMENT CONTROL BMPS" PUBLISHED BY THE BUREAU OF LAND AND WATER QUALITY, MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION, LATEST EDITION, MARCH 2003.
19. THE OWNER IS RESPONSIBLE FOR MAINTENANCE OF THE STORMWATER TREATMENT SYSTEM, TRASH REMOVAL AND GROUNDSKEEPING.

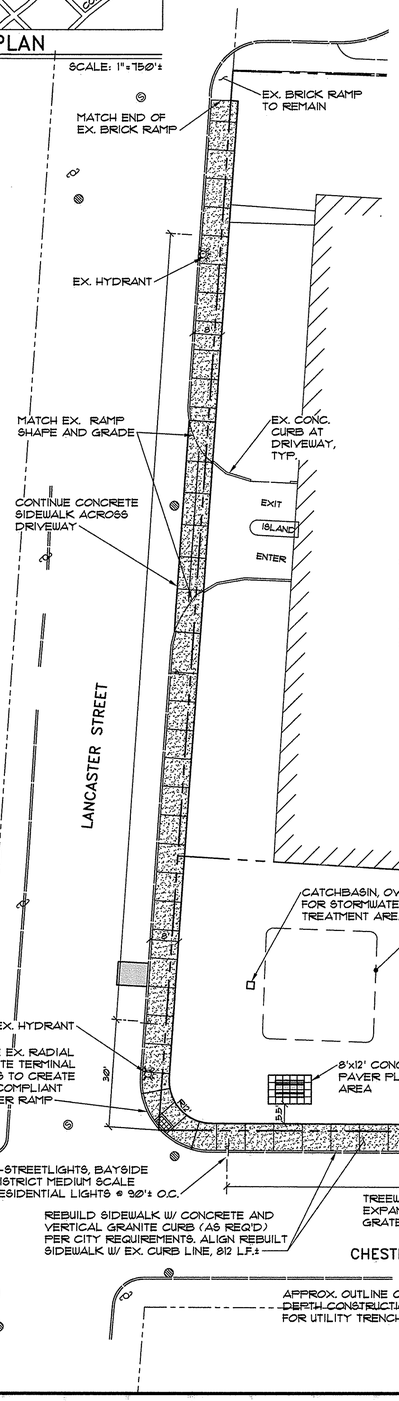
LEGEND

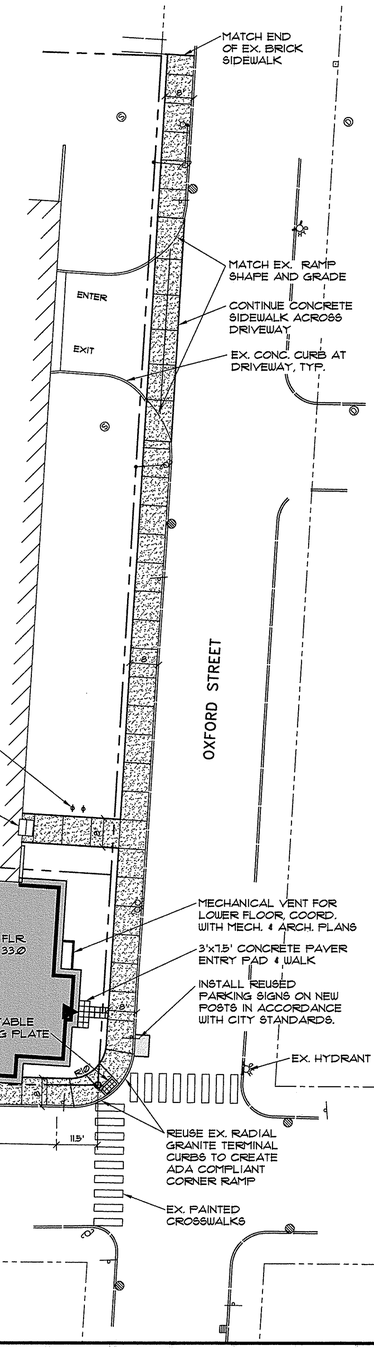
EXISTING

- PROPERTY LINE
- ABUTTERS PROPERTY
- EDGE OF PAVEMENT
- BUILDING
- CURB
- POLE MOUNTED TRANSFORMER UTILITY POLE W/ GUY WIRE
- AREA LIGHT ON POLE
- SIGN
- CONCRETE PAD

