1. Legal Ad

    Documents:

        PB LEGAL AD 10-23-18.PDF

2. Agenda

    Documents:

        PB AGENDA 10-23-18.PDF

3. Maine Medical Center (Report And Attachments)

    Documents:

        BRAMHALL ST. (REPORT).PDF
        BRAMHALL ST. (REPORT ATTACHMENTS).PDF
        BRAMHALL ST. (APPLICANTS SUBMITTAL).PDF
        BRAMHALL ST. (PLANS).PDF

4. 100 Fore Street (Memo And Attachments)

    Documents:

        FORE ST. - 100 (MEMO).PDF
        FORE ST. - 100 (MEMO ATTACHMENTS).PDF
        FORE ST. - 100 (APPLICANTS SUBMITTAL).PDF
        FORE ST - 100 (PLANS).PDF

4.I. Additional Public Comment

    Documents:

        CHRISTIAN MILNEIL 10-23-2018.PDF
        PAMELA DAY 10-23-18.PDF
        BERRY MANTER 10-23-18.PDF

5. Hotel Inclusionary Zoning (This Item Is Being Tabled)

6. 150 Riverside Street (Memo And Attachments)

    Documents:

        RIVERSIDE ST. - 150 (MEMO).PDF
        RIVERSIDE ST. - 150 (REPORT ATTACHMENTS).PDF
        RIVERSIDE ST. - 150 (APPLICANTS SUBMITTAL).PDF
        RIVERSIDE ST. - 150 (PLANS).PDF

7. 250 Riverside Ind. Parkway (Memo And Attachments)

    Documents:

        RIVERSIDE IND. PKWAY. - 250 (MEMO).PDF
        RIVERSIDE IND. PKWAY. - 250 (MEMO ATTACHMENTS).PDF

RIVERSIDE IND. PKWAY. - 250 (APPLICANTS SUBMITTAL).PDF
RIVERSIDE IND. PKWAY. - 250 (PLANS).PDF

LEGAL ADVERTISEMENT
PORTLAND PLANNING BOARD

The Portland Planning Board will hold a meeting on Tuesday, October 23, 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. Level III Site Plan; 22 Bramhall Street; Maine Medical Center, Applicant. (4:30 – 5:45 p.m. estimated time) The Board will hold a workshop to consider a proposed building expansion and new entrance off Congress Street. This is the third phase of expansion as contained in MMC's Institutional Development Plan. The application includes the demolition of the existing Gilman Street garage. The proposed 265,000 sf building addition will reorient the Bramhall medical campus to Congress street, include 64 private patient rooms, and add 19 procedure rooms. The proposed site is within the Maine Medical Center Institutional Overlay Zone. The proposal is subject to review under Portland's Site Plan Ordinance and under delegated review for Maine's Traffic Movement Permit and Site Location of Development standards.

ii. Level III Site Plan; 100 Fore Street; 100 Fore Street, LLC, Applicant. (5:45 – 7:00 p.m. estimated time) The Board will hold a workshop to consider the redevelopment of 100 Fore Street. A portion of the existing building will be demolished and the remaining 9,100 sf will be renovated for a fitness center. A three-level parking garage (total of 539 parking spaces) and two floors of retail and office space above the parking are proposed. The building footprint is approximately 64,980 sf and the total building square footage is 278,237 sf. Access to the parking levels is proposed from Fore Street (across from Mountfort) and from a proposed easterly driveway off Fore Street that is proposed to meet city street standards. The 2.97 acre lot is located within the B-6 Eastern Waterfront zone and subject to review under Portland's site plan standards.

Public Hearing – 7:30 p.m.

i. Hotel Linkage Fee, Ordinance Amendments, City of Portland, Applicant. (7:30 – 8:15 p.m. estimated time) The Planning Board will hold a public hearing on a proposed ordinance addressing new hotel developments and affordable housing demand.

Evening Workshop- Following Public Hearing

i. Level III Site Plan; 150 Riverside Street; Patagon Storage, LLC., Applicant. The Board will hold an evening workshop to consider the redevelopment of 142 and 150 Riverside Street into a 3 story, self-storage building with a footprint of 33,344 sf and a total floor area of 100,343 sf. The 3.6 acre site is located in the B-4 zone. The site plan is subject to Portland's site plan and stormwater permit standards.

ii. Level III Site Plan; 250 Riverside Industrial Parkway; Two Eisenhower Drive, LLC., Applicant. The Board will hold an evening workshop to consider a proposed two-story, 14,720 sf property services building. A total of 3.36 acres of the 12.4 acre site will be paved or gravel for parking, circulation, and outdoor material storage. The proposal is subject to Portland site plan standards and delegated review of Maine's Site Location of Development Act standards.

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 - Revised
PORTLAND PLANNING BOARD MEETING

The Portland Planning Board will hold a meeting on Tuesday, October 23, 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

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PUBLIC HEARING – 7:30 p.m.

1. **ROLL CALL AND DECLARATION OF QUORUM**
2. **COMMUNICATIONS AND REPORTS**
3. **REPORT OF ATTENDANCE AT THE MEETING HELD ON OCTOBER 9, 2018:**
   Workshop – Dundon, Eaton, Silk, Stanley and Whited present; Mazer and Smith absent.
   Public Hearing – All members present.

4. REPORT OF DECISIONS AT THE MEETING HELD ON OCTOBER 9, 2018:

i. Impact Fee Ordinance, Proposed Ordinance Amendment, City of Portland, Applicant.
Mazer moved and Stanley seconded a motion to find the proposed Impact Fee Ordinance is consistent with the Comprehensive Plan and recommends the adoption of the amendments to the City Council. Vote: 7-0

ii. Level III Site Plan and Subdivision; 130 Bancroft Street; Joshua Wagner, representing WB Group, Inc., Applicant. Mazer moved and Stanley seconded a motion to find that criteria 3 and 6 for a sidewalk waiver were met and waives the requirement for a sidewalk on the north side of Benjamin Way. Vote: 7-0. Mazer moved and Stanley seconded a motion to approve the subdivision plan with eleven (11) conditions of approval. Vote: 7-0

5. NEW BUSINESS

i. Hotel Inclusionary Zoning, Ordinance Amendments, City of Portland, Applicant. **This item is being tabled.**

6. EVENING WORKSHOP - 7:30 p.m.

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MEMORANDUM
PLANNING AND URBAN DEVELOPMENT DEPARTMENT
PLANNING DIVISION

To: Sean Dundon, Chair, and Members of the Portland Planning Board
From: Nell Donaldson, Senior Planner, and Caitlin Cameron, Urban Designer
Date: October 19, 2018
Re: MMC Congress Street Hospital Building
Project #: 000331-2018 **CBL:** 53-D-7
Meeting Date: October 23, 2018

I. INTRODUCTION

Maine Medical Center (MMC) appears before the Planning Board for a workshop on the third and final phase of the short-term expansion proposed in their 2017 Institutional Development Plan. This phase involves the demolition of the existing 360,000 SF Gilman Street employee parking garage and replacement with a 285,000 hospital building. As proposed, the hospital building would house 64 private patient rooms, 19 procedure rooms, and connections to both the Congress Street corridor and the interior of the Bramhall campus. The proposal is subject to the standards of the Maine Medical Center Institutional Overlay Zone (MMC IOZ) and qualifies for Level III site plan review under the city's land use code. Advertisement of this workshop appeared in the *Portland Press Herald* on October 12 and 13, 2018. In addition, 254 notices were sent to property owners within 500 feet and the interested citizens list.

As of the writing of this memo, staff has conducted a preliminary review of all aspects of the site plan under both the Institutional Overlay zoning and the site plan ordinance, including those elements that relate to the transportation, environmental quality, public infrastructure, and community safety standards of the site plan ordinance. Because two workshops are anticipated on this site plan, and the second of these is proposed to focus on transportation, utilities, and stormwater, only the zoning and site plan standards related to landscape, access and circulation, site design, and construction management have been considered here.

Applicant: Maine Medical Center
Consultants: Will Conway, Sebago Technics; Jeff Keilman, Perkins & Will; Randy Dunton, Gorrill-Palmer; Turner Construction

II. REQUIRED REVIEWS

Waiver Requests	*Applicable Standards*
Sidewalk material – to allow concrete sidewalks on Congress and Gilman Streets	*Technical Manual Section 1.8* – The City sidewalk materials policy shall be consulted to determine the appropriate type of sidewalk construction.
Provision of sidewalk – to allow a portion of the Gilman Street frontage without a sidewalk	*Section 14-526(a)2.c.(i)* - All developments shall provide sidewalks along all frontages....installed to city specifications, with waiver provisions under *14-506(b).*

Review	*Applicable Statute*
Institutional Overlay Zone	*Section 14-282*
Site Plan	*Section 14-526*

III. PROJECT DATA

Existing Zoning	Institutional Overlay Zone
Existing Use	Structured parking
Proposed Use	Hospital building – 19 procedure rooms, 64 inpatient rooms
Parcel Size	12.5 acres (contiguous Bramhall campus)

	Existing	*Proposed*	*Net Change*
Building Footprint	36,000 SF	50,000 SF	14,000 SF
Building Floor Area	360,000 SF	285,000 SF	-75,000 SF
Impervious Surface Area	398,575SF	412,862SF	14,287SF
Parking Spaces	3,279 (for entire campus, including employee garage)	3,279	0
Bicycle Parking Spaces	193 (campus-wide)	193	0

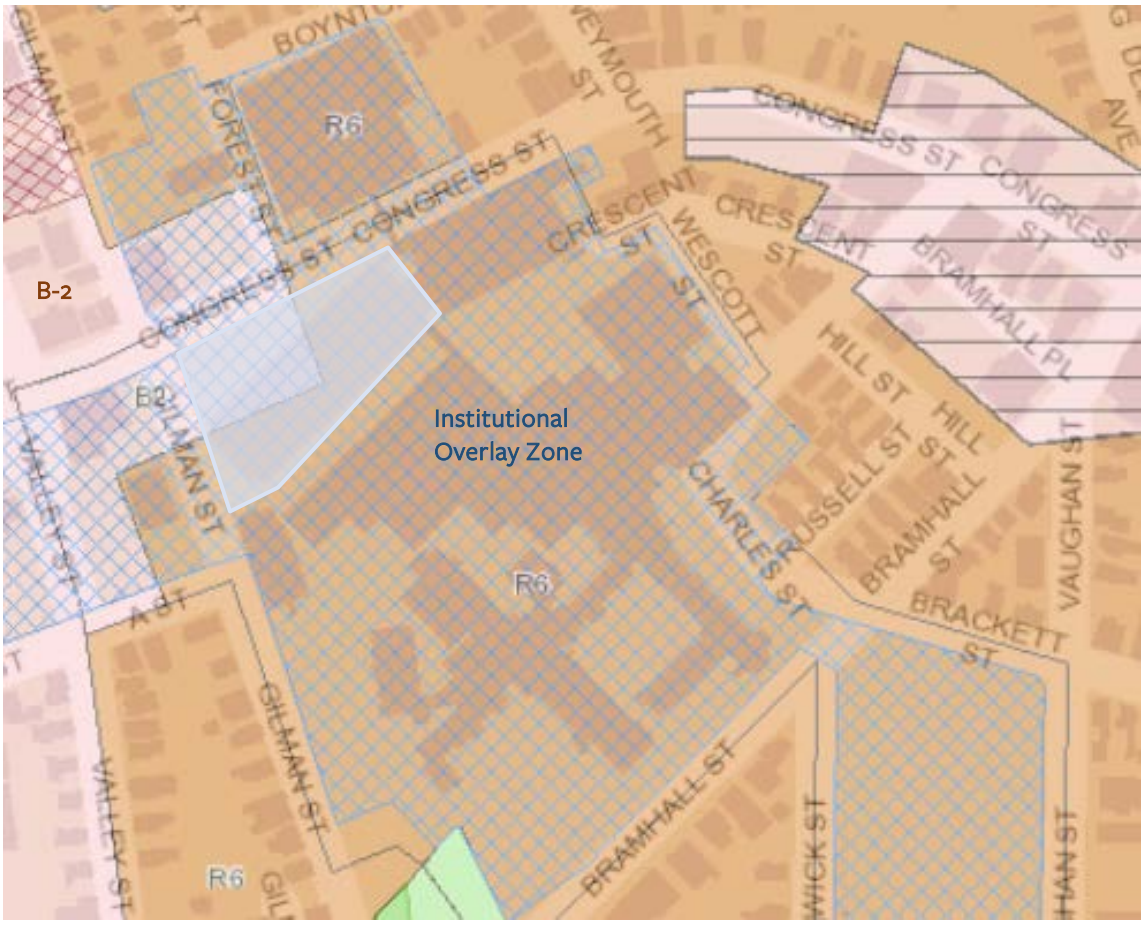
IV. CONTEXT

Maine Medical Center's Institutional Development Plan (IDP), approved by the Planning Board in the fall of 2017, laid the groundwork for a major hospital expansion over the next decade. The short- and long-term expansion plans proposed in the IDP were designed to respond to an emergent clinical need for private beds, to retire aging facilities which no longer meet the needs of patients and visitors, to reorganize the campus to address evolving best practice in health care design, and to centralize parking for employees and visitors. As of the fall of 2018, the hospital has received site plan approval for two of the three projects that comprise the hospital's short-term development plan – the vertical expansions of the East Tower and Visitor Garage and the construction of the Employee Garage at 190 St. John Street. The third project, a new 285,000 SF hospital building with a major entrance on Congress Street, is under consideration here.

The site of the proposed Congress Street hospital building lies on the northwest corner of MMC's Bramhall campus, at the intersection of Congress and Gilman Streets *(Figure 1)*. The bulk of the Bramhall campus sits up gradient behind the site. The Maine Sleep Institute lies to the west across Gilman Street, commercial properties face the site from the north across Congress Street, and MMC's Visitor Garage lies to the east. The site is currently occupied by MMC's Gilman Garage.

The site lies within the MMC Institutional Overlay Zone (IOZ), a zoning designation adopted into the land use code by the City Council in November of 2017 *(Figure 2)*. The IOZ establishes use and dimensional standards which govern proposed development by MMC within the zone, as well as a series of general development standards. Development within the IOZ which meets the criteria for site plan review is also subject to the site plan standards of the land use code.





Figures 1 & 2: Project site land use context (above) and zoning context (below)

V. PROPOSED DEVELOPMENT

The site plan application includes the demolition of the existing 360,000 SF Gilman Garage, which has stood on the site since the mid-1970s and is nearing the end of its useful life. Following demolition, significant site work is proposed, including substantial regrading, utility work, and the installation of an underground stormwater detention and treatment facility.

The new 285,000 SF building which is proposed to replace the Gilman Garage would contain circulation space on the first floor, a second floor containing 19 procedure rooms, and inpatient rooms on the third through 5th floor. A landscaped roof garden is proposed with access from the 3rd floor.

The building has been designed to function as a major point of entry to the hospital, giving the campus a new face on Congress Street and a new way of engaging with the neighborhoods that surround it. The building's most active areas, including circulation and lobby spaces, are oriented towards Congress Street, where significant amounts of glass are proposed. The building would lie between 20 and 30 feet from the right-of-way line on Congress Street and directly adjacent to the right-of-way line on Gilman Street.

The site plan includes an arrival area tucked partly below the second floor at the easterly end of the building. This turnaround would provide access for vehicles, pedestrians, and bicyclists destined for the main building entrance as well as vehicles entering the visitor garage. The turnaround is proposed in hardscape, with shade-tolerant plantings in the center. This area would be held by a significant retaining wall at the Congress Street property line, one-story above a separate plaza space with plantings and low seating walls at the northwesterly corner of the site. A broad stairway is proposed to join these two exterior spaces.

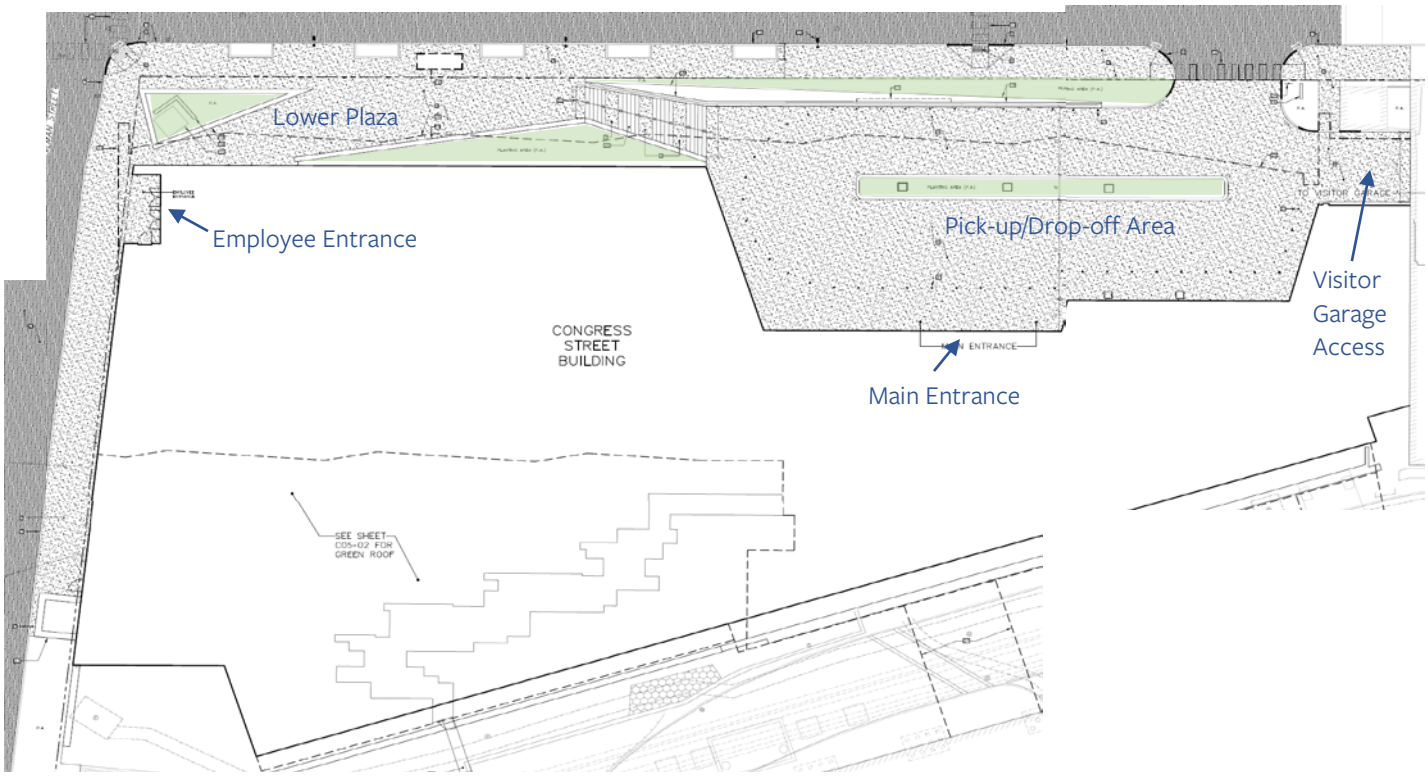


Figure 3: Preliminary site plan





Figures 4 and 5: View from Forest Street looking south across Congress Street, existing (above) and proposed (below)

VI. PRELIMINARY ZONING & SITE PLAN REVIEW - URBAN DESIGN FINDINGS

Staff has conducted a preliminary analysis of the site plan application with respect to the urban design-related standards of the Institutional Overlay Zone and land use code, including the relevant transportation, landscape, and site design standards. Preliminary staff comments are summarized below.

A. *Landscape and Landscape Preservation*

The preliminary plans show four landscape zones, one of which is proposed to serve patients and visitors to the hospital through a roof garden, and the others of which are proposed at ground level on the Congress Street frontage. The applicant has shown low, evergreen plantings contained within a center island in the arrival area; evergreen climbers, evergreen groundcover, and accents of grass at the retaining wall on Congress Street; and triangular seating areas with evergreen groundcover and accent feather reed grass in the plaza at the northwesterly corner of the site.

Staff has reviewed the preliminary landscape plans and generally finds that the plans meet the site landscaping standards of the land use code. However, final review of plant selections by Jeff Tarling, the City Arborist, is outstanding.

B. *Streetscape/Access and Circulation and Site Design*

The preliminary plans include new concrete sidewalks on Congress Street and Gilman Street, which converge at an open plaza space at the northwest corner of the site. This plaza, which would lie adjacent to the employee shuttle bus pickup/drop off, is proposed in concrete as well, with wide granite seating walls rimming the two proposed planting areas. The plaza leads to a wide stair in granite, which provides pedestrian access to the main entrance via the turnaround above.

The plans show five honey locust trees in raised tree wells along the Congress Street curb line. No street trees are proposed for Gilman Street. Similarly, the plans show four street lights on the Congress Street frontage; none are proposed for Gilman Street. A bus shelter/stop is proposed where the plaza fronts on Congress Street.

Staff has reviewed the preliminary plans with respect to the relevant site plan standards and has generally suggested additional discussion on the approach to the Congress Street streetscape in particular. In addition to requiring details for the proposed streetscape elements, including lighting, sidewalks, tree wells, and bus shelter, staff has suggested a broader consideration of the Congress Street right-of-way, including the design of sidewalks, street trees, bicycle facilities, and parking. Additional discussion on the Gilman Street sidewalk design is also anticipated. Specifically, staff has raised questions regarding the following:

1. *Sidewalk width and sidewalk design:* The effective width of the proposed Congress Street sidewalk varies between approximately 3' at the area with a perpendicular crosswalk, 6' at areas with tree wells, and 11' elsewhere. Staff has requested that the applicant explore options to widen the sidewalk to allow more a generous pedestrian zone. Staff has also raised questions about the width of the Gilman sidewalk as it is proposed to taper near Congress. Tom Errico, the city's consulting traffic engineer, writes,

> *General sidewalk width given future pedestrian demand on Congress Street seems inadequate. Congress Street cross-section width should specifically be detailed. How will bikes, parking, bus, vehicles be accommodated?*
>
> *The flared curb ramp near the main entrance vehicle driveway is not acceptable partly because it creates a narrow pedestrian accessible route. Also, the crosswalk location should be evaluated.*



Figure 6: Proposed view from Congress Street/Gilman Street intersection, with plaza in the foreground

> *The provision of the City's preferred two ramp configuration at the Gilman Street corner should be investigated.*
>
> *The Gilman Street non-tangent curb alignment is not acceptable. A straight curb is suggested. Gilman Street width dimensions shall be provided.*

In addition, staff has raised some questions regarding ADA accessibility in the sidewalk design. Bruce Hyman, the city's Transportation Program Manager, writes,

> *I don't believe, based on the grading plan submitted, (C40-01/02) that the curb ramps serving the mid-block crosswalk meet ADA in terms of cross-slope (2% max. cross-slope) nor that the area shown for the bus stop has a bus landing area that meets ADA. Please document the ADA analysis.*
>
> *I need to further assess curb ramp design- for instance, there is not sufficient landing area for the curb ramp serving the mid-block crossing along the retaining wall - a 5' deep (measured perpendicular to the street) ramp landing area is required where a ramp meets vertical obstructions (not the usual 4')*

2. *Sidewalk materials:* The applicant has proposed concrete sidewalks, although both the Congress Street and Gilman Street sidewalks are designated as brick in the City's sidewalk material policy. MMC has indicated that they intend to submit a pedestrian network plan, required under the Institutional Development Plan, to clarify the need for a sidewalk material waiver. Staff has also requested that the applicant file a formal waiver request in the revised submittal. Staff support the use of concrete sidewalk material at the corner area, as the concrete sidewalks would provide an

appropriate continuity to the private plaza design. More information is requested regarding the transition from the concrete to the existing red brick to the east on Congress Street – where will this transition occur and what is the detail? The renderings show seams and accent banding, but this level of detail does not appear in the plans. Staff has requested clarification on the design intent.

3. *Sidewalk extent:* The applicant's preliminary plans show the Gilman Street sidewalk terminating short of the southerly end of the proposed hospital building and approximately 100' north of the A Street intersection. Staff has requested that the applicant explore the possibility of extending this sidewalk to the south in order to provide access to A Street. Mr. Errico writes,

   A sidewalk on Gilman Street to A Street should be explored or a waiver analysis should be provided.

4. *Street trees*: Staff has also raised some questions with respect to the street trees as shown in the preliminary plans. Specifically, staff has asked the applicant to include street trees in raised tree wells on the Gilman Street frontage, where sidewalks are proposed at approximately 13' in width. With respect to the design of the raised tree wells, Jeff Tarling, the city's arborist, writes,

   We would like to see the planters both the tree planters and the proposed long planters have rounded edges or (radius) corners. These are visually more appealing and seem to work better for winter snow and ice clearing… On special projects like this it would be good to encourage the applicant to go with beefier granite on the planters then the standard 5" width. We noticed both Portsmouth and Boston have used 6" + and for the larger planter it could use used as a seat wall if appropriate. Included the pics of the rain planter from unknown city as it could serve a purpose as a functional stormwater feature and design concept idea.

5. *Transit access:* Staff anticipates further discussion around the placement of potential METRO bus shelters along Congress Street adjacent to the project. Given the likelihood that both the employee entrance and main entrance to the proposed hospital building would generate significant transit trips, METRO has indicated a desire to consolidate two nearby stops (one at Congress/Gilman and one at Weymouth/Gilman) to a location as close as possible to the hospital building's main entrance. On the preliminary plans, one bus stop is shown in the right-of-way near the plaza area on the northwest corner of the site. Staff has noted in its initial review that two shelters should be provided, and that adequate circulation to and around these shelters will be required. Mr. Hyman writes,

   The site plan key identifies #14 as "Bus Stop" but the elevations show a bus shelter - there is not sufficient bus landing area (5'x8' minimum") provided if a bus shelter is intended (or unless the landing area includes a portion interior to the shelter as the landing area - which is not preferred).

   No bus stop or shelter location is shown on the north side of Congress St as has been discussed with the applicant - a paired bus stop is desired.

6. *Exterior lighting*: Staff has requested that the applicant provide details for proposed street lights on Congress, in addition to cut sheets and photometric calculations for site lighting proposed in the plaza area and turnaround. The applicant has shown building-mounted lighting on the Gilman Street façade, but the need for street lighting on Gilman may also be considered.





Figures 7 and 8: View from Congress Street looking east, existing (above) and proposed (below)

7. *Right-of-way encroachment:* The preliminary plans show an encroachment into the right-of-way where a 'mechanical areaway' is proposed to occupy the sidewalk on Gilman Street, sitting proud of the sidewalk grade. Staff has requested that the applicant provide more information on this 'mechanical areaway.'

8. *Signage and Wayfinding:* A draft campus-wide signage plan is included in this submission. Generally, the sign plan proposes to replace the existing sign program with updated, cohesive signs in the existing locations. New signs are proposed as part of the Congress Street medical building – these all are proposed at the grade level and vary in scale for pedestrian and car wayfinding. A new sign appears at the gateway corner of Gilman and Congress to mask an existing utility box in this location and signal the main campus. The materials and design are consistent and comprehensive throughout the campus, although staff has requested additional information regarding the stone veneer proposed. Staff had the following additional comments (see *Attachment 5*):

   Regarding the new sign proposed at Bramhall Square, signs will not be permitted on properties not owned by MMC. This should be removed.

   There are concerns about sight line obstructions on several of the signs located at driveways and intersections. Staff requests a sight line analysis.

   There are concerns about the height of some monument signs shown at 11'0" tall next to sidewalk locations. Sight lines and pedestrian scale are factors here.

   Individual Sign Design:
   i. *South parking lot signage: Two signs facing the same street are not appropriate, not necessary, and create too much visual clutter. Eliminate one of the signs (5.b). Reduce the overall size.*
   ii. *CS.1: What methods of illumination are proposed for this large sign on Congress Street?*
   iii. *EG.1: The layout of this sign differs from the other monument signs on the main campus. Is there a reason for this? Concern is for overall consistency and comprehensiveness.*

C. *Zoning-Related Design Standards (IOZ/site design standards)*

The proposed building will replace the existing parking structure at Congress and Gilman Streets and occupy a dominant, gateway position on the MMC campus from the St. John Street approach from Congress Street. The overall building height, as observed in the long-view renderings, is not readily visible from most long distances. A future addition on top of this building will be more impactful on the long views of the campus.

The applicant sought preliminary staff guidance on the design approach for the building and plaza areas prior to submitting this site plan application. The resulting design provides a strong architectural statement at a prominent corner and fulfills the goals of the IOZ for a building that creates a new gateway on Congress Street with a character and material palette that is cohesive with the campus. The stated MMC vision includes integrating inside and outside – achieved here through the high level of fenestration, the entry under the building overhang, the atrium that connects to the street and the sky, the green roof, 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 building has a clear, solid base plinth on top of which is the more airy and transparent active and public spaces. The building overhang creates a



Figure 9: Night rendering from Congress Street

contemporary form that makes a strong statement appropriate for the gateway location of the building but also gives the building a clear orientation to Congress Street. Cohesiveness is created with design elements found here and in the other recently approved Phase I projects – use of white materials and glass, vertical windows and articulation elements.

The staff design review memo provides a complete analysis of all the applicable design guidelines and staff review for the project at 22 Bramhall Street – Congress Street Medical Building. This project was reviewed according to the adopted IOZ IDP and Regulatory Framework standards (*Attachment 5*). Some outstanding questions or areas of discussion include:

- Building interface with the ground level and public realm, especially Gilman Street and the landscape design
- Level of activity as it relates to the IDP guidelines
- Legibility of entrance and pedestrian routes
- Appropriateness of the building overhang into the Gilman ROW
- Building and site lighting, especially related to CPTED and safety concerns

VII. PRELIMINARY ZONING & SITE PLAN REVIEW – CONSTRUCTION MANAGEMENT PLAN

Staff has also conducted a preliminary review of the construction management plan. Construction is proposed on a three-year timeline, with demolition beginning in December of 2019 and occupation estimated for fall of 2022. The demolition is proposed over a six-month period, progressing from west to east. Demolition debris would be processed in place and hauled from the site via truck. The heaviest truck traffic is proposed to occur during the demolition and subsequent excavation phases. Construction will be accomplished using a tower crane; the pad is proposed to lie entirely on MMC property.

A dust control and monitoring plan is proposed, as is a noise mitigation plan and process for addressing noise concerns. The plan includes air quality monitoring and vibration monitoring provisions. In accordance with the IOZ, the construction management plan also contains a communication component, including a plan for public noticing and processing construction concerns.

With respect to traffic movement during construction, the applicant has proposed to install a construction fence 12' off the existing Congress Street curbline and 10' from the Gilman curbline, which would allow the maintenance of two-way traffic on both streets. The south-side sidewalk along Congress and the east-side sidewalk on Gilman would be closed, with pedestrian detours proposed for eastbound pedestrians at the Gilman/Congress intersection and for westbound pedestrians at the mouth of the MMC Visitor Garage on Congress Street. Trucks would enter the site through gates at the Congress/Gilman intersection, the A Street/Gilman intersection, and the Forest Street/Congress Street intersection.

Regarding the circulation plan during construction, staff has asked that the applicant provide additional details on how all modes of travel, including bicycles, will be accommodated, including during special events. Mr. Errico has reviewed the transportation elements of the construction management plan and writes,

> *Local truck routings should be clearly documented from each construction entrance. Roadway widths shall be detailed.*
>
> *Is a temporary protected sidewalk on Congress Street feasible (if not for the entire project – but during certain phases).*
>
> *How will METRO service be accommodated?*

VIII. PUBLIC COMMENT

No written public comments have been received by the Planning Division. The applicant hosted a neighborhood meeting on Tuesday, October 16. Minutes from this meeting will be available prior to the second workshop on the site plan.

IX. NEXT STEPS

1. MMC to address staff design and construction management comments;
2. November 13 Planning Board workshop to discuss transportation, utilities, and stormwater

X. ATTACHMENTS

PLANNING BOARD REPORT ATTACHMENTS

1. Traffic Engineer review (memo from Thomas Errico, 10/10/18)
2. Transportation Program Manager review (memo from Bruce Hyman, 10/10/18)
3. Planning review (memo from Nell Donaldson, 10/10/18)
4. City Arborist review (memo from Jeff Tarling, 10/11/18)
5. Urban Designer review (memo from Caitlin Cameron, 10/19/18)

APPLICANT'S SUBMITTALS

A. Project Description
B. Completed Application Checklist
C. Right, Title, & Interest
D. Evidence of State and Federal Approvals
E. Zoning Assessment
F. Existing and/or Proposed Easements
G. Waiver Requests

H. Financial Capacity
I. Technical Capability
J. Transportation Analysis
K. Access and Circulation
L. Loading and Servicing
M. Sidewalks
N. Public Transit
O. Off-Street Parking
P. Bicycle Parking
Q. Snow Storage
R. TDM Plan
S. Preservation of Significant Natural Features
T. Landscaping and Landscape Preservation
U. Site Landscaping
V. Parking Lot Landscaping
W. Street Trees
X. Water Quality
Y. Consistency with City Master Plans
Z. Public Safety and Fire Prevention
AA. Adequacy of Public Utilities
BB. Massing, Ventilation, and Wind Impact
CC. Shadows
DD. Snow and Ice Loading
EE. View Corridors
FF. Historic Resources
GG. Exterior Lighting 1
HH. Exterior Lighting 2
II. Noise and Vibration
JJ. Signage and Wayfinding
KK. Zoning-Related Design Standards
LL. Construction Management Plan

PLANS

Plan 1. Boundary Survey
Plan 2. Boundary Survey
Plan 3. Demolition Plan
Plan 4. Site Plan
Plan 5. Site Plan, Green Roof
Plan 6. Utility Plan
Plan 7. Utility Plan, Main Entrance
Plan 8. Plan and Profile, Utility Corridor
Plan 9. Grading Plan, Upper Congress
Plan 10. Grading Plan, Lower Congress
Plan 11. Grading Plan, Gilman
Plan 12. Level B Foundation Drainage Plan
Plan 13. Level B Foundation Drainage Plan
Plan 14. Level 1 Foundation Drainage Plan
Plan 15. Details
Plan 16. Details, Stormwater System
Plan 17. Details, Stair Section

Plan 18. Wall Details
Plan 19. Erosion Control Plan
Plan 20. Landscape Plan, Upper Congress
Plan 21. Landscape Plan, Lower Congress
Plan 22. Pre-Development Campus Watershed Plan
Plan 23. Post-Development Campus Watershed Plan
Plan 24. Post-Development Watershed Plan
Plan 25. Exterior Elevation, North
Plan 26. Exterior Elevation, West
Plan 27. Exterior Elevation, South
Plan 28. Rendering
Plan 29. Rendering
Plan 30. Rendering
Plan 31. Rendering
Plan 32. Rendering

Portland Maine | Yes. Google's good here.

Helen Donaldson <hcd@portlandmaine.gov>

MMC Office Building Initial Traffic Review Comments

Tom Errico <thomas.errico@tylin.com> Wed, Oct 10, 2018 at 1:15 PM
To: Helen Donaldson <HCD@portlandmaine.gov>
Cc: Bruce Hyman <bhyman@portlandmaine.gov>, Jeremiah Bartlett <JBartlett@portlandmaine.gov>

Hi Nell – the following are initial traffic comments for the project for discussion purposes at tomorrow's meeting

- A Traffic Movement Permit Scoping meeting is scheduled for October 23, 2018 and accordingly no comments are provided regarding off-site traffic impacts at this time.
- The Gilman Street non-tangent curb alignment is not acceptable. A straight curb is suggested. Gilman Street width dimensions shall be provided.
- The flared curb ramp near the main entrance vehicle driveway is not acceptable partly because it creates a narrow pedestrian accessible route. Also, the crosswalk location should be evaluated.
- The provision of the City's preferred two ramp configuration at the Gilman Street corner should be investigated.
- Bus stop location and accessibility should be evaluated.
- Shuttle pick up and drop off operations at the employee entrance on Gilman Street should be detailed.
- Vehicle drop-off/pick-up operations/management at the vehicle loop should be provided.
- Pick-up/Drop-off loop interaction with parking garage entrance is a concern and an analysis should be provided.
- General sidewalk width given future pedestrian demand on Congress Street seems inadequate.
- Congress Street cross-section width should specifically be detailed. How will bikes, parking, bus, vehicles be accommodated
- Pedestrian movements across the parking garage entrance to the Main Entrance is a concern.
- A sidewalk on Gilman Street to A Street should be explored or a waiver analysis should be provided.
- I have briefly reviewed the Construction Management Plan and noted the following:
    - Local truck routings should be clearly documented from each construction entrance.
    - Roadway widths shall be detailed.
    - Is a temporary protected sidewalk on Congress Street feasible (if not for the entire project – but during certain phases).
    - How will METRO service be accommodated.

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
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+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>

MMC Ph III Medical Office Bldg: PL331-2018

Helen Donaldson <hcd@portlandmaine.gov> Wed, Oct 10, 2018 at 4:55 PM
To: Helen Donaldson <hcd@portlandmaine.gov>

Hi Nell,

My preliminary comments regarding site access, sidewalk, street, streetscape and public realm are as follows:

In general - the plans as presented do not show enough context to readily assess them. The scale and extent of the area shown should be revised. The shading/hatching patterns should be modified so the plan is legible when shown in its entirety on a computer screen - it currently is not legible.

Grading Plans

- I don't believe, based on the grading plan submitted, (C40-01/02) that the curb ramps serving the mid-block crosswalk meet ADA in terms of cross-slope (2% max. cross-slope) nor that the area shown for the bus stop has a bus landing area that meets ADA. Please document the ADA analysis.
- The grading plan for Gilman St appears incomplete/not shown in its entirety. Please show the entire site.
-

Site Plan

The site plans do not show enough context of the entirety of the street configuration in the vicinity of the site - I'd request that the applicant resubmit and provide 1"=20' plans instead of the 1"=10' site plan (and 1"=5' grading plans - requires 2 sheets)

- The site plan key identifies #14 as "Bus Stop" but the elevations show a bus shelter - there is not sufficient bus landing area (5'x8' minimum") provided if a bus shelter is intended (or unless the landing area includes a portion interior to the shelter as the landing area - which is not preferred)
- No bus stop or shelter location is shown on the north side of Congress St as has been discussed with the applicant - a paired bus stop is desired
- The tree wells do not meet city design standard - they 1) do not use radius curb and 2) do not show a section of raised granite tree well along the Congress St curb line and 3) are not of standard size.
- The proposed street layout is not shown on the plans - locations of on-street parking, travel lanes, climbing bike lane, etc
- required signs (bus stop, etc) are not shown on the plans
- curb ramp modifications on the opposite side of Gilman and Congress Streets are to be shown to achieve ADA-compliance
- The sidewalks are shown on both Congress and Gilman Streets as broom finish concrete - I do not currently support this without further documentation of the need to stray from our Sidewalk Material Policy
- I need to further assess curb ramp design- for instance, there is not sufficient landing area for the curb ramp serving the mid-block crossing along the retaining wall - a 5' deep (measured perpendicular to the street) ramp landing area is required where a ramp meets vertical obstructions (not the usual 4')

Design Details

I did not find details available for the proposed materials within the public ROW: lighting, sidewalk, curb ramps, detectable warning panels, tree wells, bus shelter (if proposed), etc

--
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 ....

--
Nell Donaldson
City of Portland Planning Division
874-8723
hcd@portlandmaine.gov

PLANNING - LEVEL III REVIEW (14-526): MMC Congress Street Medical Building (285KSF) (19 procedure rooms, 64 patient rooms, licensed bed count remains 637)
Institutional Overlay Zone

IOZ - ZONING ANALYSIS

a. *Use*

b. *Dimensional Requirements*
Provide analysis with respect to dimensional requirements in the revised submittal.

c. *Design*
See comments by others.
Please provide floor plans in revised submittal

d. *Signs*
See below.

e. *Transportation*

f. *Environment*

g. *Mitigation Measures*

h. *Neighborhood Integration & Neighborhood Engagement*

i. *Construction Management*
See comments by others.
Please provide some discussion on attempts to minimize impacts to pedestrian circulation along the south side of Congress Street. Could sidewalk closure be limited to certain construction/demolition phases?
Provide discussion on bike accessibility around the construction site.

j. *Other*

		Preliminary Review (10/10/18)	
Transportation	a. Impact on Surrounding Street Systems	Traffic Movement Permit analysis to come pending scoping meeting	
	b. Access and Circulation	See comments by others. Please provide a circulation plan showing how visitors and employees access the main entrance/employee entrance by different modes. Further discussion on the street layout pending. At the least, a climbing bike lane should be shown on Congress Street. The Congress Street sidewalk should be widened as possible to provide better pedestrian access along the site frontage A sidewalk material waiver request should be submitted. Pending review of this request, in places where sidewalk material is proposed to transition, details should be provided. Ideally, transitions would occur at curb cut locations. A sidewalk waiver request should be submitted for the Gilman Street frontage. Provide more information on 'mechanical areaway' showing in the Gilman Street ROW. This appears to be a sidewalk obstruction? Confirm how a pedestrian coming from the west would access the front door on foot if stairs are not an option?	•
	c. Public Transit Access	Plans have been forwarded to METRO for review. Further discussion of bus shelters and associated access improvements (including crosswalk and north side shelter) pending.	o

		At the least, bus shelter as proposed lies in the middle of the pedestrian desire line. Please propose alternate location.	
	d. Parking	Bike racks should be provided at this entrance. Please indicate on revised plans.	•
	e. Transportation Demand Management (TDM)		
Environmental Quality	a. Preservation of Significant Natural Features		
	b. Landscaping and Landscape Preservation	See comments from others forthcoming. Provide street trees on Gilman Street.	
	c. Water Quality, Storm Water Management and Erosion Control	See comments from others.	
Public Infrastructure and Community Safety	a. Consistency with Master Plans		
	b. Public Safety and Fire Prevention	See comments from others forthcoming.	•
	c. Availability and Adequate Capacity of Public Utilities	Utility plans are still under review.	•
Site Design	a. Massing, Ventilation and Wind Impact		•
	b. Shadows		•
	c. Snow and Ice Loading		
	d. View Corridors		
	e. Historic Resources		
	f. Exterior Lighting	Please provide light fixture cut sheets for all lights proposed. Photometric plan should show average and max illumination levels.	•
	g. Noise and Vibration		•
	h. Signage and Wayfinding	Revised sign plan still under review.	
	i. Zoning Related Design Standards	See comments from others.	

Other Submittals Required

Utility capacity letters
Plan edits

- rescale site plan at 1" = 20'
- include distances to property lines on site plan
- add height calculation from average grade on elevations
- plans need to be stamped by an engineer

RTI

Encroachments (building and 'mechanical areaway') into Gilman ROW need further review.

Other Permits/Reviews Required

Site Location of Development
FAA

Waivers

Please provide formal requests for sidewalk material waiver and waiver of sidewalk along Gilman Street

Outstanding Items from Earlier Reviews

– Pedestrian Network Plan (requirement of IDP, included as condition of approval on East Tower) - *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").*

Portland Maine Yes. Google's good here.

Caitlin Cameron <ccameron@portlandmaine.gov>

MMC congress building

Jeff Tarling <jst@portlandmaine.gov> Thu, Oct 11, 2018 at 1:05 PM
To: Caitlin Cameron <ccameron@portlandmaine.gov>
Cc: Helen Donaldson <hcd@portlandmaine.gov>

Hi Caitlin -

Nel & I were discussing this last week at the Planning Review meeting.

We would like to see the planters both the tree planters and the proposed long planters have rounded edges or (radis) corners. These are visually more appealing and seem to work better for winter snow and ice clearing. Our spec (see attached) recommends the curbing with a 'thermal finish' which unlike the polished regular street curb looks better and is more tactile for walking and less skate board friendly, if that matters.

On special projects like this it would be good to encourage the applicant to go with beefier granite on the planters then the standard 5" width. We noticed both Portsmouth and Boston have used 6" + and for the larger planter it could use used as a seat wall if appropriate. Included the pics of the rain planter from unknown city as it could serve a purpose as a functional stormwater feature and design concept idea.

Swenson granite has the good information on options.

https://swensongranite.com/product/granite-curbing/



Portsmouth Granite tree planter with flowers



Portland planter standard with either 1' or 2' radis corners depending on size.



Urban rain planter concept ideas





Boston Rose Kennedy parkway granite planter seatwall with anti skateboard blocks



Ocean Gateway planter using native plants - Amelanchier and blueberry
Carroll Associates design, this has performed well with minimum maintenance and

includes native plants.

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]

TreePlanter.pdf
58K

Memorandum

Maine Medical Center

To:	Members of the City of Portland Planning Board
From:	Jeff Sanders, Chief Operating Officer, MMC
Date:	September 25, 2018
Re:	Site Plan Application: Congress St Patient Care Building

Maine Medical Center is pleased to submit this Level III Site Plan Application for the Congress St Patient Care building. This is the last 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

This is the third and final site plan submission in MMC's short-term expansion and modernization plan. It completes the project's overall mission of improving the experience of patients, staff and visitors to the hospital; developing MMC's presence on the urban edge of the campus and providing convenient, safe and predictable parking for staff and the community.

The site plan includes the removal of the Gilman Street garage, MMC's staff parking facility that has reached the end of its useful life. MMC will expand into that space with a building featuring 64 modern, private patient rooms and 19 procedure rooms. Re-orienting the campus toward Congress Street will help ongoing efforts to revitalize this important gateway to the city, furthering the goals of the community and the city of Portland's Comprehensive Plan.

MMC has worked closely with city staff, neighbors, and local businesses to make improvements in accessing the Bramhall campus while reducing traffic and parking challenges on neighboring streets. Work has been undertaken to design the Congress Street entrance in order to allow easy and convenient access to MMC while minimizing impact on existing pedestrian, bicycle, transit and vehicular traffic.

This 265,000-square-foot addition allows MMC to internally reorganize cardiac services within the hospital campus, which means timely, efficient access for patients and care teams and reduction of time and effort spent traveling through the hospital corridors. The 19 procedure rooms will align with industry best practices, providing adequate space to treat patients, ultimately improving the experience at MMC.

PROJECT PURPOSE AND NEED

The entire MMC campus has grown in both size and complexity since it was built as Maine General Hospital in 1874. The growth has brought changes in both programmatic and infrastructure needs as it continues to serve patients and their families throughout the entire State of Maine and Northern New England. During the master facility planning process, MMC identified four key categories of need:

- Clinical
- Building
- Campus Reorganization
- Parking

The Congress St Patient Care building represents a significant step towards modernizing the facilities at Maine Medical Center. Over 50% of MMC's Bramhall campus is over 40 years old and 25% is 30 years old. The oldest part of campus, the East Wing of the Maine General Building, was built in 1874. 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. Patient acuity and Case Mix Index are representations of how sick patients are at the hospital. Patients at MMC require advanced equipment, skilled care teams, and, most of all, private rooms to better facilitate their care and recovery.

The majority of 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, gender cohorting, maintenance, or staffing. The primary objective of the Congress St Patient Care building is to increase the number of private rooms and procedure rooms to better enable patient care.

Less than half 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. Significantly increasing the number of private rooms at MMC will improve the operational efficiency and patient and care giver experience.

CONSTRUCTION MANAGEMENT APPROACH

Turner Construction is the construction manager for this project. Turner's success working in and around highly complex environments will directly contribute to the success and safety of this project.

The purpose of the construction management plan (CMP) submitted with this application is to provide the details of the second phase of construction for MMC's Master Facility Phase IIB. The CMP 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, mitigating impacts to surrounding residences and businesses and maintaining public safety are high priorities during the construction phase. The CMP 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 CMP.

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.

DESIGN APPROACH

The campus transformation of Maine Medical Center (MMC) draws its inspiration from its site, 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.