PROPOSED

- EDGE OF PAVEMENT
- GRANITE CURB
- BUILDING
- BUILDING ENTRY/EGRESS
- CATCH BASIN
- T TRANSFORMER
- BOLLARD
- BITUMINOUS PAVEMENT
- CONCRETE PAVEMENT
- CONCRETE PAVERS





ZONE INFORMATION

ZONE: B-7, MIXED DEVELOPMENT DISTRICT
PERMITTED USE: RESIDENTIAL CONDOMINIUMS

SPACE STANDARDS	REQUIRED	LOT B PROVIDED
MINIMUM LOT SIZE	NONE	21,451 S.F.
MINIMUM STREET FRONTAGE	NONE	443 FEET
MINIMUM FRONT YARD SETBACK	NONE	0.8 FEET
MINIMUM REAR YARD SETBACK	NONE	NA
MINIMUM SIDE YARD SETBACK	NONE	NA
MAXIMUM STREET SETBACK	10 FEET OR	-
	75% OF BLDG WITHIN 10' OF RE - CHESTNUT	94%
	75% OF BLDG WITHIN 10' OF RE - OXFORD	62%
MINIMUM LENGTH OF BUILDING WALL	25% OF PERIM.	48%
MAXIMUM BUILDING LOT COVERAGE	100%	45%
MAXIMUM RESIDENTIAL DENSITY	NONE	54 UNITS
MAXIMUM BUILDING HEIGHT	75 FEET	79.87 FEET
OFF STREET PARKING	1 PER UNIT	1 PER UNIT
BIKE RACKS	12	22

WAIVERS

1. ALLOW THE DEVELOPER TO PAY INTO THE STREET TREE FUND IN LIEU OF PLANTING STREET TREES.

FOR DRAWING LEGEND SEE SHEET C1.4

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

PINKHAM & GREER CIVIL ENGINEERS
28 VANNAH AVE. PORTLAND, ME. 04103
TEL: 207.781.5242 FAX: 207.781.4245

STATE OF MAINE — THOMAS S. GREER No. 4206 — REGISTERED PROFESSIONAL ENGINEER — CIVIL

4/23/18

REV.	DATE	DESCRIPTION
7	2/21/18	REVD FOR BUILDING PERMIT
6	3/8/17	REVD BUILDING ENTRANCE
5	12/1/16	ADDED WALL SCONCE LOCATIONS
4	12/1/16	REVD PER STAFF REVIEW
3	11/21/16	REVD PER STAFF REVIEW
2	11/7/16	REVD PER CITY COMMENTS
1	9/20/16	REVD PER CITY REVIEW

A & M PARTNERS, INC.
120 EXCHANGE STREET
PORTLAND, ME 04101

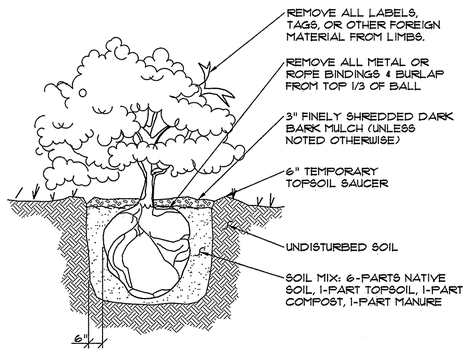
SCALE: AS SHOWN — DRN BY: JDC
DATE: JULY 28, 2016 — DESG BY: TSG
PROJECT: 16142 — CHK BY: TSG

WESTERLEA VIEW LOFTS
75 CHESTNUT STREET
PORTLAND, ME

SITE PLAN

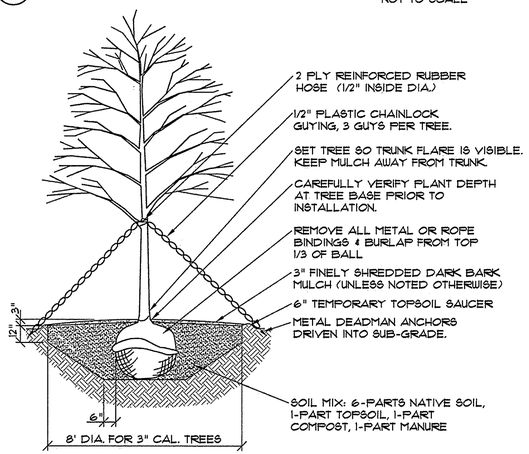
C1.2

MAP/LOT 26 / E / 10



1 SHRUB PLANTING DETAIL

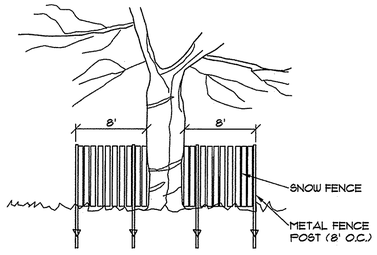
NOT TO SCALE



NOTES:
1. PRUNE ALL DEAD AND BROKEN BRANCHES, RETAIN NATURAL SHAPE, NEVER CUT LEADER.
2. IN LEDGE CONDITIONS, BLASTING SHALL BE 10' DIA AND 4' BELOW TREE HOLE BOTTOM GRADE.

2 DECIDUOUS TREE PLANTING DETAIL

NOT TO SCALE



TREE PROTECTION IS REQUIRED FOR THE EXISTING ASH TREES ALONG CHESTNUT STREET

3 TREE PROTECTION FENCE

NOT TO SCALE

PLANT LIST

(A 12) = SYMBOL / QUANTITY

KEY	COMMON NAME/BOTANICAL NAME	SIZE	ROOT	QUAN.	NOTES
A	HONEY LOCUST / g. triacanthos 'inermis' Streetkeeper	2" cal.	B&B	6	SINGLE TRUNK
B	HORNBEAM / carpinus caroliniana	2" cal.	B&B	3	
C	SHASTA VIBURNUM / v. plicatum tomentosum 'shasta'	3-4' tall	B&B	21	3 CANES
D	SHOSHONI VIBURNUM / v. plicatum var. tomentosum 'Summer Snowflake'	18" tall	B&B	11	3 CANES
E	SWITCH GRASS / panicum virgatum 'Northwind'	--	POTTED	14	
F	SWITCH GRASS / panicum virgatum 'Shenandoah'	--	POTTED	20	
G	MOHICAN VIBURNUM / v. lantana 'mohican'	3-4' tall	B&B	18	3 CANES
H	ARMSTRONG MAPLE / a. freemanii 'Armstrong'	2 1/2" cal.	B&B	7	