MMC followed the Design Guidelines set in MMC's Institutional Development Plan (Pgs. 116-118). Other key design drivers and interventions envisioned for the MMC project 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 design improves the visitor and patient experience from arrival to the City all the way to entering the 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.

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 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 and visitor experience as well as enhance the neighborhood.

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.

CONCLUSION

We are excited about this project and the enhancements it 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 Congress St patient care building with you.

WRITTEN SUBMISSION 26 – AVAILABILITY AND ADEQUACY OF PUBLIC UTILITIES
BRAMHALL ST. – 22; MMC CONGRESS STREET BUILDING
LEVEL III SITE PLAN APPLICATION

ATTACHED ARE AN ABILITY TO SERVE CONFIRMATION FROM CENTRAL MAINE POWER REGARDING ELECTRICAL SERVICE, AND AN EMAIL TO PORTLAND WATER DISTRICT REQUESTING AN ABILITY TO SERVE CONFIRMATION. THE RESPONSE FROM PORTLAND WATER DISTRICT WILL BE SUBMITTED UPON RECEIPT.

REGARDING SOLID WASTE MANAGEMENT, THE APPLICANT HAS A CONTRACT WITH TROIANO WASTE MANAGEMENT WHO WILL CONTINUE TO PROVIDE THIS SERVICE FOR THE CONGRESS STRET BUILDING.

From:	Cough, Jamie
To:	Troidl, Adam
Subject:	CMP Three Phase Ability to Serve Request and Three Phase Service Process
Date:	Monday, September 24, 2018 8:12:00 AM
Attachments:	Easement Information Worksheet.doc Standard Easement Sample.pdf 2July 2018 EDET.XLSX

9/24/18

Adam Troidl, LEED AP
Vice President | Development & Consulting Services
Colliers International

Sent via email to: adam.troidl@colliers.com

RE: CMP Ability to Serve Letter for Maine Medical Center Expansion

Project Description: Maine Medical Center 263,000 sf clinical building at the corner of Congress & Gilman. This will be a redevelopment of an existing 1,200 car +/- parking garage site on the existing primary metered campus on Congress Street.

Dear Mr. Troidl:

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 me at 207-629-1489.**

Here is our typical process for getting your three phase or CT rated single phase service installed. If you have any questions, please let me know. The underlined links will redirect you to the appropriate site for additional information.

Service Milestones for Three Phase Services and CT Rated Single Phase Services. Please refer to CMP Installation Checklists for other installations.

- Call 1-800-S6S-3181 to establish a new account (if needed) and an SAP work order. Please provide both of these to me.
- Submit Load information. Please complete the attached EDET (excel file) using load information. . Please complete this and email back to me.
- Submit the easement information worksheet. Please complete this form and either email or fax back to me.
- Submit any electronic drawings (PDF (preferred) or DWG files) of the site layout and proposed electrical connections if you have them.

- Preliminary meetings with CMP Advisor and Engineer to determine details of job (I will need to schedule with your electrician/contractor-please let me know who this is)
- Field planner design appointment to cost out job and develop CMP invoice. The invoice is typically generated 5-6 weeks after the design appointment. This expires after 90 days from the invoice date.
- CMP submits invoice to the customer for payment (typically via email). Payment received from customer.
- Easements (based on easement information worksheet) sent out, signed and originals returned to CMP.
- Job scheduled for completion after the electrical inspection has been received.

This process can take several months, depending upon several factors including transformer or materials delivery, 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.

Please complete the attached forms (the specific instructions are on each form) and email them back to me at your earliest convenience.

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

You will be responsible for installing the customer connections, conduits, and metering in accordance with the CMP Handbook of Standard Requirements. The transformer will be sized based on your submitted load sheets.

Your deposit amount will be typically based on an estimated two month bill, calculated from your completed load sheet unless otherwise determined by CMP.

Metering:

All metering (including locations) must be preapproved by CMP.

Chapter 324 Interconnections:

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 Chapter 324 Interconnection Standards 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 Customer Net Energy Billing can be accessed thru the Chapter 324 website or by clicking here: Net Energy Billing

Reallocation/Line Extensions:

Recently, changes were made to the three-phase construction policy, which require CMP to reallocate construction costs paid by customers. If applicable, those projects identified as "developments" do not qualify for reallocation of funds. Please see this document at our website for details about the reallocation conditions. Any reallocation charges will be specifically denoted on your invoice. The website address for this is: PolyphaseLineExtension .

This line extension will be part of Central Maine Power's distribution system. In the event the property served under this Agreement is sold or otherwise conveyed, all rights and obligations of the Agreement shall stay with the property. Please note that if you rent or lease this property to another and you want to receive the reimbursement payments, you must make special arrangements with the Central Maine Power Company. Otherwise, any reimbursement payments will be sent to the "Customer" taking service at the service location.

Electricity Supplier Information:

Central Maine Power Company (CMP) will provide your facility with electric delivery service. If you don't already have a provider, you will need to make arrangements with a competitive electricity provider in order to receive electricity supply for your facility. In the event you fail to choose a competitive electricity provider, you will receive Standard Offer service arranged by the Maine Public Utilities Commission. If you wish to be served by a competitive electricity provider immediately upon establishment of delivery service, you must arrange for this service directly through your chosen competitive electricity provider, who must enroll your account no later than 5 PM on the business day prior initiation of delivery service by CMP. An up-to-date list of competitive suppliers can be found at the:

1) Maine Public Utilities Commission (MPUC) web site- **Maine PUC**
2) By calling the MPUC at (207) 287-3831

Attachments:

Excel Load Sheet (EDET)
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



CENTRAL MAINE
POWER

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Will Conway

From: Dylan Stuart
Sent: Monday, September 24, 2018 11:22 AM
To: rbartels@pwd.org
Cc: Will Conway; 15466
Subject: Maine Medical Center Ability to Serve Request
Attachments: 15466U2-U-CONGRESS.pdf

Robert,

I am writing to request an ability to serve letter for the Maine Medical Center Expansion project following our meeting from last week. We have updated the locations for the domestic and fire services coming from Gilman and Congress Street. Please see the attached Utility plan as well as the most updated Peak Flow Based on Fixture Count form that was filled out by our MEP engineer.
Please let me know if you have any questions or require any additional information.

Thank you,

Dylan Stuart *Civil Engineer*
Office: 207.200.2100 | Direct: 207.200.2093
75 John Roberts Rd., Suite 4A, South Portland, ME 04106
dstuart@sebagotechnics.com | www.sebagotechnics.com
An Employee-Owned Company

SEBAGO
TECHNICS

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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	5	=	50
Bidet		2	x	0	=	0
Dental Unit		2	x	0	=	0
Drinking Fountain - Public		2	x	0	=	0
Kitchen Sink		2.2	x	95	=	209
Lavatory		1.5	x	141	=	211.5
Showerhead (Shower Only)		2.5	x	100	=	250
Service Sink		4	x	10	=	40
Toilet	-Flush Valve	35	x	142	=	4970
	-Tank Type	4	x	0	=	0
Urinal	-Pedestal Flush Valve	35	x	0	=	0
	-Wall Flush Valve	16	x	17	=	272
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: 6034.5

Customer Peak Demand From Fig. 4-2 or 4-3	175
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) **204.75** 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

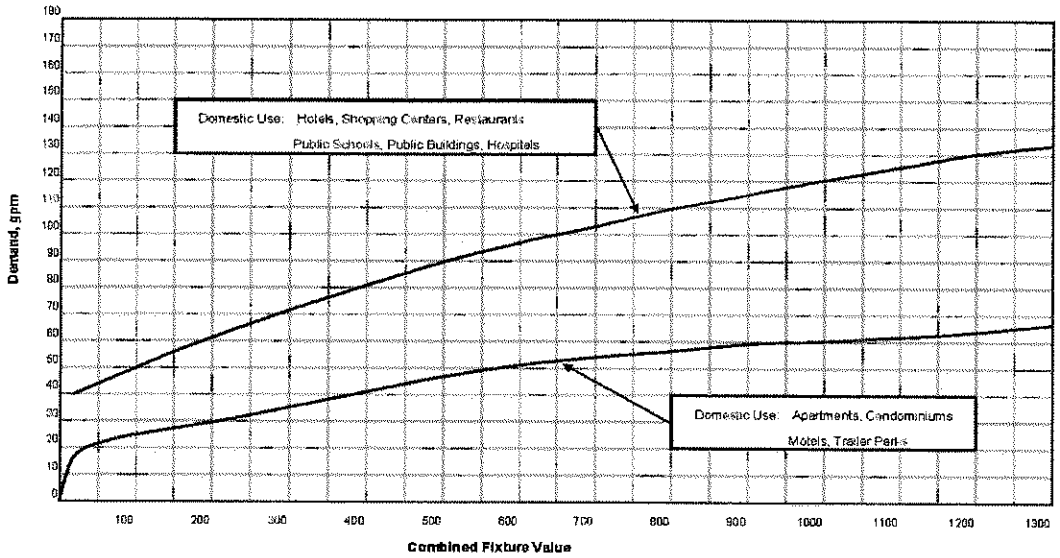

Figure 4-2 Water flow demand per fixture value - low range

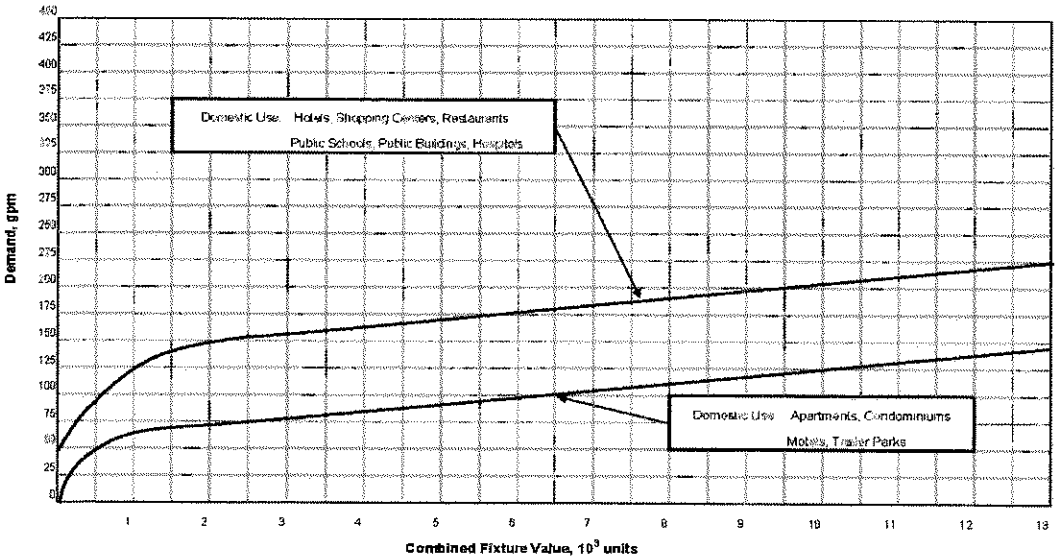

Figure 4-3 Water flow demand per fixture value - High range

Portland, Maine | Yes. Life's good here.

Planning & Urban Development Department

Bramhall St. - 22 , MMC Congress Street Building

LEVEL II and LEVEL III APPLICATION SUBMISSION CHECKLIST

Please submit each document as a separate PDF file.
Please confirm by electronically checking the boxes to the left

General Application Documents

#	Checklist	Items to be Provided
00	Yes ✓ NA Plan	PROJECT DESCRIPTION • Cover Letter with detailed project description
01	Yes ✓ NA Plan	COMPLETED CHECKLIST – LEVEL III APPLICATION
02	Yes ✓ NA Plan	RIGHT, TITLE AND INTEREST • Deeds, leases, or purchase and sales agreements
03	Yes ✓ NA Plan	EVIDENCE OF STATE OR FEDERAL APPROVALS, if applicable • Permits or letters of non-jurisdiction, if applicable
04	Yes ✓ NA Plan	ZONING ASSESSMENT • Table listing required and proposed uses and dimensional standards Zoning Assessment Table
05	Yes ✓ NA Plan	EXISTING &/OR PROPOSED EASEMENTS OR COVENANTS, if applicable • Evidence of existing easements and any proposed easements
06	Yes ✓ NA Plan	WAIVER REQUESTS • Written request for waiver describing request and reason. Waiver Table
07	Yes ✓ NA Plan	FINANCIAL CAPABILITY • Letter or evidence from a financial institution or third party verifying financial capacity to undertake project
08	Yes ✓ NA Plan	TECHNICAL CAPABILITY • Evidence of technical capability of applicant and consultants – resumes and/or examples of past projects

LEVEL II AND LEVEL III SITE PLAN STANDARDS AND SUBMISSION CHECKLIST

Provide assessment of compliance with standards and include supplemental documentation, as applicable.
Please submit each document as a separate PDF file.

TRANSPORTATION

	Check list	Assess/Provide/Document:
09	Yes ✓ NA Plan	**Transportation Analysis- Traffic Impact (14-526 (a) 1)** • Provisions for pedestrian, bicycle, vehicle, and loading circulation and incremental volume of traffic impacts • Traffic Impact Study (Technical Manual, Section 1) if applicable
10	Yes ✓ NA Plan	**Access and Circulation (14-526 (a) 2 a)** • Access and internal circulation, addressing ADA access • Access and egress impacts on traffic flows • Description and use of drive-up features, if applicable
11	Yes ✓ NA Plan	**Loading and Servicing (14-526 (a) 2 b)** • Loading and servicing needs, route and travel way geometrics for deliveries • Turning templates for delivery vehicles, if applicable
12	Yes ✓ NA Plan	**Sidewalks (14-526 (a) 2 c)** • Sidewalks and condition along street frontages and internal walkways • Engineered details for ADA ramps and public sidewalk details meeting sidewalk materials policy and ADA ramp construction details as applicable (Technical Manual, Section 1)
13	Yes ✓ NA Plan	**Public Transit (14-526 (a) 3), if applicable** • Existing available transit services • Proposed site plan design details, such as easement, pad base, and shelter
14	Yes ✓ NA Plan	**Off-Street Parking: Vehicle & Motorcycle/Scooter) (14-526 (a) 4 a and c)** • Expected parking demand, proposed parking supply, ADA parking, and applicable Zoning Requirements • Address Technical Manual standards (Section 1) for curb cut separation and parking lot layout and locate on site plan
15	Yes ✓ NA Plan	**Bicycle Parking (14-526 (a) 4 b)** • Address bicycle parking requirements and identify locations on-site • Construction details for bike racks (Technical Manual, Section 1)
16	Yes ✓ NA Plan	**Snow Storage (14-526 (a) 4 d)** • Management plan for snow removal and locate snow storage areas on plan
17	Yes ✓ NA Plan	**Traffic Demand Management (TDM) (14-526 (a) 5), if applicable** • Develop TDM with Trip Reduction Targets and Strategies

ENVIRONMENTAL AND LANDSCAPE FEATURES

Check list	Assess/Provide/Document:
18 Yes ✓ NA Plan	**Preservation of Significant Natural Features (14-526 (b) 1), if applicable** • Trees, plants, habitats listed on State or Federal list of endangered or threatened • High and moderate value waterfowl and wading habitat • Aquifers on Casco Bay Islands • Waterbodies (including wetlands, watercourses, significant vernal pools and floodplains) • Proposed preservation areas and protection measures • Documentation from environmental consultants, determinations from applicable state agencies
19 Yes ✓ NA Plan	**Landscaping and Landscape Preservation (14-526 (b) 2 a)** • Preservation of trees and preservation within required zoning setbacks (Technical Manual, Section 4) • Protection measures of existing vegetation during construction • Protection measures within Shoreland Zone, if applicable
20 Yes ✓ NA Plan	**Site Landscaping (14-526 (b) 2 b)** • Screening and buffering of service areas and between non-residential and residential uses • Planting plans with plant schedule and sizes (Technical Manual, Section 4)
21 Yes ✓ NA Plan	**Parking Lot Landscaping (14-526 (b) 2 b ii), if applicable** • Landscaped islands within parking areas (Technical Manual, Section 4)
22 Yes ✓ NA Plan	**Street Trees (14-526 (b) 2 b iii)** • Existing Heritage or Feature Trees on site and measures to preserve • Identify street trees on the plan meeting the site plan and Technical Manual standards (Section 4) or identify alternative measures, if applicable

ENVIRONMENTAL AND STORMWATER

Check list	Assess/Provide/Document:
23 Yes ✓ NA Plan	**Water Quality, Stormwater Management and Erosion Control (14-526 (b) 3 a)** • Stormwater report in compliance with Section 5 of Technical Manual and DEP Chapter 500 stormwater for basic, general and flooding standards, as applicable • Erosion control plan and measures • Evidence of compliance with Urban Impaired Stream Standards pursuant to DEP Chapter 500 stormwater, as applicable • Subsurface sanitary sewage disposal and groundwater protection

PUBLIC INFRASTRUCTURE AND SAFETY

Check list	Assess/Provide/Document:
24 Yes ✓ NA Plan	**Consistency with City Master Plans (14-526 (c) 1)** • Identify consistency with master plans • Proposed easements, rights and improvements to connect or continue off-premises public infrastructure, as applicable
25 Yes ✓ NA Plan	**Public Safety and Fire Prevention (14-526 (c))** • Address Crime Prevention through Environmental Design (CPTED) (Technical Manual, Section 3) • Emergency vehicle access • Address consistency with public safety standards (Technical Manual, Section 3) • Submit a code summary referring NFPA 1 and all Fire Department standards (Technical Manual, Section 3) – Fire Checklist
26 Yes ✓ NA Plan	**Availability and Adequacy of Public Utilities (14-526 (c) 3) (Technical Manual,** Sections 2 & 9) • Electrical services, including providing underground services • Identify existing and proposed connections for public utilities and required public utility upgrades • Sewer line connections are required, if there is a main within 200 feet • Proposed solid waste management facilities on-site and management for the site • Written evidence of the ability to serve from utility companies, as applicable

SITE DESIGN

Check list	Assess/Provide/Document:
27 Yes ✓ NA Plan	**Massing, Ventilations and Wind Impact (14-526 (d) 1)** • Wind and ventilation impacts on adjoining structures and/or adjacent public spaces. Wind study, if applicable • Bulk, location or height impacts on adjoining structures • Identify and locate HVAC equipment and venting away from public spaces and residential properties • Identify screening and manufacturing specifications for noise, if applicable
28 Yes ✓ NA Plan	**Shadows (14-526 (d) 2), if applicable** • Shadow analysis of impacts on publicly accessible open space (Technical Manual, Section 11)
29 Yes ✓ NA Plan	**Snow and Ice Loading (14-526 (d) 3)** • Building design to prevent snow and ice from loading or falling onto adjacent properties or public ways
30 Yes ✓ NA Plan	**View Corridors (14-526 (d) 4), if applicable** • Protection of designated view corridors (Portland Design Manual, Appendix 1)

31	Yes ✓ NA Plan	**Historic Resources (14-526 (d) 5), if applicable** • Identify developments within Historic Districts or affecting Designated Landmarks • Certificate of Appropriateness or other evidence • Identify Developments within 100 feet of Historic Districts or affecting Designated Landmarks. Advisory HP review may be required • Address preservation and documentation of Archaeological Resources
32	Yes ✓ NA Plan	**Exterior Lighting (14-526 (d) 6)** • Cut sheets of on-site light fixtures and any architectural or specialty lights (Technical Manual, Section 12) • Engineered details for any lights proposed in street right-of-way (Technical Manual, Section 10)
33	Yes ✓ NA Plan	**Noise and Vibration (14-526 (d) 7)** • Evidence of noise levels for equipment, such as equipment specifications, to demonstrate consistency with zoning requirements
34	Yes ✓ NA Plan	**Signage and Wayfinding (14-526 (d) 8), if applicable** • Signage plan showing the location, dimensions, height and setback of all existing and proposed signs. Signs in Historic Districts are reviewed by Historic Preservation staff • Proposed commercial and directional signage on site
35	Yes ✓ NA Plan	**Zone Related Design Standards (14-526 (d) 5)** • Address Historic Preservation Design Review, if applicable • Address any applicable design review standards by zone • Address submission requirements from Design Manual, page 1, addressing neighborhood context • Description of exterior materials, color, finish, and samples
36	**Construction Management Plan**	
	Check list	
	Yes ✓ NA Plan	Construction Management Plan • Construction Management Document and Plan

Level II and Level III Site Plan Checklist

Please upload the following drawings with the listed details into e-Plan as separate pdfs.

☑ **RECENT BOUNDARY SURVEY** (stamped by Maine Licensed Surveyor)

Must be in compliance with Technical Manual, Section 13

SITE PLAN(s) (stamped by Maine Licensed Engineer) including:

☑ **Existing Conditions**

- Approximate location of structures on abutting property
- Topography
- Locate water courses
- Delineate wetlands
- Zone lines

☑ Proposed Site Plan

- Ground floor area, and grade elevations for all buildings

☑ **Access, Circulation, and Parking**

- Streets and intersections adjacent to site , any proposed geometric modifications
- Location, dimensions and materials of all existing and proposed driveways, vehicle, bicycle, & pedestrian access ways with corresponding curb lines
- Engineered specifications/ cross-sections for proposed driveways, sidewalks & paved areas
- Location and dimensions of proposed loading areas
- Existing and proposed transit infrastructure with dimensions/ engineering specifications
- Location of vehicle and bicycle parking with dimensions and engineering specifications

☑ **Site Considerations**

- Identify snow storage areas
- Location of fire hydrants
- Location of solid waste management facilities

☑ **UTILITY PLAN** including:

- Existing utilities on site and within public streets
- Location, sizing, and directional flows of all existing and proposed utilities
- Location and dimensions of off-premises public or publicly accessible infrastructure adjacent to site
- Electric utility infrastructure

☑ **GRADING and DRAINAGE PLAN** including:

- Existing grades and drainage
- Proposed grades
- Proposed stormwater management meeting Technical Manual (Section 5) standards
- Location and proposed alteration of a water course
- Preservation or alteration of wetlands

☑ **EROSION CONTROL**

- Must be in compliance with Technical Manual, Section 5

☑ **LANDSCAPE PLAN** including:

- Existing vegetation to be preserved and preservation measures
- Proposed landscaping and buffers
- Planting schedule

☐ **RECORDING PLAT**, if applicable N/A

- IF SUBDIVISION: Must be in compliance with requirements of Section 14-496 (b)

☑ **ARCHITECTURAL PLANS & RENDERINGS** including:

- Exterior building elevations, color renderings, illustrations of all sides
- Location and dimensions of all existing & proposed HVAC & mechanical equipment, all proposed screening
- Provide context drawings, if applicable (Design Manual, page 1)
- Floor plans

WRITTEN SUBMISSION 27 – MASSING, VENTILATIONS AND WIND IMPACT
BRAMHALL ST. – 22; MMC CONGRESS STREET BUILDING
LEVEL III SITE PLAN APPLICATION

THE PROPOSED BUILDING CONFORMS TO TNE MASSING OF THE CAMPUS AS SET FORTH IN THE IDP. THE TALLER SECTION OF THE CONGRESS STREET BUILDINABUTS THE TALL ELEVATOR/ STAIR TOWER PORTION OF THER VISITOR GARAGE, WHILE THE REMAINDER OF THE BUILDING STEPS DOWN TOWARD THE EDGE OF THE CAMPUS.

IN ADDITION TO THE VISUAL EFFECT OF THIS MASSING, THE BUILDING WILL NOT CREATE ANY ADVERSE EFFECTS FROM WIND PATTERNS.

THE MAJORITY OF THE HVAC EQUIPMENT WILL BE WITHIN THE BASEMENT LEVEL OF THE BUILDING, HOWEVER , THERE WILL BE LIMITED HVAC UNITYS ON THE ROOF OF THE TALL SECTION OF THE BUILDING

WRITTEN SUBMISSION 02 – RIGHT, TITLE AND INTEREST
BRAMHALL ST. – 22; MMC CONGRESS STREET BUILDING
LEVEL III SITE PLAN APPLICATION

THE PROPERTY DEEDS ARE ATTACHED.

296
1

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

Bailey to Maine General Hospital

heirs and assigns forever, a certain lot of land situated on the Northwestern slope of Bramhalls 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 and unopened street laid down on said plan. The same conveyed to me by Moody S. Walker Oct. 14, 1863. Subject to the location of said street over any part of said lot, subject also to a mortgage for $37.50 given to Moody S. Walker which mortgage with all unpaid interest thereon, the present grantee is to assume and discharge.

U. S. I. R. 50 Cents W. H. B. June 6. 1870.

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~~ hands and seals this first 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.
Joseph E. Bailey to E. W. B.

William H. Bailey [seal]
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, Edwin Lee Register.

Know all Men by these Presents, That

I, Hugh Carney of Portland in the State of Maine

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 H. C. June 6. 70

a certain parcel of land situated on the North-western slope of Bramhall's 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 20, 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 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 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 hands and seals 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 H. C. — Hugh his X mark Carney Seal.

Witnessed by Edward N. Bates — Bridget 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 deed.

Before me, George R Davis, Justice of the Peace

Received May 19 1870 at 8h 20 m P.M. and recorded according to the original

Attest. Ebem 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 Hill in Portland, being the western part of a parcel of about two acres extending from the General ground to Congress street, formerly owned by Mr E Walker and others, described, as divided into lots on a plan made by Rowe and Osgood in 863, 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 two lots nearest the General and except the part of the street adjoining the two lots. The conveyance hereby agreed to be made is to include the fee of the land covered by the new street west of the two 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 deed is to be made and delivered, and shall therefor 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 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 St. 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. S. 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 Six Thousand Dollars paid by John Lindsey of Scandish 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 Mr. 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 sale 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.

To have and to hold the above granted premises

Portland May 7th 1874.

This mortgage having been paid and fully satisfied, is hereby cancelled and discharged.

Witness

J. S. Lindsey

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 J. Patten. Seal.

Cumberland ss. Oct. 30, 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 Registr

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 orders of the two Branches, passed by the same respectively, on the 13d and 14th 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 lines, 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 I. F. Chappell, Engineer, May 11, 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 conditions 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 executed and sealed, in behalf of the City, by Henry W. Hersey, 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 Benj. Kingsbury Jr. } Henry W. Hersey City Treasurer.



State of Maine.

Cumberland ss. On this sixth day of August 1870, personally appeared Henry W. Hersey 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 1 h. P.M. and recorded according to the original.

Attest: Elsen Sacich Register

P. & O. R. R. Co to Davis et al

U. S. I. R. $800.00 P. & O. R. R. Co By S. J. A. Dwt Nov. 1, 1870

Discharge Book 702 Page 65

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

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 37/100 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

Barnes to Maine G. Hospital

U. S. I. R.
L 4. 50.
P. B.
July 18/71.

situated on the Northwestern slope of Bramhall Hill in said Portland described and numbered on a plan of a tract of about ten acres, extending from the Maine State Arsenal Grounds, to Congress Street which plan was made in September 1863, by Hare 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 said streets, as laid out by the City the last year: The design of this Deed being to discharge bonds mentioned in Deeds to said Barnes from Moody & Walker & wife dated 6. June 1870. recorded in said Registry, Book 377. page 302 & from Joseph L. Bailey dated 6 June 1870. recorded in said Registry Book 377. page 301, the Mortgage obligations of said Barnes mentioned in said Deeds, having been discharged, by said Hospital.

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 rights of Dower in the above described Premises

have hereunto set our 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 2 m. A. M., and recorded according to the original.

Attest. Thos Lucas 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 above named 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 Bramhall Hill, 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, this 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 warrant 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 warrant 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. Boloter 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. C. Chamberlain
Charlotte M. Packard
} Joshua L. Chamberlain
Governor of Maine

Received Jan. 16. 1871 at 2 h. 44 m. P. M. and recorded according to the original.

Attest: Ebenezer Leach Register

U. S. I. R. Fifty cts. W. H. K. Jan. 13. 1871

Know all men by these presents, that I, Wm. H. 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 intrest 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. forth 4. 1869, said deed recorded Book 364 Page 288, being the same farm Seth Kneeland now lives on in Harrison all taxes excepted.

Kneeland to Kneeland

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 11th 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 — Margaret 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.

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 the slope of "Bramhalls Hill", in said city, being the land which lies between the land owned by said Hospital & Gilman 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 130 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

Portland
To
Me. General
Hospital

To Have and to Hold the same, together with all the privileges and appurtenances thereunto belonging, to the said Grantees, their successors & 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 & 4 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

Book 1250
Page 470

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. — Margaret E. L. Sherman Seal.

Geo. Davis, C. G. Hanson } as to J.C.S. — 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

Book 1282
Page 323

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

Book 1235
Page 450

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 Wherenf, 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 hand s 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.

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 804,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

Eunice M. Chase Seal

John F. Dana to both

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 50m. 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 8, 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'clock 45 m. A. M., and recorded according to the original.

Know all Men by these Presents, That

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

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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

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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

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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.

U.S.T.R. $16.50 J.T.L. 5/5/53

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 and assigns heirs and assigns forever, against the lawful claims and demands of all persons.

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,

our hand and seal this fifth day of May have hereunto set 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, 1953, 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.

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 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

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 hand s and seal s 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

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	Alzo F.Patterson Seal
R.E. Jensen	Bessie E. Patterson Seal
Carmela Chase	Fred A. Patterson Seal
Carmela Chase	Chrystine I. Patterson Seal
Arthur K. Smith	Ella H. Whidden Seal
Arthur K. Smith	Charles F. Whidden Seal
P. J. Campbell	Ruby E. MacKenzie Seal
P. J. Campbell	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

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 inches (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

our hand s and seal s this 12th day of June 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 — 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

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

Book 2149
Page 190

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 Seal
Executor

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 tha 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

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

Edmund F. Dacey

MAINE GENERAL HOSPITAL ~~Company~~

By Phillips M. Payson Treasurer.

Corporate Seal

State of Maine.

County of Cumberland ss. July 9, 1956

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 Hamm Justice of the Peace.

REGISTRY OF DEEDS, CUMBERLAND COUNTY, MAINE JUL 10 1956
Received at 1 H 5 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,

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

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 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 I. 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 I. 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 I. 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

229

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 Grantor e, 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. Terry 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. Terry 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 W. S. Haley Register's Clerk

Book 2619
Page 499

Grant
&
to
Maine
Medical
Center
--
War

Know All Men by These Presents,

499

That We, Henry H. Grant and Gladys H. Grant, both 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 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

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

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 ~~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 Henry H. Grant

and Gladys H. Grant, being husband and

wife ~~xxxxxxxxxx~~

joining in this deed as Grantor s, and relinquishing and conveying all right by descent and all other rights in the above described premises, have hereunto set our hand s 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

Gualtiero 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 Edward R. Thompson Register

Know All Men by These Presents,

369

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 186; 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 therefrom 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

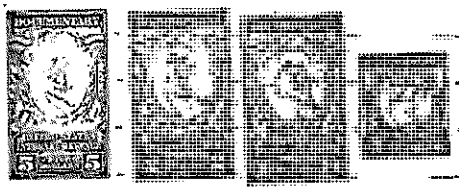
wife of the said Sewall M. Hobson, 2nd

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 2686 PAGE 369 Sewall M Hobson Register

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 Hospita

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,

War

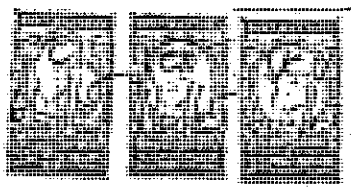
the receipt whereof I do hereby acknowledge, do hereby

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 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.



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 I do COVENANT with the said Grantee, its successors 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 and assigns forever, against the lawful claims and demands of all persons.

In Witness Whereof, I the said Vincent C. Newton, being unmarried

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

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

MY COMMISSION EXPIRES OCTOBER 8, 1971

STATE OF MAINE
CUMBERLAND, ss. REGISTRY OF DEEDS
Received at 1 H. 26 M. P. M. on JUN 15 1965 and recorded in Book 2901 Page 326
Attest
Register

(1984)
EXECUTOR'S AND TRUSTEE'S DEEDS
[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 Robart 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~~ 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~~ 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 Wherent, 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

State of Maine, Cumberland ss. March 31 1966.

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 3 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
[illegible]

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, [illegible]

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: [illegible] Register.

Know all Men by these Presents, That

139

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 have 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 heirs and assigns forever, against the lawful claims and demands of all persons, except as aforesaid.

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 A. m. & M., and recorded in BOOK 2988 PAGE 139 Attest: Samuel R. Thayer Register.

23AB

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:

OLD COLONY TRUST COMPANY

By _____
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,

_____
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, SUFFOLK COUNTY, MASS.
Received at 11 & 35 M., and recorded in
BOOK 7673 PAGE 269 Edward R. Finn Register

No. 181

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 27 '68
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 Grantee, and relinquishing and conveying~~

~~right to 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

[signature] 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, [signature]

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 Gerard R. Thompson Register

21?

No. 144

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,

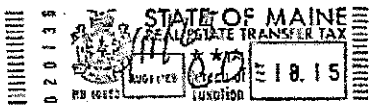
the following described property:

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.



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. Jones

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. Jones
Justice of the Peace

AUG 11 1969
REGISTRY OF DEEDS, CUMBERLAND COUNTY, MAINE
Received at 2 H 24 M, and recorded in
BOOK 3097 PAGE 244 Edward R. Hunter 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. Meuts, 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
$ 1.95

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 ~~heirs~~ 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 ~~heirs~~ 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~~

~~[illegible]~~

~~[illegible]~~

~~[illegible]~~

~~[illegible]~~ 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 F. Sous — John P. Constantine

to both — Charlene M. Constantine

State of Maine, } ss. 19 69.
Cumberland

Personally appeared the above named John P. Constantine and acknowledged the above instrument to be his free act and deed.

NOV 7 1969 Before me, Edward F. Sous

Justice of the Peace, Register ~~Notary Public~~

REGISTRY OF DEEDS, CUMBERLAND COUNTY, MAINE
Received at 11 H 18 M. and recorded in
BOOK 3108 PAGE 396 Edward R. [illegible]

Book 3183
Page 576

No. 108

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 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.

03136

STATE OF MAINE
REAL ESTATE TRANSFER TAX
AUG-27 Department of Taxation
$16.50

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 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, 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 said~~

~~joining in this deed as Grantor, and releasing 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

~~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,

~~Justice of the Peace~~

~~My commission expires~~

REGISTRY OF DEEDS, CUMBERLAND COUNTY, MAINE AUG 2, 1971
Received at 2 54 P.M., and recorded in
BOOK 3183 PAGE 376 Register

234 **Know all Men by these Presents, That** 16575

Book 3187
Page 234

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
Bureau of Taxation
$ 30.80

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
~~his~~ and assigns, to their use and behoof forever. And I do covenant with the said Grantee, its successors ~~his~~ 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 ~~his~~ 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 herein as Grantor, 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 23rd day of August in the year of our Lord one thousand nine hundred and seventy-one.

Signed, Sealed and Delivered in presence of

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, ~~Notary Public~~ Justice of the Peace.

STATE OF MAINE, CUMBERLAND COUNTY, SS. *REGISTRY OF DEEDS*
Received AUG 23 1971 *at* 1:40 *m.* P *M., and recorded*
in BOOK 3187 *PAGE* 234 *Attest:* *Register.*

17430

Book 3188
Page 710

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 werranty 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,

~~In witness whereof I have hereunto set my 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

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
~~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. Baker Register.

17050

Know All Men by These Presents,

209

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

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.

(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

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,

Justice of the Peace
Notary Public

AUG 4 1972
REGISTRY OF DEEDS, CUMBERLAND COUNTY, MAINE
Received at 3 H 05 M Pk. and recorded in
BOOK 3278 PAGE 209 Register

23119

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. Dambrog

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,

Peter M. Dambrog
~~Notary Public~~
Justice of the Peace

Approved as to form:

Leon V. Walker Jr.
Assistant Attorney General

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 W. Keith 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 John G. DePalma
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 and Assigns forever,

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~~ 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

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

WARRANTY DEED

319

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 and assigns, to it and its use and behoof forever.

And I do covenant with the said Grantee, its/successors 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 and assigns forever, against the lawful claims and demands of all persons.

In Witness Whereof, I, the said James H. Sullivan, Jr. being unmarried

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,

Notary Public
Attorney at Law
My commission expires Sept. 26, 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

024397 BK0309PG0005

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~~s~~ 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

~~his~~ and assigns forever.

And we do covenant with the said Grantee, its/ ~~his~~ successors and assigns, that we shall and will warrant and defend the premises to the said Grantee, its/ ~~his~~ successors 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. Hammatt and Elizabeth B. Hammatt

~~wife~~

~~husband/attorney-in-fact~~

~~joining herein for the purpose of releasing and conveying all rights by descent and all other rights in the above described premises, have~~ hereunto set our hand s and seals this 31st day of the month of May, A.D. 19 88.

Signed, Sealed and Delivered
in presence of

.....

.....

.....

.....

.....

.....

John J. Hammatt

Elizabeth B. Hammatt, by John J. Hammatt 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. Hammatt

and acknowledged the foregoing instrument to be his free act and deed.

Before me,

.....
Notary Public
Attorney at Law

Printed Name .....

RECEIVED
RECORDED REGISTRY OF DEEDS
1988 JUN -1 AM 8:31
CUMBERLAND COUNTY
James J. Clark

8K8855PG0081

036413 WARRANTY DEED

MAINE REAL ESTATE TAX PAID

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 P. Jones; thence South along the said division line between the land under description and the land of said Charles P. 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 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 12, 1996

Printed Name

SEAL

RECEIVED
RECORDED REGISTRY OF DEEDS
90 NOV 21 PM 3:54
CUMBERLAND COUNTY

47527 9722 45

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.

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.

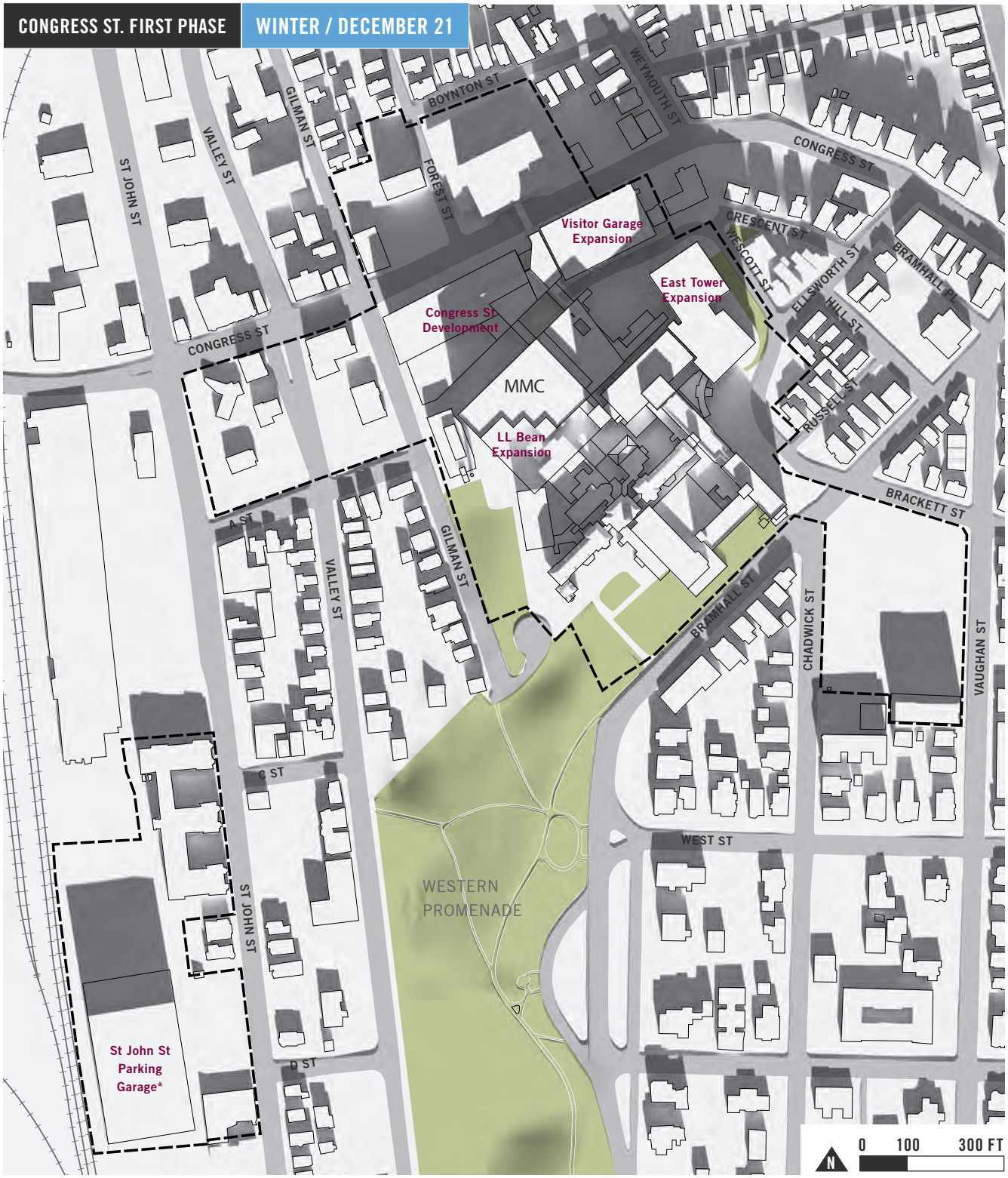
Before me,

~~Notary Public~~/Attorney at Law
Printed Name: CHRISTOPHER T.H. COCKSHALL

RECEIVED
RECORDED REGISTRY OF DEEDS
94 SEP -1 PM 3:05
CUMBERLAND COUNTY
John B O'Brien

BKL/4078/AAO/DR


CONGRESS ST. FIRST PHASE
SUMMER / JUNE 21
BOYNTON ST
WEYMOUTH ST
CONGRESS ST
ST JOHN ST
VALLEY ST
GILMAN ST
FOREST ST
CRESCENT ST
WESCOTT ST
ELLSWORTH ST
BRAMHALL PL
HILL ST
RUSSELL ST
MMC
BRACKETT ST
A ST
GILMAN ST
VALLEY ST
BRAMHALL ST
CHADWICK ST
VAUGHAN ST
C ST
WEST ST
WESTERN
PROMENADE
ST JOHN ST
D ST
N
0
100
300 FT



* NOTE: Exact garage location and footprint to be determined during detailed design.

WRITTEN SUBMISSION 03 – EVIDENCE OF STATE OR FEDERAL APPROVALS
BRAMHALL ST. – 22; MMC CONGRESS STREET BUILDING
LEVEL III SITE PLAN APPLICATION

THE PROJECT WILL REQUIRE A DEP SITE LOCATION OF DEVELOPMENT PERMIT, WHICH WILL BE REVIEWED BY THE CITY UNDER ITS DELEGATED REVIEW AUTHORITY. THE PROJECT WILL ALSO REQUIRE APPROVAL FROM THE FEDERAL AVIATION ADMINISTRATION, WHICH WILL BE REVIEWED CONCURRENTLY WITH THE SITE PLAN APPLICATION. THE APPLICANT WILL PROVIDE EVIDENCE OF FAA APPROVAL UPON RECEIPT.

WRITTEN SUBMISSION 29– SNOW AND ICE LOADING
BRAMHALL ST. – 22; MMC CONGRESS STREET BUILDING
LEVEL III SITE PLAN APPLICATION

THE BUILDING IS DESIGNED WITH A FLAT ROOF AND WILL BE STRUCTURALLY DESIGNED TO ACCOMMODATE THE WEIGHT OF SNOW. NO SNOW WILL FALL ONTO ADJACENT PROPERTIES NOR PUBLIC WAYS.

WRITTEN SUBMISSION 04 – ZONING ASSESSMENT
BRAMHALL ST. – 22; MMC CONGRESS STREET BUILDING
LEVEL III SITE PLAN APPLICATION

THE ZONING ASSESSMENT TABLE IS NOT APPLICABLE TO THIS APPLICATION. AS DEPICTED ON SUBMITTED DRAWINGS, THE PROJECT FULLY COMPLIES WITH THE APPROVED INSTITUTIONAL DEVELOPMENT PLAN.

WRITTEN SUBMISSION 30 – VIEW CORRIDORS
BRAMHALL ST. – 22; MMC CONGRESS STREET BUILDING
LEVEL III SITE PLAN APPLICATION

THERE ARE NO DESIGNATED VIEW CORRIDORS WITHIN THE PROJECT SITE.

WRITTEN SUBMISSION 05 – EXISTING &/OR PROPOSED EASEMENTS OR COVENANTS
BRAMHALL ST. – 22; MMC CONGRESS STREET BUILDING
LEVEL III SITE PLAN APPLICATION

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.

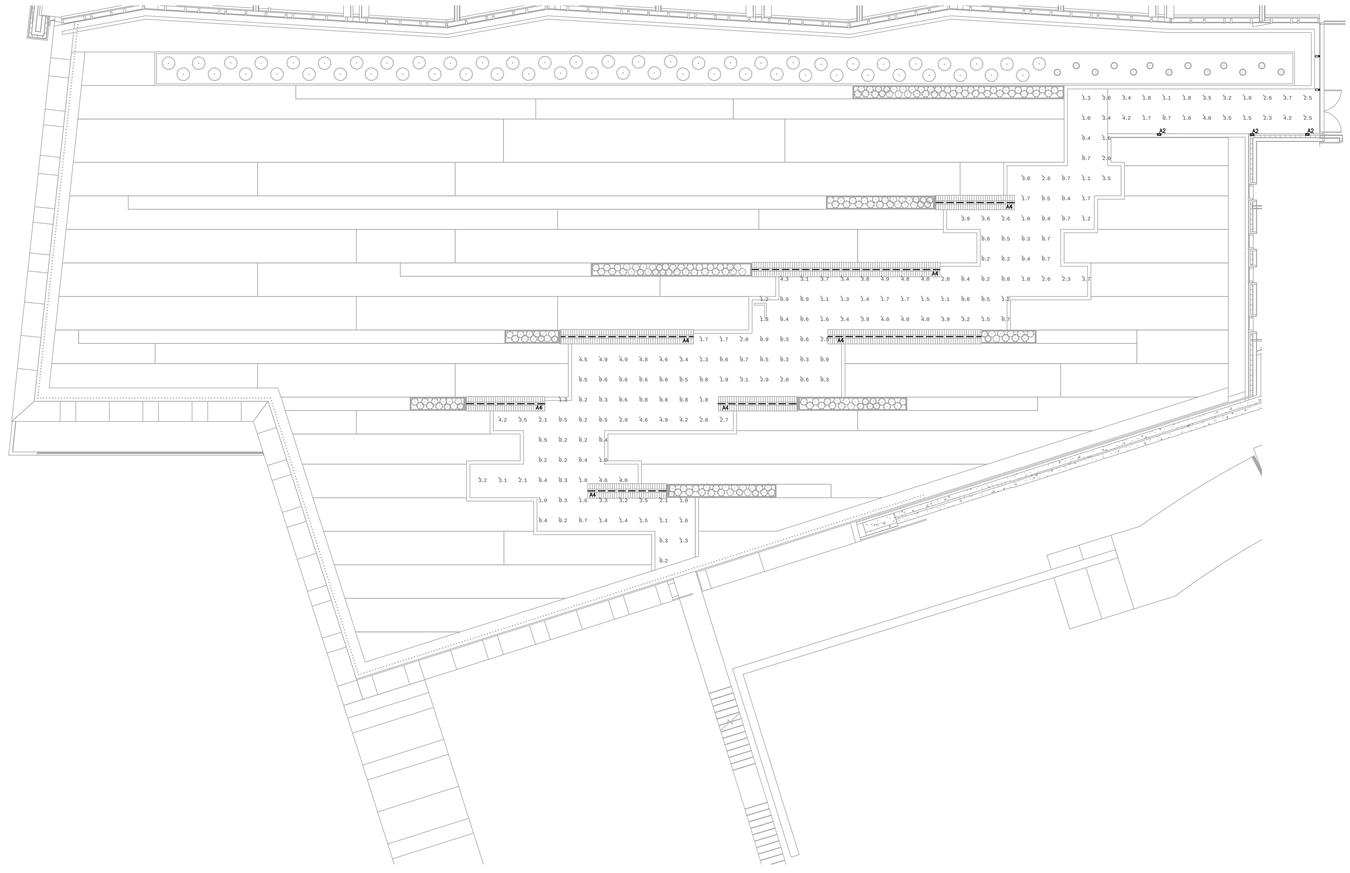
WRITTEN SUBMISSION 31 – HISTORIC RESOURCES
BRAMHALL ST. – 22; MMC CONGRESS STREET BUILDING
LEVEL III SITE PLAN APPLICATION

THIS SUBMISSION ITEM IS NOT APPLICABLE TO THIS APPLICATION.