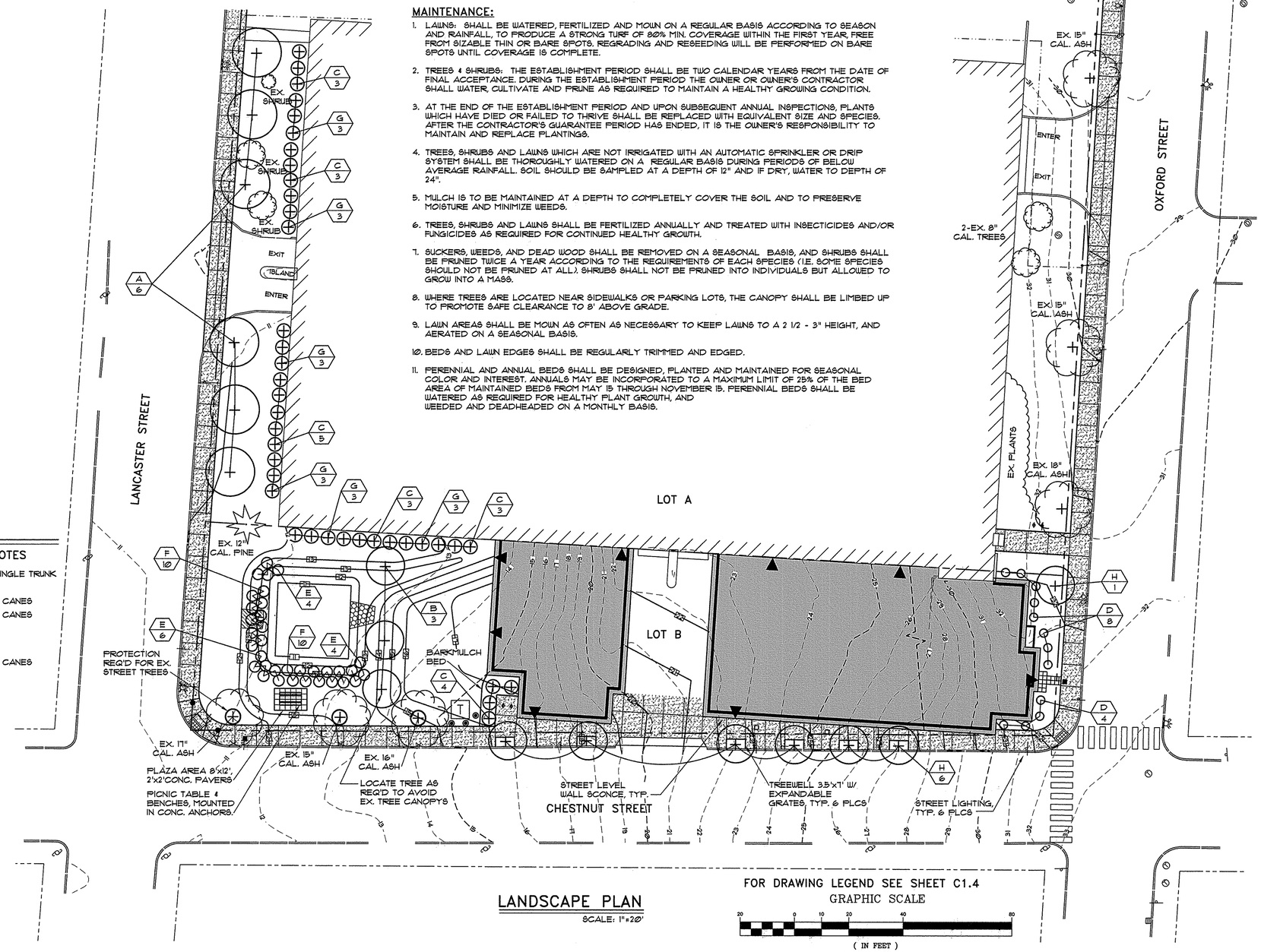
LANDSCAPE NOTES

GENERAL:

1. SAVE EXISTING TREES AS SHOWN. DO NOT CUT OR CLEAR ANY VEGETATION BEYOND THE IMPACT LIMIT LINE.
2. ALL PLANT MATERIALS INSTALLED ARE TO MEET THE SPECIFICATIONS OF THE "AMERICAN STANDARDS FOR NURSERY STOCK" BY THE AMERICAN ASSOCIATION OF NURSERYMEN.
3. ALL PROPOSED PLANT LOCATIONS SHALL BE AS SHOWN ON PLANS. CONTRACTOR SHALL VERIFY LOCATION OF ALL UTILITIES PRIOR TO PLANTING AND WILL NOTIFY OWNER'S REPRESENTATIVE IN THE EVENT OF CONFLICTS.
4. PLANT LOCATIONS ARE TO BE SCALED FROM THELANDSCAPE PLAN UNLESS NOTED OTHERWISE.
5. NO PLANT MATERIAL SHALL BE INSTALLED UNTIL FINAL GRADING AND CONSTRUCTION HAS BEEN COMPLETED IN THE IMMEDIATE AREA.
6. FINAL QUANTITY FOR EACH PLANT TYPE IS NOTED IN THE PLANT LIST. THIS NUMBER SHALL TAKE PRECEDENCE IN THE CASE OF ANY DISCREPANCY BETWEEN QUANTITIES SHOWN IN THE LIST AND ON THE PLAN.
7. ANY PROPOSED SUBSTITUTIONS MUST BE APPROVED BY THE OWNER OR THE OWNER'S REPRESENTATIVE.
8. ALL DISTURBED AREAS TO BE LOAMED AND SEEDED.