WRITTEN SUBMISSION 06 – WAIVER REQUESTS
BRAMHALL ST. -22; MMC CONGRESS STREET BUILDING

1. WAIVER REQUESTS INCLUDE :
   A) REDUCTION IN DRIVE AISLE FROM 24 FEET TO 21' – 9" ON THE RAMP BETWEEN THE NEW DROP OFF PLAZA AND THE ENTRANCE TO THE VISITOR GARAGE. THIS REQUEST IS BASED ON EXISTING FOUNDATIONS AND GRADE BEAMS AT THE VISITOR GARAGE.

A1	STREET PEDESTRIAN LIGHTING POLE - CITY OF PORTLAND, MAINE	HALOPHANE PEDESTRIAM ESPLANADE SERIES
A2	RECESSED LINEAR WALL MOUNTED FIXTURE	BEGA 33054
A3	LINEAR COVE MOUNTED FIXTURE IN PERFORATED CEILING	LUMENPULSE LUMENFACADE
A4	LINEAR LED TAPE LIGHT IN CHANNEL BELOW BENCH SEATING	LED LINEAR, ADONIS HYDRA WHITE



1 LEVEL 3 TERRACE (GARDEN ROOF)
SCALE: 1/8"=1'-0"

PERKINS
+WILL
225 Franklin Street, Suite 1100
Boston, MA 02110
t 617.478.0300
f 617.478.0321
www.perkinswill.com

CONSULTANTS

CIVIL/ LANDSCAPE ARCHITECT
Segabo Technics
75 John Roberts Road , Suite 1A, South
Portland, ME 04106

STRUCTURAL ENGINEER/ BUILDING ENVELOPE
Simpson Gumpertz & Heger Inc.
41 Seyon Street, Building 1, Suite 500, Waltham,
Massachusetts 02453

MEP/FP ENGINEER/ CODE
AKF Group LLC
99 Bedford Street, 2nd Floor, Boston MA 02111

LIGHTING CONSULTANT
Lightcraft
99 Bedford Street, 2nd Floor, Boston MA 02111

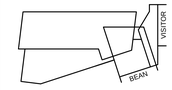
PROJECT

Congress St.
22 Bramhall St.
Portland, ME 04102

Maine Medical Center
MaineHealth

Maine Medical Center
22 Bramhall St.
Portland, ME 04102

KEYPLAN



ISSUE CHART

Exterior Photometric Submission to the City of Portland Maine
09.25.2018

ISSUE	DATE
Job Number	B160234-000
Drawn	
Checked	
Approved	

TITLE

PHOTOMETRIC LEVEL 3 TERRACE ROOF GARDEN

SHEET NUMBER

L-200

MAINE MEDICAL CENTER LEVEL III SITE PLAN APPLICATION

CONGRESS ST PATIENT TOWER

EVIDENCE OF FINANCIAL & TECHINICAL CAPACITY

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

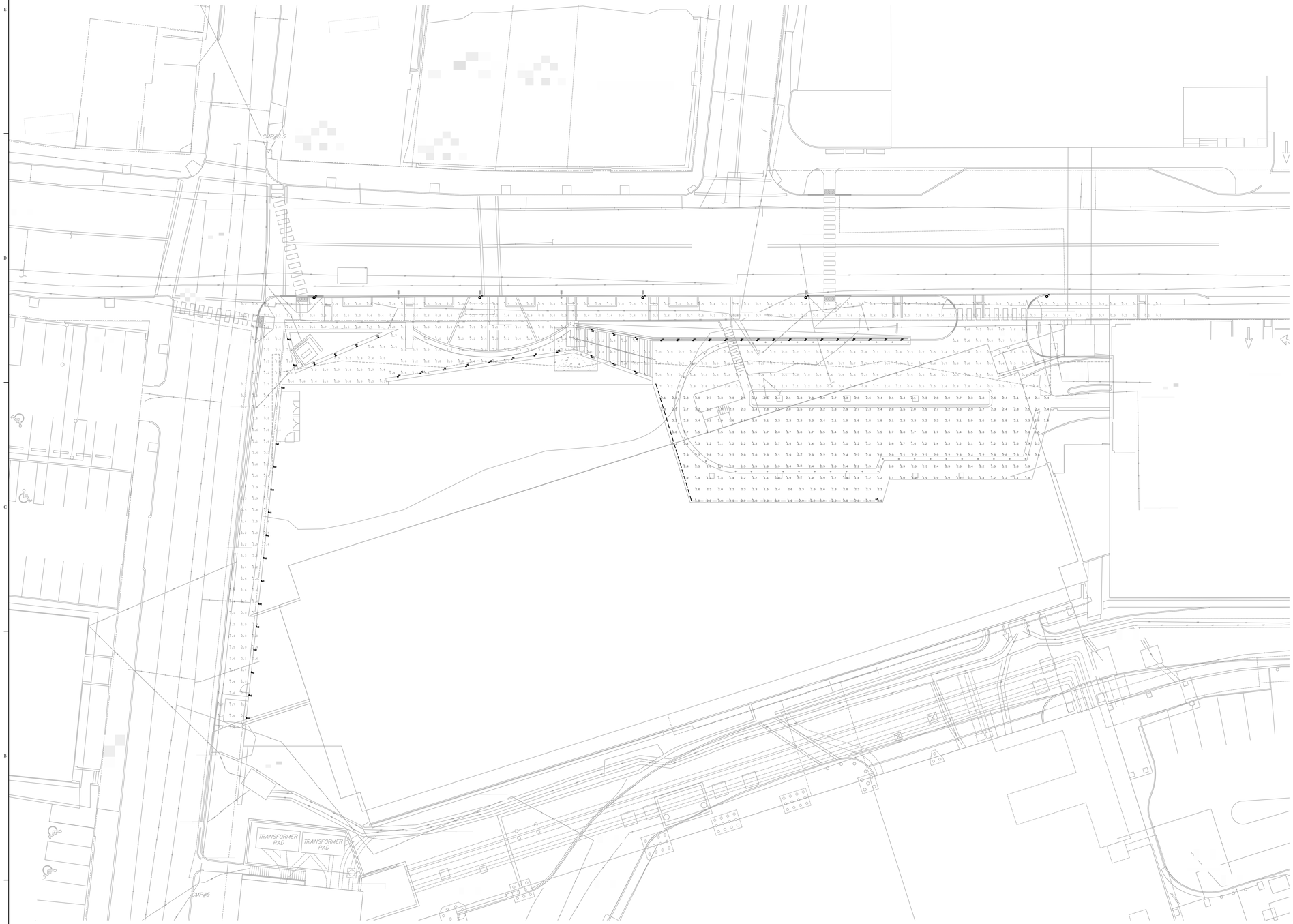
Minor changes in the law or regulatory environment impacting these assumptions will likely not jeopardize the overall strategic financial plan. Substantive changes, however, will need to be monitored closely to ensure support of the project.

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.

A1	STREET PEDESTRIAN LIGHTING POLE - CITY OF PORTLAND, MAINE	HALOPHANE PEDESTRIAM ESPLANADE SERIES
A2	RECESSED LINEAR WALL MOUNTED FIXTURE	BEGA 33054
A3	LINEAR COVE MOUNTED FIXTURE IN PERFORATED CEILING	LUMENPULSE LUMENFACADE
A4	LINEAR LED TAPE LIGHT IN CHANNEL BELOW BENCH SEATING	LED LINEAR, ADONIS HYDRA WHITE



1 EXTERIOR SITE PLAN
SCALE: 1/16"=1'-0"

PERKINS
+WILL
225 Franklin Street, Suite 1100
Boston, MA 02110
t 617.478.0300
f 617.478.0321
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CONSULTANTS

CIVIL/ LANDSCAPE ARCHITECT
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STRUCTURAL ENGINEER/ BUILDING ENVELOPE
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MEP/FP ENGINEER/ CODE
AKF Group LLC
99 Bedford Street, 2nd Floor, Boston MA 02111

LIGHTING CONSULTANT
Lightcraft
99 Bedford Street, 2nd Floor, Boston MA 02111

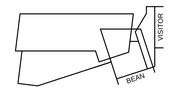
PROJECT

Congress St.
22 Bramhall St.
Portland, ME 04102

Maine Medical Center
MaineHealth

Maine Medical Center
22 Bramhall St.
Portland, ME 04102

KEYPLAN



ISSUE CHART

Exterior Photometric Submission to the City of Portland Maine
09.25.2018

ISSUE	DATE
Job Number	B160234-000
Drawn	
Checked	
Approved	

TITLE

PHOTOMETRIC

SHEET NUMBER

L-100

MAINE MEDICAL CENTER LEVEL III SITE PLAN APPLICATION

CONGRESS ST PATIENT TOWER

EVIDENCE OF FINANCIAL & TECHINICAL CAPACITY

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:

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WRITTEN SUBMISSION 33– NOISE AND VIBRATION
BRAMHALL ST. – 22; MMC CONGRESS STREET BUILDING
LEVEL III SITE PLAN APPLICATION

THERE ARE SMALL HVAC UNITS PROPOSED ON THE ROOF OF THE HIGH PORTION OF THE BUILDING, HOWEVER, THERE ARE NO NEARBY ADJACENT PROPERTIES . MOST OF THE MECHANICAL, EQUIPMENT WILL BE LOCATED IN THE BASEMENT, AND PROPOSED AREAWAYS ARE LOCATED AT THE REAR OF THE BUILDING.

Relationships.
Responsiveness.
Results.









Traffic Movement Permit Application
Bramhall Street - 22: MMC Congress Street Building
Portland, Maine

PREPARED FOR:
Maine Medical Center
22 Bramhall Street
Portland, ME 04102

September 2018

SUBMITTED BY:
Gorrill Palmer
707 Sable Oaks Drive
Suite 30
So. Portland, ME 04106
207.772.2515

GORRILL PALMER

707 Sable Oaks Drive, Suite 30
South Portland, Maine 04106
207.772.2515

September 25, 2018

Ms. Nell Donaldson
City of Portland Planning Division
389 Congress Street, 4th Floor
Portland, Maine 04101

RE: Application for Traffic Movement Permit
Maine Medical Center Expansion
Portland, Maine

Dear Ms. Donaldson,

Gorrill Palmer (GP) has been retained by Maine Medical Center to prepare this Traffic Movement Permit Application for the proposed Maine Medical Center expansion project located at the site of the existing Gilman Garage in the southeast corner of the Gilman Street / Congress Street intersection in Portland, Maine.

We have attached the following information in support of this application:

- Sections 1-7
- Signed application form
- Notice of intent to file
- List of abutters
- $1,500 application fee

Section 7 (Traffic Impact Study) of the application is also being submitted under separate cover. Please contact our office with any questions regarding this application.

Sincerely,
Gorrill Palmer

Randy Dunton, PE, PTOE
Project Manager

Copy: Alexander Green, Maine Medical Center
Randy Ilian, MaineDOT Region 1 Traffic Engineer

Department of Transportation
Traffic Engineering Division
16 State House Station
Augusta, Maine 04333
Telephone: 207-287-3775

FOR MDOT USE 12/99
ID#_____

Total Fees:_____
Date Received: _____

****

PERMIT APPLICATION – TRAFFIC
TRAFFIC MOVEMENT PERMIT, 23 M.R.S.A. §704-A

Please type or print:

This application is for (check all that apply): Traffic 100-200 PCE's ☐
Traffic 200 + PCE's ☒

Name of Applicant: Maine Medical Center; Attn: Alexander Green

Address: 22 Bramhall Street, Portland, Maine 04102 Telephone: (207) 662-3689

Name of local contact or agent: **Randy Dunton – Gorrill Palmer**

Address: **707 Sable Oaks Drive, South Portland, ME 04106** Telephone: **(207) 772-2515**

Name and type of development: The Maine Medical Center Expansion includes razing the existing employee parking garage and constructing additional hospital space including new operating rooms and patient rooms, although the total number of beds will remain the same.

Location of development including road, street, or nearest route number: **The site is located at the existing Gilman Street garage and the block bounded by Valley Street, Congress Street, Gilman Street, and A Street.**

City/~~Town~~/~~Plantation~~: **Portland** County: **Cumberland** Tax Maps: **53 & 67** Lots: D007 and H001, H002, H005, H008, and H009.

Do you want a consolidated review with DEP pursuant to 23 M.R.S.A. § 704-A (7)? **No**

Was this development started prior to obtaining a traffic permit? **No**

Is the project located in an area designated as a growth area (as defined in M.R.S.A. title 30-A, chapter 187)?
Yes_____ No _____

Is this project located within a compact area of an urban compact municipality? Yes X No_____

Is this development or any portion of the site currently subject to state or municipal enforcement action?

None Known

Existing DEP or MDOT permit number (if applicable): N/A

Name(s) DOT staff person(s) contacted concerning this application Delegated Review is to the City

Name(s) of DOT staff person(s) present at the scoping meeting for 200+ applicants:_____

Department of Transportation
Traffic Engineering Division
16 State House Station
Augusta, Maine 04333
Telephone: 207-287-3775

FOR MDOT USE 12/99
ID#_____

Total Fees:_____
Date Received: _____

CERTIFICATION

This person responsible for preparing this application and/or attaching pertinent site and traffic information hereto, by signing below, certifies that the applicant for traffic approval is complete and accurate to the best of his/her knowledge.

Signature: Randall E. Dunton Re/Cert/Lic No.: _____

Name (print): **Randall E. Dunton** Engineer: **Maine PE # 8686**

Date: Sept 24, 2018 Other: _____



If the signature below is not the applicant's signature, attach letter of agent authorization signed by applicant.

"I certify under penalty of law that I have personally examined the information submitted in this document and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the information is true, accurate, and complete. I authorize the Department to enter the property that is the subject of this application, at reasonable hours, including buildings, structures or conveyances on the property, to determine the accuracy of any information provided herein. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

_____ 9/25/2018

Signature of applicant Date

Form C 7/97

NOTICE OF INTENT TO FILE

Please take notice that:

Maine Medical Center
22 Bramhall Street
Portland, ME 04102

is intending to file a MaineDOT Traffic Permit application with the City of Portland (Delegated Review Authority) pursuant to the provisions of 23 M.R.S.A. §704 – A on or about September 25, 2018.

This application is for:

The Congress Street building expansion of Maine Medical Center on Bramhall Street in Portland, Maine. The proposed development is to include razing the existing employee parking garage and constructing additional hospital space including new operating rooms and patient rooms, although the total number of beds will remain the same. A new patient drop-off on Congress Street is also proposed. The project is forecast to generate 68 and 66 AM and PM weekday peak hour trip ends respectively. The project is expected to open in 2023.

At the following location:

The site is located in the southeast corner of the Gilman Street / Congress Street intersection at the site of the existing Gilman Garage.

A request for a public hearing must be received by the City, in writing no later than 20 days after the application is found by the department to be complete and is accepted for processing. Public comment on the application will be accepted throughout the processing of the application.

The application will be filed for public inspection at the Department of Transportation's office in Scarborough (Region 1) during normal working hours. A copy of the application may also be seen at the municipal offices in Portland, Maine.

Written public comments may be sent to the following address: Attention Nell Donaldson, Planning Division, 389 Congress Street, Portland, Maine 04101.

Randall Dunton, P.E., PTOE
Gorrill-Palmer Consulting Engineers, Inc.



ABUTTERS LIST
MMC EXPANSION
PORTLAND, ME
JN 2866.01

CBL	UNITS	PROP_LOC	OWNR_NAME1	OWNR_NAME2	MAIL_ADDR1	OWNR_CITY	WNR_STA	ZIPCODE	ProjectDesc
053 A013001	2	29 BOYNTON ST	HOLLOWAY MICAH L &	HANNAH MONACO JTS	29 BOYNTON ST	PORTLAND	ME	04102	2017002 MMC Master Facility Plan Phase IIE
053 A014001	3	27 BOYNTON ST	KONGO MATTHEW &	ROSE DIJIERI JTS	27 BOYNTON ST	PORTLAND	ME	04102	2017002 MMC Master Facility Plan Phase IIE
053 A015001	3	23 BOYNTON ST	EMPIRE REALTY LLC		17 BOYNTON ST # 1	PORTLAND	ME	04102	2017002 MMC Master Facility Plan Phase IIE
053 A017001	3	21 BOYNTON ST	MICHAUD STEPHEN J II &	TAMMY J BEAULIEU JTS	21 BOYNTON ST	PORTLAND	ME	04102	2017002 MMC Master Facility Plan Phase IIE
053 A018001	3	17 BOYNTON ST	EMPIRE REALTY LLC		17 BOYNTON ST # 1	PORTLAND	ME	04102	2017002 MMC Master Facility Plan Phase IIE
053 A019001	1	15 BOYNTON ST	MACCONNELL DOUGLAS F &	REBECCA MACCONNELL JTS	340 SOUTH LEMON AVE # 7427	WALNUT	CA	91789	2017002 MMC Master Facility Plan Phase IIE
053 A020001	1	11 BOYNTON ST	KURAN BARBARA LYNN		11 BOYNTON ST	PORTLAND	ME	04102	2017002 MMC Master Facility Plan Phase IIE
053 A021001	2	9 BOYNTON ST	MARCISSO SAMUEL M JR		16 RUBY MAE LN	SCARBOROUGH	ME	04074	2017002 MMC Master Facility Plan Phase IIE
053 A022001	0	232 PARK AVE	HARRIS RICHARD S JR &	PEGGY HARRIS	103 LOUDEN RD	SACO	ME	04072	2017002 MMC Master Facility Plan Phase IIE
053 E003001	44	25 CRESCENT ST	CRESCENT HEIGHTS LLC		PO BOX 4790	PORTLAND	ME	04112	2017002 MMC Master Facility Plan Phase IIE
053 E008001	6	19 CRESCENT ST	19 CRESCENT STREET LLC		26B BRACKETT ST	PORTLAND	ME	04102	2017002 MMC Master Facility Plan Phase IIE
053 H001001	10	9 WESCOTT ST	FISK KENNETT H		43 SPINNAKER LN	FALMOUTH	MA	02540	2017002 MMC Master Facility Plan Phase IIE
053 H002001	0	25 ELLSWORTH ST	BEH REDEVELOPMENT LLC		PO BOX 4790	PORTLAND	ME	04112	2017002 MMC Master Facility Plan Phase IIE
053 H003001	4	23 ELLSWORTH ST	MCCAIN MARK &	KATRINA SCHOLTZ JTS	812-6 CONGRESS ST	PORTLAND	ME	04102	2017002 MMC Master Facility Plan Phase IIE
053 H004001	2	19 ELLSWORTH ST	RAINBOW PARACHUTE LLC		19 ELLSWORTH ST	PORTLAND	ME	04102	2017002 MMC Master Facility Plan Phase IIE
053 H005001	2	2 CRESCENT ST	BOURRET ANDREW P &	EMILY M BOURRET JTS	21 TAINE MOUNTAIN RD	UNIONVILLE	CT	06085	2017002 MMC Master Facility Plan Phase IIE
053 I007001	3	14 BOYNTON ST	MCKEOWN RYAN L		1226 SUNNYMEADE DR	NASHVILLE	TN	37215	2017002 MMC Master Facility Plan Phase IIE
053 I016001	5	879 CONGRESS ST	KONTOS GREGORY C &	CAROL A KONTOS	PO BOX 1785	WINDHAM	ME	04062	2017002 MMC Master Facility Plan Phase IIE
053 I017001	0	873 CONGRESS ST	KONTOS GREGORY C	C/O GCK GROUP	PO BOX 1785	WINDHAM	ME	04062	2017002 MMC Master Facility Plan Phase IIE
053 I019001	7	8 WEYMOUTH ST	GRANTWEY APARTMENTS LIMITE	LIABILITY COMPANY	103 LOUDEN RD	SACO	ME	04072	2017002 MMC Master Facility Plan Phase IIE
053 I020001	9	871 CONGRESS ST	LASH LLC		PO BOX 4182	PORTLAND	ME	04101	2017002 MMC Master Facility Plan Phase IIE
053 I021001	1	867 CONGRESS ST	PORT CITY BAPTIST CHRUCH		867 CONGRESS ST	PORTLAND	ME	04102	2017002 MMC Master Facility Plan Phase IIE
054 B001001	3	12 ELLSWORTH ST	12 ELLSWORTH STREET LLC		PO BOX 7225	PORTLAND	ME	04112	2017002 MMC Master Facility Plan Phase IIE
054 B002001	5	19 HILL ST	19 HILL STREET LLC		PO BOX 7225	PORTLAND	ME	04112	2017002 MMC Master Facility Plan Phase IIE
054 B004001	8	17 HILL ST	17 HILL STREET LLC		PO BOX 7225	PORTLAND	ME	04112	2017002 MMC Master Facility Plan Phase IIE
054 C001001	2	20 HILL ST	BEH REDEVELOPMENT LLC		PO BOX 4790	PORTLAND	ME	04112	2017002 MMC Master Facility Plan Phase IIE
054 C005001	3	32 ELLSWORTH ST	BEH REDEVELOPMENT LLC		PO BOX 4790	PORTLAND	ME	04112	2017002 MMC Master Facility Plan Phase IIE
054 C007001	2	7 RUSSELL ST	FERRELL RANDY D		7 RUSSELL ST	PORTLAND	ME	04102	2017002 MMC Master Facility Plan Phase IIE
054 C008001	2	9 RUSSELL ST	WILHOITE ROBERT W ETALS JTS		9 RUSSELL ST	PORTLAND	ME	04102	2017002 MMC Master Facility Plan Phase IIE
054 C009001	4	11 RUSSELL ST	STEINS KARL M &	RHIANNE STEINS JTS	2333 CAMINO DEL RIO SOUTH STE	SAN DIEGO	CA	92108	2017002 MMC Master Facility Plan Phase IIE
054 C012001	2	15 RUSSELL ST	SHIR MOHAMMAD NASIR		41 OCEAN HOUSE RD	CAPE ELIZABETH	ME	04107	2017002 MMC Master Facility Plan Phase IIE
054 D006001	0	331 BRACKETT ST	BEH REDEVELOPMENT LLC		PO BOX 4790	PORTLAND	ME	04112	2017002 MMC Master Facility Plan Phase IIE
054 D007001	8	325 BRACKETT ST	BEH REDEVELOPMENT LLC		PO BOX 4790	PORTLAND	ME	04112	2017002 MMC Master Facility Plan Phase IIE
063 A001001	1	31 BRAMHALL ST	PETERS ANNE GINDER		31 BRAMHALL ST	PORTLAND	ME	04102	2017002 MMC Master Facility Plan Phase IIE
063 A002001	1	25 BRAMHALL ST	CARREN JOY M ETAL &	GARY LAMSON	PO BOX 9715-327	PORTLAND	ME	04104	2017002 MMC Master Facility Plan Phase IIE
063 A003001	8	23 BRAMHALL ST	PALMER DEVELOPMENT	GROUP LLC	83 SOUTH FREEPORT RD	FREEPORT	ME	04032	2017002 MMC Master Facility Plan Phase IIE
063 A004001	10	19 BRAMHALL ST	NEW EARTH ASSOCIATES LLC		PO BOX 9715-327	PORTLAND	ME	04104	2017002 MMC Master Facility Plan Phase IIE
063 A005001	10	15 BRAMHALL ST	WEST COMPANY		104 GRANT ST	PORTLAND	ME	04101	2017002 MMC Master Facility Plan Phase IIE
063 A006001	1	7 BRAMHALL ST	7 BRAMHALL STREET LLC		335 BRIGHTON AVE	PORTLAND	ME	04102	2017002 MMC Master Facility Plan Phase IIE
064 E001001	4	12 A ST	CUMMINGS THOMAS L HEIRS		12 A ST	PORTLAND	ME	04102	2017002 MMC Master Facility Plan Phase IIE
064 E014001	4	36 GILMAN ST	LAMBERT STUART C		36 GILMAN ST	PORTLAND	ME	04102	2017002 MMC Master Facility Plan Phase IIE
064 E015001	4	34 GILMAN ST	AWLARI IWANI M &	LIA BOULIS KODI JTS	34 GILMAN ST	PORTLAND	ME	04102	2017002 MMC Master Facility Plan Phase IIE
064 E016001	4	28 GILMAN ST	SABBATH NICHOLAS M		28 GILMAN ST	PORTLAND	ME	04102	2017002 MMC Master Facility Plan Phase IIE
064 E017001	3	24 GILMAN ST	SNYDER KAREN L		72 WATERVILLE ST # 3	PORTLAND	ME	04103	2017002 MMC Master Facility Plan Phase IIE
064 E018001	5	20 GILMAN ST	SS MINNOW LLC &	PUTTERS LLC	22 BARLEY LN	SCARBOROUGH	ME	04074	2017002 MMC Master Facility Plan Phase IIE
064 E019001	6	16 GILMAN ST	SEA OTTER 16G LIMITED	LIABILITY COMPANY	39 COVESIDE LN	YARMOUTH	ME	04096	2017002 MMC Master Facility Plan Phase IIE
064 E020001	8	12 GILMAN ST	12 GILMAN STREET LLC		295 BROWN ST STE 1	WESTBROOK	ME	04092	2017002 MMC Master Facility Plan Phase IIE
064 E021001	4	10 GILMAN ST	10 GILMAN STREET LLC		40 WOODFIELD DR	SCARBOROUGH	ME	04074	2017002 MMC Master Facility Plan Phase IIE
064 E022001	1	10 A ST	STICKNEY BRIAN J		10 A ST	PORTLAND	ME	04102	2017002 MMC Master Facility Plan Phase IIE
064 E023001	3	4 GILMAN ST	HOCHSTEDLER ANNA F &	MOISES T SABINA JTS	4 GILMAN ST	PORTLAND	ME	04102	2017002 MMC Master Facility Plan Phase IIE
064 E025001	1	8 A ST	MACKENZIE JENNIFER A &	GARRY J BOWCOTT	8 A ST	PORTLAND	ME	04102	2017002 MMC Master Facility Plan Phase IIE
064 E028001	1	4 GILMAN PL	FOX STEPHEN H		4 GILMAN PL	PORTLAND	ME	04102	2017002 MMC Master Facility Plan Phase IIE
064 E029001	3	3 GILMAN PL	FOX STEPHEN H		4 GILMAN PL	PORTLAND	ME	04102	2017002 MMC Master Facility Plan Phase IIE
065 D014001	1	931 CONGRESS ST	CR VENTURES LLC		302 CHANDLER'S WHARF	PORTLAND	ME	04101	2017002 MMC Master Facility Plan Phase IIE
065 D016001	1	925 CONGRESS ST	WORAMALEE SAENGTONG		921 CONGRESS ST	PORTLAND	ME	04102	2017002 MMC Master Facility Plan Phase IIE
065 D017001	2	921 CONGRESS ST	WORAMALEE SAENGTONG		921 CONGRESS ST	PORTLAND	ME	04102	2017002 MMC Master Facility Plan Phase IIE
065 E017001	1	24 FOREST ST	CAREY MEGHAN		24 FOREST ST	PORTLAND	ME	04102	2017002 MMC Master Facility Plan Phase IIE
065 E019001	0	22 FOREST ST	EAST END DEVELOPMENT LLC		PO BOX 10291	PORTLAND	ME	04104	2017002 MMC Master Facility Plan Phase IIE
065 E021001	0	18 FOREST ST	EAST END DEVELOPMENT LLC		PO BOX 10291	PORTLAND	ME	04104	2017002 MMC Master Facility Plan Phase IIE
065 E023001	0	14 FOREST ST	EAST END CORP		ONE CANAL PLAZA	PORTLAND	ME	04112	2017002 MMC Master Facility Plan Phase IIE
065 E025001	12	12 FOREST ST	EAST END CORP		PO BOX 10291	PORTLAND	ME	04104	2017002 MMC Master Facility Plan Phase IIE
065 E028001	1	919 CONGRESS ST	EAST END CORP		PO BOX 10291	PORTLAND	ME	04104	2017002 MMC Master Facility Plan Phase IIE
065 E030001	0	909 CONGRESS ST	EAST END HOLDINGS LLC		PO BOX 10291	PORTLAND	ME	04104	2017002 MMC Master Facility Plan Phase IIE

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PORTLAND, ME
JN 2866.01

065	G002001	3	942 CONGRESS ST	TPA ASSOCIATES		940 CONGRESS ST	PORTLAND	ME	04102	2017002 MMC Master Facility Plan Phase IIE
065	G003001	0	VALLEY ST	TPA ASSOCIATES		940 CONGRESS ST	PORTLAND	ME	04102	2017002 MMC Master Facility Plan Phase IIE
065	G004001	3	274 VALLEY ST	JORDAN ROBERT K TRUSTEE		1050 ISLAND AVE	LONG ISLAND	ME	04050	2017002 MMC Master Facility Plan Phase IIE
054	E001001	9	59 BRAMHALL ST	BJB REALTY LLC		PO BOX 6842	PORTLAND	ME	04103	2017002 MMC Master Facility Plan Phase IIE
054	E010001	4	315 BRACKETT ST	315 BRACKETT STREET LLC		55 D ST	SOUTH PORTLAND	ME	04106	2017002 MMC Master Facility Plan Phase IIE
054	E011001	5	311 BRACKETT ST	JOBI PROPERTIES LLC		16 CHARLOTTE DR	FALMOUTH	ME	04105	2017002 MMC Master Facility Plan Phase IIE
054	F033001	7	249 VAUGHAN ST	PARKER VAUGHAN STREET LLC		249 VAUGHAN ST	PORTLAND	ME	04102	2017002 MMC Master Facility Plan Phase IIE
054	F034001	5	303 BRACKETT ST	303 BRACKETT LLC		PO BOX 2301	SOUTH PORTLAND	ME	04116	2017002 MMC Master Facility Plan Phase IIE
063	A015001	1	146 CHADWICK ST	ISERBYT SAMUEL T		146 CHADWICK ST	PORTLAND	ME	04102	2017002 MMC Master Facility Plan Phase IIE
063	A016001	5	140 CHADWICK ST	NEWFANGLED CAPITAL LLC		140 CHADWICK ST	PORTLAND	ME	04102	2017002 MMC Master Facility Plan Phase IIE
063	A018001	1	132 CHADWICK ST	BOYD MARJORIE ANN		132 CHADWICK ST	PORTLAND	ME	04102	2017002 MMC Master Facility Plan Phase IIE
063	B001001	36	135 CHADWICK ST	BOWDOIN REALTY LLC		131 CHADWICK ST	PORTLAND	ME	04102	2017002 MMC Master Facility Plan Phase IIE
063	B009001	1	212 VAUGHAN ST	BLANK CHERYL L		212 VAUGHAN ST	PORTLAND	ME	04102	2017002 MMC Master Facility Plan Phase IIE
063	B010001	2	208 VAUGHAN ST	210 VAUGHAN STREET LLC		81 COUSINS RD	BUXTON	ME	04093	2017002 MMC Master Facility Plan Phase IIE
063	C001001	1	304 BRACKETT ST	HENNIGAR CHRISTOPHER G		405 WESTERN AVE	SOUTH PORTLAND	ME	04106	2017002 MMC Master Facility Plan Phase IIE
063	C004001	1	233 VAUGHAN ST	VAUGHAN STREET REALTY	ASSOCIATES	233 VAUGHAN ST	PORTLAND	ME	04102	2017002 MMC Master Facility Plan Phase IIE
063	C006001	1	217 VAUGHAN ST UNIT 1	SMITH LORI L		217 VAUGHAN ST # 1	PORTLAND	ME	04102	2017002 MMC Master Facility Plan Phase IIE
063	C006002	1	217 VAUGHAN ST UNIT 2	WHORF STEVEN C &		DHL EXPRESS ASIA PACIFIC REGI	819458 SINGAPORE			2017002 MMC Master Facility Plan Phase IIE
063	C006003	1	217 VAUGHAN ST UNIT 3	TEDESCO THEODORE M &	MARILYN M TEDESCO	217 VAUGHAN ST # 3	PORTLAND	ME	04102	2017002 MMC Master Facility Plan Phase IIE
063	C006004	1	217 VAUGHAN ST UNIT 4	MAIN CHARLES D &	JUDITH Z MAIN JTS	36 LONGFELLOW W AVE	BRUNSWICK	ME	04011	2017002 MMC Master Facility Plan Phase IIE
063	C006005	1	217 VAUGHAN ST UNIT 5	GALLO JORDAN L &	JACLYN R GALLO JTS	217 VAUGHAN ST # 5	PORTLAND	ME	04102	2017002 MMC Master Facility Plan Phase IIE
063	C006006	1	217 VAUGHAN ST UNIT 6	BIBERSTEIN KATHRYN L		43 BYRAM AVE	FREEPORT	ME	04032	2017002 MMC Master Facility Plan Phase IIE

UPON REVIEW OF ABOVE ABUTTERS LIST PROVIDED BY MMC WITH CITY'S TAX MAPS; WE HAVE ADDED THE FOLLOWING ABUTTERS:

								2017002 MMC Master Facility Plan Phase IIE
053	E005	25 CRESCENT ST	CRESCENT HEIGHTS LLC	PO BOX 4790	PORTLAND	ME	04112	2017002 MMC Master Facility Plan Phase IIE
053	E013	868 CONGRESS ST	MMC	22 BRAMHALL STREET	PORTLAND	ME	04102	2017002 MMC Master Facility Plan Phase IIE
053	E014	25 CRESCENT ST	CRESCENT HEIGHTS LLC	PO BOX 4790	PORTLAND	ME	04112	2017002 MMC Master Facility Plan Phase IIE
053	E015	25 CRESCENT ST	CRESCENT HEIGHTS LLC	PO BOX 4790	PORTLAND	ME	04112	2017002 MMC Master Facility Plan Phase IIE
053	H006	9 WESCOTT ST	KENNETT FISK	43 SPINNAKER LANE	FALMOUTH	MA	02540	2017002 MMC Master Facility Plan Phase IIE
053	I001	887 CONGRESS ST	MMC	22 BRAMHALL STREET	PORTLAND	ME	04102	2017002 MMC Master Facility Plan Phase IIE
053	I002	887 CONGRESS ST	MMC	22 BRAMHALL STREET	PORTLAND	ME	04102	2017002 MMC Master Facility Plan Phase IIE
053	I003	887 CONGRESS ST	MMC	22 BRAMHALL STREET	PORTLAND	ME	04102	2017002 MMC Master Facility Plan Phase IIE
053	I007	14 BOYNTON ST	MCKEOWN RYAN	1226 SUNNYMEADOW DRIVE	NASHVILLE	TN	37215	2017002 MMC Master Facility Plan Phase IIE
053	I012	887 CONGRESS ST	MMC	22 BRAMHALL STREET	PORTLAND	ME	04102	2017002 MMC Master Facility Plan Phase IIE
053	X001	19 FOREST ST	MMC / CAT-WALK					2017002 MMC Master Facility Plan Phase IIE
054	C006	34 ELLSWORTH ST	MMC	22 BRAMHALL STREET	PORTLAND	ME	04102	2017002 MMC Master Facility Plan Phase IIE
054	C010	40 ELLSWORTH ST	MMC	22 BRAMHALL STREET	PORTLAND	ME	04102	2017002 MMC Master Facility Plan Phase IIE
054	D005	46 BRAMHALL ST	YENTSCH CARLTON	PO BOX 254	W. BOOTHBAY HBR	ME	04575-025	2017002 MMC Master Facility Plan Phase IIE
054	E009	47 BRAMHALL ST	MMC					2017002 MMC Master Facility Plan Phase IIE
054	I001	308 BRACKETT ST	MMC	22 BRAMHALL STREET	PORTLAND	ME	04102	2017002 MMC Master Facility Plan Phase IIE
063	A007	7 BRAMHALL ST	7 BRAMHALL STREET LLC	160 ANN MARY BROWN DRIVE	WARWICK	RI	02888	2017002 MMC Master Facility Plan Phase IIE
063	A008	265 WESTERN PROMENAD	COPE SAMUEL & SARA	265 WEST PROMENADE	PORTLAND	ME	04102	2017002 MMC Master Facility Plan Phase IIE
063	A017	132 CHADWICK ST	MARGERY ANN BOYD	132 CHADWICK STREET	PORTLAND	ME	04102	2017002 MMC Master Facility Plan Phase IIE
063	B008	214 VAUGHAN ST	MMC	22 BRAMHALL STREET	PORTLAND	ME	04102	2017002 MMC Master Facility Plan Phase IIE
063	C005	229 VAUGHAN ST	MMC	22 BRAMHALL STREET	PORTLAND	ME	04102	2017002 MMC Master Facility Plan Phase IIE
063	C007	217 VAUGHAN ST	BIBERSTEIN KATHRYN	43 BYRAM AVENUE	FREEPORT	ME	04032	2017002 MMC Master Facility Plan Phase IIE
063	C008	217 VAUGHAN ST	BIBERSTEIN KATHRYN	43 BYRAM AVENUE	FREEPORT	ME	04032	2017002 MMC Master Facility Plan Phase IIE
064	B002	264 VALLEY ST	MMC	22 BRAMHALL STREET	PORTLAND	ME	04102	2017002 MMC Master Facility Plan Phase IIE
064	D011	254 VALLEY ST	STICKNEY ADAM	254 VALLEY STREET	PORTLAND	ME	04101	2017002 MMC Master Facility Plan Phase IIE
064	E024	51 VALLEY ST	CITY OF PORTLAND - LAND BANK	389 CONGRESS STREET	PORTLAND	ME	04101	2017002 MMC Master Facility Plan Phase IIE
065	C001	939 CONGRESS ST	THE INN AT ST. JOHN	939 CONGRESS STREET	PORTLAND	ME	04101	2017002 MMC Master Facility Plan Phase IIE
065	C002	947 CONGRESS ST	LI RI TENG & WEI YI WANG	PO BOX 495	MOODY	ME	04054-049	2017002 MMC Master Facility Plan Phase IIE
065	C009	937 CONGRESS ST	MARDIGAN STEPHEN	460 BAXTER BOULEVARD	PORTLAND	ME	04101	2017002 MMC Master Facility Plan Phase IIE
065	E029	909 CONGRESS ST	EAST END HOLDINGS LLC	PO BOX 10291	PORTLAND	ME	04104	2017002 MMC Master Facility Plan Phase IIE
065	G005	0 VALLEY ST	MMC	22 BRAMHALL STREET	PORTLAND	ME	04102	2017002 MMC Master Facility Plan Phase IIE

- ALL PROPERTIES OWNED BY MAINE MEDICAL CENTER - DO NOT SEND ABUTTERS NOTICES - INCLUDED FOR INFORMATION PURPOSES ONLY

Section 1
Site and Traffic Information

1.A. Site Description and Site Plan

The proposed project is located at the site of the existing Gilman Garage for Maine Medical Center employees on Congress Street and the southeast corner of the Gilman Street / Congress Street intersection. The site is identified on City Tax Map 53, Lot D007, and City Tax Map 65 Lots H001, H002, H005, H008, and H009. A proposed site plan is included in the site plan application submitted under separate cover.

1.B. Existing and Proposed Site Uses

The existing site is the Gilman parking garage for the employees of Maine Medical Center. The proposed project consists of razing the existing employee garage and constructing additional hospital space, including new private universal patient rooms, procedure rooms, a new hospital entrance, and a new drop off area with a connection to the visitor garage. Although the expansion will include new patient rooms, the project will optimize the current bed capacity, and is not proposed to add any beds. Vehicular access to the hospital expansion will be expanded to include a new entrance on Congress Street and a new patient drop-off area with a direct connection to the visitor garage. Employees who park in the existing employee parking garage will park in the larger proposed employee parking garage on St. John Street with approximately 2,400 spaces. It should be noted that of the approximately 2,400 spaces, 50 are will be reserved for the Eagles and approximately 200 are reserved for the tenants of 222 St. John Street. There will be many shuttles that run throughout the day to transport employees to and from the parking garage from Maine Medical Center. The project is proposed to increase the number of employees by 200 between 2016 and 2023.

1.C. Site Vicinity and Boundaries

The entire site is bordered by Congress Street to the north, Wescott Street to the east, the Bramhall Street to the south, and Gilman Street to the west. A site location map showing the development area is included in Attachment 1A.

1.D. Proposed Uses in the Vicinity of the Proposed Development

Approved projects that are not yet opened as well as projects for which applications have been filed are required to be included in the predevelopment volumes for this project. Based on conversations with City Staff, the traffic from these projects that is forecast to impact the Maine Medical Center Expansion study area is discussed in Section 7 (Traffic Impact Study).

1.E. Trip Generation

The trip generation for the proposed expansion was calculated using the Institute of Transportation Engineers' (ITE) publication, *Trip Generation*, Seventh Edition, Land Use Code (LUC) 610 – Hospital. The Tenth Edition is available, but has not yet been accepted by the MaineDOT. The expansion is proposed to be a total of 265,000 sf and it is anticipated to add 200 employees (including employees, students, and physicians). As approved at the October 13, 2017 Pre-Scoping meeting with the City, the trip generation for the expansion is based on the number of employees, students, and physicians. The following is a summary of the trip generation for the expansion that will need to be permitted:

- AM Peak Hour Adjacent Street: 68 trip ends
- PM Peak Hour Adjacent Street: 66 trip ends
- AM Peak Hour of Generator: 78 trip ends
- PM Peak Hour of Generator: 94 trip ends
- Saturday Peak Hour of Generator: 106 trip ends

A trip end is defined as a trip into or out of the site; thus, a round trip is equal to two trip ends. Since the forecast traffic exceeds 99 trip ends during a peak hour, a Traffic Movement Permit is required. The City of Portland has delegated review authority, so the application can be administered by the City. A copy of the trip generation calculations are included as an attachment to this section.

1.F. Trip Distribution

Based on ITE's *Trip Generation*, the following trip distribution is anticipated:

- AM Peak Hour Adjacent Street: 54 in / 14 out
- PM Peak Hour Adjacent Street: 23 in / 43 out

- AM Peak Hour of Generator: 51 in / 27 out
- PM Peak Hour of Generator: 38 in / 56 out
- Saturday Peak Hour of Generator: 58 in / 48 out

1.G. Trip Composition and Assignment

GP has assumed that all trips are primary in nature and made for the sole purpose of going to and from the site. The trips will also be comprised of both employees and patients/visitors. The portion of the trip generation that is forecast to be due to patients/visitors has been based on information provided by MMC Staff in an email dated August 8, 2018. Based on MMC's information, an additional 15,500 patient trips are anticipated annually by 2023. Based on discussions with MMC, the distribution of the patient/visitors has been based on the following assumptions:

- Patient trips are split evenly throughout the year
- 90% of patient trips occur Monday through Friday
- Patient trips are evenly split through the week
- 20% of daily trips occur during the peak hours
- 80% entering during the AM peak hour
- 80% exiting during the PM peak hour

Based on these assumptions, the following trip composition is forecast for the peak hours of the adjacent street:

- AM Peak Hour Adjacent Street (assumed 7:30AM – 8:30AM):
  - Patients/Visitors: 10 trip ends (8 in / 2 out)
  - Employees: 58 trip ends (46 in / 12 out)
- PM Peak Hour Adjacent Street (assumed 4:15PM – 5:15PM):
  - Patients/Visitors: 10 trip ends (2 in / 8 out)
  - Employees: 56 trip ends (21 in / 35 out)

The trip assignment for the employees has been based on the VHB Travelshed (attached) for employees, previously reviewed by the City. The patient/visitor trip assignment has been based on the proposed driveway locations, information from MMC in an email dated August 8, 2018, and the existing traffic patterns. The trip assignment is discussed in more detail in Section 7 of this application.