MAINTENANCE:

1. LAWNS: SHALL BE WATERED, FERTILIZED AND MOWN ON A REGULAR BASIS ACCORDING TO SEASON AND RAINFALL, TO PRODUCE A STRONG TURF OF 80% MIN. COVERAGE WITHIN THE FIRST YEAR, FREE FROM SIZABLE THIN OR BARE SPOTS. REGRADING AND RESEEDING WILL BE PERFORMED ON BARE SPOTS UNTIL COVERAGE IS COMPLETE.
2. TREES & SHRUBS: THE ESTABLISHMENT PERIOD SHALL BE TWO CALENDAR YEARS FROM THE DATE OF FINAL ACCEPTANCE. DURING THE ESTABLISHMENT PERIOD THE OWNER OR OWNER'S CONTRACTOR SHALL WATER, CULTIVATE AND PRUNE AS REQUIRED TO MAINTAIN A HEALTHY GROWING CONDITION.
3. AT THE END OF THE ESTABLISHMENT PERIOD AND UPON SUBSEQUENT ANNUAL INSPECTIONS, PLANTS WHICH HAVE DIED OR FAILED TO THRIVE SHALL BE REPLACED WITH EQUIVALENT SIZE AND SPECIES. AFTER THE CONTRACTOR'S GUARANTEE PERIOD HAS ENDED, IT IS THE OWNER'S RESPONSIBILITY TO MAINTAIN AND REPLACE PLANTINGS.
4. TREES, SHRUBS AND LAWNS WHICH ARE NOT IRRIGATED WITH AN AUTOMATIC SPRINKLER OR DRIP SYSTEM SHALL BE THOROUGHLY WATERED ON A REGULAR BASIS DURING PERIODS OF BELOW AVERAGE RAINFALL. SOIL SHOULD BE SAMPLED AT A DEPTH OF 12" AND IF DRY, WATER TO DEPTH OF 24".
5. MULCH IS TO BE MAINTAINED AT A DEPTH TO COMPLETELY COVER THE SOIL AND TO PRESERVE MOISTURE AND MINIMIZE WEEDS.
6. TREES, SHRUBS AND LAWNS SHALL BE FERTILIZED ANNUALLY AND TREATED WITH INSECTICIDES AND/OR FUNGICIDES AS REQUIRED FOR CONTINUED HEALTHY GROWTH.
7. SUCKERS, WEEDS, AND DEAD WOOD SHALL BE REMOVED ON A SEASONAL BASIS, AND SHRUBS SHALL BE PRUNED TWICE A YEAR ACCORDING TO THE REQUIREMENTS OF EACH SPECIES (I.E. SOME SPECIES SHOULD NOT BE PRUNED AT ALL). SHRUBS SHALL NOT BE PRUNED INTO INDIVIDUALS BUT ALLOWED TO GROW INTO A MASS.
8. WHERE TREES ARE LOCATED NEAR SIDEWALKS OR PARKING LOTS, THE CANOPY SHALL BE LIMBED UP TO PROMOTE SAFE CLEARANCE TO 8' ABOVE GRADE.
9. LAWN AREAS SHALL BE MOWN AS OFTEN AS NECESSARY TO KEEP LAWNS TO A 2 1/2 - 3" HEIGHT, AND AERATED ON A SEASONAL BASIS.
10. BEDS AND LAWN EDGES SHALL BE REGULARLY TRIMMED AND EDGED.
11. PERENNIAL AND ANNUAL BEDS SHALL BE DESIGNED, PLANTED AND MAINTAINED FOR SEASONAL COLOR AND INTEREST. ANNUALS MAY BE INCORPORATED TO A MAXIMUM LIMIT OF 25% OF THE BED AREA OF MAINTAINED BEDS FROM MAY 15 THROUGH NOVEMBER 15. PERENNIAL BEDS SHALL BE WATERED AS REQUIRED FOR HEALTHY PLANT GROWTH, AND WEEDED AND DEADHEADED ON A MONTHLY BASIS.