1.H. Attachments

Attachment 1A – Site Location Map, Trip Assignment Diagram, VHB Travelshed
Attachment 1B – Trip Generation Calculations

Attachment 1A

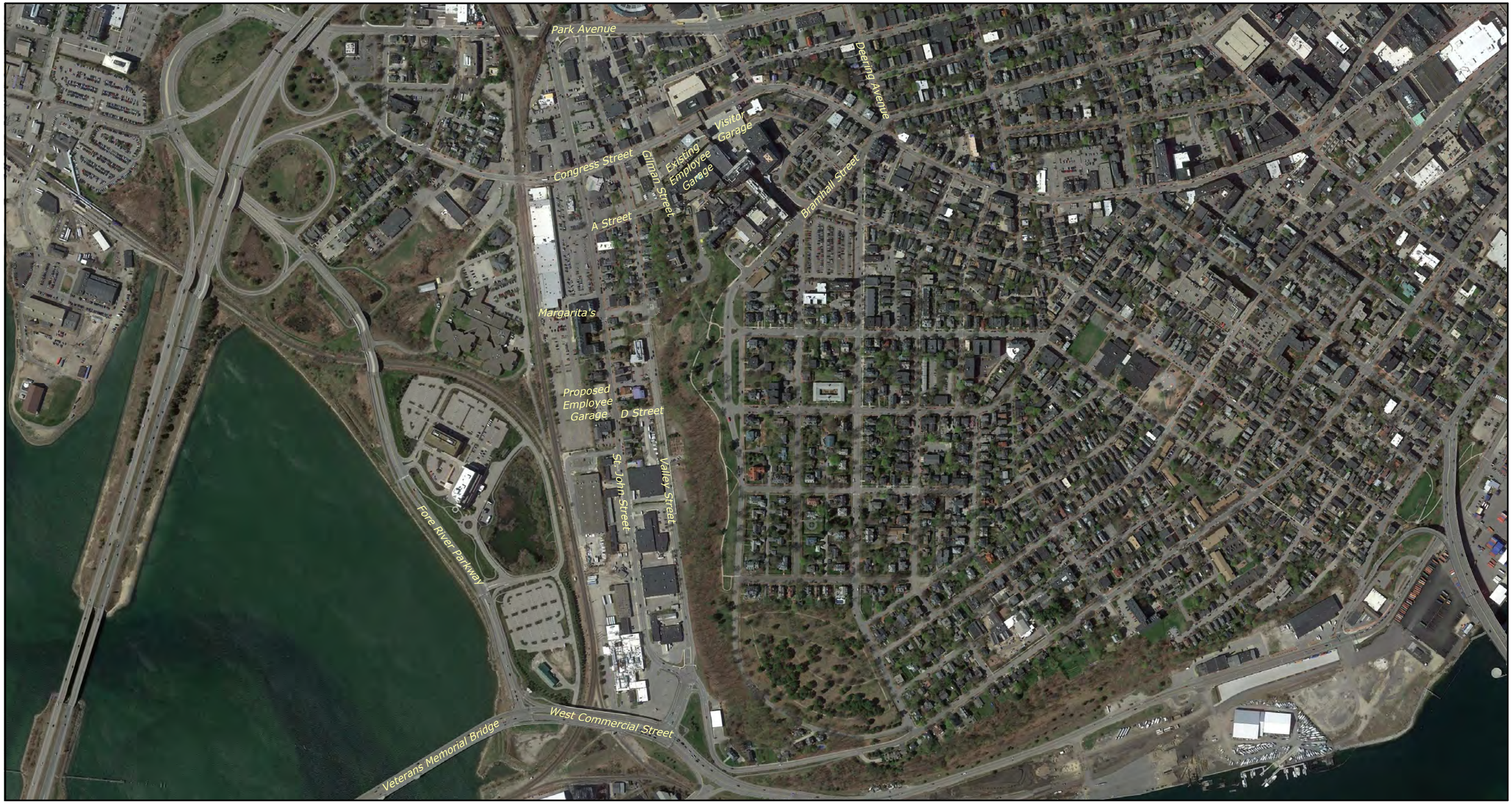
Site Location Map

Trip Assignment Diagram

VHB Travelshed

Location Map

Figure No. 1



Bramhall St. - 22; MMC Congress Street Building
PORTLAND, MAINE

Design:	EAL	Scale:	NONE
Draft:		Date:	SEP 2018
Checked:	RED	File Name:	28866.01 - TIS Figures

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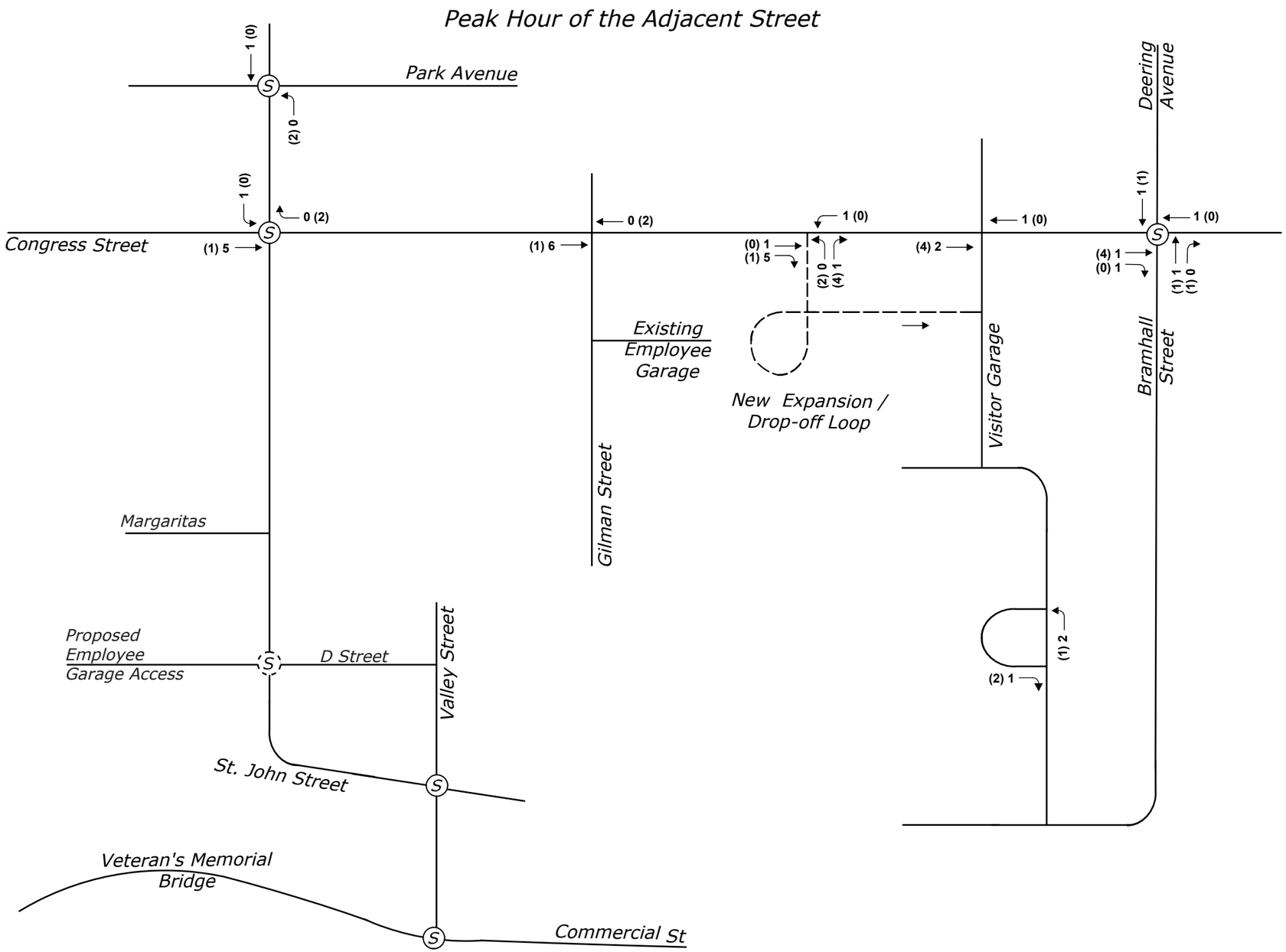
Phase 3 Patient/Visitor Assignment

Figure No. 6



Bramhall St. - 22; MMC Congress Street Building
PORTLAND, MAINE

Design: EAL Scale: NONE
Draft: Date: SEP 2018
Checked: RED File Name: 28866.01 - TIS Figures

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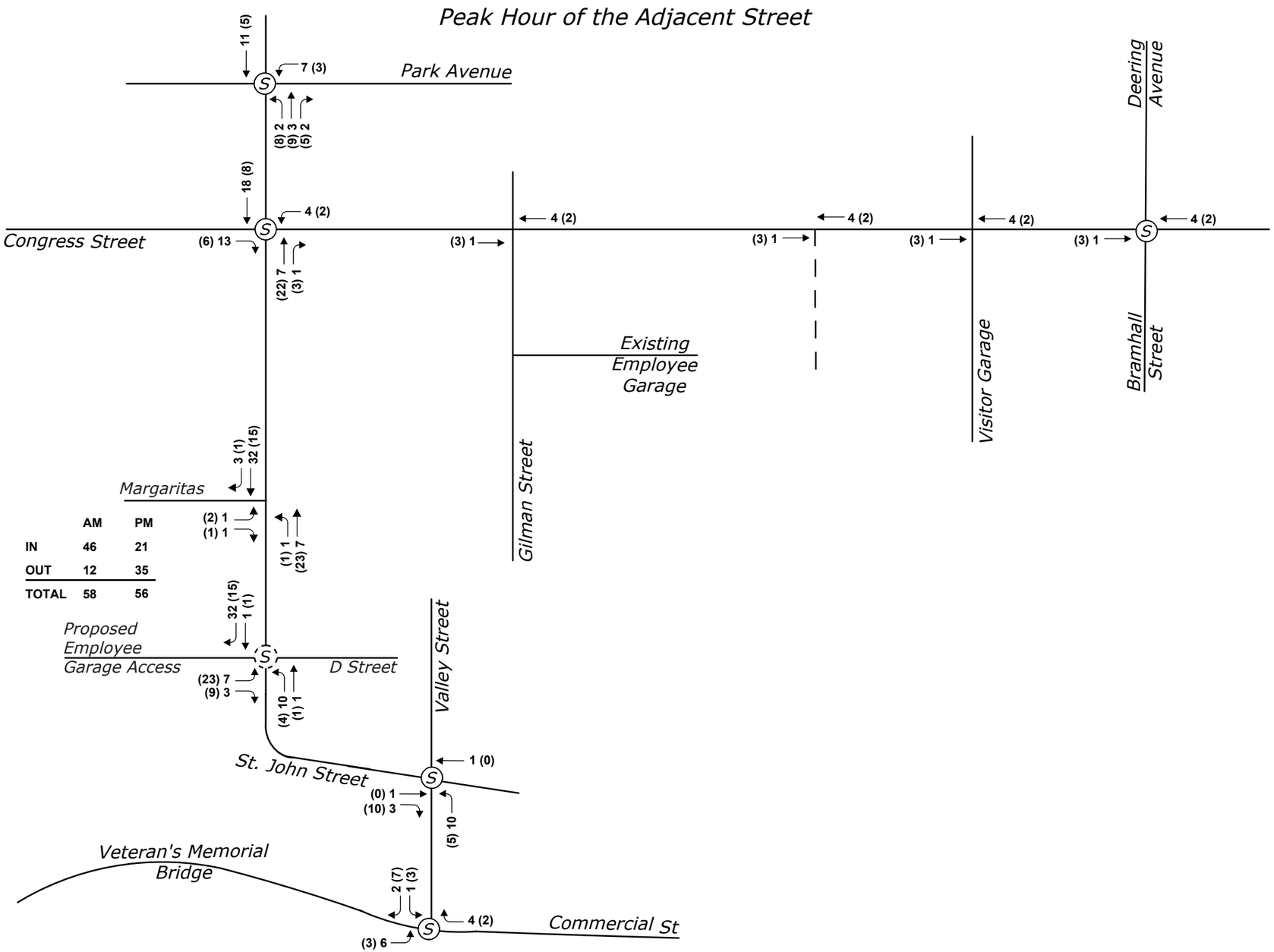
Phase 3 Employee Trip Assignment

Figure No. 7



Bramhall St. - 22; MMC Congress Street Building
PORTLAND, MAINE

Design: EAL Scale: NONE
Draft: Date: SEP 2018
Checked: RED File Name: 28866.01 - TIS Figures

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LEGEND

Bramhall Employees	1 mile	Travelshed
<1 mile	3 miles	295 North
1-3 miles	5 miles	35 - 302 - 117 North
3-5 miles	10 miles	95 North
5-10 miles	20 miles	95 South
10-20 miles	30 miles	Ferries
20-30 miles	40 miles	Peninsular Surface Streets
30-40 miles	50 miles	Rt 25 - Brighton Ave
40-50 miles		South Portland Surface Streets
>50 miles		Maine Medical Center

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Bramhall Employee Address Locations and Travelsheds
Maine Medical Center

vhb

0 2.5 5 Miles

Attachment 1B

Trip Generation Calculations

JN: 2866.01
Project Description: Maine Medical Center Phase 3
Project Location: Portland, ME
Date: 08/14/18

Gorrill Palmer
707 Sable Oaks Drive
Suite 30
South Portland, Maine 04106

Hospital
Land Use Code (LUC) 610

Employees 200

Fitted Curve:

Time Period	ITE Trip Rate	Trip Ends	Directional Split* IN	Directional Split* OUT	Directional Distribution IN	Directional Distribution OUT	Sample Size/R2
Weekday	T =4.40 (X) + 711.46	1591	50%	50%	796	795	19/.77
AM Peak Adjacent Street	T =0.32 (X) + 35.15	99	80%	20%	79	20	9/.77
PM Peak Adjacent Street	T =0.28 (X) + 75.75	132	35%	65%	46	86	8/.69
AM Peak of Generator	T = 0.33 (X) +66.57	133	65%	35%	86	47	8/.83
PM Peak of Generator	T = 0..36 (X) + 97.41	169	40%	60%	68	101	15/.73
Saturday	T = 2.95 (X)+ 691.43	1281	50%	50%	641	640	15/.84
Saturday Peak of Generator	Not given	-	55%	45%	-	-	4

* Percentages rounded to nearest 5%

Average Rate:

Time Period	ITE Trip Rate	Trip Ends	Directional Split* IN	Directional Split* OUT	Directional Distribution IN	Directional Distribution OUT	Sample Size
Weekday	**T = 5.2 (X)**	**1040**	**50%**	**50%**	**520**	**520**	**19**
AM Peak Adjacent Street	**T = 0.34 (X)**	**68**	**80%**	**20%**	**54**	**14**	**9**
PM Peak Adjacent Street	**T = 0.33 (X)**	**66**	**35%**	**65%**	**23**	**43**	**8**
AM Peak of Generator	**T = 0.39 (X)**	**78**	**65%**	**35%**	**51**	**27**	**8**
PM Peak of Generator	**T = 0.47 (X)**	**94**	**40%**	**60%**	**38**	**56**	**15**
Saturday	**T = 3.78 (X)**	**756**	**50%**	**50%**	**378**	**378**	**15**
Saturday Peak of Generator	**T = 0.53 (X)**	**106**	**55%**	**45%**	**58**	**48**	**4**

* Percentages rounded to nearest 5%

Section 2
Traffic Crashes

2.A. Crash Summary Data

Gorrill Palmer obtained the crash data from MaineDOT for the period of 2015-2017, the most recent period available (Attachment 2A).

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 to be classified as an HCL.

1. A critical rate factor of 1.00 or more for a three-year period. (A Critical Rate Factor {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, there are eight high crash locations in the vicinity of the study area:

- Intersection of Park Avenue with Valley Street
- Intersection of Congress Street with Gilman Street
- Intersection of St. John Street with A Street
- Intersection of Park Avenue with St. John Street
- Valley Street from A Street to C Street
- Congress Street from Forest Street to Weymouth Street
- St. John Street from Congress Street to Non-Intersection (just south of Park Avenue)

To better evaluate the high crash locations and identify correctable crash patterns, the police reports for these locations were provided by MaineDOT and used to create collision diagrams, included as Attachment 2A to this section. The following discusses the high crash locations as well as pedestrian and bicycle crashes in more detail.

High Crash Locations

The following describes the HCLs in more detail.

Park Avenue / Valley Street

This intersection has a CRF of 1.80 and experienced 10 collisions during the most recent three-year period. It is an unsignalized intersection that is STOP controlled on Valley Street with free flowing traffic on Park Avenue. The northbound Valley Street approach is one-way into the intersection.

There is one crash pattern at this intersection involving vehicles turning left from northbound Valley Street onto westbound Park Avenue and colliding with vehicles traveling westbound on Park Avenue. Additionally, one collision that occurred at this intersection involved a pedestrian and one that involved a bicyclist. The traffic from the proposed MMC expansion is not expected to exacerbate this pattern.

Congress Street / Gilman Street

This intersection has a CRF of 3.26 and experienced 20 collisions during the most recent three-year period. It is an unsignalized intersection that is STOP controlled on the Gilman Street approaches with free flowing traffic on Congress Street. The southbound Gilman Street approach is one-way into the intersection. Based on a review of the collision diagram there are three crash patterns at this intersection; southbound through traffic on Gilman Street failing to yield to eastbound through traffic on Congress Street, southbound through traffic on Gilman Street failing to yield to westbound through traffic on Congress Street, and rear end collisions involving eastbound Congress Street traffic.

There were four collisions that involved southbound through traffic on Gilman Street failing to yield the right of way to the eastbound through traffic on Congress Street and three collisions that involved vehicles coming from the same direction failing to yield the right of way to westbound through traffic on Congress Street. These types of collisions may be due to the buildings along Congress Street blocking the sight distance of the southbound traffic. Because the MMC employee parking is being relocated to St. John Street, both the AM and PM total entering traffic volume for this intersection will be decreased from the Predevelopment condition to the Postdevelopment condition.

There were three rear end collisions on Congress Street eastbound. All three were caused by drivers following too closely and/or driver inattention. Additionally, all three collisions involved vehicles stopping for pedestrians in the crosswalk.

St. John Street / A Street

This intersection has a CRF of 1.82 and experienced 8 collisions during the most recent three-year period. It is an unsignalized four-leg intersection with two-way traffic on all approaches. Based on a review of the collision diagram, there were no correctable crash patterns identified at this intersection.

Park Avenue / St. John Street

This intersection has a CRF of 1.63 and experienced 36 collisions during the most recent three-year period. It is a signalized four-leg intersection with two-way traffic on all approaches, with the exception of Park Avenue to the east of St. John Street, which is one way away from the intersection. Based on a review of the collision diagram, there are four crash patterns at this intersection.

One crash pattern involved vehicles in the northbound St. John Street left turn lane attempting to go straight through the intersection from the left-most lane and colliding with left turning vehicles in the adjacent left-through lane. There were 13 such crashes at this intersection during the most recent three year period. Most of the drivers that incorrectly attempted to travel through the intersection claimed that they believed they could travel through the intersection from that lane.

Another crash pattern was northbound left turning vehicles sideswiping one another while traveling in the left turn lane and left-through lane from the northbound St. John Street approach to the intersection. Six of these crashes occurred at this intersection during the most recent three year period. There is already a skip line striping between the left turn lane and the left-through lane through the intersection. Many of the crashes involved in the two crash patterns discussed at this intersection so far occurred either during the winter or in the spring when the striping of the skip line may have faded away.

A third crash pattern at this intersection involves right angle collisions between westbound through vehicles on Park Avenue failing to yield to northbound through vehicles on St. John Street. Three of these crashes occurred at this intersection during the most recent three year period. All three collisions involved the westbound Park Avenue vehicle running the red light.

The fourth crash pattern at this intersection involved rear-end collisions involving vehicles at the northbound approach to this intersection. One potential contributing factor to rear end collisions at signalized intersections is inadequate signal clearance times.

Valley Street from A Street to C Street

This intersection has a CRF of 2.89 and experienced 8 collisions during the most recent three-year period. There were no correctable crash patterns identified, however there were five crashes involving parked vehicles. Of the five crashes involving parked vehicles, three crashes involved vehicles that were parked illegally. Stricter enforcement of the parking regulations may help reduce the number of crashes along this segment of Valley Street. It should also be noted that there was one crash involving a pedestrian at this location during the most recent three year period.

Congress Street from Forest Street to Weymouth Street

This section of Congress Street has a CRF of 1.45 and experienced 10 collisions during the most recent three-year period. Based on a review of the collision diagram there is one crash pattern of rear end collisions in the eastbound direction. Of the 10 collisions, five were rear end collisions on Congress Street eastbound. The five collisions were caused by drivers following too closely. There are multiple driveways in this roadway segment, including an entrance to the Maine Medical Center visitor parking garage.

An overall review of the collisions showed that there were 9 collisions that occurred on a weekday and of those, 2 occurred during the AM peak commuter hour and 4 occurred during the PM peak commuter hour, when traffic volumes are heaviest. Additionally, one of the collisions that occurred in this area involved a bicyclist.

Restriping of this section of Congress Street to include a center turn lane may be an alternative to be pursued to improve this section of Congress Street.

St. John Street from Congress Street to Non-Intersection (just south of Park Avenue)

This section of St. John Street has a CRF of 3.00 and experienced 30 collisions during the most recent three-year period. Based on a review of the collision diagram, there are two crash patterns.

The first crash pattern involves sideswipe crashes involving vehicles traveling northbound on St. John Street, which are caused by vehicles making lane changes.

Of the 30 collisions, 17 involved vehicles attempting to turn left onto St. John Street from various driveways. There are many driveways on this link of St. John Street including McDonald's, Amato's, Sullivan Tire, Dunkin' Donuts, Lang's Express, Salty Sally's Bare and Grille and Portland Physical Therapy. Of the 30 crashes in this roadway segment, two involved left turns into driveways from St. John Street.

In a recent Traffic Impact Study completed by Maine Traffic Resources for a Dunkin Donuts relocation project in this section of St. John Street, a "road diet" was recommended that would include a single travel lane in each direction with a center turn lane. Gorrill Palmer supports that recommendation.

Pedestrian Collisions

There were 22 collisions involving pedestrians throughout the study area. Of those, 15 occurred when the pedestrian was within the marked crosswalk, seven of which involved one vehicle rear ending another that was yielding to the pedestrian. Several of the collisions involved pedestrians crossing without the walk sign at a signalized intersection,

or abruptly entering the intersection. Others involved vehicles failing to yield to the pedestrians in the crosswalks.

Bicycle Collisions

There were 9 collisions involving bicyclists throughout the study area. One collision involved a bicyclist riding in a bike lane being struck by a turning vehicle on Park Avenue. Several of the collisions involved bicyclists riding in the roadway, but not following traffic rules.

2.B. Attachments

Attachment 2A – Crash Report, Collision Diagrams

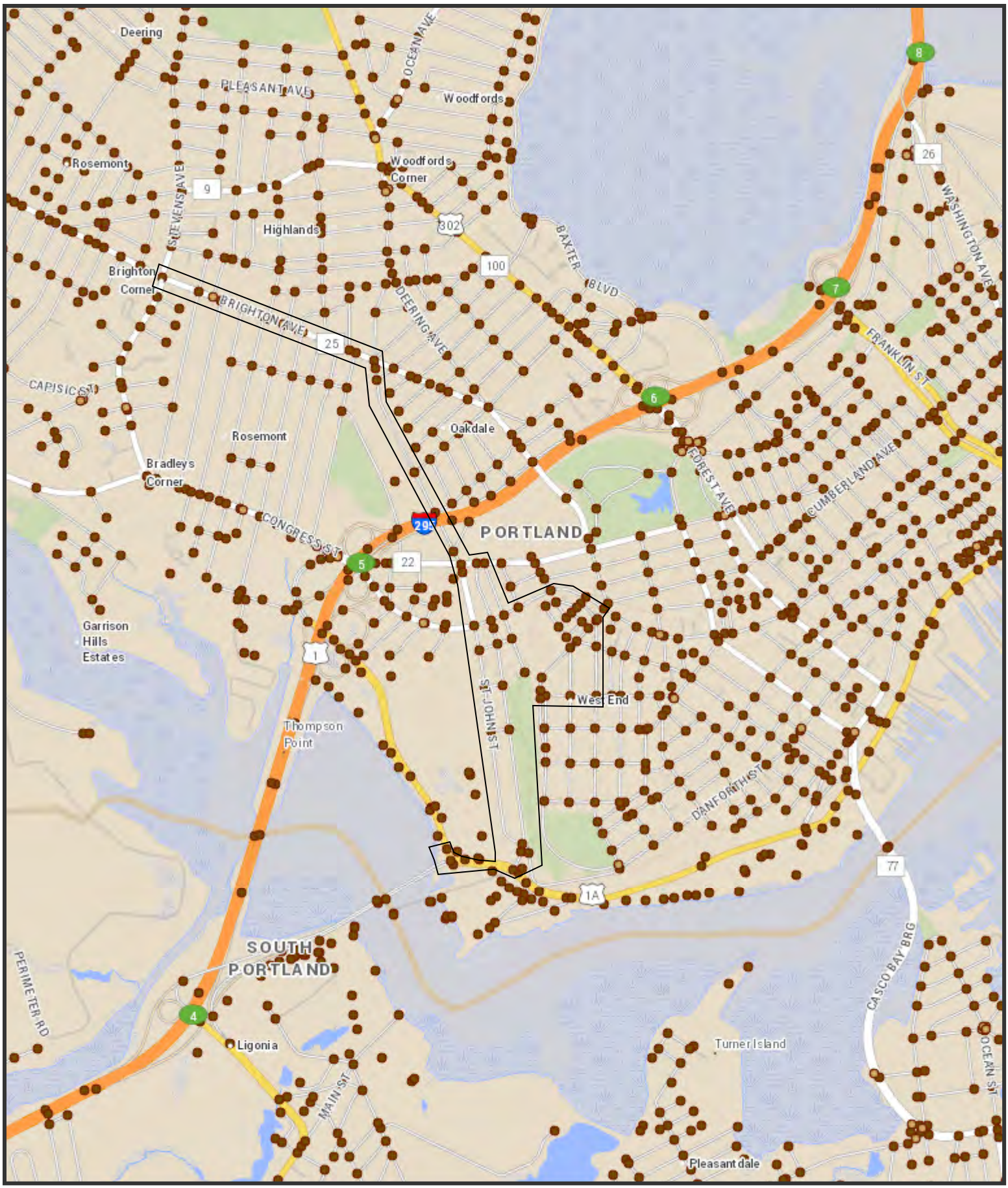
Attachment 2A

Node Map

Crash History

Collision Diagrams

PORTLAND NODE MAP PAGE 1



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0.4 Miles

1 inch = 0.45 miles

Date: 8/8/2018
Time: 4:08:26 PM

Crash Summary Report

Report Selections and Input Parameters

REPORT SELECTIONS

☑ Crash Summary I ☐ Section Detail ☑ Crash Summary II ☐ 1320 Public ☐ 1320 Private ☑ 1320 Summary

REPORT DESCRIPTION

Portland
Brighton Ave., St. John St., Congress St. Area

REPORT PARAMETERS

Year 2015, Start Month 1 through Year 2017 End Month: 12

Route: 0001A	Start Node: 66546	Start Offset: 0	☐ Exclude First Node
	End Node: 16747	End Offset: 0	☐ Exclude Last Node
Route: 001AS	Start Node: 16747	Start Offset: 0	☑ Exclude First Node
	End Node: 66542	End Offset: 0	☑ Exclude Last Node
Route: 3209586	Start Node: 66548	Start Offset: 0	☑ Exclude First Node
	End Node: 66546	End Offset: 0	☑ Exclude Last Node
Route: 3201019	Start Node: 16747	Start Offset: 0	☑ Exclude First Node
	End Node: 16753	End Offset: 0	☐ Exclude Last Node
Route: 3209776	Start Node: 16752	Start Offset: 0	☑ Exclude First Node
	End Node: 67695	End Offset: 0	☑ Exclude Last Node
Route: 0560191	Start Node: 67749	Start Offset: 0	☐ Exclude First Node
	End Node: 16748	End Offset: 0	☑ Exclude Last Node
Route: 3209812	Start Node: 67750	Start Offset: 0	☑ Exclude First Node
	End Node: 67749	End Offset: 0	☑ Exclude Last Node
Route: 0560314	Start Node: 19081	Start Offset: 0	☐ Exclude First Node
	End Node: 19079	End Offset: 0	☐ Exclude Last Node
Route: 0560001	Start Node: 19080	Start Offset: 0	☑ Exclude First Node
	End Node: 16751	End Offset: 0	☑ Exclude Last Node
Route: 0560100	Start Node: 16750	Start Offset: 0	☑ Exclude First Node
	End Node: 16763	End Offset: 0	☑ Exclude Last Node

Crash Summary Report

Report Selections and Input Parameters

REPORT SELECTIONS

☑ Crash Summary I ☐ Section Detail ☑ Crash Summary II ☐ 1320 Public ☐ 1320 Private ☑ 1320 Summary

REPORT DESCRIPTION

Portland
Brighton Ave., St. John St., Congress St. Area

REPORT PARAMETERS

Year 2015, Start Month 1 through Year 2017 End Month: 12

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	End Node: 18571	End Offset: 0	☑ Exclude Last Node
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Route: 0560077	Start Node: 16825	Start Offset: 0	☑ Exclude First Node
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Route: 0560782	Start Node: 71553	Start Offset: 0	☐ Exclude First Node
	End Node: 12751	End Offset: 0	☑ Exclude Last Node
Route: 3200519	Start Node: 60369	Start Offset: 0	☑ Exclude First Node
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	End Node: 12603	End Offset: 0	☑ Exclude Last Node

Crash Summary Report

Report Selections and Input Parameters

REPORT SELECTIONS

☑ Crash Summary I ☐ Section Detail ☑ Crash Summary II ☐ 1320 Public ☐ 1320 Private ☑ 1320 Summary

REPORT DESCRIPTION

Portland
Brighton Ave., St. John St., Congress St. Area

REPORT PARAMETERS

Year 2015, Start Month 1 through Year 2017 End Month: 12

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Route: 0560171	Start Node: 12619	Start Offset: 0	☑ Exclude First Node
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	End Node: 15476	End Offset: 0	☑ Exclude Last Node

Crash Summary Report

Report Selections and Input Parameters

REPORT SELECTIONS

☑ Crash Summary I ☐ Section Detail ☑ Crash Summary II ☐ 1320 Public ☐ 1320 Private ☑ 1320 Summary

REPORT DESCRIPTION

Portland
Brighton Ave., St. John St., Congress St. Area

REPORT PARAMETERS

Year 2015, Start Month 1 through Year 2017 End Month: 12

Route: 0022X	Start Node: 19079	Start Offset: 0	☑ Exclude First Node
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Route: 3210295	Start Node: 12700	Start Offset: 0	☑ Exclude First Node
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Route: 0560001	Start Node: 16751	Start Offset: 0	☑ Exclude First Node
	End Node: 16764	End Offset: 0	☑ Exclude Last Node

Crash Summary I

Nodes

Node	Route - MP	Node Description	U/R	Total Crashes	Injury Crashes K	A	B	C	PD	Percent Injury	Annual M Ent-Veh	Crash Rate	Critical Rate	CRF
16747	0001A - 9.88	Int of FORE RIVER PKY VALLEY ST W COMMERCIAL ST	9	26	0	0	3	4	19	26.9	10.520	0.82	1.12	0.00
											Statewide Crash Rate:	0.74		
66542	0001A - 9.72	Int of FORE RIVER PKY VETERANS BRIDGE	9	19	0	0	1	2	16	15.8	9.400	0.67	1.14	0.00
											Statewide Crash Rate:	0.74		
66546	0001A - 9.69	Int of FORE RIVER PKY RD INV 3209586	2	0	0	0	0	0	0	0.0	3.283	0.00	0.44	0.00
											Statewide Crash Rate:	0.16		
66548	001AS - 2.59	Int of FORE RIVER PKY RD INV 3209586	2	0	0	0	0	0	0	0.0	5.449	0.00	0.38	0.00
											Statewide Crash Rate:	0.16		
16753	3201019 - 0.82	Int of PARK AV VALLEY ST	2	10	0	0	1	4	5	50.0	4.639	0.72	0.40	1.80
											Statewide Crash Rate:	0.16		
16749	3201019 - 0.37	Int of D ST VALLEY ST	2	2	0	0	0	0	2	0.0	1.357	0.49	0.55	0.00
											Statewide Crash Rate:	0.16		
16751	3201019 - 0.60	Int of A ST VALLEY ST	2	5	0	0	0	2	3	40.0	1.467	1.14	0.54	2.11
											Statewide Crash Rate:	0.16		
16748	3201019 - 0.07	Int of DANFORTH ST ST JOHN ST VALLEY ST	9	11	0	0	1	2	8	27.3	3.995	0.92	1.34	0.00
											Statewide Crash Rate:	0.74		
16750	3201019 - 0.49	Int of C ST VALLEY ST	2	1	0	0	0	0	1	0.0	1.286	0.26	0.55	0.00
											Statewide Crash Rate:	0.16		
16752	3201019 - 0.66	Int of CONGRESS ST VALLEY ST	9	9	0	0	0	1	8	11.1	5.210	0.58	1.27	0.00
											Statewide Crash Rate:	0.74		
67750	3201019 - 0.05	Int of RD INV 3209812 VALLEY ST	2	0	0	0	0	0	0	0.0	2.723	0.00	0.46	0.00
											Statewide Crash Rate:	0.16		
67695	3201019 - 0.64	Non Int VALLEY ST	2	0	0	0	0	0	0	0.0	0.480	0.00	0.67	0.00
											Statewide Crash Rate:	0.16		
67749	0560191 - 1.34	Int of DANFORTH ST RD INV 3209812	2	0	0	0	0	0	0	0.0	2.670	0.00	0.44	0.00
											Statewide Crash Rate:	0.15		
18571	0560314 - 0.17	Int of CONGRESS ST GILMAN ST	2	20	0	0	0	6	14	30.0	5.274	1.26	0.39	3.26
											Statewide Crash Rate:	0.16		
19080	0560314 - 0.10	0509500 POR,GILMAN,'A' ST.	2	0	0	0	0	0	0	0.0	0.058	0.00	-0.42	0.00
											Statewide Crash Rate:	0.14		
19081	0560314 - 0	0509501 POR,GILMAN ST,END	2	0	0	0	0	0	0	0.0	0.019	0.00	-4.47	0.00
											Statewide Crash Rate:	0.14		
19079	0560314 - 0.31	Int of GILMAN ST PARK AV	2	1	0	0	1	0	0	100.0	3.841	0.09	0.42	0.00
											Statewide Crash Rate:	0.16		
16828	0560160 - 2.23	Int of CONGRESS ST FOREST ST	2	1	0	0	0	0	1	0.0	4.848	0.07	0.40	0.00
											Statewide Crash Rate:	0.16		
16827	0560160 - 2.13	Int of CONGRESS ST WEYMOUTH ST	2	3	0	0	0	1	2	33.3	4.615	0.22	0.40	0.00
											Statewide Crash Rate:	0.16		
16825	0560160 - 1.97	Int of BRAMHALL ST CONGRESS ST DEERING AV	9	17	0	1	1	4	11	35.3	7.276	0.78	1.19	0.00
											Statewide Crash Rate:	0.74		
16826	0560160 - 2.03	Int of CONGRESS ST ELLSWORTH ST	2	3	0	0	1	0	2	33.3	4.494	0.22	0.40	0.00
											Statewide Crash Rate:	0.16		
18352	0560077 - 0.01	Int of BRAMHALL PL BRAMHALL ST	2	0	0	0	0	0	0	0.0	2.944	0.00	0.41	0.00
											Statewide Crash Rate:	0.14		

Crash Summary I

Nodes

Node	Route - MP	Node Description	U/R	Total Crashes	Injury Crashes K	A	B	C	PD	Percent Injury	Annual M Ent-Veh	Crash Rate	Critical Rate	CRF
12625	0560077 - 0.24	Int of BRAMHALL ST WESTERN PROMENADE	2	0	0	0	0	0	0	0.0	0.386	0.00	0.60	0.00
												Statewide Crash Rate:	0.14	
12603	0560077 - 0.13	0503015 POR,BRAMHALL,BRACKETT,CHADWICK	2	0	0	0	0	0	0	0.0	0.521	0.00	0.59	0.00
												Statewide Crash Rate:	0.14	
19111	0560077 - 0.11	0509531 POR,BRACKETT,BRAMHALL ST.	2	4	0	0	1	1	2	50.0	1.973	0.68	0.45	1.50
												Statewide Crash Rate:	0.14	
12621	0560077 - 0.06	0503033 POR,BRAMHALL,HILL ST.	2	1	0	0	0	0	1	0.0	1.575	0.21	0.48	0.00
												Statewide Crash Rate:	0.14	
12604	0560077 - 0.03	0503016 POR,BRAMHALL,VAUGHN ST.	2	1	0	0	0	0	1	0.0	3.051	0.11	0.40	0.00
												Statewide Crash Rate:	0.14	
60369	0560785 - 0.62	Non Int WESTERN PROMENADE	2	0	0	0	0	0	0	0.0	0.386	0.00	0.60	0.00
												Statewide Crash Rate:	0.14	
71553	0560782 - 0	Non Int WESTERN PROMENADE	2	0	0	0	0	0	0	0.0	0.214	0.00	0.56	0.00
												Statewide Crash Rate:	0.14	
12751	0560782 - 0.01	Int of WEST ST WESTERN PROMENADE	2	0	0	0	0	0	0	0.0	0.395	0.00	0.60	0.00
												Statewide Crash Rate:	0.14	
12602	0560782 - 0.07	Int of CHADWICK ST, WEST ST	2	0	0	0	0	0	0	0.0	1.295	0.00	0.50	0.00
												Statewide Crash Rate:	0.14	
12605	0560782 - 0.14	0503017 POR,VAUGHN,WEST ST.	2	0	0	0	0	0	0	0.0	1.753	0.00	0.47	0.00
												Statewide Crash Rate:	0.14	
19110	0560751 - 0.06	0509530 POR,BRACKETT,VAUGHN ST.	2	1	0	0	1	0	0	100.0	2.274	0.15	0.44	0.00
												Statewide Crash Rate:	0.14	
19112	0560071 - 0.82	0509532 POR,CHARLES,BRACKETT ST.	2	0	0	0	0	0	0	0.0	0.843	0.00	0.55	0.00
												Statewide Crash Rate:	0.14	
12617	0560128 - 0.03	0503029 POR,ELLSWORTH,CHARLES ST.	2	0	0	0	0	0	0	0.0	0.930	0.00	0.54	0.00
												Statewide Crash Rate:	0.14	
12624	0560128 - 0.09	0503036 POR,CHARLES,CRESCENT ST.	2	1	0	0	0	0	1	0.0	0.313	1.06	0.60	1.77
												Statewide Crash Rate:	0.14	
12622	0560251 - 0.03	0503034 POR,WESCOTT,ELLSWORTH ST.	2	0	0	0	0	0	0	0.0	0.542	0.00	0.59	0.00
												Statewide Crash Rate:	0.14	
12618	0560251 - 0.05	0503030 POR,ELLSWORTH,HILL ST.	2	1	0	0	0	0	1	0.0	0.871	0.38	0.54	0.00
												Statewide Crash Rate:	0.14	
15476	0560251 - 0.08	Int of BRAMHALL PL ELLSWORTH ST	2	0	0	0	0	0	0	0.0	0.525	0.00	0.59	0.00
												Statewide Crash Rate:	0.14	
12619	0560251 - 0.07	0503031 POR,CRESCENT,ELLSWORTH ST.	2	0	0	0	0	0	0	0.0	0.537	0.00	0.59	0.00
												Statewide Crash Rate:	0.14	
12623	0560171 - 0.05	0503035 POR,CRESCENT,WESCOTT ST.	2	0	0	0	0	0	0	0.0	0.096	0.00	0.20	0.00
												Statewide Crash Rate:	0.14	
12620	0560369 - 0.03	0503032 POR,HILL,RUSSELL ST.	2	1	0	0	0	0	1	0.0	0.242	1.38	0.58	2.37
												Statewide Crash Rate:	0.14	
16763	3201042 - 0.44	Int of C ST ST JOHN ST	2	3	0	0	1	0	2	33.3	2.590	0.39	0.47	0.00
												Statewide Crash Rate:	0.16	
16762	3201042 - 0.32	Int of D ST ST JOHN ST	2	0	0	0	0	0	0	0.0	2.480	0.00	0.47	0.00
												Statewide Crash Rate:	0.16	

Crash Summary I

Nodes

Node	Route - MP	Node Description	U/R	Total Crashes	Injury Crashes K	A	B	C	PD	Percent Injury	Annual M Ent-Veh	Crash Rate	Critical Rate	CRF
16764	3201042 - 0.54	Int of A ST ST JOHN ST	2	8	0	0	0	1	7	12.5	3.383	0.79	0.43	1.82
												Statewide Crash Rate:	0.16	
16765	3201042 - 0.60	Int of CONGRESS ST ST JOHN ST	9	25	0	1	1	3	20	20.0	11.212	0.74	1.11	0.00
												Statewide Crash Rate:	0.74	
16770	0022S - 1.04	Int of PARK AV ST JOHN ST	9	36	0	0	2	4	30	16.7	5.948	2.02	1.24	1.63
												Statewide Crash Rate:	0.74	
66777	0022S - 1.02	Non Int ST JOHN ST	2	0	0	0	0	0	0	0.0	2.639	0.00	0.46	0.00
												Statewide Crash Rate:	0.16	
12629	0560637 - 0.15	Int of GRANITE ST ST JOHN ST	2	1	0	0	0	0	1	0.0	3.175	0.10	0.44	0.00
												Statewide Crash Rate:	0.16	
12692	0560637 - 0.53	Int of DARTMOUTH ST ST JOHN ST	2	1	0	0	0	0	1	0.0	2.890	0.12	0.45	0.00
												Statewide Crash Rate:	0.16	
12695	0560637 - 0.27	Int of FALMOUTH ST ST JOHN ST	2	1	0	0	0	0	1	0.0	3.223	0.10	0.44	0.00
												Statewide Crash Rate:	0.16	
12628	0560637 - 0.04	Int of ST JOHN ST WASHBURN AV	2	0	0	0	0	0	0	0.0	3.041	0.00	0.45	0.00
												Statewide Crash Rate:	0.16	
71539	0560637 - 0.56	Non Int ST JOHN ST	2	0	0	0	0	0	0	0.0	2.745	0.00	0.46	0.00
												Statewide Crash Rate:	0.16	
12878	0025X - 1.15	Int of BRIGHTON AV MASSACHUSETTS AV	2	1	0	0	0	0	1	0.0	6.452	0.05	0.33	0.00
												Statewide Crash Rate:	0.14	
A12883	0025X - 1.20	Int of BOLTON ST BRIGHTON AV	2	0	0	0	0	0	0	0.0	0.000	0.00	0.00	0.00
												Statewide Crash Rate:	0.14	
A12891	0025X - 1.30	Int of BRIGHTON AV FRANCES ST	2	0	0	0	0	0	0	0.0	0.000	0.00	0.00	0.00
												Statewide Crash Rate:	0.14	
P12776	0025X - 1.26	Int of BRIGHTON AV ORLAND ST	2	3	0	0	0	0	3	0.0	6.582	0.15	0.33	0.00
												Statewide Crash Rate:	0.14	
A12892	0025X - 1.35	Int of BRIGHTON AV EDWARDS ST	2	0	0	0	0	0	0	0.0	0.000	0.00	0.00	0.00
												Statewide Crash Rate:	0.14	
12877	0025X - 1.10	Int of BRIGHTON AV DOUGLASS ST	2	7	0	0	0	0	7	0.0	6.575	0.35	0.33	1.07
												Statewide Crash Rate:	0.14	
P12899	0025X - 1.47	Int of BRIGHTON AV, CALEB ST	2	3	0	0	0	1	2	33.3	6.064	0.16	0.34	0.00
												Statewide Crash Rate:	0.14	
12928	0025X - 1.63	Int of BRIGHTON AV STEVENS AV	9	54	0	0	2	9	43	20.4	8.793	2.05	1.15	1.78
												Statewide Crash Rate:	0.74	
12779	0025X - 1.12	Int of BRIGHTON AV, ST GEORGE ST	2	0	0	0	0	0	0	0.0	6.095	0.00	0.34	0.00
												Statewide Crash Rate:	0.14	
P12782	0025X - 1.18	Int of BEACON ST, BRIGHTON AV	2	4	0	0	2	0	2	50.0	6.796	0.20	0.33	0.00
												Statewide Crash Rate:	0.14	
A12884	0025X - 1.25	Int of BRIGHTON AV WHITNEY AV	2	0	0	0	0	0	0	0.0	0.000	0.00	0.00	0.00
												Statewide Crash Rate:	0.14	
A12904	0025X - 1.49	Int of BRIGHTON AV HOLLIS RD	2	0	0	0	0	0	0	0.0	0.000	0.00	0.00	0.00
												Statewide Crash Rate:	0.14	
P12775	0025X - 1.29	Int of BRIGHTON AV, DEBLOIS ST	2	1	0	0	0	0	1	0.0	6.090	0.05	0.34	0.00
												Statewide Crash Rate:	0.14	

Crash Summary I

Nodes

Node	Route - MP	Node Description	U/R	Total Crashes	Injury Crashes K	A	B	C	PD	Percent Injury	Annual M Ent-Veh	Crash Rate	Critical Rate	CRF
P12783	0025X - 1.34	Int of BRIGHTON AV, HIGHLAND ST	2	6	0	0	0	1	5	16.7	6.056	0.33	0.34	0.00
											Statewide Crash Rate:	0.14		
12903	0025X - 1.53	Int of BRADLEY ST, BRIGHTON AV	2	3	0	0	0	2	1	66.7	5.930	0.17	0.34	0.00
											Statewide Crash Rate:	0.14		
12898	0025X - 1.41	0503311 POR,BRIGHTON AVE,CRAIGIE ST.	2	4	0	0	0	0	4	0.0	6.112	0.22	0.34	0.00
											Statewide Crash Rate:	0.14		
12700	0025X - 1.05	Int of BRIGHTON AV DEVONSHIRE ST NOYES ST ST JOH	9	21	0	1	0	7	13	38.1	7.464	0.94	1.19	0.00
											Statewide Crash Rate:	0.74		
Study Years:	3.00	NODE TOTALS:		320	0	3	19	55	243	24.1	226.905	0.47	0.39	1.21

Crash Summary I

Sections

Start Node	End Node	Element	Offset Begin - End	Route - MP	Section Length	U/R	Total Crashes	Injury Crashes K	A	B	C	PD	Percent Injury	Annual HMVM	Crash Rate	Critical Rate	CRF
66546	66542	3508657	0 - 0.03	0001A - 9.69	0.03	2	0	0	0	0	0	0	0.0	0.00064	0.00	828.15	0.00
Int of FORE RIVER PKY RD INV 3209586				US 1A											Statewide Crash Rate: 218.56		
66542	16747	3140171	0 - 0.16	0001A - 9.72	0.16	2	3	0	0	0	1	2	33.3	0.00782	127.84	445.86	0.00
Int of FORE RIVER PKY VETERANS BRIDGE				US 1A											Statewide Crash Rate: 218.56		
16747	66548	3117394	0 - 0.13	001AS - 2.46	0.13	2	4	0	0	0	1	3	25.0	0.00708	188.21	456.26	0.00
Int of FORE RIVER PKY VALLEY ST W COMMERCIAL ST				US 1AS											Statewide Crash Rate: 218.56		
66548	66542	3121654	0 - 0.04	001AS - 2.59	0.04	2	0	0	0	0	0	0	0.0	0.00187	0.00	637.86	0.00
Int of FORE RIVER PKY RD INV 3209586				US 1AS											Statewide Crash Rate: 218.56		
66548	66546	3120374	0 - 0.06	3209586 - 0	0.06	2	0	0	0	0	0	0	0.0	0.00046	0.00	880.08	0.00
Int of FORE RIVER PKY RD INV 3209586				RD INV 3209586											Statewide Crash Rate: 218.56		
16747	67750	3417945	0 - 0.05	3201019 - 0	0.05	2	0	0	0	0	0	0	0.0	0.00155	0.00	669.13	0.00
Int of FORE RIVER PKY VALLEY ST W COMMERCIAL ST				RD INV 3201019											Statewide Crash Rate: 218.56		
67750	16748	3417946	0 - 0.02	3201019 - 0.05	0.02	2	0	0	0	0	0	0	0.0	0.00047	0.00	878.84	0.00
Int of RD INV 3209812 VALLEY ST				RD INV 3201019											Statewide Crash Rate: 218.56		
16748	16749	3139464	0 - 0.30	3201019 - 0.07	0.30	2	2	0	0	1	0	1	50.0	0.00383	174.05	530.31	0.00
Int of DANFORTH ST ST JOHN ST VALLEY ST				RD INV 3201019											Statewide Crash Rate: 218.56		
16749	16750	3118971	0 - 0.12	3201019 - 0.37	0.12	2	4	0	0	0	0	2	0.0	0.00148	903.57	677.99	1.33
Int of D ST VALLEY ST				RD INV 3201019											Statewide Crash Rate: 218.56		
16750	16751	3117941	0 - 0.11	3201019 - 0.49	0.11	2	8	0	0	0	2	5	28.6	0.00133	2010.83	696.66	2.89
Int of C ST VALLEY ST				RD INV 3201019											Statewide Crash Rate: 218.56		
16751	67695	3416725	0 - 0.04	3201019 - 0.60	0.04	2	1	0	0	0	0	1	0.0	0.00038	868.76	906.67	0.00
Int of A ST VALLEY ST				RD INV 3201019											Statewide Crash Rate: 218.56		
67695	16752	3508600	0 - 0.02	3201019 - 0.64	0.02	2	0	0	0	0	0	0	0.0	0.00010	0.00	726.01	0.00
Non Int VALLEY ST				RD INV 3201019											Statewide Crash Rate: 218.56		
16752	16753	3118516	0 - 0.16	3201019 - 0.66	0.16	2	2	0	0	0	0	2	0.0	0.00134	496.76	694.56	0.00
Int of CONGRESS ST VALLEY ST				RD INV 3201019											Statewide Crash Rate: 218.56		
16752	67695	3416727	0 - 0.03	3209776 - 0	0.03	2	0	0	0	0	0	0	0.0	0.00014	0.00	893.23	0.00
Int of CONGRESS ST VALLEY ST				RD INV 3209776											Statewide Crash Rate: 218.56		
16748	67749	3417943	0 - 0.03	0560191 - 1.34	0.03	2	0	0	0	0	0	0	0.0	0.00062	0.00	696.56	0.00
Int of DANFORTH ST ST JOHN ST VALLEY ST				RD INV 05 60191											Statewide Crash Rate: 174.83		
67750	67749	3417947	0 - 0.02	3209812 - 0	0.02	2	0	0	0	0	0	0	0.0	0.00008	0.00	316.22	0.00
Int of RD INV 3209812 VALLEY ST				RD INV 3209812											Statewide Crash Rate: 174.83		
19080	19081	194795	0 - 0.10	0560314 - 0	0.10	2	5	0	0	0	0	3	0.0	0.00004	43077.45	926.59	46.49
0509500 POR,GILMAN,'A' ST.				RD INV 05 60314											Statewide Crash Rate: 407.52		
18571	19080	194101	0 - 0.07	0560314 - 0.10	0.07	2	3	0	0	0	1	2	33.3	0.00002	49542.97	-1166.96	0.00
Int of CONGRESS ST GILMAN ST				RD INV 05 60314											Statewide Crash Rate: 407.52		
18571	19079	194100	0 - 0.14	0560314 - 0.17	0.14	2	4	0	0	0	0	1	0.0	0.00023	5889.98	1666.75	3.53
Int of CONGRESS ST GILMAN ST				RD INV 05 60314											Statewide Crash Rate: 407.52		

Crash Summary I

Sections

Start Node	End Node	Element	Offset Begin - End	Route - MP	Section Length	U/R	Total Crashes	Injury Crashes K	A	B	C	PD	Percent Injury	Annual HMVM	Crash Rate	Critical Rate	CRF
16751	19080	192420	0 - 0.03	0560001 - 0	0.03	2	0	0	0	0	0	0	0.0	0.00001	0.00	-3169.30	0.00
Int of A ST VALLEY ST				RD INV 05 60001											Statewide Crash Rate: 407.52		
16750	16763	192417	0 - 0.05	0560100 - 0	0.05	2	0	0	0	0	0	0	0.0	0.00007	0.00	1603.07	0.00
Int of C ST VALLEY ST				RD INV 05 60100											Statewide Crash Rate: 407.52		
16749	16762	192415	0 - 0.04	0560184 - 0	0.04	2	0	0	0	0	0	0	0.0	0.00008	0.00	1693.39	0.00
Int of D ST VALLEY ST				RD INV 05 60184											Statewide Crash Rate: 407.52		
16825	16826	3106408	0 - 0.06	0560160 - 1.97	0.06	2	6	0	1	0	1	3	40.0	0.00285	701.52	571.89	1.23
Int of BRAMHALL ST CONGRESS ST DEERING AV				RD INV 05 60160											Statewide Crash Rate: 218.56		
16826	16827	3106410	0 - 0.10	0560160 - 2.03	0.10	2	4	0	0	0	1	3	25.0	0.00424	314.80	517.06	0.00
Int of CONGRESS ST ELLSWORTH ST				RD INV 05 60160											Statewide Crash Rate: 218.56		
16827	16828	3120728	0 - 0.10	0560160 - 2.13	0.10	2	10	0	0	0	2	8	20.0	0.00453	735.77	508.44	1.45
Int of CONGRESS ST WEYMOUTH ST				RD INV 05 60160											Statewide Crash Rate: 218.56		
16828	18571	3106411	0 - 0.04	0560160 - 2.23	0.04	2	4	0	0	0	1	3	25.0	0.00207	645.26	621.60	1.04
Int of CONGRESS ST FOREST ST				RD INV 05 60160											Statewide Crash Rate: 218.56		
16752	18571	3106395	0 - 0.04	0560160 - 2.27	0.04	2	3	0	0	0	0	3	0.0	0.00201	497.12	625.94	0.00
Int of CONGRESS ST VALLEY ST				RD INV 05 60160											Statewide Crash Rate: 218.56		
16752	16765	3106394	0 - 0.05	0560160 - 2.31	0.05	2	1	0	0	0	0	1	0.0	0.00222	150.41	610.42	0.00
Int of CONGRESS ST VALLEY ST				RD INV 05 60160											Statewide Crash Rate: 218.56		
16825	18352	192521	0 - 0.01	0560077 - 0	0.01	2	2	0	0	0	0	1	0.0	0.00029	2267.52	1591.62	1.42
Int of BRAMHALL ST CONGRESS ST DEERING AV				RD INV 05 60077											Statewide Crash Rate: 407.52		
12604	18352	186995	0 - 0.02	0560077 - 0.01	0.02	2	0	0	0	0	0	0	0.0	0.00058	0.00	1368.39	0.00
0503016 POR,BRAMHALL,VAUGHN ST.				RD INV 05 60077											Statewide Crash Rate: 407.52		
12604	12621	186994	0 - 0.03	0560077 - 0.03	0.03	2	1	0	0	0	0	1	0.0	0.00047	706.95	1436.70	0.00
0503016 POR,BRAMHALL,VAUGHN ST.				RD INV 05 60077											Statewide Crash Rate: 407.52		
12621	19111	187026	0 - 0.05	0560077 - 0.06	0.05	2	2	0	0	0	0	1	0.0	0.00069	963.34	1307.97	0.00
0503033 POR,BRAMHALL,HILL ST.				RD INV 05 60077											Statewide Crash Rate: 407.52		
12603	19111	186993	0 - 0.02	0560077 - 0.11	0.02	2	0	0	0	0	0	0	0.0	0.00021	0.00	1687.34	0.00
0503015 POR,BRAMHALL,BRACKETT,CHADWICK				RD INV 05 60077											Statewide Crash Rate: 407.52		
12603	12625	186992	0 - 0.11	0560077 - 0.13	0.11	2	0	0	0	0	0	0	0.0	0.00042	0.00	1472.20	0.00
0503015 POR,BRAMHALL,BRACKETT,CHADWICK				RD INV 05 60077											Statewide Crash Rate: 407.52		
60369	12751	3097430	0 - 0.02	0560785 - 0.60	0.02	2	0	0	0	0	0	0	0.0	0.00003	0.00	680.37	0.00
Non Int WESTERN PROMENADE				RD INV 05 60785											Statewide Crash Rate: 407.52		
12625	60369	2074703	0 - 0.03	0560785 - 0.62	0.03	2	0	0	0	0	0	0	0.0	0.00012	0.00	1758.24	0.00
Int of BRAMHALL ST WESTERN PROMENADE				RD INV 05 60785											Statewide Crash Rate: 407.52		
71553	12751	4047594	0 - 0.01	0560782 - 0	0.01	2	0	0	0	0	0	0	0.0	0.00002	0.00	-892.86	0.00
Non Int WESTERN PROMENADE				RD INV 05 60782											Statewide Crash Rate: 407.52		

Crash Summary I

Sections

Start Node	End Node	Element	Offset Begin - End	Route - MP	Section Length	U/R	Total Crashes	Injury Crashes K	A	B	C	PD	Percent Injury	Annual HMVM	Crash Rate	Critical Rate	CRF
60369	71553	4047593	0 - 0.01	3200519 - 0	0.01	2	0	0	0	0	0	0	0.0	0.00002	0.00	-892.86	0.00
Non Int WESTERN PROMENADE				RD INV 3200519											Statewide Crash Rate: 407.52		
12602	12751	3097432	0 - 0.06	0560782 - 0.01	0.06	2	0	0	0	0	0	0	0.0	0.00020	0.00	1694.97	0.00
Int of CHADWICK ST, WEST ST				RD INV 05 60782											Statewide Crash Rate: 407.52		
12602	12605	186990	0 - 0.07	0560782 - 0.07	0.07	2	0	0	0	0	0	0	0.0	0.00052	0.00	1403.49	0.00
Int of CHADWICK ST, WEST ST				RD INV 05 60782											Statewide Crash Rate: 407.52		
12602	12603	186989	0 - 0.13	0560124 - 0.27	0.13	2	2	0	0	0	0	1	0.0	0.00091	733.68	1220.10	0.00
Int of CHADWICK ST, WEST ST				RD INV 05 60124											Statewide Crash Rate: 407.52		
12604	19110	186996	0 - 0.06	0560751 - 0	0.06	2	0	0	0	0	0	0	0.0	0.00099	0.00	1194.44	0.00
0503016 POR,BRAMHALL,VAUGHN ST.				RD INV 05 60751											Statewide Crash Rate: 407.52		
12605	19110	186999	0 - 0.13	0560751 - 0.06	0.13	2	3	0	0	0	0	3	0.0	0.00167	598.89	1042.44	0.00
0503017 POR,VAUGHN,WEST ST.				RD INV 05 60751											Statewide Crash Rate: 407.52		
19110	19111	194832	0 - 0.06	0560071 - 0.72	0.06	2	0	0	0	0	0	0	0.0	0.00040	0.00	1492.48	0.00
0509530 POR,BRACKETT,VAUGHN ST.				RD INV 05 60071											Statewide Crash Rate: 407.52		
19111	19112	194833	0 - 0.04	0560071 - 0.78	0.04	2	0	0	0	0	0	0	0.0	0.00034	0.00	1544.01	0.00
0509531 POR,BRACKETT,BRAMHALL ST.				RD INV 05 60071											Statewide Crash Rate: 407.52		
12617	19112	187018	0 - 0.03	0560128 - 0	0.03	2	0	0	0	0	0	0	0.0	0.00025	0.00	1640.21	0.00
0503029 POR,ELLSWORTH,CHARLES ST.				RD INV 05 60128											Statewide Crash Rate: 407.52		
12617	12624	187017	0 - 0.06	0560128 - 0.03	0.06	2	0	0	0	0	0	0	0.0	0.00034	0.00	1541.73	0.00
0503029 POR,ELLSWORTH,CHARLES ST.				RD INV 05 60128											Statewide Crash Rate: 407.52		
12617	12622	187016	0 - 0.03	0560251 - 0	0.03	2	0	0	0	0	0	0	0.0	0.00014	0.00	1756.21	0.00
0503029 POR,ELLSWORTH,CHARLES ST.				RD INV 05 60251											Statewide Crash Rate: 407.52		
12618	12622	187021	0 - 0.02	0560251 - 0.03	0.02	2	0	0	0	0	0	0	0.0	0.00010	0.00	1739.73	0.00
0503030 POR,ELLSWORTH,HILL ST.				RD INV 05 60251											Statewide Crash Rate: 407.52		
12618	12619	187019	0 - 0.02	0560251 - 0.05	0.02	2	0	0	0	0	0	0	0.0	0.00011	0.00	1752.80	0.00
0503030 POR,ELLSWORTH,HILL ST.				RD INV 05 60251											Statewide Crash Rate: 407.52		
12619	15476	187023	0 - 0.01	0560251 - 0.07	0.01	2	0	0	0	0	0	0	0.0	0.00004	0.00	1140.14	0.00
0503031 POR,CRESCENT,ELLSWORTH ST.				RD INV 05 60251											Statewide Crash Rate: 407.52		
15476	16826	191013	0 - 0.02	0560251 - 0.08	0.02	2	0	0	0	0	0	0	0.0	0.00010	0.00	1741.07	0.00
Int of BRAMHALL PL ELLSWORTH ST				RD INV 05 60251											Statewide Crash Rate: 407.52		
12620	19112	187025	0 - 0.05	0560633 - 0	0.05	2	1	0	0	0	0	1	0.0	0.00003	11783.77	160.62	73.37
0503032 POR,HILL,RUSSELL ST.				RD INV 05 60633											Statewide Crash Rate: 407.52		
12619	12623	187022	0 - 0.05	0560171 - 0	0.05	2	1	0	0	0	0	1	0.0	0.00005	6739.79	1306.79	5.16
0503031 POR,CRESCENT,ELLSWORTH ST.				RD INV 05 60171											Statewide Crash Rate: 407.52		
12623	12624	187028	0 - 0.04	0560171 - 0.05	0.04	2	0	0	0	0	0	0	0.0	0.00002	0.00	-939.97	0.00
0503035 POR,CRESCENT,WESCOTT ST.				RD INV 05 60171											Statewide Crash Rate: 407.52		
12622	12623	187027	0 - 0.05	0560780 - 0	0.05	2	0	0	0	0	0	0	0.0	0.00007	0.00	1609.51	0.00
0503034 POR,WESCOTT,ELLSWORTH ST.				RD INV 05 60780											Statewide Crash Rate: 407.52		
12618	12620	187020	0 - 0.03	0560369 - 0	0.03	2	1	0	0	0	0	1	0.0	0.00005	6302.57	1384.61	4.55
0503030 POR,ELLSWORTH,HILL ST.				RD INV 05 60369											Statewide Crash Rate: 407.52		

Crash Summary I

Sections

Start Node	End Node	Element	Offset Begin - End	Route - MP	Section Length	U/R	Total Crashes	Injury Crashes K	A	B	C	PD	Percent Injury	Annual HMVM	Crash Rate	Critical Rate	CRF
12620	12621	187024	0 - 0.02	0560369 - 0.03	0.02	2	0	0	0	0	0	0	0.0	0.00004	0.00	933.70	0.00
0503032 POR,HILL,RUSSELL ST.				RD INV 05 60369											Statewide Crash Rate: 407.52		
15476	18352	191014	0 - 0.06	0560076 - 0	0.06	2	0	0	0	0	0	0	0.0	0.00004	0.00	863.16	0.00
Int of BRAMHALL PL ELLSWORTH ST				RD INV 05 60076											Statewide Crash Rate: 407.52		
16753	19079	3122262	0 - 0.02	0022X - 0.53	0.02	2	1	0	0	0	0	1	0.0	0.00079	420.00	789.03	0.00
Int of PARK AV VALLEY ST				ST RTE 22											Statewide Crash Rate: 218.56		
16753	16770	4338968	0 - 0.02	0022X - 0.55	0.02	2	1	0	0	0	0	1	0.0	0.00073	458.87	804.91	0.00
Int of PARK AV VALLEY ST				ST RTE 22											Statewide Crash Rate: 218.56		
16753	16770	4338968	0.02 - 0.04	0022X - 0.57	0.02	2	0	0	0	0	0	0	0.0	0.00073	0.00	804.91	0.00
Int of PARK AV VALLEY ST				ST RTE 22											Statewide Crash Rate: 218.56		
16748	16762	3944344	0 - 0.06	3201042 - 0	0.06	2	2	0	0	1	0	1	50.0	0.00139	478.71	688.07	0.00
Int of DANFORTH ST ST JOHN ST VALLEY ST				RD INV 3201042											Statewide Crash Rate: 218.56		
16748	16762	3944344	0.06 - 0.32	3201042 - 0.06	0.26	2	2	0	0	1	0	1	50.0	0.00603	110.47	473.98	0.00
Int of DANFORTH ST ST JOHN ST VALLEY ST				RD INV 3201042											Statewide Crash Rate: 218.56		
16762	16763	3120382	0 - 0.12	3201042 - 0.32	0.12	2	5	0	0	0	0	4	0.0	0.00292	571.18	568.48	1.00
Int of D ST ST JOHN ST				RD INV 3201042											Statewide Crash Rate: 218.56		
16763	16764	3119255	0 - 0.10	3201042 - 0.44	0.10	2	4	0	0	0	0	4	0.0	0.00261	510.48	584.97	0.00
Int of C ST ST JOHN ST				RD INV 3201042											Statewide Crash Rate: 218.56		
16764	16765	3106397	0 - 0.06	3201042 - 0.54	0.06	2	0	0	0	0	0	0	0.0	0.00206	0.00	622.08	0.00
Int of A ST ST JOHN ST				RD INV 3201042											Statewide Crash Rate: 218.56		
16765	66777	3155094	0 - 0.14	0022S - 0.88	0.14	2	30	0	0	0	6	23	20.7	0.00739	1353.16	451.78	3.00
Int of CONGRESS ST ST JOHN ST				ST RTE 22S											Statewide Crash Rate: 218.56		
66777	16770	3154475	0 - 0.02	0022S - 1.02	0.02	2	0	0	0	0	0	0	0.0	0.00106	0.00	737.39	0.00
Non Int ST JOHN ST				ST RTE 22S											Statewide Crash Rate: 218.56		
12628	16770	3122179	0 - 0.04	0560637 - 0	0.04	2	0	0	0	0	0	0	0.0	0.00119	0.00	715.26	0.00
Int of ST JOHN ST WASHBURN AV				RD INV 05 60637											Statewide Crash Rate: 218.56		
12628	12629	3131531	0 - 0.11	0560637 - 0.04	0.11	2	3	0	0	0	1	2	33.3	0.00338	296.12	547.57	0.00
Int of ST JOHN ST WASHBURN AV				RD INV 05 60637											Statewide Crash Rate: 218.56		
12629	12695	3120379	0 - 0.12	0560637 - 0.15	0.12	2	3	0	0	1	0	2	33.3	0.00376	265.69	532.67	0.00
Int of GRANITE ST ST JOHN ST				RD INV 05 60637											Statewide Crash Rate: 218.56		
12692	12695	3129248	0 - 0.26	0560637 - 0.27	0.26	2	6	0	0	1	1	4	33.3	0.00751	266.16	450.03	0.00
Int of DARTMOUTH ST ST JOHN ST				RD INV 05 60637											Statewide Crash Rate: 218.56		
12692	71539	4047229	0 - 0.03	0560637 - 0.53	0.03	2	0	0	0	0	0	0	0.0	0.00079	0.00	790.98	0.00
Int of DARTMOUTH ST ST JOHN ST				RD INV 05 60637											Statewide Crash Rate: 218.56		
71539	12700	4047230	0 - 0.02	0560637 - 0.56	0.02	2	0	0	0	0	0	0	0.0	0.00024	0.00	943.59	0.00
Non Int ST JOHN ST				RD INV 05 60637											Statewide Crash Rate: 218.56		
12700	71539	4047231	0 - 0.02	3210295 - 0	0.02	2	0	0	0	0	0	0	0.0	0.00029	0.00	935.64	0.00
Int of BRIGHTON AV DEVONSHIRE ST NOYES ST ST JOHN ST				RD INV 3210295											Statewide Crash Rate: 218.56		
12700	12877	3944348	0 - 0.05	0025X - 1.05	0.05	2	8	1	0	0	2	5	37.5	0.00320	833.87	525.54	1.59
Int of BRIGHTON AV DEVONSHIRE ST NOYES				ST RTE 25											Statewide Crash Rate: 202.97		

Crash Summary I

Sections

Start Node	End Node	Element	Offset Begin - End	Route - MP	Section Length	U/R	Total Crashes	Injury Crashes K	A	B	C	PD	Percent Injury	Annual HMVM	Crash Rate	Critical Rate	CRF
ST ST JOHN ST																	
12779	12877	3120098	0 - 0.02	0025X - 1.10	0.02	2	1	0	0	0	1	0	100.0	0.00121	275.34	674.27	0.00
Int of BRIGHTON AV, ST GEORGE ST				ST RTE 25											Statewide Crash Rate: 202.97		
12779	12878	3129250	0 - 0.03	0025X - 1.12	0.03	2	2	0	0	0	0	2	0.0	0.00181	368.03	608.80	0.00
Int of BRIGHTON AV, ST GEORGE ST				ST RTE 25											Statewide Crash Rate: 202.97		
12782	12878	3131537	0 - 0.03	0025X - 1.15	0.03	2	3	0	0	0	2	1	66.7	0.00200	501.20	593.80	0.00
Int of BEACON ST, BRIGHTON AV				ST RTE 25											Statewide Crash Rate: 202.97		
12782	12883	3120099	0 - 0.02	0025X - 1.18	0.02	2	0	0	0	0	0	0	0.0	0.00129	0.00	663.59	0.00
Int of BEACON ST, BRIGHTON AV				ST RTE 25											Statewide Crash Rate: 202.97		
12883	12884	3123616	0 - 0.05	0025X - 1.20	0.05	2	0	0	0	0	0	0	0.0	0.00318	0.00	526.41	0.00
Int of BOLTON ST BRIGHTON AV				ST RTE 25											Statewide Crash Rate: 202.97		
12776	12884	3122184	0 - 0.01	0025X - 1.25	0.01	2	0	0	0	0	0	0	0.0	0.00064	0.00	779.59	0.00
Int of BRIGHTON AV ORLAND ST				ST RTE 25											Statewide Crash Rate: 202.97		
12775	12776	3106212	0 - 0.03	0025X - 1.26	0.03	2	2	0	0	0	1	1	50.0	0.00191	349.34	600.67	0.00
Int of BRIGHTON AV, DEBLOIS ST				ST RTE 25											Statewide Crash Rate: 202.97		
12775	12891	3123710	0 - 0.01	0025X - 1.29	0.01	2	0	0	0	0	0	0	0.0	0.00056	0.00	799.93	0.00
Int of BRIGHTON AV, DEBLOIS ST				ST RTE 25											Statewide Crash Rate: 202.97		
12783	12891	3123925	0 - 0.04	0025X - 1.30	0.04	2	1	0	0	0	1	0	100.0	0.00224	148.49	575.94	0.00
Int of BRIGHTON AV, HIGHLAND ST				ST RTE 25											Statewide Crash Rate: 202.97		
12783	12892	3131538	0 - 0.01	0025X - 1.34	0.01	2	0	0	0	0	0	0	0.0	0.00061	0.00	788.53	0.00
Int of BRIGHTON AV, HIGHLAND ST				ST RTE 25											Statewide Crash Rate: 202.97		
12892	12898	187491	0 - 0.06	0025X - 1.35	0.06	2	2	0	0	0	0	2	0.0	0.00362	183.97	508.96	0.00
Int of BRIGHTON AV EDWARDS ST				ST RTE 25											Statewide Crash Rate: 202.97		
12898	12899	187501	0 - 0.06	0025X - 1.41	0.06	2	4	0	0	0	1	3	25.0	0.00361	369.75	509.60	0.00
0503311 POR,BRIGHTON AVE,CRAIGIE ST.				ST RTE 25											Statewide Crash Rate: 202.97		
12899	12904	3131543	0 - 0.02	0025X - 1.47	0.02	2	1	0	0	0	1	0	100.0	0.00117	285.32	680.22	0.00
Int of BRIGHTON AV, CALEB ST				ST RTE 25											Statewide Crash Rate: 202.97		
12903	12904	3106229	0 - 0.04	0025X - 1.49	0.04	2	1	1	0	0	0	0	100.0	0.00233	142.84	570.17	0.00
Int of BRADLEY ST, BRIGHTON AV				ST RTE 25											Statewide Crash Rate: 202.97		
12903	12928	3131544	0 - 0.10	0025X - 1.53	0.10	2	1	0	0	0	0	1	0.0	0.00581	57.38	452.28	0.00
Int of BRADLEY ST, BRIGHTON AV				ST RTE 25											Statewide Crash Rate: 202.97		
16751	16764	192419	0 - 0.05	0560001 - 0.03	0.05	2	5	0	0	0	0	4	0.0	0.00036	4631.04	1527.03	3.03
Int of A ST VALLEY ST				RD INV 05 60001											Statewide Crash Rate: 407.52		
Study Years: 3.00				Section Totals:	5.54		165	2	1	5	27	115	21.2	0.13524	406.69	288.24	1.41
				Grand Totals:	5.54		485	2	4	24	82	358	23.1	0.13524	1195.42	406.85	2.94

COLLISION DIAGRAM

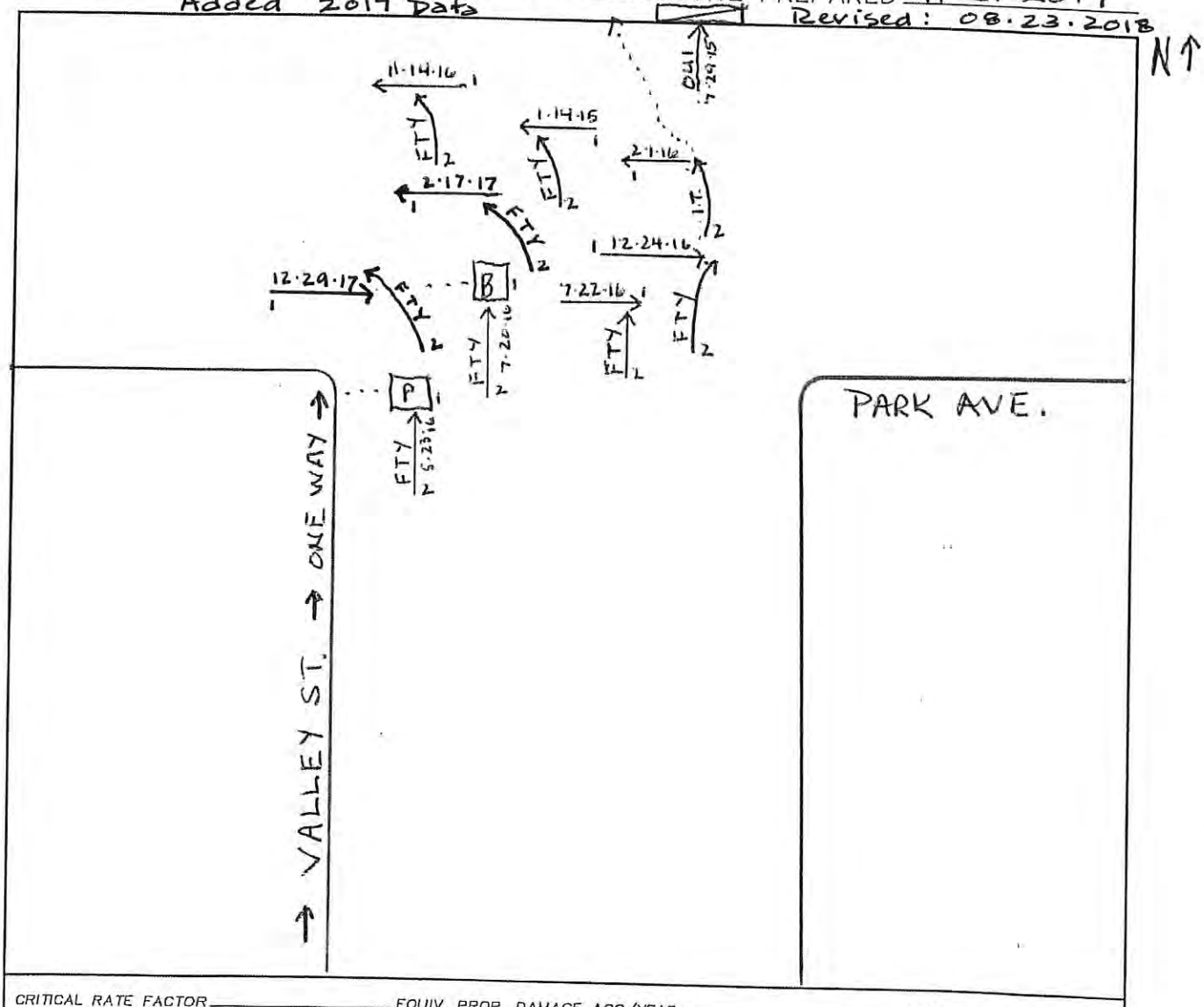
SHEET 1 OF 2

LOCATION Intersection of Park Avenue & Valley Street

TOWN Portland, Maine NODE NO(S) 16753

YEARS REVIEWED 2014 - 2016 DATE PREPARED 11.21.2017

Added 2017 Data Revised: 08.23.2018



CRITICAL RATE FACTOR _____ EQUIV. PROP. DAMAGE ACC/YEAR _____ ACC/MEV _____

LIGHT
1. DAWN (MORNING) 2. DAYLIGHT 3. DUSK (EVENING)
4. DARK (ST. LIGHTS ON) 5. DARK (NO ST. LIGHTS) 6. DARK (ST. LIGHTS OFF)
7. OTHER

ROAD SURFACE
1. DRY 2. WET 3. SNOW/SLUSH-SANDED
4. ICE/PACKED SNOW-SANDED 5. MUDDY 6. DEBRIS
7. OILY 8. SNOW/SLUSH-NOT SANDED 9. ICE-PKD. SNOW-NOT SANDED
10. OTHER

APPARENT CONTRIBUTING FACTORS - HUMAN
1. NO IMPROPER ACTION 2. FAIL TO YLD. RIGHT OF WAY 3. ILLEGAL UNSAFE SPEED
4. FOLLOW TOO CLOSE 5. DISREGARD TRAFFIC CONTROL DEVICE
6. DRIVING LEFT OF CENTER-NO PASSING 7. IMPROPER PASS-OVERTAKING
8. IMP. UNSAFE LANE CHANGE 9. IMP. PARKING START/STOP 10. IMPROPER TURN
11. UNSAFE BACKING 12. NO SIGNAL OR IMP. SIGNAL 13. IMPEDING TRAFFIC
14. DRIVER INATTENTION-DISTRACTION 15. DRIVER INEXPERIENCE
16. PEDEST. VIOLATION ERROR 17. PHYSICAL IMPAIRMENT 18. VISION OBSCURED-WINDSHIELD GLASS
19. VISION OBSCURED-SUN/HEADLIGHTS 20. OTHER VISION OBSCUREMENT
30. OTHER HUMAN VIOLATION FACTOR 31. HIT AND RUN 51. UNKNOWN

- VEHICULAR
41. DEFECTIVE BRAKES 42. DEFECTIVE TIRE/FAILURE 43. DEFECTIVE LIGHTS
44. DEFECTIVE SUSPENSION 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT
OR FACTOR 51. UNKNOWN

SYMBOLS

ANGLE	→	PEDESTRIAN	→ P	FATAL ACCIDENT	●
BACKING	→←	REAR END	→|		
FIXED OBJECT	→□	SIDE SWIPE	⇉	VEHICLE (MOVING)	→
HEAD ON	→|←	TURNING MOVE	↱	BICYCLE	- - - B
OVERTURN	→○	CHANGE LANE	⇉	ANIMAL	- - - A
PARKED VEHICLE	▨	OUT OF CONTROL	∿→	SLED	- - - S

WEATHER
C - CLEAR
SL - SLEET
F - FOG
S - SNOW
R - RAIN
CL - CLOUDY
XW - CROSS WINDS

INJURIES
K - FATAL
A - INCAPACITATING
B - NON-INCAPACITATING
C - POSSIBLE INJURY

COLLISION DIAGRAM

SHEET 2 OF 2

LOCATION Intersection of Park Avenue & Valley Street

TOWN Portland, Maine NODE NO(S) 16753

YEARS REVIEWED 2014 - 2016 DATE PREPARED 11.21.2017

Added 2017 Data Revised: 08.23.2018

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
15-0190	01.14.15	12:40					2	2	2	
15.2555	07.29.15	17:30					2	1	14/17	OWI
16.0371	02.01.16	14:50					2	1	10	
16.1541	05.23.16	22:02				1	5	1	2	
16.2240	07.20.16	17:24			1		2	1	2	
16.2272	07.22.16	13:48				1	2	1	2	
16.3509	11.14.16	12:20					2	1	2	
16.3941	12.24.16	11:10				1	2	2	2	
17.0600	02.17.17	09:14					2	1	2	
17.4129	12.29.17	13:09				1	2	1	2	

S:/SHEETS/COLLISION DIAGRAM.DWG

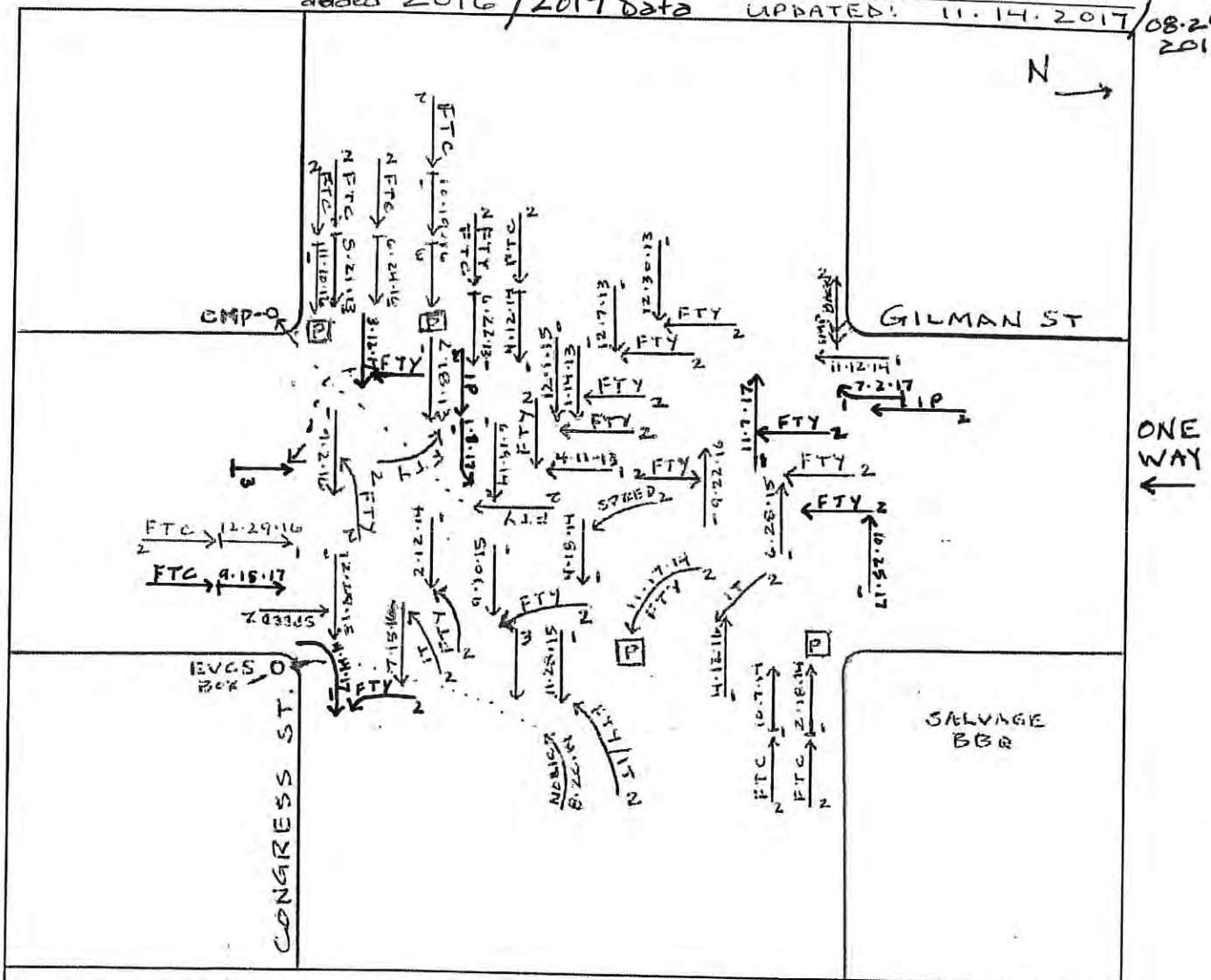
COLLISION DIAGRAM

SHEET 1 OF 2

LOCATION Intersection of Congress Street & Gilman Street

TOWN Portland, Maine NODE NO(S) 18571

YEARS REVIEWED 2013 - 2015 added 2016/2017 Data DATE PREPARED 10·24·2016 UPDATED: 11·14·2017/08·24·2018



CRITICAL RATE FACTOR _____ EQUIV. PROP. DAMAGE ACC/YEAR _____ ACC/MEV _____

LIGHT

1. DAWN (MORNING) 2. DAYLIGHT 3. DUSK (EVENING)
4. DARK (ST. LIGHTS ON) 5. DARK (NO ST. LIGHTS) 6. DARK (ST. LIGHTS OFF)
7. OTHER

ROAD SURFACE

1. DRY 2. WET 3. SNOW/SLUSH-SANDED
4. ICE/PACKED SNOW-SANDED 5. MUDDY 6. DEBRIS
7. OILY 8. SNOW/SLUSH-NOT SANDED 9. ICE-PKD. SNOW-NOT SANDED
10. OTHER

APPARENT CONTRIBUTING FACTORS - HUMAN

1. NO IMPROPER ACTION 2. FAIL TO YLD. RIGHT OF WAY 3. ILLEGAL UNSAFE SPEED
4. FOLLOW TOO CLOSE 5. DISREGARD TRAFFIC CONTROL DEVICE
6. DRIVING LEFT OF CENTER-NO PASSING 7. IMPROPER PASS-OVERTAKING
8. IMP. UNSAFE LANE CHANGE 9. IMP. PARKING START/STOP 10. IMPROPER TURN
11. UNSAFE BACKING 12. NO SIGNAL OR IMP. SIGNAL 13. IMPEDING TRAFFIC
14. DRIVER INATTENTION-DISTRACTION 15. DRIVER INEXPERIENCE
16. PEDEST. VIOLATION ERROR 17. PHYSICAL IMPAIRMENT 18. VISION OBSCURED-WINDSHIELD GLASS
19. VISION OBSCURED-SUN/HEADLIGHTS
20. OTHER VISION OBSCUREMENT 30. OTHER HUMAN VIOLATION FACTOR
31. HIT AND RUN 51. UNKNOWN

- VEHICULAR

41. DEFECTIVE BRAKES 42. DEFECTIVE TIRE/FAILURE 43. DEFECTIVE LIGHTS
44. DEFECTIVE SUSPENSION OR FACTOR 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT
51. UNKNOWN

SYMBOLS

ANGLE	PEDESTRIAN	FATAL ACCIDENT
BACKING	REAR END	
FIXED OBJECT	SIDE SWIPE	VEHICLE (MOVING)
HEAD ON	TURNING MOVE	BICYCLE
OVERTURN	CHANGE LANE	ANIMAL
PARKED VEHICLE	OUT OF CONTROL	SLED

WEATHER

C - CLEAR
SL - SLEET
F - FOG
S - SNOW
R - RAIN
CL - CLOUDY
XW - CROSS WINDS

INJURIES

K - FATAL
A - INCAPACITATING
B - NON-INCAPACITATING
C - POSSIBLE INJURY

COLLISION DIAGRAM

SHEET 2 OF 2

LOCATION Intersection of Congress Street & Gilman Street

TOWN Portland, Maine NODE NO(S) 18571

YEARS REVIEWED 2013 - 2015 DATE PREPARED 10.24.2016
added 2016/2017 DATA UPDATED: 11.14.2017 / 08.24.2018

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
13.169	01.14.13	16:15					2	1	2	
13.609	02.18.13	21:00				1	4	1	2	
13.1153	04.11.13	12:40					2	1	2	
13.1780	06.22.13	12:13				1	2	1	2/4	
13.2344	08.21.13	14:08					2	1	4	
13.3531	12.07.13	10:11				1	2	2	2/19	SMV
13.3827	12.30.13	11:43					2	2	2	
14.538	02.12.14	14:50					2	1	2	
14.631	02.18.14	12:10					2	1	4	Pedestrian
14.1194	04.12.14	12:30					2	1	4/14	
14.1243	04.18.14	11:10					2	1	3	
14.1789	06.19.14	23:45					4	1	2	
14.2519	08.26.14	14:54					2	1	15/30	NO LICENSE NO INSURANCE
14.2955	10.07.14	13:14					2	1	4	
14.3344	11.12.14	18:49					4	1	11	
14.3389	11.17.14	17:15				1	5	2	2	Pedestrian
15.2214	06.28.15	13:00					2	2	2	
15.3054	09.10.15	20:16					4	1	2	
15.3961	11.28.15	12:30					2	1	2/10	
15.3994	12.01.15	16:00					2	2	2	
15.4357	12.29.15	15:00					2	3	3	
16.1134	04.12.16	14:24					2	2	10	
16.1930	06.24.16	18:38					2	1	4	
16.2178	07.15.16	12:20					2	1	10	
16.2693	09.02.16	08:43					2	1	2	No License
16.2932	09.22.16	12:59				1	2	1	2	
16.3228	10.19.16	10:51				1	2	1	4	
16.3480	11.10.16	11:35				1	2	1	4	
16.3991	12.29.16	16:41					4	3	4	
17.0081	01.08.17	17:32					4	2	12	
17.0882	03.12.17	12:00				2	2	1	2	
17.1262	04.14.17	10:30					2	1	2	
17.2092	07.02.17	18:00					2	1	12	
17.2941	09.15.17	11:15				1	2	1	4	
17.3359	10.25.17	04:42					4	2	2	
17.3493	11.07.17	08:12				1	2	1	2	

S:/SHEETS/COLLISION DIAGRAM.DWG

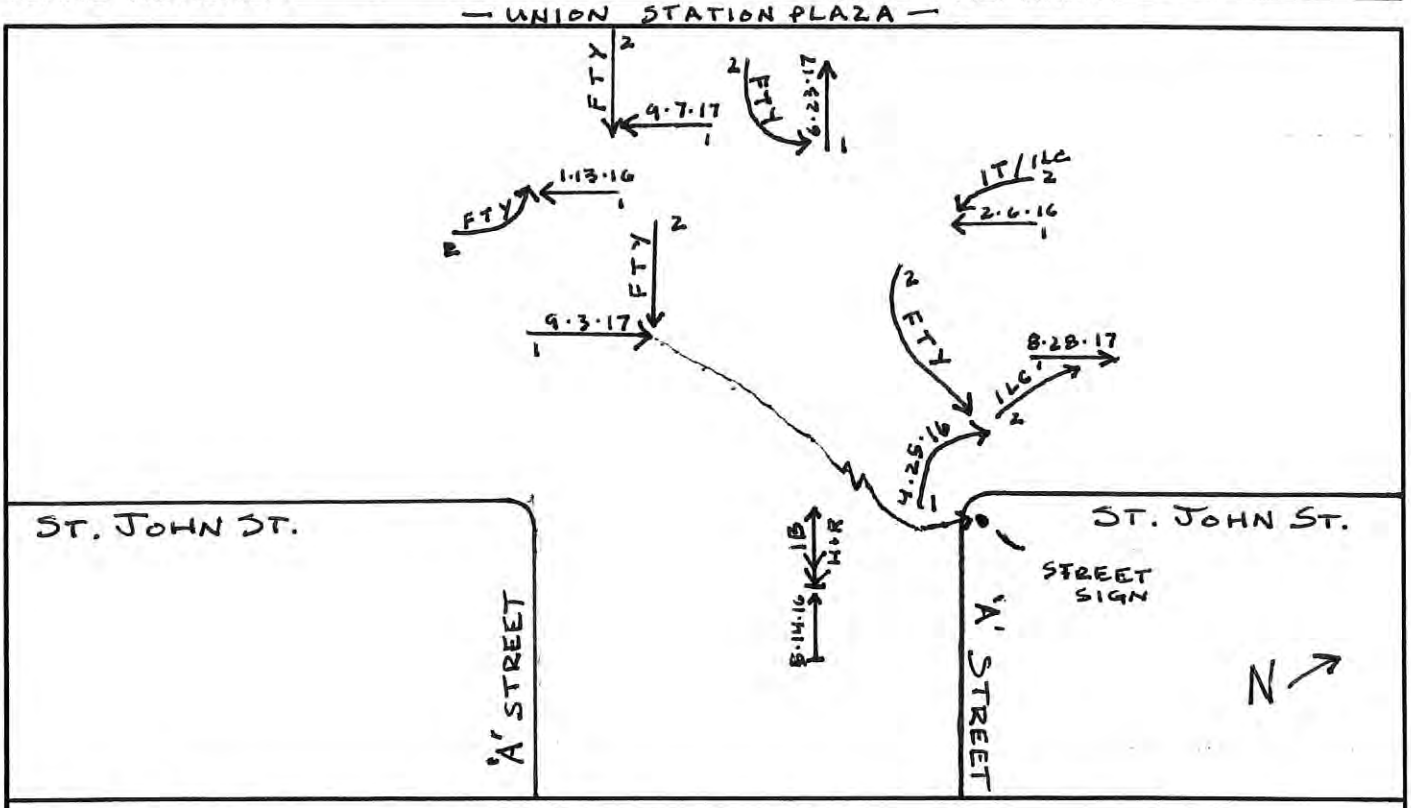
COLLISION DIAGRAM

SHEET 1 OF 1

LOCATION St. John Street / 'A' Street

TOWN Portland, Maine NODE NO(S) 16764

YEARS REVIEWED 2015 to 2017 DATE PREPARED 08·24·2018



CRITICAL RATE FACTOR _____ EQUIV. PROP. DAMAGE ACC/YEAR _____ ACC/MEV _____

LIGHT
1. DAWN (MORNING) 2. DAYLIGHT 3. DUSK (EVENING)
4. DARK (ST. LIGHTS ON) 5. DARK (NO ST. LIGHTS) 6. DARK (ST. LIGHTS OFF)
7. OTHER

ROAD SURFACE
1. DRY 2. WET 3. SNOW/SLUSH-SANDED
4. ICE/PACKED SNOW-SANDED 5. MUDDY 6. DEBRIS
7. OILY 8. SNOW/SLUSH-NOT SANDED 9. ICE-PKD. SNOW-NOT SANDED
10. OTHER

APPARENT CONTRIBUTING FACTORS – HUMAN
1. NO IMPROPER ACTION 2. FAIL TO YLD. RIGHT OF WAY 3. ILLEGAL UNSAFE SPEED
4. FOLLOW TOO CLOSE 5. DISREGARD TRAFFIC CONTROL DEVICE
6. DRIVING LEFT OF CENTER-NO PASSING 7. IMPROPER PASS-OVERTAKING
8. IMP. UNSAFE LANE CHANGE 9. IMP. PARKING START/STOP 10. IMPROPER TURN
11. UNSAFE BACKING 12. NO SIGNAL OR IMP. SIGNAL 13. IMPEDING TRAFFIC
14. DRIVER INATTENTION-DISTRACTION 15. DRIVER INEXPERIENCE
16. PEDEST. VIOLATION ERROR 17. PHYSICAL IMPAIRMENT 18. VISION OBSCURED-WINDSHIELD GLASS
19. VISION OBSCURED-SUN/HEADLIGHTS
20. OTHER VISION OBSCUREMENT 30. OTHER HUMAN VIOLATION FACTOR
31. HIT AND RUN 51. UNKNOWN

– VEHICULAR
41. DEFECTIVE BRAKES 42. DEFECTIVE TIRE/FAILURE 43. DEFECTIVE LIGHTS
44. DEFECTIVE SUSPENSION OR FACTOR 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT
51. UNKNOWN

SYMBOLS

ANGLE	PEDESTRIAN [P]	FATAL ACCIDENT
BACKING	REAR END	
FIXED OBJECT	SIDE SWIPE	VEHICLE (MOVING)
HEAD ON	TURNING MOVE	BICYCLE [B]
OVERTURN	CHANGE LANE	ANIMAL [A]
PARKED VEHICLE	OUT OF CONTROL	SLED [S]

WEATHER
C = CLEAR F = FOG R = RAIN
SL = SLEET S = SNOW CL = CLOUDY
XW = CROSS WINDS

INJURIES
K = FATAL B = NON-INCAPACITATING
A = INCAPACITATING C = POSSIBLE INJURY

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
16·0134	01·13·16	07:06					2	3	2/14	
16·0455	02·06·16	16:24					2	2	8/10	
16·1232	04·25·16	17:06					2	1	2	
16·1433	05·14·16	12:25					2	1	11/31	
17·2019	06·23·17	12:06					2	1	2/14	
17·2741	08·28·17	14:26					2	1	8	
17·2808	09·03·17	18:24				3	3	2	2/3	
17·2844	09·07·17	17:58					2	1	2	