LANDSCAPE PLAN

SCALE: 1"=20'

FOR DRAWING LEGEND SEE SHEET C1.4

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

PINKHAM & GREER
CIVIL ENGINEERS
28 WINNAL AVE. PORTLAND, ME. 04103
TEL: 207.781.5242 FAX: 207.781.4245

STATE OF MAINE — THOMAS S GREER No. 4065 — REGISTERED PROFESSIONAL ENGINEER

2/23/18

REV.	DATE	DESCRIPTION
7	2/2/18	REVD FOR BUILDING PERMIT
6	3/8/17	REVD BUILDING ENTRANCE
5	12/1/16	ADDED WALL SCONCE LOCATIONS
4	12/21/16	REVD PER STAFF REVIEW
3	11/21/16	REVD PER STAFF REVIEW
2	11/7/16	REVD PER CITY COMMENTS
1	9/30/16	REVD PER CITY REVIEW

A & M PARTNERS, INC.
120 EXCHANGE STREET
PORTLAND, ME 04101

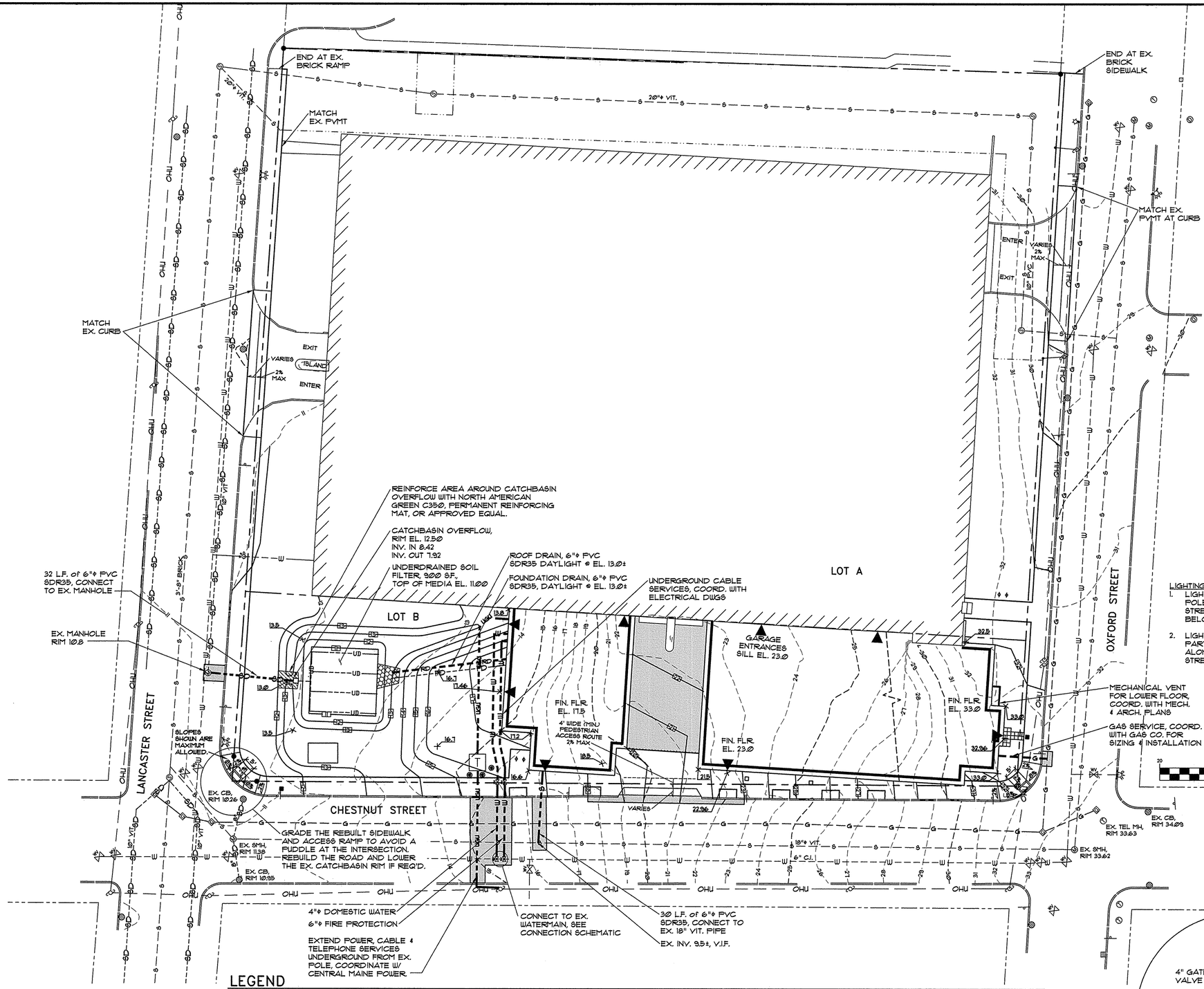
SCALE: AS SHOWN | DRN BY: JDC
DATE: JULY 28, 2016 | DESG BY: TSG
PROJECT: 16142 | CHK BY: TSG