S:/SHEETS/COLLISION DIAGRAM.DWG

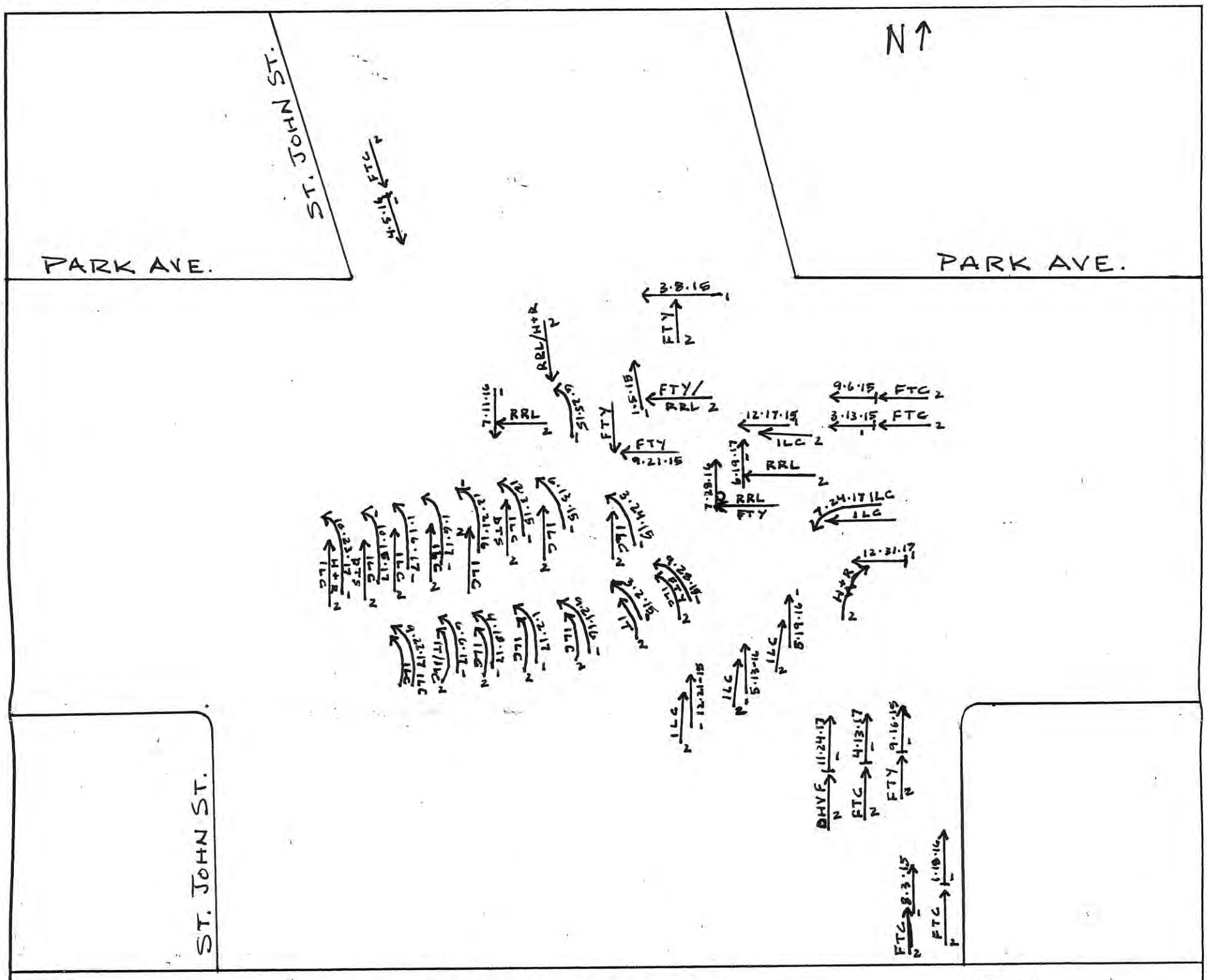
COLLISION DIAGRAM

SHEET 1 OF 2

LOCATION Park Avenue / St. John Street

TOWN Portland, Maine NODE NO(S) 16770

YEARS REVIEWED 2015 to 2017 DATE PREPARED 08.22.2018



CRITICAL RATE FACTOR EQUIV. PROP. DAMAGE ACC/YEAR ACC/MEV

LIGHT
1. DAWN (MORNING) 2. DAYLIGHT 3. DUSK (EVENING)
4. DARK (ST. LIGHTS ON) 5. DARK (NO ST. LIGHTS) 6. DARK (ST. LIGHTS OFF)
7. OTHER

ROAD SURFACE
1. DRY 2. WET 3. SNOW/SLUSH–SANDED
4. ICE/PACKED SNOW–SANDED 5. MUDDY 6. DEBRIS
7. OILY 8. SNOW/SLUSH–NOT SANDED 9. ICE–PKD. SNOW–NOT SANDED
10. OTHER

APPARENT CONTRIBUTING FACTORS – HUMAN
1. NO IMPROPER ACTION 2. FAIL TO YLD. RIGHT OF WAY 3. ILLEGAL UNSAFE SPEED
4. FOLLOW TOO CLOSE 5. DISREGARD TRAFFIC CONTROL DEVICE
6. DRIVING LEFT OF CENTER–NO PASSING 7. IMPROPER PASS–OVERTAKING
8. IMP. UNSAFE LANE CHANGE 9. IMP. PARKING START/STOP 10. IMPROPER TURN
11. UNSAFE BACKING 12. NO SIGNAL OR IMP. SIGNAL 13. IMPEDING TRAFFIC
14. DRIVER INATTENTION–DISTRACTION 15. DRIVER INEXPERIENCE
16. PEDEST. VIOLATION ERROR 17. PHYSICAL IMPAIRMENT 18. VISION OBSCURED–WINDSHIELD GLASS
19. VISION OBSCURED–SUN/HEADLIGHTS
20. OTHER VISION OBSCUREMENT 30. OTHER HUMAN VIOLATION FACTOR
31. HIT AND RUN 51. UNKNOWN

– VEHICULAR
41. DEFECTIVE BRAKES 42. DEFECTIVE TIRE/FAILURE 43. DEFECTIVE LIGHTS
44. DEFECTIVE SUSPENSION OR FACTOR 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT
51. UNKNOWN

SYMBOLS

ANGLE		PEDESTRIAN	P	FATAL ACCIDENT	
BACKING		REAR END			
FIXED OBJECT		SIDE SWIPE		VEHICLE (MOVING)	
HEAD ON		TURNING MOVE		BICYCLE	B
OVERTURN		CHANGE LANE		ANIMAL	A
PARKED VEHICLE		OUT OF CONTROL		SLED	S

WEATHER
C – CLEAR F – FOG R – RAIN
SL – SLEET S – SNOW CL – CLOUDY
XW – CROSS WINDS

INJURIES
K – FATAL B – NON–INCAPACITATING
A – INCAPACITATING C – POSSIBLE INJURY

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COLLISION DIAGRAM

LOCATION Park Avenue / St. John Street

TOWN Portland, Maine NODE NO(S) 16770

YEARS REVIEWED 2015 to 2017 DATE PREPARED 08·22·2018

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
15·0051	01·05·15	15:28			3		2	3	2/5	
15·1037	03·02·15	20:45					4	1	10	
15·1106	03·08·15	11:39				2	2	1	2/5	
15·1164	03·13·15	13:58				2	2	1	2/4	
15·1273	03·24·15	15:30					2	1	8	
15·2027	06·13·15	16:42					2	1	8/10	
15·2184	06·25·15	18:55					2	1	31	
15·2605	08·03·15	17:20					2	1	4	
15·3014	09·26·15	14:31					2	1	4/14	
15·3110	09·16·15	14:28				1	2	1	2/14	
15·3164	09·21·15	05:36					1	1	2	
15·3253	09·28·15	10:29					2	1	8/10	
15·4031	12·03·15	17:09					4	2	5	
15·4211	12·17·15	14:58					2	2	8	
15·4278	12·21·15	20:35					4	1	8	
16·0208	01·18·16	15:00					2	3	3/4	
16·1078	04·05·16	15:42					2	1	4	
16·1420	05·13·16	13:17					2	1	8	
16·1502	05·19·16	17:32					2	1	8	
16·2107	07·11·16	13:10					2	1	5	
16·2341	07·28·16	20:06				2	3	1	2/5/14	
16·2921	09·21·16	16:33					2	1	8	
16·3906	12·21·16	12:47					2	1	8	
17·0012	01·02·17	20:30					4	1	8	
17·0060	01·06·17	16:37					4	1	8	
17·0158	01·16·17	16:56					4	1	8	
17·1251	04·13·17	13:08					2	1	4	
17·1302	04·18·17	19:06					4	1	8	
17·1827	06·06·17	12:46					2	2	10	
17·1966	06·19·17	15:37					2	1	5	
17·2353	07·24·17	13:10					2	2	5	
17·3010	09·22·17	16:25					2	1	8	
17·3241	10·15·17	14:25					2	1	5	
17·3340	10·23·17	13:13					2	1	8/31	
17·3674	11·24·17	23:27			1	1	4	1	30	
17·4166	12·31·17	20:40					4	1	3/10/31	

S:/SHEETS/COLLISION DIAGRAM.DWG

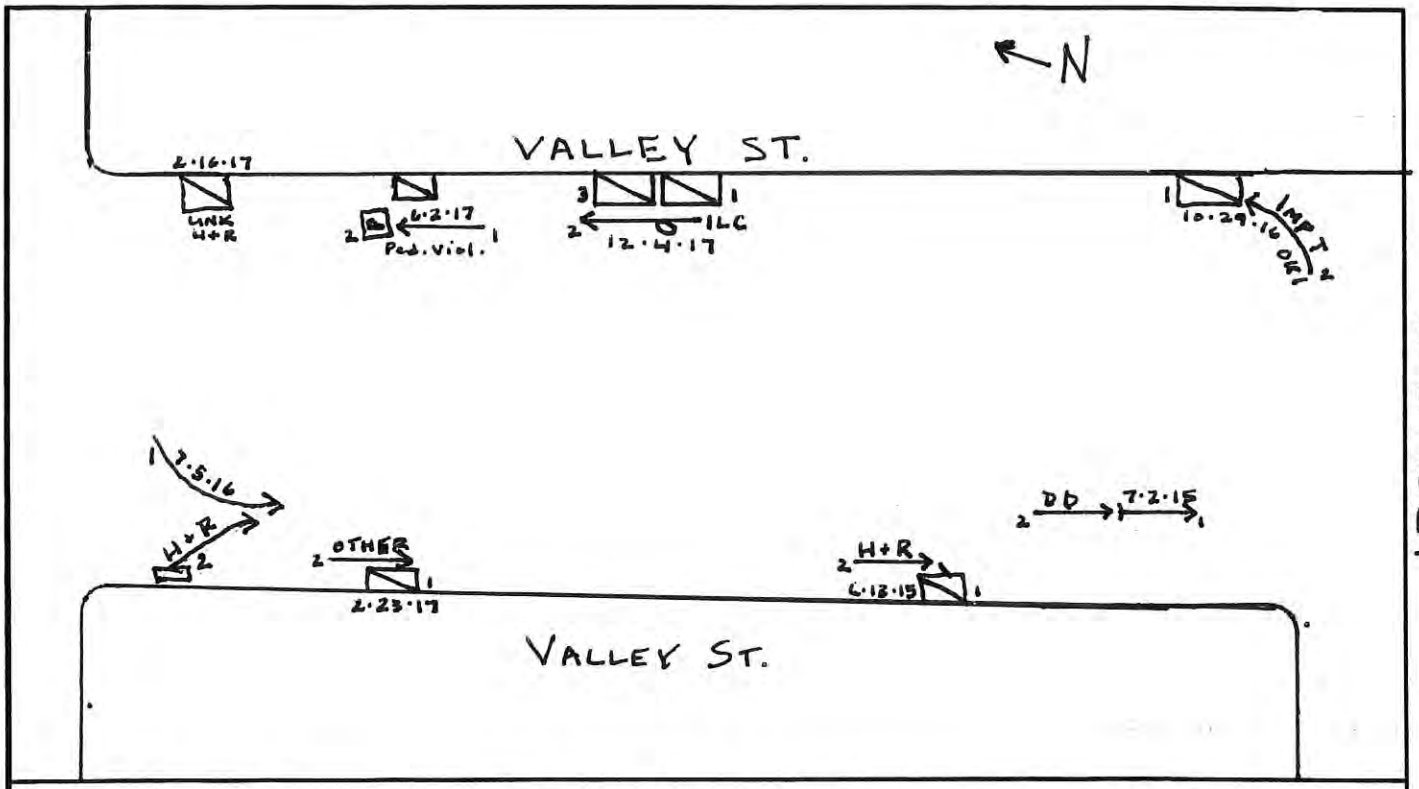
COLLISION DIAGRAM

SHEET 1 OF 1

LOCATION Valley St. from 'A' Street to 'C' Street

TOWN Portland, Maine NODE NO(S) 16750 to 16751

YEARS REVIEWED 2015 to 2017 DATE PREPARED 08.24.2018



CRITICAL RATE FACTOR _____ EQUIV. PROP. DAMAGE ACC/YEAR _____ ACC/MEV _____

LIGHT
1. DAWN (MORNING) 2. DAYLIGHT 3. DUSK (EVENING)
4. DARK (ST. LIGHTS ON) 5. DARK (NO ST. LIGHTS) 6. DARK (ST. LIGHTS OFF)
7. OTHER

ROAD SURFACE
1. DRY 2. WET 3. SNOW/SLUSH-SANDED
4. ICE/PACKED SNOW-SANDED 5. MUDDY 6. DEBRIS
7. OILY 8. SNOW/SLUSH-NOT SANDED 9. ICE-PKD. SNOW-NOT SANDED
10. OTHER

APPARENT CONTRIBUTING FACTORS - HUMAN
1. NO IMPROPER ACTION 2. FAIL TO YLD. RIGHT OF WAY 3. ILLEGAL UNSAFE SPEED
4. FOLLOW TOO CLOSE 5. DISREGARD TRAFFIC CONTROL DEVICE
6. DRIVING LEFT OF CENTER-NO PASSING 7. IMPROPER PASS-OVERTAKING
8. IMP. UNSAFE LANE CHANGE 9. IMP. PARKING START/STOP 10. IMPROPER TURN
11. UNSAFE BACKING 12. NO SIGNAL OR IMP. SIGNAL 13. IMPEDING TRAFFIC
14. DRIVER INATTENTION-DISTRACTION 15. DRIVER INEXPERIENCE
16. PEDEST. VIOLATION ERROR 17. PHYSICAL IMPAIRMENT 18. VISION OBSCURED-WINDSHIELD GLASS
19. VISION OBSCURED-SUN/HEADLIGHTS
20. OTHER VISION OBSCUREMENT 30. OTHER HUMAN VIOLATION FACTOR
31. HIT AND RUN 51. UNKNOWN

- VEHICULAR
41. DEFECTIVE BRAKES 42. DEFECTIVE TIRE/FAILURE 43. DEFECTIVE LIGHTS
44. DEFECTIVE SUSPENSION OR FACTOR 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT
51. UNKNOWN

SYMBOLS

ANGLE		PEDESTRIAN	P	FATAL ACCIDENT	●
BACKING		REAR END			
FIXED OBJECT	□	SIDE SWIPE		VEHICLE (MOVING)	
HEAD ON		TURNING MOVE		BICYCLE	B
OVERTURN		CHANGE LANE		ANIMAL	A
PARKED VEHICLE		OUT OF CONTROL		SLED	S

WEATHER
C = CLEAR F = FOG R = RAIN
SL = SLEET S = SNOW CL = CLOUDY
XW = CROSS WINDS

INJURIES
K = FATAL B = NON-INCAPACITATING
A = INCAPACITATING C = POSSIBLE INJURY

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
15.2037	06.13.15	21:30				1	4	1	31	
15.2268	07.02.15	08:00					2	1	14	
16.2031	07.05.16	07:14					2	1	31	
16.3334	10.29.16	01:17					4	1	10/17	
17.0609	02.16.17	20:00					4	1	31	
17.0710	02.23.17	17:20					2	1	30	
17.1786	06.02.17	06:55					2	1	16	Pedestrian
17.3754	12.04.17	08:36					2	1	8/14	

S:/SHEETS/COLLISION DIAGRAM.DWG

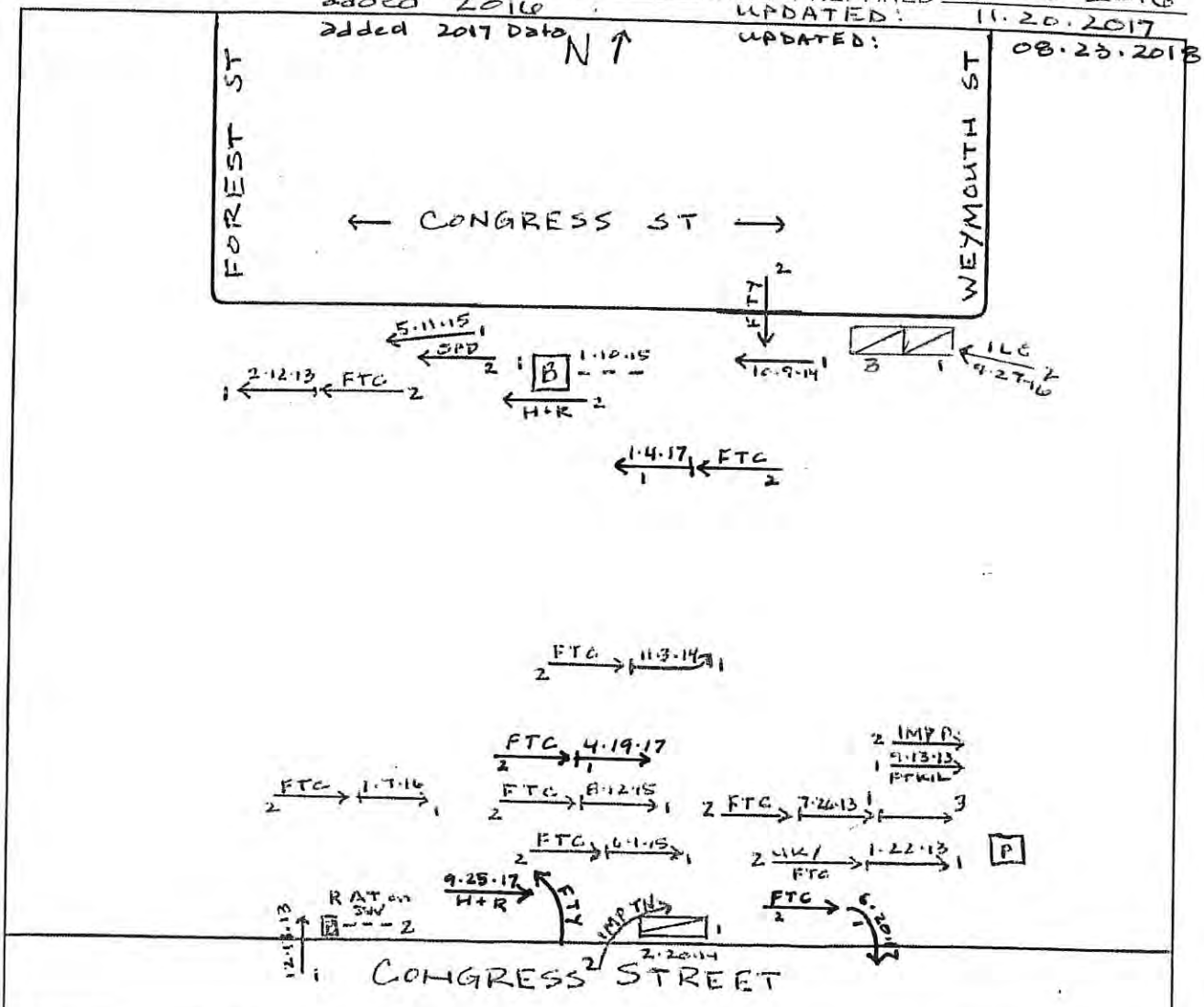
COLLISION DIAGRAM

SHEET 1 OF 2

LOCATION Congress Street - Forest to Weymouth Street

TOWN Portland, Maine — NODE NO(S) 16827 to 16828

YEARS REVIEWED 2013 - 2015 added 2016 added 2017 Data — DATE PREPARED 10.25.2016 UPDATED: 11.20.2017 UPDATED: 08.23.2018



CRITICAL RATE FACTOR _____ EQUIV. PROP. DAMAGE ACC/YEAR _____ ACC/MEV _____

LIGHT
1. DAWN (MORNING) 2. DAYLIGHT 3. DUSK (EVENING)
4. DARK (ST. LIGHTS ON) 5. DARK (NO ST. LIGHTS) 6. DARK (ST. LIGHTS OFF)
7. OTHER

ROAD SURFACE
1. DRY 2. WET 3. SNOW/SLUSH-SANDED
4. ICE/PACKED SNOW-SANDED 5. MUDDY 6. DEBRIS
7. OILY 8. SNOW/SLUSH-NOT SANDED 9. ICE-PKD. SNOW-NOT SANDED
10. OTHER

APPARENT CONTRIBUTING FACTORS - HUMAN
1. NO IMPROPER ACTION 2. FAIL TO YLD. RIGHT OF WAY 3. ILLEGAL UNSAFE SPEED
4. FOLLOW TOO CLOSE 5. DISREGARD TRAFFIC CONTROL DEVICE
6. DRIVING LEFT OF CENTER-NO PASSING 7. IMPROPER PASS-OVERTAKING
8. IMP. UNSAFE LANE CHANGE 9. IMP. PARKING START/STOP 10. IMPROPER TURN
11. UNSAFE BACKING 12. NO SIGNAL OR IMP. SIGNAL 13. IMPEDING TRAFFIC
14. DRIVER INATTENTION-DISTRACTION 15. DRIVER INEXPERIENCE
16. PEDEST. VIOLATION ERROR 17. PHYSICAL IMPAIRMENT 18. VISION OBSCURED-WINDSHIELD GLASS
19. VISION OBSCURED-SUN/HEADLIGHTS
20. OTHER VISION OBSCUREMENT 30. OTHER HUMAN VIOLATION FACTOR
31. HIT AND RUN 51. UNKNOWN

- VEHICULAR
41. DEFECTIVE BRAKES 42. DEFECTIVE TIRE/FAILURE 43. DEFECTIVE LIGHTS
44. DEFECTIVE SUSPENSION 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT
OR FACTOR 51. UNKNOWN

SYMBOLS
ANGLE, BACKING, FIXED OBJECT, HEAD ON, OVERTURN, PARKED VEHICLE, PEDESTRIAN, REAR END, SIDE SWIPE, TURNING MOVE, CHANGE LANE, OUT OF CONTROL, FATAL ACCIDENT, VEHICLE (MOVING), BICYCLE (B), ANIMAL (A), SLED (S)

WEATHER
C - CLEAR
SL - SLEET
F - FOG
S - SNOW
R - RAIN
CL - CLOUDY
XW - CROSS WINDS

INJURIES
K - FATAL
A - INCAPACITATING
B - NON-INCAPACITATING
C - POSSIBLE INJURY

COLLISION DIAGRAM

SHEET 2 OF 2

LOCATION Congress Street - Forest to Weymouth Street

TOWN Portland, Maine NODE NO(S) 16827 to 16828

YEARS REVIEWED 2013 - 2015 DATE PREPARED 10.25.2016

added 2017 Data added 2016 UPDATED: 11.20.2017 / 08.23.2018

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
13.272	01.22.13	11:55					2	1	51	Pedestrian
13.525	02.12.13	11:50					2	1	4	
13.2108	07.26.13	15:35				1	2	1	4	
13.2604	09.13.13	22:03					4	2	7/8	
13.3610	12.13.13	13:33					2	1	16	Bicyclist
14.710	02.20.14	16:15					2	2	10	
14.2975	10.09.14	13:43					2	1	2	
14.3295	11.03.14	14:38					2	2	4	
15.125	01.10.15	20:40				1	4	3	31	Hit + Run Bicyclist
15.1725	05.11.15	16:35					2	1	3	
15.1925	06.01.15	14:55					2	2	4	
15.2704	08.12.15	15:02					2	1	4	
16.0071	01.07.16	16:28					4	1	4	
16.2980	09.27.16	10:36					2	1	8	
17.0029	01.04.17	13:50					2	1	4	
17.1307	04.19.17	08:01					2	1	4	
17.1971	06.20.17	08:00					2	1	4	
17.3033	09.25.17	20:20					4	1	2	

S:/SHEETS/COLLISION DIAGRAM.DWG

COLLISION DIAGRAM

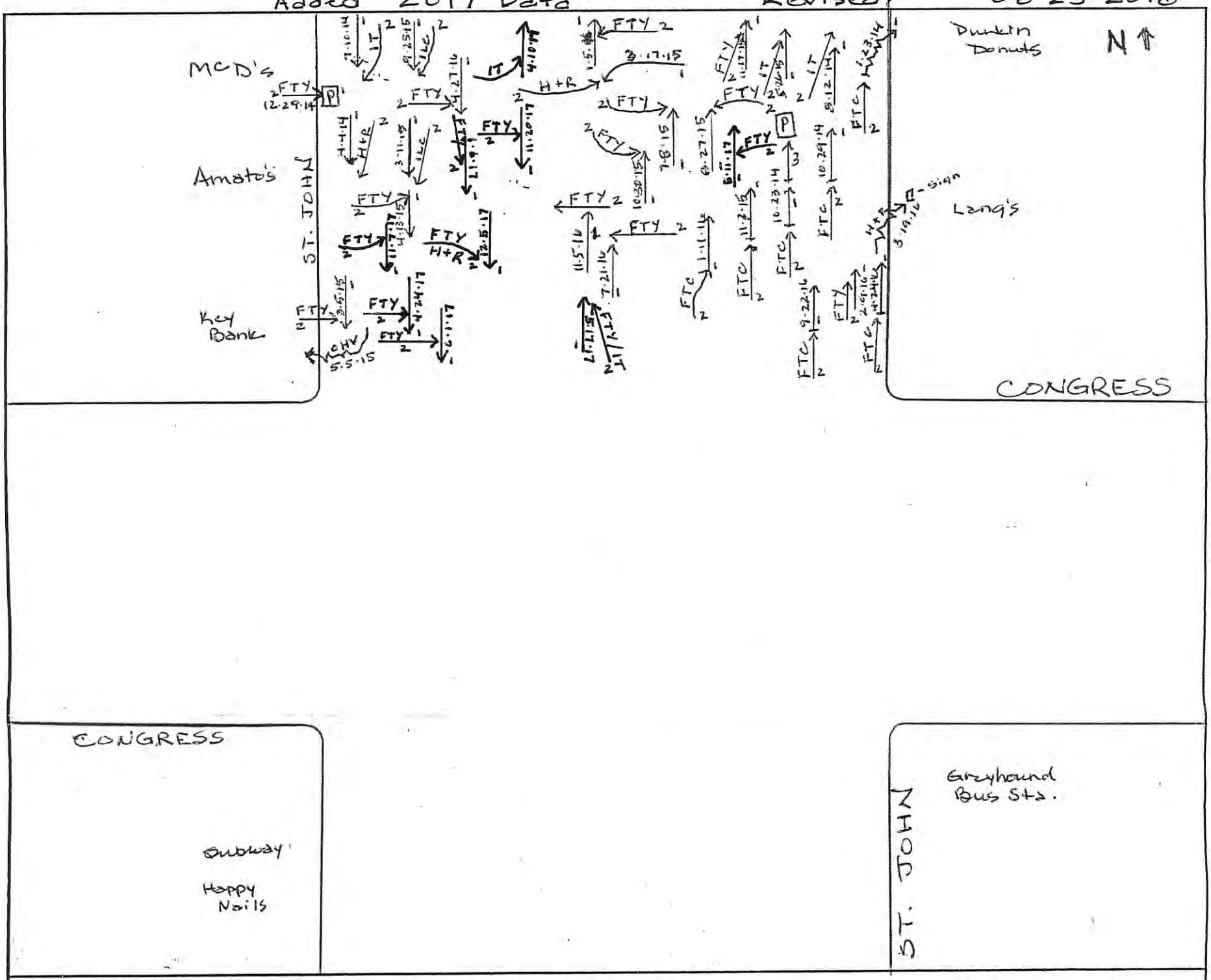
SHEET 1 OF 3

LOCATION Intersection of Congress Street & St. John Street

TOWN Portland, Maine NODE NO(S) 16765 - 66777

YEARS REVIEWED 2014 - 2016 DATE PREPARED 11.21.2017

Added 2017 Data Revised: 08.23.2018



CRITICAL RATE FACTOR _____ EQUIV. PROP. DAMAGE ACC/YEAR _____ ACC/MEV _____

LIGHT

1. DAWN (MORNING) 2. DAYLIGHT 3. DUSK (EVENING)
4. DARK (ST. LIGHTS ON) 5. DARK (NO ST. LIGHTS) 6. DARK (ST. LIGHTS OFF)
7. OTHER

ROAD SURFACE

1. DRY 2. WET 3. SNOW/SLUSH–SANDED
4. ICE/PACKED SNOW–SANDED 5. MUDDY 6. DEBRIS
7. OILY 8. SNOW/SLUSH–NOT SANDED 9. ICE–PKD. SNOW–NOT SANDED
10. OTHER

APPARENT CONTRIBUTING FACTORS – HUMAN

1. NO IMPROPER ACTION 2. FAIL TO YLD. RIGHT OF WAY 3. ILLEGAL UNSAFE SPEED
4. FOLLOW TOO CLOSE 5. DISREGARD TRAFFIC CONTROL DEVICE
6. DRIVING LEFT OF CENTER–NO PASSING 7. IMPROPER PASS–OVERTAKING
8. IMP. UNSAFE LANE CHANGE 9. IMP. PARKING START/STOP 10. IMPROPER TURN
11. UNSAFE BACKING 12. NO SIGNAL OR IMP. SIGNAL 13. IMPEDING TRAFFIC
14. DRIVER INATTENTION–DISTRACTION 15. DRIVER INEXPERIENCE
16. PEDEST. VIOLATION ERROR 17. PHYSICAL IMPAIRMENT 18. VISION OBSCURED–WINDSHIELD GLASS
19. VISION OBSCURED–SUN/HEADLIGHTS
20. OTHER VISION OBSCUREMENT 30. OTHER HUMAN VIOLATION FACTOR
31. HIT AND RUN 51. UNKNOWN

– VEHICULAR

41. DEFECTIVE BRAKES 42. DEFECTIVE TIRE/FAILURE 43. DEFECTIVE LIGHTS
44. DEFECTIVE SUSPENSION OR FACTOR 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT
51. UNKNOWN

SYMBOLS

ANGLE, PEDESTRIAN, FATAL ACCIDENT
BACKING, REAR END
FIXED OBJECT, SIDE SWIPE, VEHICLE (MOVING)
HEAD ON, TURNING MOVE, BICYCLE
OVERTURN, CHANGE LANE, ANIMAL
PARKED VEHICLE, OUT OF CONTROL, SLED

WEATHER

C – CLEAR
F – FOG
R – RAIN
SL – SLEET
S – SNOW
CL – CLOUDY
XW – CROSS WINDS

INJURIES

K – FATAL
A – INCAPACITATING
B – NON–INCAPACITATING
C – POSSIBLE INJURY

S:/SHEETS/COLLISION DIAGRAM.DWG

COLLISION DIAGRAM

LOCATION Intersection of Congress Street & St. John Street

TOWN Portland, ME NODE NO(S) 16765 - 66777

YEARS REVIEWED 2014 - 2016 DATE PREPARED 11.21.2017

Added 2017 Data Revised: 08.23.2017

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
14-0299	01-23-14	06:31				1	2	1	4/31	
14-1129	04-04-14	13:00					2	1	31	
14-1990	07-10-14	06:08					2	1	10	
14-2345	08-12-14	14:30			1		2	1	10	
14-3141	10-23-14	18:01					4	2	4	
14-3202	10-29-14	16:03					2	1	4	
14-3836	12-29-14	00:55			1		4	1	2	
15-1075	03-05-15	14:47					2	1	2	
15-1142	03-11-15	08:00					2	1	2/8/14	
15-1208	03-17-15	14:58					2	1	31	
15-1458	04-13-15	12:00					2	1	2	Suspended license
15-1654	05-05-15	15:24				3	2	1	30	
15-1861	05-26-15	20:18					3	1	10	
15-2343	07-08-15	19:21					2	1	2	
15-2908	08-27-15	15:49				1	2	1	2	
15-3228	09-25-15	16:04					2	1	8	
15-3635	10-30-15	10:41					2	1	2	
15-3684	11-03-15	11:50					2	1	4	
15-3841	11-17-15	12:17					2	1	2/7	
16-0030	01-05-16	15:09					2	1	2	
16-0108	01-11-16	14:15					2	1	4	Expired License
16-0489	02-09-16	16:09					2	1	2	
16-0902	03-19-16	18:45					4	1	31	
16-1219	04-24-16	16:24					2	1	4	Permited Driver only
16-1251	04-27-16	12:02					2	1	2	
16-2261	07-21-16	17:52				1	2	1	2	Suspended NH License
16-2929	09-22-16	11:08					2	1	4	
16-3415	11-05-16	10:30					2	1	2	

S:/SHEETS/COLLISION DIAGRAM.DWG

COLLISION DIAGRAM

SHEET 3 OF 3

LOCATION Congress St. / St. John St.

TOWN Portland, Maine NODE NO(S) 16765 - 66777

YEARS REVIEWED Adding 2017 Data DATE PREPARED 08.23.2018

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
17.0053	01.06.17	06:48					2	2	2	
17.1210	04.10.17	08:15					2	1	10	
17.1355	04.24.17	11:55					2	1	2	
17.1553	05.11.17	16:58				2	2	1	2	
17.1615	05.17.17	18:18				1	2	1	2/10	
17.1782	06.01.17	17:08				1	2	1	2	
17.3490	11.07.17	07:49					2	1	2/14	
17.3630	11.20.17	11:31					2	1	2	
17.3783	12.05.17	17:49					4	2	31	

S:/SHEETS/COLLISION DIAGRAM.DWG

Section 3
Development Entrances and Exits

3.A. Entrance and Exit Locations

Vehicular access to the specific site is currently via an access to the employee parking garage on Gilman Street and an access to the visitor parking garage on Congress Street with a second access to the visitor parking garage on Crescent Street, and a pick-up and drop-off area in front of the East Tower off Bramhall Street.

Vehicular access to the proposed MMC expansion includes a full movement access with Congress Street, primarily to the pick-up / drop-off area. The existing Congress Street access to the visitor garage will be maintained and a vehicular connection will be provided between the existing visitor garage and the pick-up / drop-off area. This new connection will eliminate the need for traffic to recirculate onto Congress Street, thus reducing off-site conflicts. All other MMC site accesses will be maintained.

3.B. Plan View

A proposed site plan is provided in the Site Plan application provided under separate cover.

- Frontage Road(s) – Congress Street and Gilman Street
- Posted Speed Limit – 25 mph
- Sight Lines – The posted speed on Congress Street is 25 mph, which requires a MaineDOT and City available sight distance of 200 feet. The sight distances at the proposed site access currently appear to meet the requirements; however, we recommend that this be reviewed throughout the review process to ensure no obstacles such as signing, vegetation, or structures restrict proper sight distances.

Section 4
Title, Right, or Interest

4.A. Evidence of Title, Right, or Interest

A copy of the deeds to the property are included in Attachment in 4A.

4.B. Attachments

Attachment 4A – Deeds

Attachment 4A

Deeds

Know All Men by These Presents,

(2)

That We, Henry H. Grant and Gladys H. Grant, both 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 Medical Center, a corporation duly organized and existing under the laws of the State of Maine and located at said Portland,

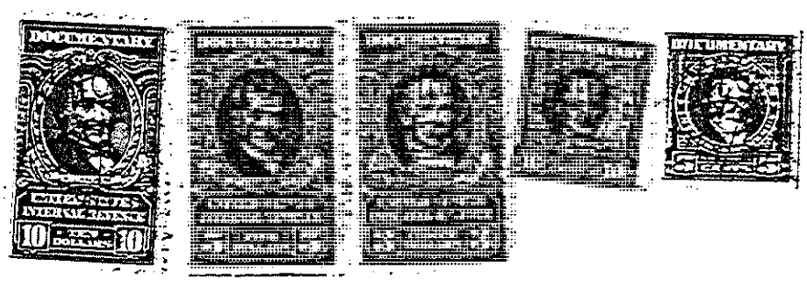
the receipt whereof we do hereby acknowledge, do hereby give, grant, bargain, sell and convey unto the said Maine Medical Center, its successors

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.



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, / ~~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 Henry H. Grant

and Gladys H. Grant, being husband and

wife ~~xxxxxxxxxxx~~

joining in this deed as Grantor s, and relinquishing and conveying all right by descent and all other rights in the above described premises, have hereunto set our hand s 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~~

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,

Norman E. Jensen

Justice of the Peace
~~Notary Public~~

AUG 4 1961

REGISTRY OF DEEDS, CUMBERLAND COUNTY, MAINE

Received at 10 H 27 M A M, and recorded in

BOOK 2619 PAGE 499 Lowell R. Thompson Register

Phillinde 1881 3/

Warranty Deed

FROM

Henry H. Grant, et al

TO

Maine Medical Center

Dated July 31, 1961

State of Maine.

_____ ss. Registry of Deeds

Received AUG 4 1961 19____

at _____ H., _____ M., _____ M., and

recorded in Book _____ Page _____

ATTEST:

_____ REGISTER

FROM THE OFFICE OF

JENSEN & BAIRD
477 Congress Street
Portland, Maine

L. L. MARTIN, PORTLAND, ME.—OFFICE FURNITURE AND SUPPLIES TYPEWRITERS, ADDING MACHINES, FILING CABINETS, SAFES, ETC.

MARTIN'S FORM NO. 1 — STANDARD REGISTRY FORM

1 - 35

(3)

(No. 106)

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 ~~Heirs~~ 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.

To have and to hold the aforegranted and bargained premises, with all privileges and appurtenances thereof to the said MAINE MEDICAL CENTER, its successors

~~Xxxxx~~ and Assigns, to its and their use and behoof forever.

And I do ~~covenant~~ with the said Grantee, its successors ~~Xxxxx~~ 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 ~~Xxxxx~~ 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 hands and seals 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

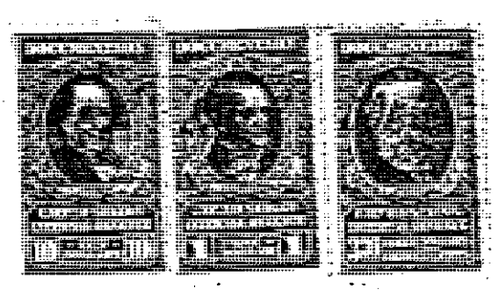
Edward F. Sams
to both

Donald D. McPhee
Lorraine J. McPhee

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. Sams
Justice of the Peace



Philbrick

320

Warranty Deed.

FROM

DONALD D. McPHEE

TO

MAINE MEDICAL CENTER

DATED May, 19 53.

State of Maine.

Cumberland ss: Registry of Deeds.

Received MAY 9 1953, 19 ,

at 2 P., 37 M., 11 M., and

recorded in Book 2127, Page 320

ATTEST:

Robert T. Crosse, REGISTER.

FROM THE OFFICE OF

VERRILL DANA WALKER PHILBRICK

& WHITEHOUSE.

No. 105. ROBERTS OFFICE SUPPLY COMPANY
Portland - Maine - Lewiston

9-37

Know all Men by these Presents, (4)

That 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 ~~heirs~~ 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.

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 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

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 ~~June~~ September in the year of our Lord one thousand nine hundred and fifty-three.

Signed, Sealed and Delivered
in presence of

H. Edwin Hall

Henry H. Grant.

Gladys H. Grant

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 Hall

~~Justice of the Peace.~~
Notary Public
My Commission Expires June 29, 1955



Phillrick

116

Warranty Deed

From

HENRY H. GRANT

To

MAINE MEDICAL CENTER

Dated, ... *1953*

State of Maine.

Cumberland ..... ss. Registry of Deeds.

Received SEP 9 1953 at 9 h., 50 M., A M., and recorded in Book 2147 Page 110

Attest: Robert N. Crommett
Register.

FROM THE OFFICE OF

Warren E. Winslow, Esq.
443 Congress Street
Portland, Maine

LORING, SHORT & HARMON, Law Stationers
PORTLAND, MAINE

9-50

MORTGAGE AND SECURITY AGREEMENT

KNOW ALL MEN BY THESE PRESENTS, that MAINE MEDICAL CENTER, a corporation organized and existing under the laws of the State of Maine, having its principal place of business at 22 Bramhall Street, in Portland, County of Cumberland, State of Maine (hereinafter referred to as the Grantor), for and in consideration of the sum of ONE MILLION SEVEN HUNDRED NINETY-NINE THOUSAND FIVE HUNDRED SIXTY-NINE ($1,799,569) DOLLARS, paid by MAINE SAVINGS BANK, a banking corporation organized and existing under the laws of the State of Maine, having its principal office at One Maine Savings Plaza, in the said Portland, County of Cumberland and State of Maine (hereinafter called the Grantee), the receipt of which is hereby acknowledged, does give, grant, bargain, sell, and convey unto the said Grantee, its successors and assigns, forever, the following-described premises:

> A certain lot or parcel of land with the buildings and improvements thereon situated at and near Gilman Street, Congress Street, Charles Street, Brackett Street, Bramhall Street and the Western Promenade, in the City of Portland, County of Cumberland and State of Maine, more particularly described in Schedule A attached hereto, which Schedule A is hereby made a part of this Mortgage and Security Agreement by reference thereto.

Also conveying and granting hereby as part of the realty and in addition to said realty and as property mortgaged hereunder, all of the following articles now or hereafter owned or acquired by Grantor, or in which it may now or hereafter acquire an interest, and now or hereafter located on the above-described premises or used therewith as follows: All machinery, equipment, furnishings, furniture, fixtures, chattels and articles of tangible personal property, including, without limitation, all hospital and medical diagnostic, treatment and convalescent equipment, machinery and supplies, all beds and bedding, all food service and cafeteria equipment, machinery and supplies, all other machinery, equipment and chattels used or usable in the operation of a hospital and full service medical center, furnaces, boilers, oil burner, refrigeration, air conditioning and sprinkler systems, awnings, screens, window shades, motors, dynamos, incinerators, plants and shrubbery, whether now owned or hereafter from time to time acquired by the Grantor, together with all substitutions, replacements, additions, attachments, accessories, accretions thereto or thereof, now or in the future, situated or located on, or used or usable in connection with the maintenance and/or operation of hospital and medical center now constructed and any other facilities to be constructed on the premises described in said Schedule A attached hereto. If the lien of this mortgage on any fixtures or personal property be subject to a lease agreement, conditional sale agreement or chattel mortgage covering such property, then in the event of any default hereunder all the rights, title and interest of the Grantor in and to any and all deposits made thereon or therefor are hereby assigned to the Grantee, together with the benefit of any payments now or hereafter made thereon. There are also transferred, set over and assigned by Grantor to Grantee, its successors and assigns, hereby all leases and use agreements of machinery, equipment and other personal property of Grantor in the categories hereinabove set forth, under which Grantor is the lessee of, or entitled to use, such items, and Grantor agrees to execute and deliver to Grantee specific separate assignments to Grantee of such leases and agreements when requested by Grantee; and nothing herein shall obligate Grantee to perform any obligations of Grantor under such leases, or agreements, unless it so chooses, which obligations Grantor hereby covenants and agrees to well and punctually perform.

As further security for payment of the indebtedness and performance of the obligations, covenants and agreements secured hereby, Grantor hereby transfers, sets over and assigns to Grantee:

a. All rents, profits, revenues, royalties, bonuses, rights and benefits under any and all leases or tenancies now existing or hereafter created of the premises or any part thereof, with the right to receive and apply the same to said indebtedness, and Grantee may demand, sue for and recover such payments, but shall not be required to do so; provided, however, that so long as Grantor is not in default hereunder, the right to receive and retain such rents, issues and profits is reserved to Grantor. To carry out the foregoing, Grantor agrees (1) to execute and deliver to Grantee such conditional assignments of leases and rents applicable to the mortgaged premises as the Grantee may from time to time request while this mortgage and the debt secured hereby are outstanding, and further (2) not to cancel, accept a surrender of, reduce the rentals under, anticipate any rentals under, or modify any such leases or tenancies, or consent to an assignment or subletting thereof, in whole or in part, without Grantee's written consent. Nothing herein shall obligate the Grantee to perform the duties of the Grantor as landlord or lessor under any such leases or tenancies, which duties Grantor hereby covenants and agrees to well and punctually perform.

b. All judgments, awards of damages and settlements hereafter made as a result or in lieu of any taking of the premises or any interest thereon or part thereof under the power of eminent domain, or for any damage (whether caused by such taking or otherwise) to the premises or the improvements thereon or any part thereof, including any award for change of grade of streets. Grantee may apply all such sums or any part thereof so received on the indebtedness secured hereby in such manner as it elects or, at its option, the entire amount or any part thereof so received may be released. Grantor hereby irrevocably authorizes and appoints Grantee its attorney-in-fact to collect and receive any such judgments, awards, and settlements from the authorities or entities making the same, to appear in any proceeding therefor, to give receipts and acquittances therefor, and to apply the same to payment on account of the debt secured hereby, whether then matured or not; and the Grantor will execute and deliver to the Grantee on demand such assignments and other instruments as the Grantee may require for said purposes and will reimburse the Grantee for its costs (including reasonable counsel fees) in the collection of such judgments and settlements.

Receipt of rents, awards, and any other moneys or evidences thereof, pursuant to the provisions of the foregoing paragraphs a. and b. and any disposition of the same by Grantee shall not constitute a waiver of the right of foreclosure by Grantee in the event of default or failure of performance by Grantor of any covenant or agreement contained herein or any note secured hereby.

TO HAVE AND TO HOLD the aforegranted and bargained premises, with all the privileges and appurtenances thereof, to Grantee, its successors and assigns, to its and their use and behoof forever; PROVIDED NEVERTHELESS, that if Grantor pays to Grantee the sum of ONE MILLION SEVEN HUNDRED NINETY-NINE THOUSAND FIVE HUNDRED SIXTY-NINE ($1,799,569.00) DOLLARS, with interest and other charges, as applicable, in accordance with all the terms and conditions of a certain Mortgage Note of even date signed and given by Grantor to Grantee, and until such payment performs all of Grantor's obligations, covenants and agreements contained herein and contained in said promissory note, then this deed, as also said certain promissory note, shall be void, otherwise shall remain in full force.

Grantor covenants and agrees with Grantee as follows:

1. That Grantor is lawfully seized of an indefeasible estate in fee simple, free from encumbrances, except as may have been specifically noted herein, or in Schedule A attached hereto, and has good right and power to convey the premises to Grantee to hold as aforesaid, and that Grantor shall and will Warrant and Defend the same to Grantee forever against the claims and demands of all persons, except as aforesaid.

2. That Grantor shall pay all sums secured hereby when due.

3. That Grantor will not permit or suffer the use of any of the mortgaged property for any purposes other than hospital or medical center purposes.

4. That the Loan Guaranty Agreement between the Grantor and the Secretary of Health, Education,and Welfare, which is being executed simultaneously herewith, is incorporated herein and made a part of this mortgage.

5. That upon default hereunder Grantee shall be entitled, in addition to any other rights given by this Agreement or by law, to the appointment of a receiver by any court having jurisdiction, without notice, to take possession and protect the property described herein and operate same and collect the rents, profits, and income therefrom.

6. That the Grantor will keep the building and improvements now existing or hereafter erected on the mortgaged property insured against loss by fire and such other hazards, casualties, and contingencies, as may be stipulated by the Secretary of Health, Education, and Welfare upon the guarantee of the Note and other hazards, all as may be required from time to time by the Grantee, and all such insurance shall be evidenced by standard fire and extended coverage insurance policy or policies, in amounts not less than necessary to comply with the applicable Coinsurance Clause percentage, but in no event shall the amounts of coverage be less than eighty per centum (80%) of the insurable value and in no event less than the unpaid balance of the debt secured hereby, and in default thereof the Grantee shall have the right to obtain such insurance at the cost of Grantor, such cost to be secured hereby. Such policies shall be endorsed with standard mortgagee clause with loss payable to the Grantee and the Secretary of Health, Education, and Welfare, as their interests may appear, and shall be deposited with the Grantee; and that if the premises mortgaged hereby, or any part thereof, shall be damaged by fire or other hazard against which insurance is held as hereinabove provided, the amounts paid by any insurance company in pursuance of the contract of insurance to the extent of the indebtedness then remaining unpaid, shall be paid to the Grantee and, at the option of Grantee and the Secretary of Health, Education, and Welfare, may be applied to the debt or released for the repairing or rebuilding of the premises.