WESTERLEA VIEW LOFTS
75 CHESTNUT STREET
PORTLAND, ME

LANDSCAPE PLAN, NOTES AND DETAILS

C1.5

MAP/LOT 26 / E / 10



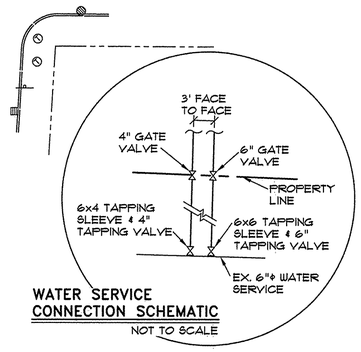
LEGEND

EXISTING

- PROPERTY LINE
- ABUTTERS PROPERTY
- EDGE OF PAVEMENT
- CONTOURS
- BUILDING
- EDGE OF GRAVEL
- CURB
- GAS LINE
- SANITARY SEWER
- STORMDRAIN
- OVERHEAD UTILITY
- WATER LINE
- CATCH BASIN
- COMBINED MANHOLE
- SEWER MANHOLE
- ELECTRIC MANHOLE
- GAS METER
- HYDRANT
- WATER VALVE
- GAS VALVE
- POLE MOUNTED TRANSFORMER
- UTILITY POLE W/ GUY WIRE
- SIGN
- LIGHT POLE

PROPOSED

- EDGE OF PAVEMENT
- VERTICAL GRANITE CURB
- BUILDING
- BUILDING ENTRY/EGRESS
- CONTOURS
- GAS LINE
- SANITARY SEWER
- STORMDRAIN
- UNDERGROUND UTILITY
- WATER LINE
- SPOT GRADE
- CATCH BASIN
- WATER SHUT OFF
- TRANSFORMER
- BOLLARD
- BITUMINOUS PAVEMENT
- CONCRETE PAVEMENT
- CONCRETE PAVERS



WATER SERVICE CONNECTION SCHEMATIC
NOT TO SCALE

REV.	DATE	DESCRIPTION
8	2/21/18	REVD FOR BUILDING PERMIT
7	3/8/17	REVD BUILDING ENTRANCE
6	12/1/16	ADDED WALL SCONCE LOCATIONS
5	12/1/16	REVD PER STAFF REVIEW
4	11/21/16	REVD PER STAFF REVIEW
3	11/10/16	COORDINATED FINISH GRADES
2	11/7/16	REVD PER CITY COMMENTS
1	9/30/16	REVD PER CITY REVIEW

PINKHAM & GREER
CIVIL ENGINEERS
28 VAUGHAN ST., PORTLAND, ME. 04103
TEL: 207/761-2921 FAX: 207/761-4249

STATE OF MAINE
THOMAS GREER No. 4206
LICENSED PROFESSIONAL ENGINEER
8/22/16

A & M PARTNERS, INC.
120 EXCHANGE STREET
PORTLAND, ME 04101

SCALE: AS SHOWN
DATE: JULY 29, 2016
PROJECT: 16142
DRN BY: JDC
DES'G BY: TSG
CHK BY: TSG

WESTERLEA VIEW LOFTS
75 CHESTNUT STREET
PORTLAND, ME

GRADING AND UTILITIES PLAN

C1.4

MAP/LOT: 26/E/10



PROPOSED



PROPOSED