7. That at the request of Grantor with consent of Grantee, or at the option of Grantee, the principal balance secured hereby may be reamortized on terms acceptable to the Secretary of Health, Education, and Welfare if a partial prepayment results from an eminent domain or condemnation award or from a fire or casualty insurance payment where there is a resulting loss of project income.

8. That in order more fully to protect the security of this Mortgage, together with, and in addition to, such payments of interest, or of principal and interest, Grantor will pay to the Grantee, on the

dates each month that such payments are due, until the Note is fully paid, the following sums:

(a) A sum equal to the ground rents, if any, next due, plus the premiums that will next become due and payable on policies of fire and other property insurance covering the premises covered hereby, plus water rates, taxes and assessments next due on the premises covered hereby (all as estimated by the Grantee) less all sums already paid therefor divided by the number of months to elapse before one month prior to the date when such ground rents, premiums, water rates, taxes and assessments will become delinquent, such sums to be held by Grantee in escrow to pay said ground rents, premiums, water rates, taxes, and special assessments; no interest shall be due on sums so held;

(b) All payments mentioned in the preceding subsection of this paragraph and all payments to be made under the Note secured hereby shall be added together and the aggregate amount thereof shall be paid each (month) in a single payment to be applied by Grantee to the following items in the order set forth:

(I) ground rents, taxes, special assessments, water rates, fire and other property insurance premiums;

(II) interest on the Note secured hereby;

(III) amortization of the principal of said Note;

9. In the event of Grantor's failure to pay any sums provided for in this Mortgage, the Grantee, at its option, may pay the same. Any excess funds accumulated under (a) of the preceding paragraph remaining after payment of the items therein mentioned, shall be credited to subsequent periodic payments of the same nature required thereunder; but if any such items shall exceed the estimate therefor, or if the Grantor shall fail to pay any other governmental or municipal charge, the Grantor shall forthwith make good the deficiency or pay the charge before the same become delinquent or subject to interest or penalties and in default thereof the Grantee may pay the same. All sums paid by the Grantee shall be added to the principal of the debt secured hereby and shall bear interest from the date of payment at the rate specified in the Note and shall be due and payable on demand. If the property is sold under foreclosure or is otherwise acquired by the Grantee after default, any remaining balance of the accumulations under (a) of the preceding paragraph shall be credited to the principal of the Mortgage as of the date of the commencement of foreclosure proceedings or as of the date the property is otherwise acquired.

10. That Grantor will keep the premises above conveyed in good order and condition and will not commit or permit any waste thereof, reasonable wear and tear excepted, and in the event of the failure of the Grantor to keep the buildings on said premises and those to be erected on said premises, or improvements thereon, in good repair, the Grantee may make such repairs as in its discretion it may deem necessary for the proper preservation thereof, and any sums paid for such repairs shall bear interest from the date of payment at the rate specified in the Note, shall be due and payable on demand and shall be fully secured by this Mortgage.

11. That Grantor will not voluntarily create, permit or suffer

to be created against the property subject to this Mortgage any lien or liens inferior or superior to the lien of this Mortgage and further that it will keep and maintain the same free from the claim of all persons supplying labor or materials which will enter into the construction of any and all buildings and improvements now being erected or to be erected on said premises.

12. That Grantor further covenants and agrees that this mortgage shall constitute a security agreement with respect to any and all machinery, equipment, chattels, articles of personal property, and fixtures described and included in this mortgage, and all additions, accessions, substitutions, and replacements thereto and therefor, and all of which are hereinafter referred to as the collateral, and Grantor hereby grants and conveys to Grantee, its successors and assigns, a security interest therein. That upon default of any term, condition or covenant of this mortgage and acceleration of any indebtedness hereby secured, the Grantee may, at its discretion, require the Grantor to assemble the collateral and make it available to the Grantee at a place reasonably convenient to both parties to be designated by the Grantee. That the Grantee shall give the Grantor notice, by registered mail, postage prepaid, of the time and place of any public sale or other intended disposition thereof is to be made by sending notice to the Grantor at least five days before the time of the sale or other disposition, which provisions for notice the Grantor and Grantee agree are reasonable; provided, however, that nothing herein shall preclude the Grantee from proceeding as to both real and personal property in accordance with Grantee's rights and remedies in respect of the real property. Grantee shall have all of the remedies of a secured party under the Uniform Commercial Code as now in effect in the State of Maine and such further remedies as may from time to time hereafter be provided in Maine for a secured party. Grantor agrees that all rights of Grantee as to said collateral and as to said real estate, and rights and interests appurtenant thereto, may be exercised together or separately and further agrees that in exercising its power of sale as to said collateral and as to said real estate, and rights and interest appurtenant thereto, the Grantee may sell the collateral or any part thereof either separately from or together with the said real estate, rights and interests appurtenant thereto, or any part thereof, all as the Grantee may in its discretion elect.

13. That Grantor shall maintain full and correct books and records showing in detail the earnings and expenses of the mortgaged premises; will permit the Grantee and its representatives to examine said books and records and all supporting vouchers and data any time and from time to time upon request by the Grantee at the mortgaged premises or at such other place in the County in which the mortgaged premises are located as such books and records are customarily kept; and Grantor hereby agrees to furnish to Grantee within one hundred twenty (120) days after the close of each fiscal year an audited financial statement of the operation of the premises reflecting income (including sources thereof) and expenses, such statement to be prepared by a certified or other competent accountant satisfactory to the Grantee.

14. That Grantor within seven (7) days upon request in person or within ten (10) days upon request by mail shall furnish a duly acknowledged written statement setting forth the amount of the debt secured by this mortgage, and stating either that no offsets or defenses exist against the mortgage debt, or, if such offsets or defenses are alleged to exist, the nature thereof.

15. That in case of foreclosure of this Mortgage, and as often

as any proceedings shall be taken to foreclose the same, the Grantor will pay to the Grantee a reasonable attorney's fee, and the same shall be a further charge and lien upon the said premises.

16. That no sale of the premises hereby mortgaged and no forebearance on the part of the Grantee, and no extention of the time for the payments of the debt hereby secured given by the Grantee, shall operate to release, discharge, modify, change, or affect the original liability of the Grantor herein either in whole or in part.

17. That in the event of any default, as herein described, this mortgage may be foreclosed in any manner prescribed or permitted by law, appraisement being hereby waived; and out of all the monies arising from a sale to retain the amount then due or to become due according to the conditions of this instrument together with the costs and charges of making such sale, and the overplus, if any there be, shall be paid by the party or parties making such sale to the Grantor, its successors and assigns.

18. That no waiver of any covenant herein or of the Note secured hereby shall at any time thereafter be held to be a waiver of the terms hereof or of the Note secured hereby.

19. That receipt and disposition of rents, income of the premises, insurance proceeds, eminent domain awards, or any other sums under the provisions of the mortgage, the note, or other loan documentation by Grantee shall not be a waiver or release of any rights of the Grantee, including but not limited to, the right of foreclosure or acceleration of the note, whether such receipt or disposition shall be before or after exercise of any such rights.

20. That Grantee hereof, its successors and assigns, shall have The Statutory Power of Sale in addition to all other rights of a Mortgagee allowed by law and this mortgage in case of default in any term or condition contained or referred to herein.

21. That it is an additional condition of this Mortgage and Security Agreement for breach of which foreclosure may be claimed and for breach of which all indebtedness secured hereby may be declared due and payable at once, that title to the within described mortgaged premises shall not pass be deed, mortgage or other means, or operation of law, from Grantor, or from any subsequent title holder, either voluntarily or involuntarily. This condition shall continue until all indebtedness and obligations secured hereby are satisfied, and permission given, or election not to foreclose or accelerate said indebtedness by Grantee, its successors or assigns, as to any one such transfer, shall not constitute a waiver of any rights of Grantee, its successors or assigns, as to any subsequent such transfer of title as to which this condition shall remain in full force and effect. The term title as used herein shall mean the estate of the Grantor subject to the lien of this mortgage.

22. This Mortgage and Security Agreement is expressly made subject and inferior to a Mortgage (FHA Form 4125-B) and to Security Agreement both of even date herewith executed and delivered by Grantor herein to Grantee herein encumbering the real and personal property herein described and securing a Mortgage Note (FHA Form 4125-d) of even date herewith in the amount of $3,245,431.00, all of which documents are hereinafter collectively called the FHA Mortgage. Grantor herein shall perform, or cause to be performed, when due all obligations of the mortgagor under the terms

and provisions of the FHA Mortgage, specifically including prompt payment when due of all indebtedness secured and evidenced thereby. Should Grantor herein fail to comply with its obligatins set forth in this paragraph 22, such failure shall constitute a default under the terms and provisions of this Mortgage and Security Agreement and, in addition to any other rights which the Grantee may have hereunder and by operation of law, the Grantee herein shall have the right, but not the obligation, to make all payments and to do all things to render said FHA Mortgage current, and all advances made for such purpose, including interest paid thereon at the rate specified in said FHA Mortgage Note, shall be payable by Grantor herein to Grantee herein upon demand by Grantee herein and, to the extent permitted by law, all such advances shall be secured by the lien of this Mortgage and Security Agreement.

23. That in the event of default in making any payment provided for herein or in the Note secured hereby, or in the event of a breach of any other stipulation, agreement, condition or covenant of this mortgage, including any transfer of title to the mortgaged premises without permission of Grantee as set forth in paragraph 21 hereof, and if such default or breach is not cured prior to the expiration of 90 days after the Secretary of Health, Education, and Welfare, aforesaid, receives notification from the holder of the loan of such default or breach then in any such event the whole principal sum of said Note shall, at the option of the Grantee, its successors and assigns, as such holder, be deemed to have become immediately due, and the same with interest thereon and with all other costs and charges, shall thereupon be collectible by foreclosure of this mortgage; provided, however, such notice to said Secretary of Health, Education, and Welfare and such 90 day period shall not be necessary should the guaranty of this mortgage indebtedness be terminated or become void pursuant to its terms and Grantee receives written notice thereof from said Secretary.

The covenants herein contained shall bind, and the benefits and advantages shall inure to, the respective successors and assigns of the parties hereto and to the extent permitted by law shall bind any future owner of the mortgaged premises or any part thereof. Whenever used, the singular number shall include the plural and the plural the singular, and the use of any gender shall include all genders.

IN WITNESS WHEREOF, the said Grantor has caused these presents to be signed in its name by JACK R. DYSON, its Treasurer, and its corporate seal to be hereunto affixed this 14th day of February, 1975.

Signed, Sealed and Delivered in the Presence of:

Robert B. Patterson, Jr.

MAINE MEDICAL CENTER, a Maine corporation

BY _____
Its Treasurer

(CORPORATE SEAL)

STATE OF MAINE
COUNTY OF CUMBERLAND, ss. February 14, 1975

Then personally appeared the above-named Jack R. Dyson as Treasurer of Maine Medical Center, 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.

_____
Notary Public

MY COMMISSION EXPIRES
MAY 2, 1980

SCHEDULE A

GRANTOR: MAINE MEDICAL CENTER

GRANTEE: MAINE SAVINGS BANK

DATE : February 14, 1975

A certain lot or parcel of land together with the buildings and improvements thereon, located in the City of Portland, County of Cumberland and State of Maine, bounded and described as follows: Beginning at a point at the intersection of the southeasterly side of Congress Street and the easterly side of Gilman Street, said point being marked by an iron pin; thence North 79° 44½' East, four hundred twenty and seventy-nine hundredths (420.79) feet to a point marked by an iron; thence South 18° 24' East by land now or formerly of Brophy, one hundred forty-eight and eighty-five hundredths (148.85) feet, more or less, to an iron; thence North 72° 01' East by said Brophy land, seventy-four and eight tenths (74.8) feet, more or less, to Charles Street; thence by Charles Street, South 18° 24' East, three hundred fifty-seven and twenty-three hundredths (357.23) feet to a point; thence South 18° 04½' East, ninety-eight and eighty hundredths (98.80) feet to a point on the northwesterly terminus of Brackett Street; thence South 62° 24' West by Brackett Street, thirty-eight and fifty-seven (38.57) feet to a point; thence South 33° 29' East by said Brackett Street, sixty and thirty-two hundredths (60.32) feet to a point; thence South 57° 21½' East by said Brackett Street, fifty and eighteen hundredths (50.18) feet to a point and land now or formerly of Gemma A. McKenzie et al; thence South 61° 08½' West by said McKenzie land, forty-two and ninety-six hundredths (42.96) feet to a point; thence South 27° 36' East by said McKenzie land, sixty-two and twenty-eight hundredths (62.28) feet, more or less, to the northerly side of Bramhall Street; thence South 61° 00½' West by said Bramhall Street, five hundred nine and fifty-eight hundredths (509.58) feet to a point in the Western Promenade; thence North 50° 49' 20" West, one hundred fifty-one and thirty-nine hundredths (151.39) feet to a point on the southeasterly line of Arsenal Street; thence North 62° 24' East by Arsenal Street, fifty (50) feet to a point at the easterly terminus of Arsenal Street; thence North 27° 36' West by said Arsenal Street and by land conveyed by the Maine Medical Center to the City of Portland by deed dated August 4, 1972, and recorded in Cumberland County Registry of Deeds in Book 3278, Page 212, one hundred (100) feet to a point; thence South 85° 56' West by said City of Portland land, ninety-four and two hundredths (94.02) feet, more or less, to Gilman Street; thenc North 04° 04' West by said Gilman Street, six hundred ninety-five and twenty-five hundredths (695.25) feet, more or less, to said Congress Street and the point of beginning.

Being the same premises shown on a plan entitled "Plan of Property in Portland, Maine made for Maine Medical Center", H.I. & E.C. Jordan-Surveyors, dated May 31, 1966 and updated and certified on June 13, 1966, July 7, 1966, October 26, 1972, January 24, 1975 and February 12, 1975.

COPY

such default or breach then in any such event the entire unpaid principal balance of this mortgage note plus accrued interest, at the option of the holder hereof shall become immediately due and payable; provided, however, such notice to said Secretary and such 90 day period shall not be necessary should the guaranty of this mortgage note be terminated or become void pursuant to its terms and payee receives written notice thereof from said Secretary.

The payments due hereunder shall be made to Maine Savings Bank at its office at One Maine Savings Plaza, Portland, Maine 04111, unless another holder or address be given in writing to the parties liable herefor.

All parties to this mortgage note, whether principal, surety, guarantor, or endorser, hereby waive presentment for payment, demand, protest, notice of protest, and notice of dishonor.

Signed and Sealed the day and year first above written.

WITNESS:
Thomas F. Trechette
Robert B. Patterson Jr.

MAINE MEDICAL CENTER, a Maine corporation

By [signature]
Its Treasurer

(CORPORATE SEAL)

THIS IS TO CERTIFY that this is the Note described in and secured by said Mortgage and Security Agreement of even date herewith and in the same principal amount as herein stated and secured by real estate and personal property situated in the City of Portland, Cumberland County, Maine.

Dated: February 14, 1975

Louis A. Wood
Notary Public

MY COMMISSION EXPIRES
MAY 2, 1980

COPY

3

MORTGAGE NOTE

$1,799,569.00

Portland, Maine
February 14, 1975

FOR VALUE RECEIVED, the undersigned, MAINE MEDICAL CENTER, a Maine corporation located in the City of Portland, County of Cumberland and State of Maine, promises to pay to MAINE SAVINGS BANK, a Maine banking corporation, or order, at its principal place of business at One Maine Savings Plaza in the said City of Portland, County of Cumberland and State of Maine, the principal sum of ONE MILLION SEVEN HUNDRED NINETY-NINE THOUSAND FIVE HUNDRED SIXTY-NINE ($1,799,569.00) DOLLARS, with interest from date at the rate of seven per centum (7%) per annum on the unpaid balance thereof until paid; which principal and interest shall be paid as follows: Interest only at said rate shall be paid on the first day of March, 1975; thereafter commencing on the first day of April, 1975, monthly installments of interest and principal shall be paid in the sum of Twelve Thousand Seven Hundred Eighteen and 98/100ths ($12,718.98) Dollars each; such payments shall continue to be made monthly thereafter upon the first day of each succeeding month until the entire indebtedness has been paid in full; in any event, the balance of principal, if any, remaining unpaid, plus accrued interest at said rate, shall be paid on March 1, 2000. Said monthly installments of interest and principal shall be applied first to interest at said rate per annum upon the principal sum, or so much thereof as shall from time to time remain unpaid, and the balance thereof shall be applied to principal.

In the event any installment, or part of any installment, of principal or interest becomes delinquent for more than 15 days, there shall be due, at the option of the holder hereof, an additional sum equal to two cents ($.02) for each dollar ($1.00) of each installment so delinquent; provided, nevertheless, that as long as this mortgage note shall be guaranteed by the Secretary of the Department of Health, Education, and Welfare the amount of the monthly payment upon which such delinquency charge may be imposed shall be limited to the amount actually to be paid by the maker hereof and shall not include for such purpose any amount payable as an interest subsidy by said Secretary.

This note is secured by Mortgage and Security Agreement upon real estate and personal property situated in the City of Portland, Cumberland County, State of Maine.

Privilege is reserved to pay the debt in whole or in an amount equal to one or more monthly payments on principal next due, on the first day of any month prior to maturity upon at least thirty (30) days' prior written notice to the holder.

No default shall exist by reason of nonpayment of any required installment of principal so long as the amount of optional additional prepayments of principal already made pursuant to the privilege of prepayment set forth in this mortgage note equals or exceeds the amount of such required installment of principal.

In the event of default in the making of any payment provided for herein, including any delinquency charge, or in the event of a breach of any agreement, condition or covenant of the said Mortgage and Security Agreement given by the maker hereof to Maine Savings Bank, and if such default or breach is not cured prior to the expiration of 90 days after the Secretary of Health, Education, and Welfare, aforesaid, receives notification from the holder hereof of

(6)

(No. 106)

Know All Men by these Presents,

That 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 ~~Heirs~~ 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.

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 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 Leola J. Noyes and William H. Noyes, Jr., the said grantors, both being unmarried

~~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 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. Haus
to both

Leola J. Noyes
William H. Noyes Jr.

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. Haus
Justice of the Peace



Philbrick 1st

317

Warranty Deed.

FROM

LEOLA J. NOYES, et al

TO

MAINE MEDICAL CENTER

DATED June, 1953.

State of Maine.
Cumberland, ss: Registry of Deeds.

Received JUN 12 1953, 19, at 1 H., 47 M., 8 M., and recorded in Book 2133, Page 317.

ATTEST:

Robert V. Crommett, Register.

FROM THE OFFICE OF

Verrill Dana Walker Philbrick

& Whitehouse

No. 106. ROBERTS OFFICE SUPPLY COMPANY
Portland - Maine - Lewiston

1-114

(No. 106)

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

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.

To have and to hold the aforegranted and bargained premises, with all privileges and appurtenances thereof to the said Maine Medical Center, its Successors and Assigns ~~forever~~, 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, 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 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

~~xxx~~ ~~xxxxxxxxxxxxxxxx~~

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	Alzo F. Patterson
R. E. Jensen	Bessie E. Patterson
Pamela Chase	Fred A. Patterson
Pamela Chase	Chrystine I. Patterson
Arthur K. Smith	Ella H. Whidden
Arthur K. Smith	Charles F. Whidden
P. J. Campbell	Ruby E. McKenzie
P. J. Campbell	Elmer W. McKenzie

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



Phillbrick

311

Warranty Deed.

FROM

ALZO F. PATTERSON, ET ALS.

TO

MAINE MEDICAL CENTER

DATED ....., 1953.

State of Maine.

Cumberland ss: Registry of Deeds.

Received JUN 12 1953, 19/

at 11 H., 5 M., A M., and

recorded in Book 2133, Page 311

ATTEST:

Robert L. Cross, REGISTER.

FROM THE OFFICE OF
RAYMOND E. JENSEN
415 Congress Street
Portland, Maine

No. 106. ROBERTS OFFICE SUPPLY COMPANY
Portland - Maine - Lewiston

11-5

Know All Men by These Presents.

(8)

That 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 ~~heirs~~ and assigns forever, ~~a~~ 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 tosaid 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 Registry of Deeds in Book 1771 Page 131.

Also conveying all my,right, title and interest in and to Arsenal Street, recently abandoned by theCity 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 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 ~~heirs~~ successors and assigns forever, against the lawful claims and demands of all persons.

~~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
Ann C. Lennon

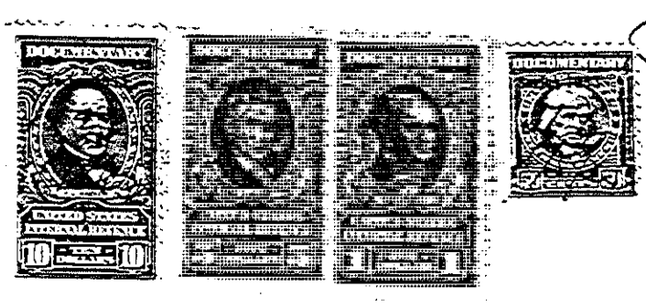
1650

~~State of Maine.~~ Cumberland ss. May 5, 19 53.

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
~~Notary Public~~



Phillbrook

269

Warranty Deed

FROM

John T.Lennon

TO

Maine Medical Center

Dated May 5th 19 53

State of Maine.
Cumberland Co. Registry of Deeds

Received MAY 5 1953 19/

at 2 H., 30 M., 0 M., and

recorded in Book 2127 Page 269

ATTEST: Robert W. Crockett Register

FROM THE OFFICE OF

Devine, Devine, Devine
102 Exchange St
Portland,Maine.

L. L. MARTIN, PORTLAND, ME.—OFFICE FURNITURE AND SUPPLIES
TYPEWRITERS, ADDING MACHINES, FILING CABINETS, SAFES, ETC.

MARTIN'S FORM NO. 1 — STANDARD REGISTRY FORM

9 3 3

(9)

(No. 106)

Know All Men by these Presents,

That 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.

To have and to hold the aforegranted and bargained premises, with all 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, 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 Hazel B. Therio,
being unmarried,

~~xxxxx~~ ~~xxxxxxxxxxxxxxx~~

~~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
16th day of May in the year of our Lord
one thousand nine hundred and fifty-three.

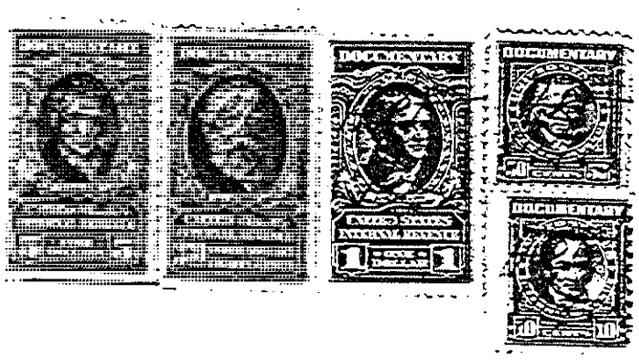
~~Signed, Sealed and Delivered~~
in presence of

Edward F. Sawyer — Hazel B. Therio

~~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. Sawyer.
Justice of the Peace



Philbrick

443

Warranty Deed.

FROM

HAZEL B. THERIO

TO

MAINE MEDICAL CENTER

DATED May, 19 53.

State of Maine.

Cumberland ss: Registry of Deeds.

Received MAY 16 1953, 19 ,

at 10 H, 25 M., A M., and

recorded in Book 2127, Page 143.

ATTEST:

Robert V. Crommett, REGISTER.

FROM THE OFFICE OF

VERRILL DANA WALKER PHILBRICK

& WHITEHOUSE.

No. 100. ROBERTS OFFICE SUPPLY COMPANY
Portland - Maine - Lewiston

10-35

(No. 106)

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 ~~Heirs~~ 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.

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 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 Wherrof, We the said Albert N. Tardif

and M. Louise Tardif, the said Grantors, being Husband and Wife

~~and~~ ~~wife of the said~~

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~~

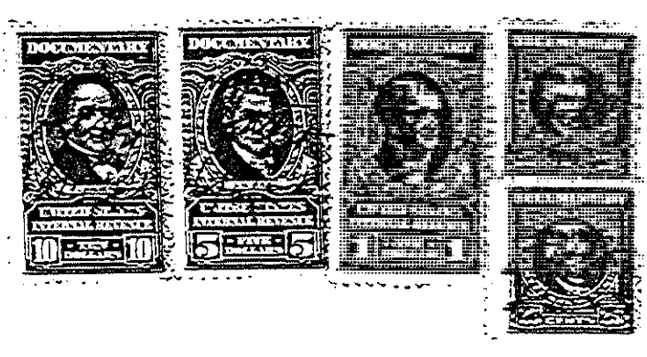
Edward F. Sawyer
to both

Albert N Tardif
M Louise Tardif

~~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. Sawyer
Justice of the Peace



Philbrick

310

Warranty Deed.

FROM

ALBERT N. TARDIF, et al

TO

MAINE MEDICAL CENTER

DATED June, 1953.

State of Maine.
Cumberland ss: Registry of Deeds.

Received JUN 12 1953, 19 ,

at 11 H., 5 M., A M., and

recorded in Book 2133, Page 310

ATTEST:

Robert T. Crowell, REGISTER.

FROM THE OFFICE OF

Verrill Dana Walker Philbrick

& Whitehouse

No. 106. ROBERTS OFFICE SUPPLY COMPANY
Portland - Maine - Lewiston

11-5

(11)

No. 106

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,

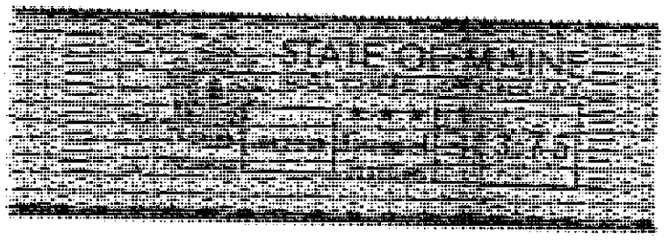
the following described property:

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.



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/ ~~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 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

[illegible] [illegible]

State of Maine,
CUMBERLAND } ss.

July [illegible] 1969.

Personally appeared the above named

CLARA G. READ

and acknowledged the above instrument to be [illegible] free act and deed.

Before me, [illegible]

Justice of the Peace

JUL 23 1969
REGISTRY OF DEEDS, CUMBERLAND COUNTY, MAINE
Received at 10 H 58 M.M. and recorded in
BOOK 3695 PAGE 34 Seward R. T[illegible] Register

Phillich/40

Warranty Deed.

FROM

CLARA G. READ

TO

MAINE MEDICAL CENTER

DATED July 22, 1969.

State of Maine,

..... ss: Registry of Deeds

Received JUL 2 6 1969, 19 ,

at ..... M., ... M., ... M., and

recorded in Book....., Page.....

ATTEST:

....., REGISTER.

FROM THE OFFICE OF

JOHN W. STURGIS
415 Congress Street
Portland, Maine

No. 106. ROBERTS OFFICE SUPPLY COMPANY
Portland, Maine

10.50

(12)

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 ~~xxxxx~~ and Assigns forever,

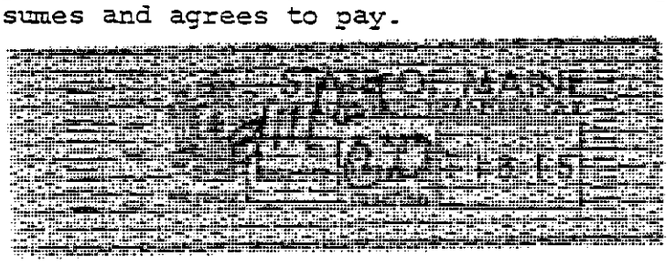
the following described property:

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.



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 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 all 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

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,

Justice of the Peace

AUG 11 1969
REGISTRY OF DEEDS, CUMBERLAND COUNTY, MAINE
Received at 2 E 24 M. and recorded in
BOOK 3197 PAGE 244 Register

Philbrick / EFD

Warranty Deed.

FROM

William C. Gokey et al

TO

Maine Medical Center

DATED August, 1969.

State of Maine,

..... on: Registry of Deeds

Received AUG 11 1969, 19 ,

at ..... H., ... M., ... M., and

recorded in Book....., Page.....

ATTEST:

....., REGISTER.

FROM THE OFFICE OF
Verrill Dana Philbrick Whitehouse
& Putnam
57 Exchange Street
Portland, Maine

No. 106. ROBERTS OFFICE SUPPLY COMPANY
Portland, Maine

2-28

(13)

(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 grant 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.

928

To have and to hold the above-granted premises unto the said Maine Medical Center, its successors ~~and~~ ~~assigns~~ 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 3 H 55 M P.M. and recorded in
BOOK 2951 PAGE 927 Register

Executor's and Trustee's Deed.

(WHEN THE WILL AUTHORIZES A SALE.)

Helen M. Griffin

TO

Maine Medical Center

Dated, ... 19

..... ss. **Registry of Deeds.**

Received 19

MAR 31 1966

at ..... H., ... M., ... M., and

recorded in Book ..... Page .....

Attest: ..... Register.

FROM THE OFFICE OF

Verrill Dana Walker Philbrick
& Whitehouse
57 Exchange Street
Portland, Maine

LORING, SHORT & HARMON, LAW STATIONERS
PORTLAND, MAINE

3355

(15)

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:

OLD COLONY TRUST COMPANY

By _____
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,

_____
Notary Public

Mary F. Archoska
NOTARY PUBLIC
My commission expires May 23, 1971

Section 5
Public or Private Rights-of-Way

5.A. Public or Private Rights-of-Way

The existing site has four primary accesses; one on Gilman Street for the existing employee garage, one on Congress for the visitor parking garage, one onto Crescent Street for the visitor parking garage, and a pick-up and drop-off driveway off Bramhall Street. The site is proposed to have one new access on Congress Street for the proposed visitor pick-up and drop-off driveway and visitor parking garage connection. The East Tower will continue to be accessed via the existing drop-off and pick-up driveway off Bramhall Street, and the two existing visitor parking garage accesses will remain. The existing Gilman Street employee garage access will be eliminated.

Section 6
Schedule

6.A. Schedule

The proposed project is anticipated to be completed and occupied by 2023.

Relationships.
Responsiveness.
Results.









Section #7
Traffic Impact
Study
Bramhall Street - 22;
MMC Congress Street
Building
Portland, Maine

PREPARED FOR:
Maine Medical Center
22 Bramhall Street
Portland, ME 04102

September 2018

SUBMITTED BY:
Gorrill Palmer
707 Sable Oaks Drive
Suite 30
So. Portland, ME 04106
207.772.2515

Traffic Impact Study
Bramhall St. – 22; MMC Congress St. Building
Portland, Maine
September 2018

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Attachment 7A
Site Location Map
Turning Movement Diagrams

Attachment 7B
Trip Generation Calculations

Attachment 7C
Capacity and Queue Analysis Results

I. Introduction

This traffic impact study examines the potential traffic impact of phase three (3) of the proposed Maine Medical Center expansion in Portland, Maine. The site of the expansion is located at the site of the existing Gilman Garage in the southeast corner of the Congress Street / Gilman Street intersection. The site is identified on City Tax Map 53, Lot D007, and City Tax Map 65 Lots H001, H002, H005, H008, and H009. A proposed site plan is provided with the site plan application under separate cover. The attached Figure 1 in Attachment 7A shows the location of the site.

The existing site is the same location as the Gilman parking garage for the employees of Maine Medical Center. The proposed project consists of razing the existing employee garage and constructing additional hospital space, including new operating rooms and patient rooms, although the total number of beds will remain the same, since the new patient rooms are intended to decompress the existing hospital. A new drop off and pick up loop, with access to the visitor garage is proposed on Congress Street, to the west of the existing visitor garage. Parking will be provided for employees at the recently approved St. John Street employee parking garage and for the patients and visitors in the existing and recently expanded visitor parking garage. The expansion is proposed to be a total of 265,000 sf and is also anticipated to add 200 employees by 2023.

II. Existing Traffic Volumes

Turning movement counts were completed by Accurate Counts at the following intersections from 5:00AM to 9:00AM and 2:00PM to 8:00 PM on the specified dates:

- St John Street / Valley Street: November 8, 2017
- Valley Street / Commercial Street: November 2, 2017
- Congress Street / St. John Street: November 2, 2017
- St John Street / Park Avenue: November 8, 2017

Turning movement counts were also completed by Gorrill Palmer at the following intersections:

- St. John Street / D Street: May 30, 2018, 6:00AM – 9:00AM and 3:00PM – 6:00PM
- Congress Street / Bramhall Street: August 23, 2018, 6:00AM – 9:00AM and 3:00PM – 6:00PM
- Congress Street / Visitor Garage: August 29, 2018, 6:00AM – 9:15AM and 3:00PM – 6:00PM
- Visitor Garage / Crescent Street: August 29, 2018, 6:00AM – 9:00 AM and 3:00PM – 6:00PM

In addition, turning movement counts were also completed by Gorrill Palmer at the intersection of St. John Street with the Margarita's Driveway on May 17, 18, and 19, 2017 from 6:00AM to 8:00AM, 7:45AM to 9:00AM, 5:00PM to 8:00PM, and 3:00PM to 5:00PM. Those volumes were used as the base raw volumes for St. John Street and for Margaritas during the peak hours of the generator. This evaluation has focused on the peak hour of the adjacent street, which occurs at 7:30AM to 8:30AM and 4:15PM to 5:15PM at the intersection of Congress Street with Bramhall Street.

The results of all counts for the peak hour of the adjacent street are shown on the attached Figure 2 in Attachment 7A.

III. Other Developments in the Vicinity of the Site

Approved projects that are not yet opened as well as projects for which applications have been filed are required to be included in the predevelopment volumes for this project. Based on conversations with City Staff, traffic from the proposed Mercy Hospital expansion, the proposed Dunkin' Donuts on St. John Street, and the Thompson's Point development should be included in the background traffic. It should be noted that although portions of the Thompson's Point development have been constructed, the full build out traffic volumes from the August 2011 Traffic Impact Study have been utilized to be conservative. The traffic from this project that is forecast to impact the Maine Medical Center Expansion study area is shown on the attached Figure 4.

IV. Predevelopment Traffic Volumes

Traffic volumes that are not collected during peak summer months are typically seasonally adjusted to estimate traffic volumes that may be experienced during the peak summer months. Since the traffic counts were not collected during the peak summer months, the raw volumes shown on Figure 2 have been seasonally adjusted based on the weekly group mean factors published by MaineDOT. The following summarizes the adjustment at each intersection:

- Valley Street / Commercial Street: 8.3%
- St. John Street / Valley Street: 8.3%
- D Street / St. John Street: 2.4%
- Margaritas / St. John Street: 3.6%
- Congress Street / St. John Street: 8.3%
- Park Avenue / St. John Street: 8.3%
- Gilman Street / Congress Street: 15.5% (Congress through traffic only)
- Bramhall Street / Congress Street: 0.0%

In addition to the seasonal adjustment, the adjacent roadway volumes were also increased by an annual growth rate to forecast the traffic volume that may be experienced during the build out year of the project. An annual growth rate of 0.5% per year (approved by the City and consistent with other studies in the area) has been applied to the seasonally adjusted volumes to yield the 2023 Adjusted Volumes shown on the attached Figure 3. The 2023 Adjusted Volumes have been combined with the Other Development Volumes to yield the 2023 Predevelopment traffic volumes shown on the attached Figure 5. It should be noted that the employee growth rate in the IDP is forecast to be approximately 0.63% per year, which is very similar to the growth rate approved by the City for overall on-street traffic and used on other studies in the area.

It should be noted that the traffic volumes into and out of parking areas has not been adjusted because significant seasonal or annual fluctuation is not anticipated.

V. Trip Generation

The trip generation for the Phase 3 Expansion was calculated using the Institute of Transportation Engineers' (ITE) publication, *Trip Generation*, Seventh Edition, Land Use Code (LUC) 610 – Hospital. The Tenth Edition is available, but has not yet been accepted by the MaineDOT. The expansion is proposed to be a total of 265,000 sf and is anticipated to add 200 employees by 2023. As approved at the October 13, 2017 Pre-Scoping meeting, the trip generation for the expansion has been based on the number of employees, students, and physicians. The following is a summary of the trip generation for the expansion that will need to be permitted:

- AM Peak Hour Adjacent Street: 68 trip ends
- PM Peak Hour Adjacent Street: 66 trip ends
- AM Peak Hour of Generator: 78 trip ends
- PM Peak Hour of Generator: 94 trip ends
- Saturday Peak Hour: 106 trip ends

A trip end is defined as a trip into or out of the site; thus, a round trip is equal to two trip ends. Since the forecast traffic exceeds 99 trip ends during a peak hour, a Traffic Movement Permit is required. The City of Portland has delegated review authority, so the application can be administered by the City. A copy of the trip generation calculations are included as an attachment to this section.

Based on ITE's *Trip Generation*, the following trip distribution is anticipated:

- AM Peak Hour Adjacent Street: 54 in / 14 out
- PM Peak Hour Adjacent Street: 23 in / 43 out
- AM Peak Hour of Generator: 51 in / 27 out
- PM Peak Hour of Generator: 38 in / 56 out
- Saturday Peak Hour: 58 in / 48 out

VI. Trip Composition and Assignment

GP has assumed that all trips are primary in nature and made for the sole purpose of going to and from the site. The forecast trip generation is anticipated to be comprised of patients/visitors and employees. The portion of the trip generation that is forecast to be due to patients/visitors has been based on information provided by MMC in an email dated August 8, 2018.

Based on MMC's information, GP anticipates an additional 15,500 patient trips annually by 2023. The distribution of the patient/visitors has been based on the following assumptions:

- Patient trips are split evenly throughout the year
- 90% of patient trips occur Monday through Friday
- Patient trips are evenly split through the week
- 20% of daily trips occur during the peak hours
- 80% entering during the AM peak hour
- 80% exiting during the PM peak hour

Based on these assumptions, the following trip composition is forecast for the peak hours of the adjacent street:

- AM Peak Hour Adjacent Street (assumed 7:30AM – 8:30AM):
    - Patients/Visitors: 10 trip ends (8 in / 2 out)
    - Employees: 58 trip ends (46 in / 12 out)
- PM Peak Hour Adjacent Street (assumed 4:15PM – 5:15PM):
    - Patients/Visitors: 10 trip ends (2 in / 8 out)
    - Employees: 56 trip ends (21 in / 35 out)

The patient/visitor trip assignment has been based on the proposed driveway locations, information from MMC in an email dated August 8, 2018, and the existing traffic patterns and is shown on Figure 6 in Attachment 7A. The trip assignment for the employees was

initially based on the VHB Travelshed for employees, and adjusted per City comments. The trip assignments are shown on Figure 7 in Attachment 7A.

VII. Congress Street Pick-Up / Drop-Off Reassignment

It is anticipated that the new Congress Street pick-up / drop-off will draw existing traffic from the Bramhall Street drop-off loop. To estimate the traffic that may use the Congress drop-off instead of the Bramhall drop-off, counts and observations were completed by Gorrill Palmer at the Bramhall drop-off on August 28-30, 2018 from 7:00AM – 10:00AM and 3:00PM – 6:00PM. On August 29, 2018 an additional two hours, from 10:00AM – 12:00PM, was also collected. The counts were separated into six types of trips through the loop; pick-up, drop-off, pass-through, parked, valet parking (park), and valet parking (return). Using the counts collected, traffic was reassigned based on existing traffic patterns and the following assumptions:

- Valet parking and return will remain at the Bramhall drop off
- 75% of pick-ups and drop-offs will use the Congress drop off (from MMC in an email dated August 8, 2018)
- 25% of pick-ups and drop-offs will remain at the Bramhall drop off (from MMC in an email dated August 8, 2018)

The reassigned traffic volumes are shown on Figure 8 in Attachment 7A. It should be noted that the initial assumption was that valet parking would remain only at the Bramhall drop-off. Since that time, it has been identified that there will be valet parking at the Congress Street drop-off as well as the Bramhall drop-off. This may increase traffic volumes using the Congress drop-off and right turning traffic from Congress to Bramhall. The increase in traffic due to valet parking is not forecast to significantly impact the results of this evaluation.

VIII. Phase 3 Net Impact

The Phase 3 patient/visitor trip assignment on Figure 6, the Phase 3 employee trip assignment on Figure 7, and the reassigned drop-off traffic on Figure 8 were combined to yield the Phase 3 Net Impact shown on Figure 9 in Attachment 7A.

IX. Existing Employee Garage

The proposed Phase 3 expansion will be located at the site of the existing employee garage in the southeast corner of the Congress Street / Gilman Street intersection. The existing

employee garage is proposed to be razed and MMC will be constructing a new 2400 space employee parking garage on St. John Street. As a result, the existing employee traffic volumes will be relocated to St. John Street. The existing employee garage traffic volumes have been estimated based on the turning movement counts completed at the garage access on Gilman Street on November 2, 2017, the previously approved proposed employee garage assignment, and existing traffic patterns. Figure 10 in Attachment 7A shows the existing employee garage traffic to be removed from the adjacent roadway network.

X. Proposed Employee Garage

MMC will construct an approximately 2,400 space employee parking garage with an adjacent surface lot with approximately 50 spaces on St. John Street. The proposed garage and adjacent surface lot are anticipated to initially accommodate the following:

- Gilman Garage: 1,274 spaces
- Sportsman Lot: 60 spaces
- 222 St. John Street Lot: 283 spaces
- Gateway Garage: 100 spaces
- Classic Lot: 97 spaces
- 321 Brackett Street Lot: 9 spaces
- MMC Employee On-Street Parking: 200 spaces (estimated)

Total Parking Spaces = 2,023

The 200 on-street parking spaces are an approximate number of spaces intended to include vehicles that may currently park on neighborhood streets. It should be noted that in the garage and surface lot 50 spaces are proposed to be reserved for the Eagles and approximately 150 are reserved for 222 St. John Street. The 50 parking spaces reserved for the Eagles are not expected to occur on a regular and frequent basis. Additionally, the Eagles and 222 St. John Street peaks are not expected to coincide with the peaks of MMC.

The Institutional Development Plan (IDP) identifies a current total of 2,027 employee parking spaces both on and off campus. The existing employee spaces that are not included in the garage spaces identified above are located in the 7 Bramhall Street lot (26 spaces). This lot is proposed to remain where it is because it serves specific programs at that location.

Existing Parking Area Traffic Volumes

Traffic counts were completed at the existing Gilman Garage access as follows:

- Accurate Counts - November 2, 2017 from 5:00AM to 9:00PM (16 hours) – The counts indicate that the peak hours of traffic entering and exiting the garage occurred from 6:45AM to 7:45AM with 448 trip ends, and 6:00PM to 7:00PM with 326 trip ends.
- GP – January 18, 2018 from 6:30AM to 8:00AM and 5:45PM to 7:15PM - The times were chosen based on the peak hours determined in the November 2, 2017 counts. The counts completed by GP confirmed the original findings from the November 2, 2017 counts.

Traffic counts were also completed at the existing 222 St. John Street surface parking as follows:

- GP - January 18, 2018 from 6:15AM to 7:45AM and from 3:30PM to 5:00PM
- GP - January 23, 2018 from 5:45PM to 7:15PM

The 222 St. John Street parking lot peak hours occurred from 6:15AM to 7:15AM and 3:30PM to 4:30PM. The entering and exiting traffic for each 15 minute period at the 222 St. John Street is shown on the attached "St. John Street Parking Garage Trip Generation" table.

The Gilman Employee Parking Garage and 222 St. John Street surface lot represent approximately 85% of the MMC employee spaces anticipated to be accommodated by the proposed St. John Street garage. As such, it is anticipated that when combined they will represent the majority of the traffic patterns that can be expected at the new garage. To represent the traffic patterns of the remaining 15% of the satellite lots as well as the on-street parking spaces, the traffic patterns were assumed to be similar to the 222 St. John Street satellite lot. The trip generation for each 15 minute period for each satellite parking area has been estimated based on the trip generation at the 222 St. John Street parking lot and is shown on the attached "St. John Street Parking Garage Trip Generation" table.

Reassigned Parking Area Traffic Volumes

Since the employees that currently park in the Gilman garage will be shifted to the new garage, they will have to take a shuttle in the future rather than have direct access to the hospital as they do currently. Because of this shift, we would expect those employees to arrive approximately 15 minutes earlier than they typically would and that they would end up leaving the new garage approximately 15 minutes later. Therefore, the counted volumes for the Gilman Garage were adjusted by 15 minutes to estimate the traffic that

would be experienced when the spaces are relocated to 222 St. John Street. The adjusted Gilman Garage volumes are shown on the attached "St. John Street Parking Garage Trip Generation" table.

The trip generation for the proposed St. John Street garage is based on adding the existing or estimated trip generation of each 15 minute period for each parking location to identify the overall AM & PM peak hours. The AM peak hour of the proposed garage is estimated to occur from 6:00AM to 7:00AM with and the PM peak hour of the garage is estimated to occur 4:15PM to 5:15PM. The peak hours of the garage were evaluated in the St. John Street Garage Memorandum dated June 19, 2018, completed by Gorrill Palmer. This evaluation focuses on the peak hours of the adjacent street which occur from 7:30AM to 8:30AM and 4:15PM to 5:15PM. It should be noted that the PM peak hour of the adjacent street occurs at the same time as the PM peak hour of the proposed garage. The trip generation for the reassigned 2,023 spaces is estimated to be **443 trip ends** during the AM peak hour of the adjacent street and **474 trip ends** during the PM peak hour of the adjacent street. Detailed data is shown on the attached spreadsheet.

Trip Distribution and Assignment

The garage is proposed to be accessed via a full movement driveway directly onto St. John Street as well as indirectly via the Margarita's driveway. During peak hours of the garage, the garage will be set up such that the ground level and first deck will be accessed via the Margarita's driveway and decks 2-8 will be accessed directly via the St. John Street access. All of the 222 St. John Street employees, the 50 Eagles spaces, and some of the MMC Campus employees will use the ground level and first deck parking spaces with decks 2 – 8 used by MMC Campus employees only. It should be noted that at the time this study was prepared, it was estimated that of the approximately All employee shuttles throughout the day (enter and exit) will access the garage via the Margarita's access. Unused shuttles during non-peak times of the day are expected to be parked on the ground level.

The trip distribution (enter vs. exit) for the proposed St. John Street garage has been based on the counts completed at the existing 222 St. John Street surface lot and the Gilman Garage. Based on the counts, the following trip distribution is anticipated for the proposed 222 St. John Street garage:

- AM Peak Hour: 98% entering, 2% exiting
- PM Peak Hour: 14% entering, 86% exiting

The regional trip assignment has been based primarily on the VHB travelshed completed for the IDP and revised slightly per comments received from the City. For localized assignment, it is based on GP's review of the area as well as numerous discussions with

the City of Portland staff and traffic consultant. The trip assignment is shown on the attached Figure 11 in Attachment 7A.

Proposed Parking Garage Trip Generation – Adjacent Street Peak Hour

The proposed St. John Street garage was evaluated for full capacity in a memorandum dated June 19, 2018. To ensure that the proposed garage can accommodate the proposed expansion, the total trip generation for the full capacity garage has been compared to the trip generation for the reassigned existing spaces. The difference between the reassigned existing spaces and the full capacity garage trip generation has been compared to the proposed expansion employee trip generation to determine if the proposed garage can accommodate the proposed expansion.

The total trip generation for the proposed St. John Street garage is based on adding the existing or estimated trip generation of each 15 minute period for each parking location to identify the overall AM & PM peak hours. Then, a ratio of the proposed number of parking spaces (2,450) to the existing combined number of parking spaces to forecast the trip generation for the proposed garage.

Based on the combined volumes for the parking areas and the proportional increase in number of parking spaces, the trip generation of the proposed garage during the peak hours of the adjacent street is forecast to be **537 trip ends** during the AM peak hour and **574 trip ends** during the PM peak hour.

The MMC employees full garage is 94 trip ends greater than the existing reassigned volumes during the AM peak hour of the adjacent street and 100 trip ends greater than the reassigned volumes during the PM peak hour of the adjacent street. The proposed garage was previously evaluated for full capacity and was forecast to operate at acceptable levels of service. The ITE forecast trip generation for the AM and PM peak hours of the adjacent street is forecast to be 68 trip ends and 66 trip ends respectively, which is less than the increase from the existing to full build out of the garage. Since the garage is forecast to operate at acceptable levels of service with more trip generation, the garage can accommodate the increase of 200 employees and students.

XI. Shuttle Assignment

MMC will be upgrading their current shuttle service to accommodate the new garage. In addition to employee traffic, shuttles will be used to transport employees between the parking garage and the hospital. There are proposed to be 13 shuttles during the peak hours, each with an approximate 15 minute headway. Based on this information, one shuttle can make approximately four trips to and from the proposed garage during a one hour period. With 13 shuttles, approximately 52 round (52 enter and 52 exit) trips are

anticipated at the site during the peak hour. As identified previously, all entering and exiting shuttles will use the Margarita's access. These 104 trips have been added to the employee trips. The shuttle assignment has been based on the shuttle routes provided by MMC. At this time, seven of the shuttles are proposed to use the Congress Street drop off area on Gilman Street and six shuttles are proposed to use the Bramhall Street drop off. It has been assumed that the shuttles will turn right out of the Margarita's access with the Gilman Drop off shuttles entering taking a right in and the Bramhall shuttles entering taking a left in. The shuttle assignment is shown on Figure 12 in Attachment 7A.

XII. 222 St. John Street MMC Traffic

MMC currently utilizes a satellite parking lot at 222 St. John Street for employees. This traffic currently uses the Margarita's access and will be relocated to the proposed parking garage and is included in the proposed parking garage trip generation. The existing estimated 222 St. John Street MMC traffic is shown on Figure 13 in Attachment 7A.

XIII. 222 St. John Street Cut-Through (Non-MMC Traffic)

The existing turning movement counts indicate that some traffic uses the existing Union Station access from Congress Street to the site. For the purposes of this assessment, to be conservative, it has been assumed that this cut-through will not be available and that traffic has been reassigned to the adjacent street. The attached Figure 14 shows the reassignment of the cut-through traffic (not including MMC traffic).

XIV. Proposed Garage Net Impact

The net impact of the proposed St. John Street garage has been calculated by combining the Proposed Garage Reassignment on Figure 11 with the Shuttle Assignment on Figure 12 and the 222 St. John Street Cut-Through traffic on Figure 14, then subtracting the existing Gilman garage traffic on Figure 10 and the existing 222 St. John Street MMC traffic on Figure 13. This yields the Proposed Garage Net Impact traffic volumes on Figure 15 included in Attachment 7A.

XV. Postdevelopment Traffic Volumes

The predevelopment traffic volumes shown in Figure 5 have been combined with the Phase 3 Net Impact on Figure 9 and the Proposed Employee Garage Net Impact on Figure 15 to yield the 2023 Postdevelopment volumes shown on the attached Figure 16 in Attachment 7A.

XVI. Capacity Analysis

GP completed capacity analyses for the intersections discussed above using the Synchro/SimTraffic computer analysis software (Version 10). 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 conditions. At an unsignalized intersection, if the level of service falls below a 'D', an evaluation should be made to determine if mitigation is warranted. The following tables summarize the relationship between control delay per vehicle and level of service:

Level of Service Criteria for Signalized Intersections

Level of Service	Control Delay per Vehicle (s)
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

Level of Service Criteria for Unsignalized Intersections

Level of Service	Control Delay per Vehicle (s)
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

The analysis has been completed assuming that the signal at the intersection of Valley Street with Congress is removed and will be unsignalized (based on a study completed by Sebago Technics, Inc.). This change is supported by the City and MaineDOT. Additionally, the intersection of St. John Street with the proposed Garage access is unsignalized in the predevelopment conditions and signalized in the postdevelopment conditions. The

predevelopment conditions include timing and phasing that was provided by the City. The postdevelopment has been evaluated based on optimized signal timing. This includes converting the intersection of St. John Street / Congress Street from exclusive pedestrian phasing to concurrent pedestrian phasing. The following table summarizes the capacity analysis results. The detailed analyses are included in Attachment 7C.

Level of Service Summary

Approach	Level of Service			
	AM Pre	AM Post	PM Pre	PM Post
Park / St John (S)				
Park WB	C	C	D	D
St. John NB	C	B	B	C
St. John SB	D	C	B	C
Overall	**C**	**C**	**C**	**C**
Congress / St John (S)				
Congress EB	B	B	B	C
Congress WB	A	A	A	A
St. John NB	C	C	C	C
St. John SB	C	C	C	C
Overall	**B**	**C**	**B**	**C**
Margarita's / St. John (U)				
Margarita's EB	A	A	A	A
St. John NB	A	A	A	A
St. John SB	A	A	A	A
Garage / D / St. John (U/S)				
Garage EB	A	B	A	B
D WB	A	A	A	A
St. John NB	A	A	A	A
St. John SB	A	A	A	B
Overall	**N/A**	**A**	**N/A**	**B**
Valley / St. John (S)				
St. John EB	B	B	B	B
St. John WB	B	B	B	B
Valley NB	B	B	B	B
Valley SB	B	B	B	B
Overall	**B**	**B**	**B**	**B**
Commercial / Valley (S)				
Fore River Pkwy EB	D	C	D	E
Commercial WB	B	B	B	B
Valley SB	B	B	B	B
Overall	**D**	**C**	**C**	**C**
Gilman / Congress (U)				
Congress EB	A	A	A	A
Congress WB	A	A	A	A
Gilman NB	C	B	E	D
Gilman SB	A	A	B	B

Approach	Level of Service			
	AM Pre	AM Post	PM Pre	PM Post
Proposed Drop-Off / Congress (U)				
Congress EB	N/A	A	N/A	A
Congress WB	N/A	A	N/A	A
Drop-Off NB	N/A	C	N/A	C
Visitor Garage / Congress (U)				
Congress EB	A	A	A	A
Congress WB	A	A	A	A
Visitor Garage NB	C	C	C	C
MOB Garage SB	A	A	A	A
Bramhall / Congress (S)				
Congress EB	A	A	B	B
Congress WB	B	B	C	C
Bramhall NE	B	B	B	B
Deering SW	B	B	B	B
Overall	**B**	**A**	**B**	**B**

S=Signalized, U=Unsignalized

As shown in the table, all approaches to the study area intersections are forecast to operate at acceptable levels of service during the AM and PM peak hours, with the exception of the eastbound Fore River Parkway approach to Valley Street during the PM peak hour, which is forecast to operate at a level of service 'E'. This may be improved with additional adjustments to the timing at the intersection. Overall, the intersection approaches are forecast to be a LOS 'D' or above.

XVII. Queue Analysis

GP completed a queue analysis using the same Synchro/SimTraffic computer analysis software that was used for the capacity analysis. The queuing analysis involves comparing the postdevelopment 95th percentile queue lengths of the site driveway and turn lanes to the available storage lengths. The queue lengths have been rounded up to the nearest five feet. The following table summarizes the postdevelopment 95th percentile queue lengths based on SimTraffic analyses. The detailed reports are included in Attachment 7C.

Queue Analysis Summary

Approach	Storage Length (ft)	95th Percentile Queue Length (ft)			
		AM Pre	AM Post	PM Pre	PM Post
Park / St John					
Park WB L	95	115	130	180	195
Park WB T	95	190	200	270	265
Park WB TR		210	215	485	585
St. John NB L		175	160	360	250
St. John NB LT		285	255	495	400
St. John NB R	110	175	170	180	175
St. John SB LT		575	290	310	240
St. John SB R	55	110	105	105	105
Congress / St John					
Congress EB L		210	270	195	220
Congress EB T		340	405	295	340
Congress EB R	290	175	225	145	200
Congress WB L	80	65	80	85	90
Congress WB R		110	90	145	130
St. John NB T		95	195	180	330
St. John NB TR	265	120	175	180	215
St. John SB L		135	120	105	95
St. John SB T		175	185	215	215
Margarita's / St. John					
Margarita's EB L		25	35	65	65
Margarita's EB R	125	30	50	50	55
St. John NB LT		25	70	50	100
St. John SB T		--	5	--	10
Garage / D / St. John					
Garage EB LTR		20	N/A	25	N/A
Garage EB LT		N/A	105	N/A	150
Garage EB R	150	N/A	55	N/A	85
D WB LTR		35	40	40	40
St. John NB LTR		--	N/A	25	N/A
St. John NB L	100	N/A	50	N/A	45
St. John NB TR		N/A	100	N/A	160
St. John SB LTR		25	N/A	15	N/A
St. John SB L	75	N/A	65	N/A	85
St. John SB TR		N/A	145	N/A	240
Valley / St. John					
St. John EB LT		100	115	110	150
St. John EB R	110	105	120	120	145
St. John WB L	335	225	230	260	240
St. John WB TR		45	55	100	70
Valley NB L		120	135	110	125
Valley NB TR		245	225	155	170
Valley SB LT		60	40	80	40
Valley SB TR	265	75	40	110	35

Approach	Storage Length (ft)	95th Percentile Queue Length (ft)			
		AM Pre	AM Post	PM Pre	PM Post
Commercial / Valley					
Fore River Pkwy EB L	430	605	375	530	575
Fore River Pkwy EB L	430	620	420	565	595
Fore River Pkwy EB T		1250	245	905	820
Fore River Pkwy EB T		1125	200	830	715
Commercial WB T		185	205	220	210
Commercial WB T		180	200	215	205
Commercial WB R	415	85	80	55	55
Valley SB L		120	115	120	110
Valley SB R		115	120	135	155
Valley SB R		115	120	145	155
Gilman / Congress					
Congress EB TR		15	10	5	10
Congress WB T		--	--	30	15
Congress WB L	65	65	40	65	60
Gilman NB LTR		110	75	155	85
Gilman SB LTR		45	50	60	60
Proposed Drop-Off / Congress					
Congress EB TR		N/A	20	N/A	10
Congress WB LT		N/A	65	N/A	80
Drop-Off NB LR		N/A	65	N/A	65
Visitor Garage / Congress					
Congress EB		100	110	60	35
Congress WB		20	45	45	50
Visitor Garage NB		50	50	70	80
MOB Garage SB		25	30	70	70
Bramhall / Congress					
Congress EB L		50	50	160	125
Congress EB TR	400	190	175	240	235
Congress WB L		135	125	170	155
Congress WB TR	65	105	100	105	100
Congress WB L		110	105	105	75
Bramhall NE TR	135	115	120	150	130
Deering SW L		100	100	245	235
Deering SW TR	50	80	80	85	90

As shown in the table, the 95th percentile queue lengths can be accommodated by the storage lengths for most approaches. Some queue lengths exceed the available storage lengths in both the predevelopment and postdevelopment conditions. The 95th percentiles are not forecast to increase by more than three vehicles for most approaches, assuming the length of a vehicle and the associated gap between vehicles is equal to 25 feet. In addition, there are several lanes which are forecast to have improved queue lengths, likely due to the redistribution of traffic in the study area and the modifications

to signal timing. The 95th percentile queue length of the proposed Congress Street drop off is not forecast to exceed four vehicles during the AM or PM peak hours.

XVIII. Sight Line Evaluation

As discussed in Sections 1-6, the existing sight distances at the proposed drop-off appears to meet City and MaineDOT criteria for 25 mph. The sight distances should continue to be evaluated through the design process to ensure no signs, landscaping or structures will create sight distance deficiencies.

XIX. Crash Summary Data

Gorrill Palmer obtained the crash data from MaineDOT for the period of 2015-2017, the most recent period available (See Section 2 of Sections 1-6, Attachment 2A).

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 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, there are eight high crash locations in the vicinity of the study area:

- Intersection of Park Avenue with Valley Street
- Intersection of Congress Street with Gilman Street
- Intersection of St. John Street with A Street
- Intersection of Park Avenue with St. John Street
- Valley Street from A Street to C Street
- Congress Street from Forest Street to Weymouth Street
- St. John Street from Congress Street to Non-Intersection (just south of Park Avenue)

To better evaluate the high crash locations and identify correctable crash patterns, the police reports for these locations were provided by MaineDOT and used to create

collision diagrams, included as an attachment to this section. The following discusses the high crash locations as well as pedestrian and bicycle crashes in more detail.

Park Avenue / Valley Street

This intersection has a CRF of 1.80 and experienced 10 collisions during the most recent three-year period. It is an unsignalized intersection that is STOP controlled on Valley Street with free flowing traffic on Park Avenue. The northbound Valley Street approach is one-way into the intersection.

There is one crash pattern at this intersection involving vehicles turning left from northbound Valley Street onto westbound Park Avenue and colliding with vehicles traveling westbound on Park Avenue. Additionally, one collision that occurred at this intersection involved a pedestrian and one that involved a bicyclist. The traffic from the proposed MMC expansion is not expected to exacerbate this pattern.

Congress Street / Gilman Street

This intersection has a CRF of 3.26 and experienced 20 collisions during the most recent three-year period. It is an unsignalized intersection that is STOP controlled on the Gilman Street approaches with free flowing traffic on Congress Street. The southbound Gilman Street approach is one-way into the intersection. Based on a review of the collision diagram there are three crash patterns at this intersection; southbound through traffic on Gilman Street failing to yield to eastbound through traffic on Congress Street, southbound through traffic on Gilman Street failing to yield to westbound through traffic on Congress Street, and rear end collisions involving eastbound Congress Street traffic.

There were four collisions that involved southbound through traffic on Gilman Street failing to yield the right of way to the eastbound through traffic on Congress Street and three collisions that involved vehicles coming from the same direction failing to yield the right of way to westbound through traffic on Congress Street. These types of collisions may be due to the buildings along Congress Street blocking the sight distance of the southbound traffic. Because the MMC employee parking is being relocated to St. John Street, both the AM and PM total entering traffic volume for this intersection will be decreased from the Predevelopment condition to the Postdevelopment condition.

There were three rear end collisions on Congress Street eastbound. All three were caused by drivers following too closely and/or driver inattention. Additionally, all three collisions involved vehicles stopping for pedestrians in the crosswalk.

St. John Street / A Street

This intersection has a CRF of 1.82 and experienced 8 collisions during the most recent three-year period. It is an unsignalized four-leg intersection with two-way traffic on all approaches. Based on a review of the collision diagram, there were no correctable crash patterns identified at this intersection.

Park Avenue / St. John Street

This intersection has a CRF of 1.63 and experienced 36 collisions during the most recent three-year period. It is a signalized four-leg intersection with two-way traffic on all approaches, with the exception of Park Avenue to the east of St. John Street, which is one way away from the intersection. Based on a review of the collision diagram, there are four crash patterns at this intersection.

One crash pattern involved vehicles in the northbound St. John Street left turn lane attempting to go straight through the intersection from the left-most lane and colliding with left turning vehicles in the adjacent left-through lane. There were 13 such crashes at this intersection during the most recent three year period. Most of the drivers that incorrectly attempted to travel through the intersection claimed that they believed they could travel through the intersection from that lane.

Another crash pattern was northbound left turning vehicles sideswiping one another while traveling in the left turn lane and left-through lane from the northbound St. John Street approach to the intersection. Six of these crashes occurred at this intersection during the most recent three year period. There is already a skip line striping between the left turn lane and the left-through lane through the intersection. Many of the crashes involved in the two crash patterns discussed at this intersection so far occurred either during the winter or in the spring when the striping of the skip line may have faded away.

A third crash pattern at this intersection involves right angle collisions between westbound through vehicles on Park Avenue failing to yield to northbound through vehicles on St. John Street. Three of these crashes occurred at this intersection during the most recent three year period. All three collisions involved the westbound Park Avenue vehicle running the red light.

The fourth crash pattern at this intersection involved rear-end collisions involving vehicles at the northbound approach to this intersection. One potential contributing factor to rear end collisions at signalized intersections is inadequate signal clearance times.

Valley Street from A Street to C Street

This intersection has a CRF of 2.89 and experienced 8 collisions during the most recent three-year period. There were no correctable crash patterns identified, however there were five crashes involving parked vehicles. Of the five crashes involving parked vehicles, three crashes involved vehicles that were parked illegally. Stricter enforcement of the parking regulations may help reduce the number of crashes along this segment of Valley Street. It should also be noted that there was one crash involving a pedestrian at this location during the most recent three year period.

Congress Street from Forest Street to Weymouth Street

This section of Congress Street has a CRF of 1.45 and experienced 10 collisions during the most recent three-year period. Based on a review of the collision diagram there is one crash pattern of rear end collisions in the eastbound direction. Of the 10 collisions, five were rear end collisions on Congress Street eastbound. The five collisions were caused by drivers following too closely. There are multiple driveways in this roadway segment, including an entrance to the Maine Medical Center visitor parking garage.

An overall review of the collisions showed that there were 9 collisions that occurred on a weekday and of those, 2 occurred during the AM peak commuter hour and 4 occurred during the PM peak commuter hour, when traffic volumes are heaviest. Additionally, one of the collisions that occurred in this area involved a bicyclist.

Restriping of this section of Congress Street to include a center turn lane may be an alternative to be pursued to improve this section of Congress Street.

St. John Street from Congress Street to Non-Intersection (just south of Park Avenue)

This section of St. John Street has a CRF of 3.00 and experienced 30 collisions during the most recent three-year period. Based on a review of the collision diagram, there are two crash patterns.

The first crash pattern involves sideswipe crashes involving vehicles traveling northbound on St. John Street, which are caused by vehicles making lane changes.

Of the 30 collisions, 17 involved vehicles attempting to turn left onto St. John Street from various driveways. There are many driveways on this link of St. John Street including McDonald's, Amato's, Sullivan Tire, Dunkin' Donuts, Lang's Express, Salty Sally's Bare and Grille and Portland Physical Therapy. Of the 30 crashes in this roadway segment, two involved left turns into driveways from St. John Street.

In a recent Traffic Impact Study completed by Maine Traffic Resources for a Dunkin Donuts relocation project in this section of St. John Street, a "road diet" was recommended that would include a single travel lane in each direction with a center turn lane. Gorrill Palmer supports that recommendation.

Pedestrian Collisions

There were 22 collisions involving pedestrians throughout the study area. Of those, 15 occurred when the pedestrian was within the marked crosswalk, seven of which involved one vehicle rear ending another that was yielding to the pedestrian. Several of the collisions involved pedestrians crossing without the walk sign at a signalized intersection, or abruptly entering the intersection. Others involved vehicles failing to yield to the pedestrians in the crosswalks.

Bicycle Collisions

There were 9 collisions involving bicyclists throughout the study area. One collision involved a bicyclist riding in a bike lane being struck by a turning vehicle on Park Avenue. Several of the collisions involved bicyclists riding in the roadway, but not following traffic rules.

XX. Executive Summary

The following is a summary of the Conclusions / Recommendations:

1. The proposed development is forecast to generate 78 trip ends during the AM peak hour of the generator, 94 trip ends during the PM peak hour of the generator, and 106 trip ends during the Saturday peak hour of the generator. This level of trip generation requires a MaineDOT traffic movement permit.

2. The proposed St. John Street garage can accommodate the proposed increase of 200 employees and students, since the forecast trip generation for the full occupancy of the garage is greater than the existing reassigned employee trip generation and the ITE trip generation for the expansion, combined.

3. All study area intersection approaches are forecast to operate at acceptable levels of service, with the exception of the eastbound Fore River Parkway approach to Valley Street. This approach is forecast to operate at a level of service 'E' during the PM peak hour of the adjacent street. This may be improved with additional adjustments to the signal timing. We recommend that timing and phasing of the study area intersections be adjusted as needed upon completion of the MMC expansion.

4. Overall, the 95th percentile queue lengths are not forecast to exceed the predevelopment queue lengths by more than three vehicles. For many approaches, the 95th percentile queue lengths are forecast to decrease from the predevelopment conditions due to both the redistribution of traffic throughout the study area and the optimization of signal timing.

5. The existing sight distances at the proposed Congress Street drop off appear to meet MaineDOT and City of Portland Standards.

6. The MaineDOT crash data indicates that there are eight high crash locations in the study area:

    - Intersection of Park Avenue with Valley Street
    - Intersection of Congress Street with Gilman Street
    - Intersection of St. John Street with A Street
    - Intersection of Park Avenue with St. John Street
    - Valley Street from A Street to C Street
    - Congress Street from Forest Street to Weymouth Street
    - St. John Street from Congress Street to Non-Intersection (just south of Park Avenue)

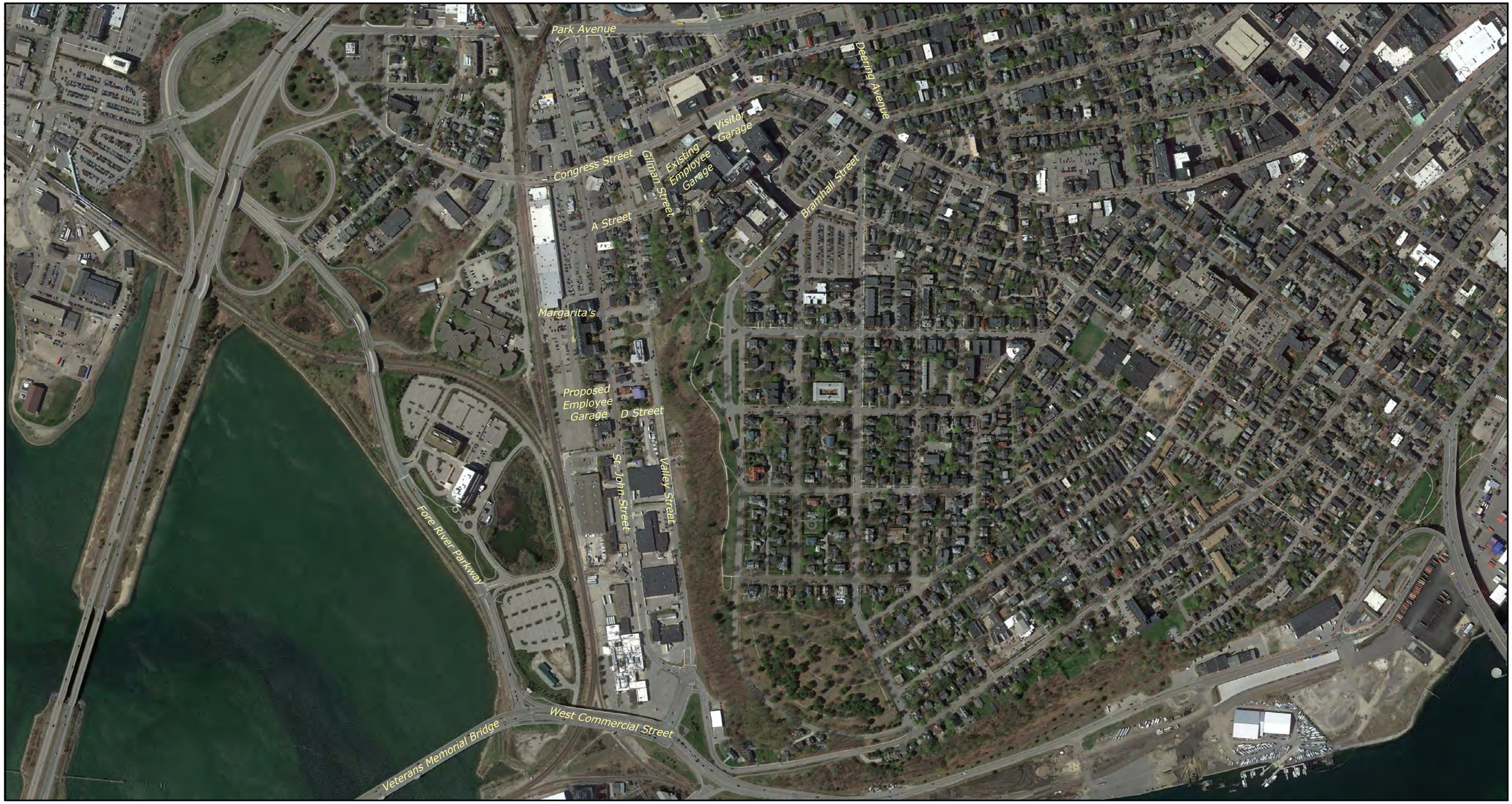
7. Overall, the proposed expansion is forecast to have a moderate impact on the surrounding roadway network; however, the surrounding roadway network has the capacity to accommodate the proposed project.

Attachment 7A

Site Location Map
Turning Movement Figures
VHB Travelshed

Location Map

Figure No. 1



Bramhall St. - 22; MMC Congress Street Building
PORTLAND, MAINE

Design:	EAL	Scale:	NONE
Draft:		Date:	SEP 2018
Checked:	RED	File Name:	28866.01 - TIS Figures

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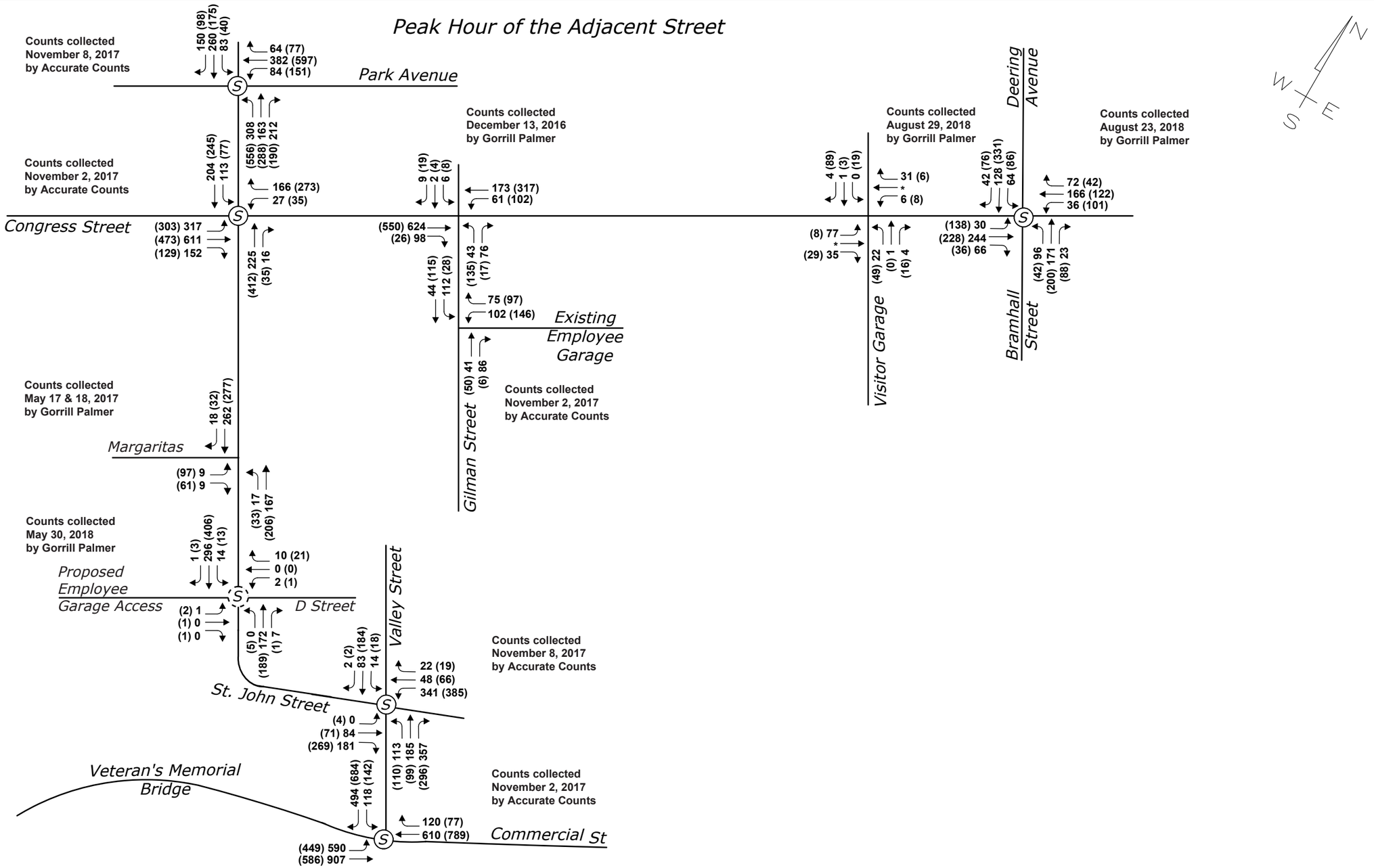
Raw Volumes

Figure No. 2



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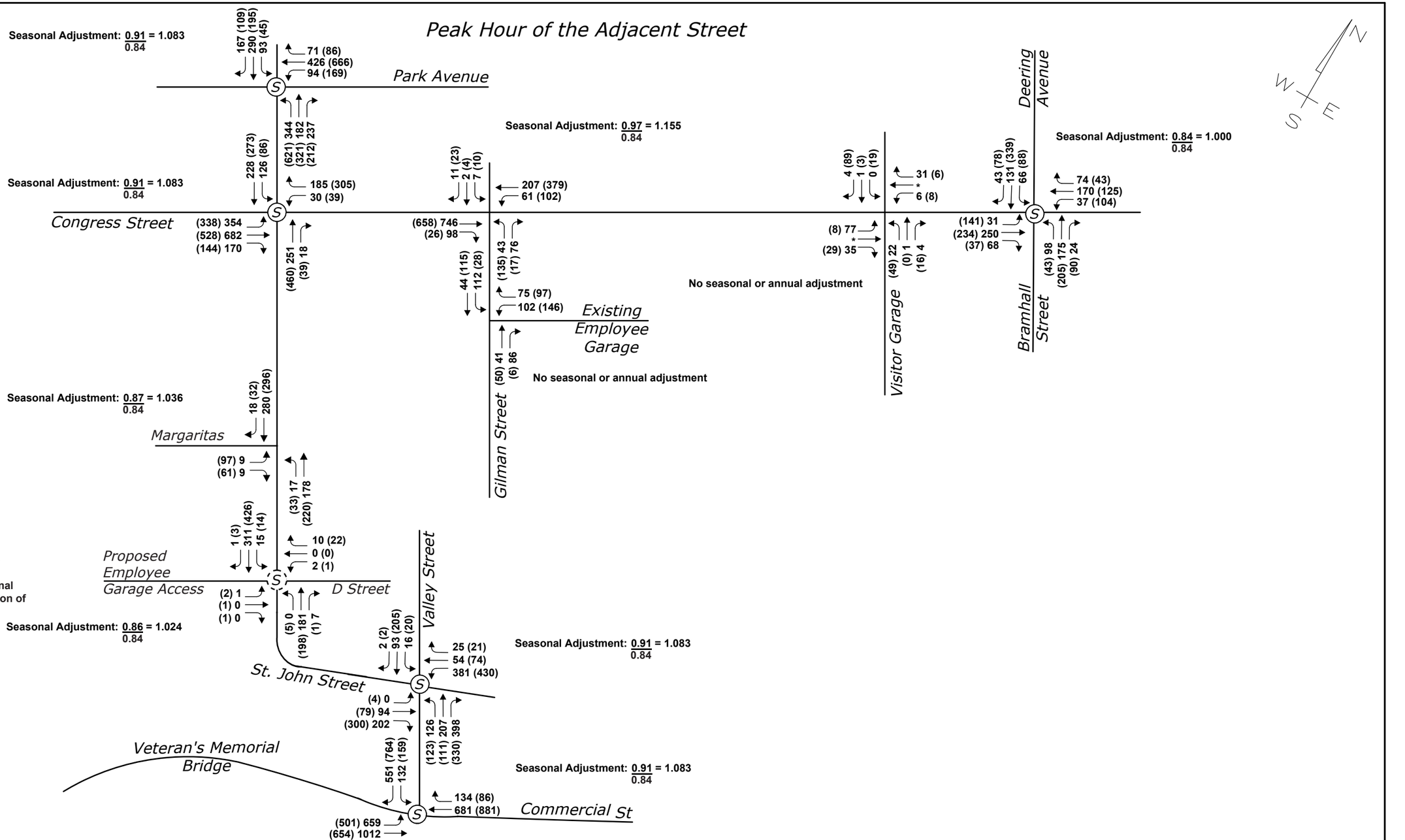
2023 Adjusted Volumes

Figure No. 3



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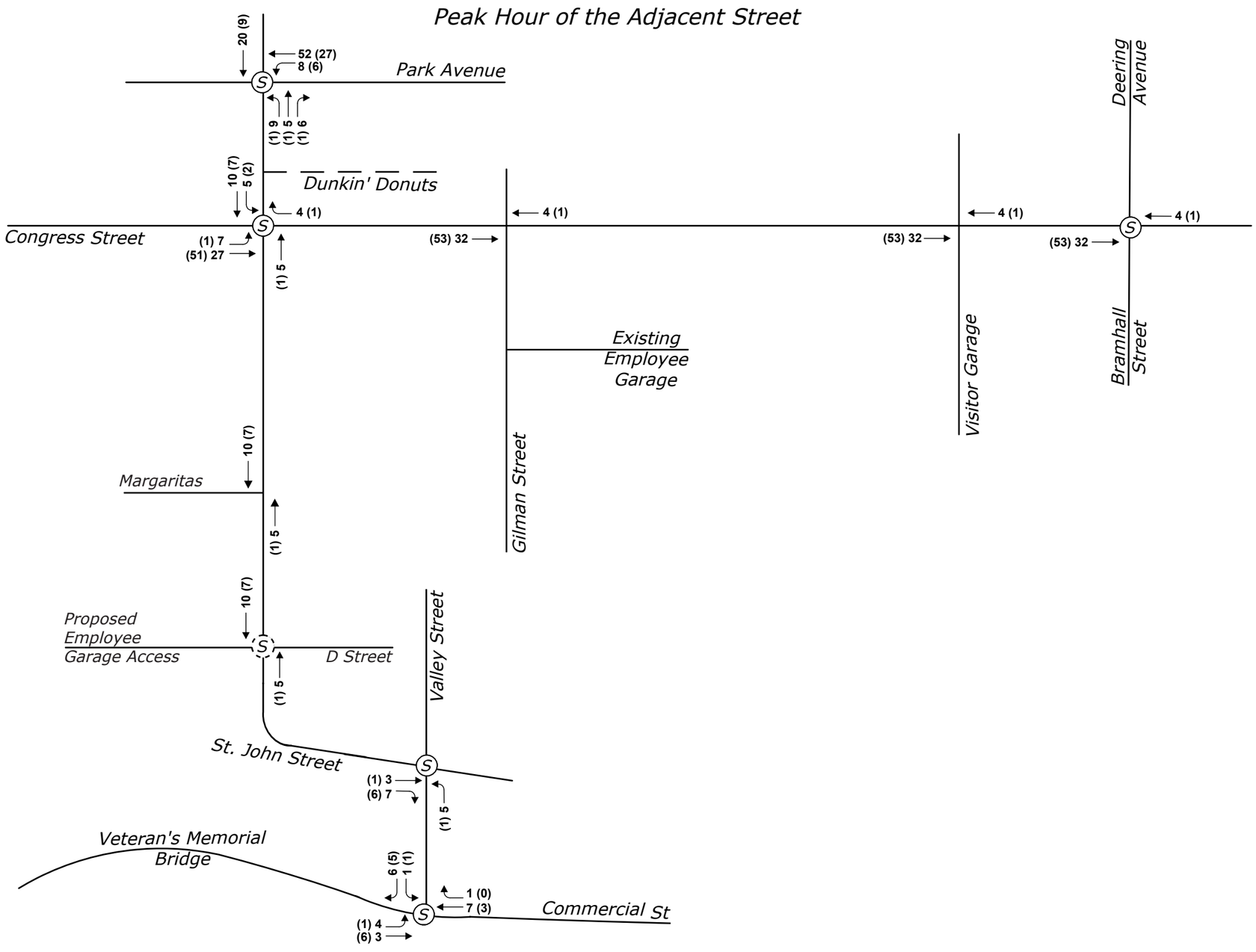
Other Development

Figure No. 4



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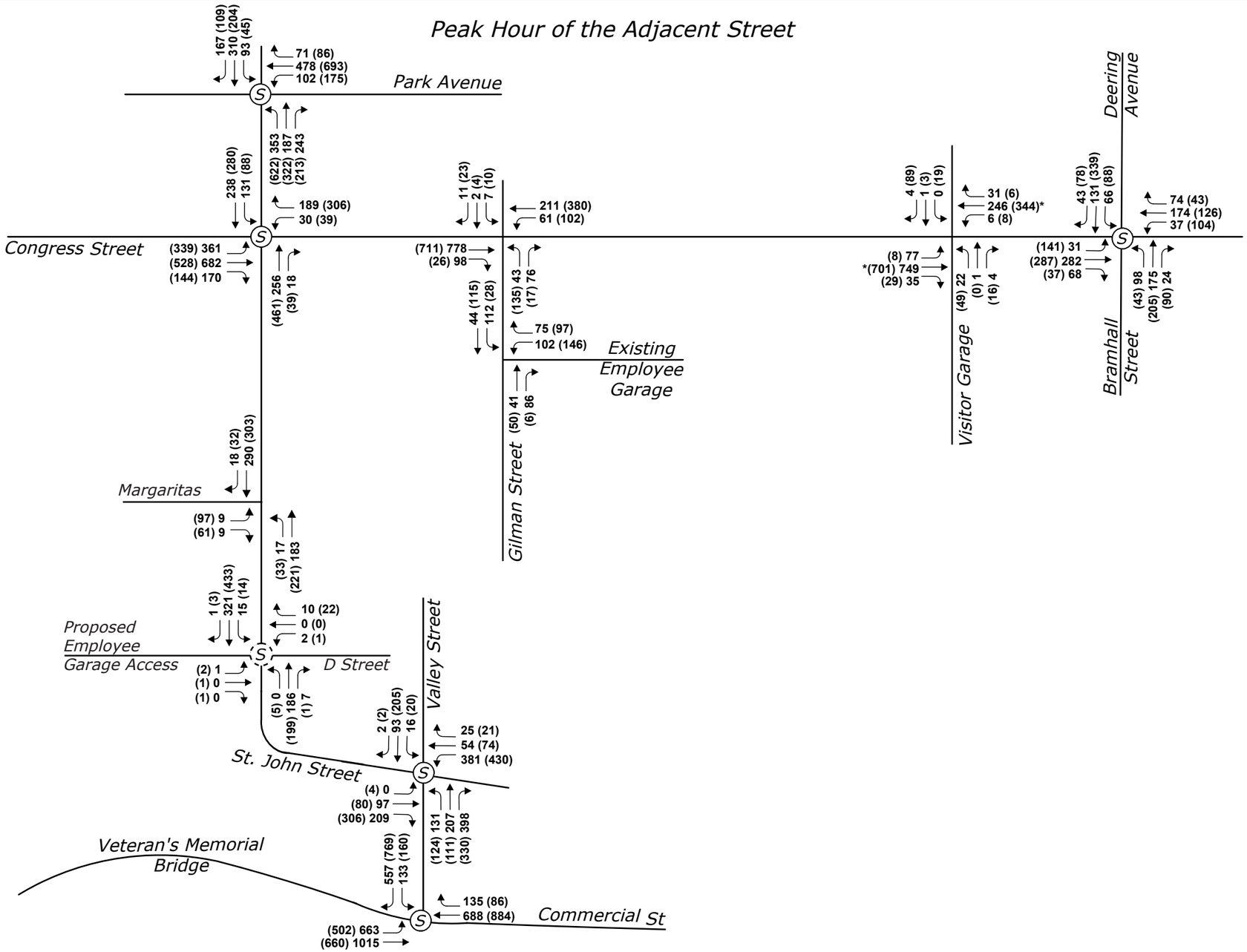

* Through volumes based on volumes at adjacent intersections.

(S) Proposed Signalized Intersection

(S) Denotes Signalized Intersection

XX = AM Peak Hour of Adjacent Street
(XX) = PM Peak Hour of Adjacent Street

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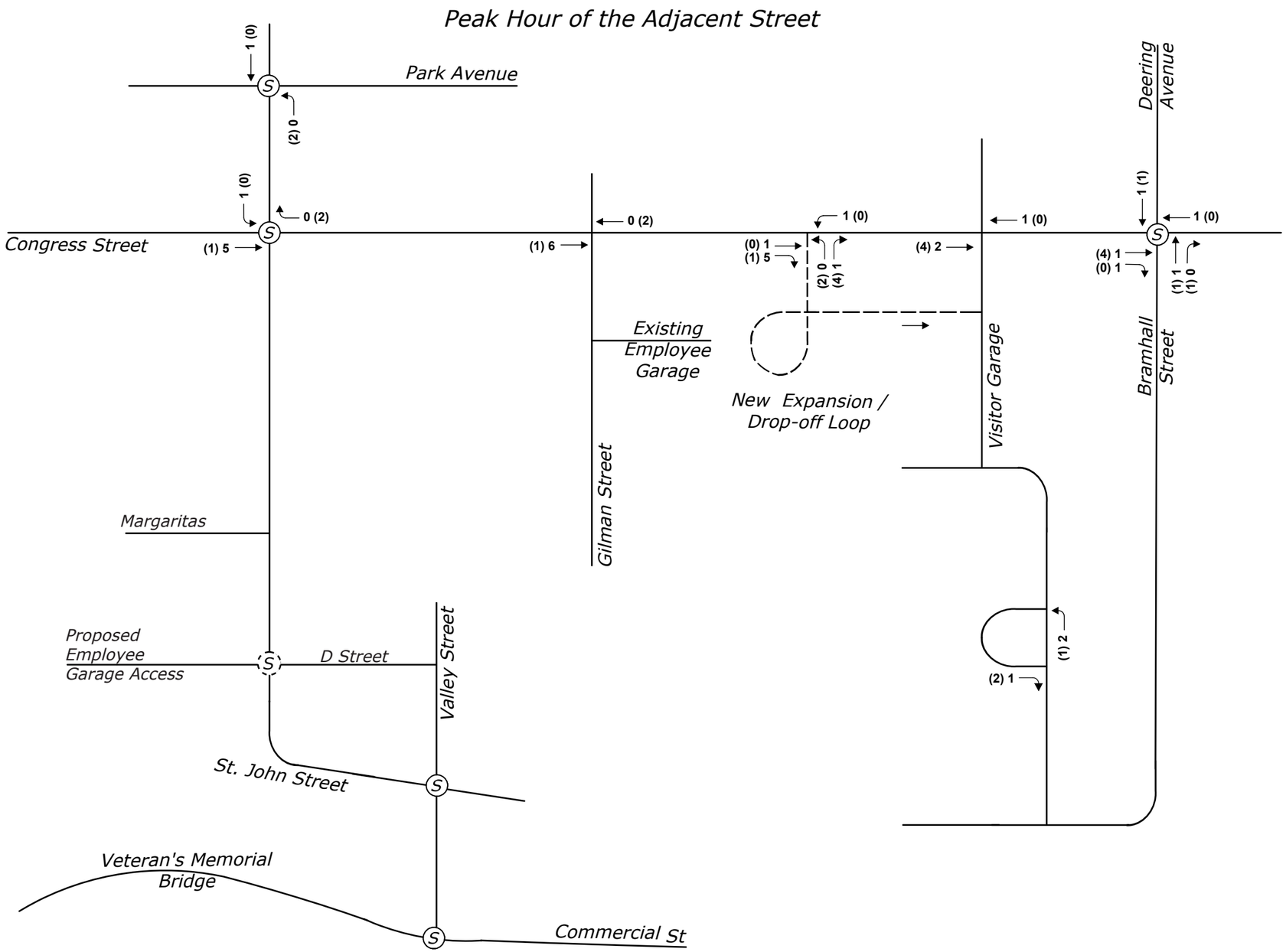
Phase 3 Patient/Visitor Assignment

Figure No. 6



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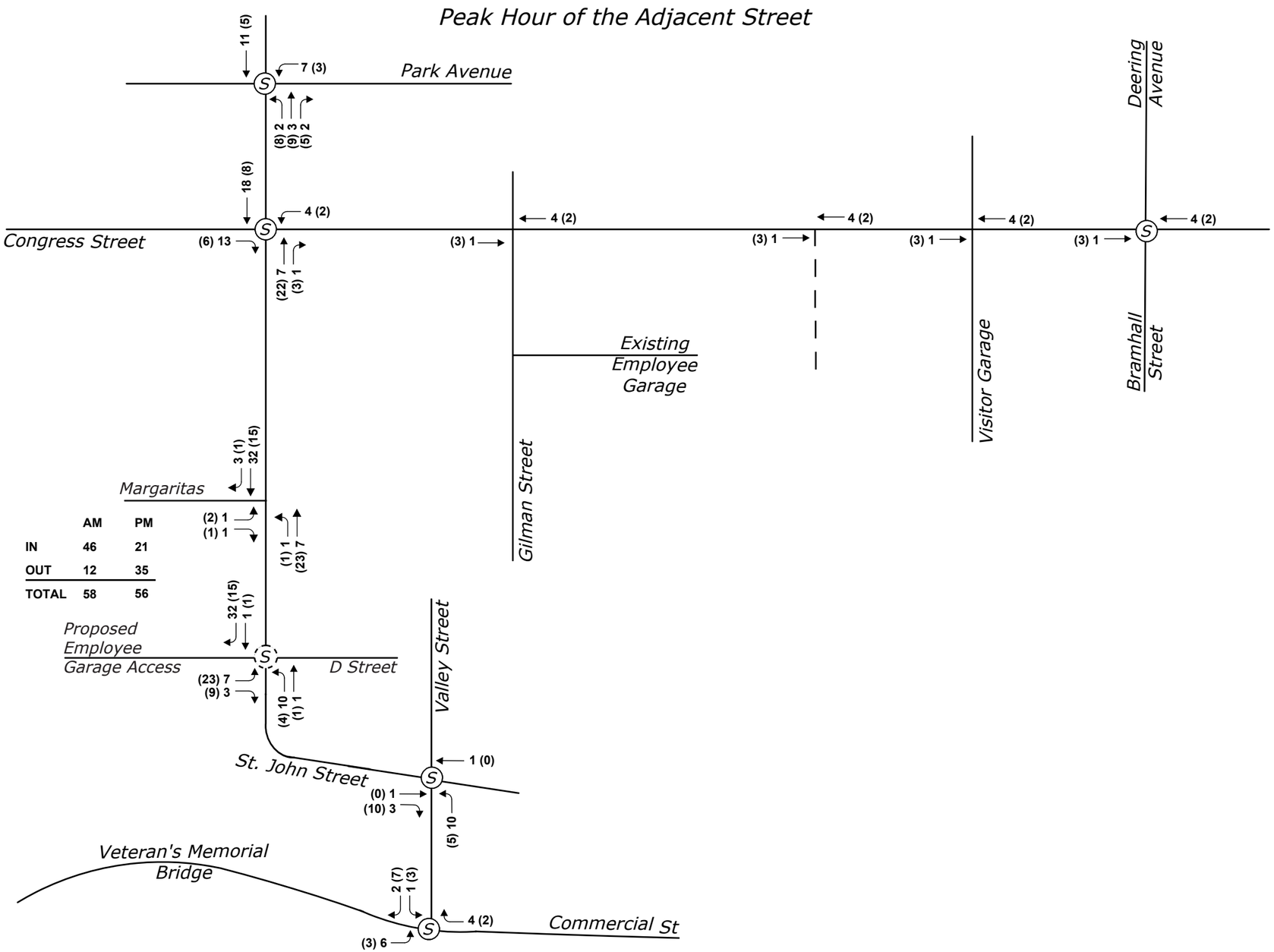
Phase 3 Employee Trip Assignment

Figure No. 7



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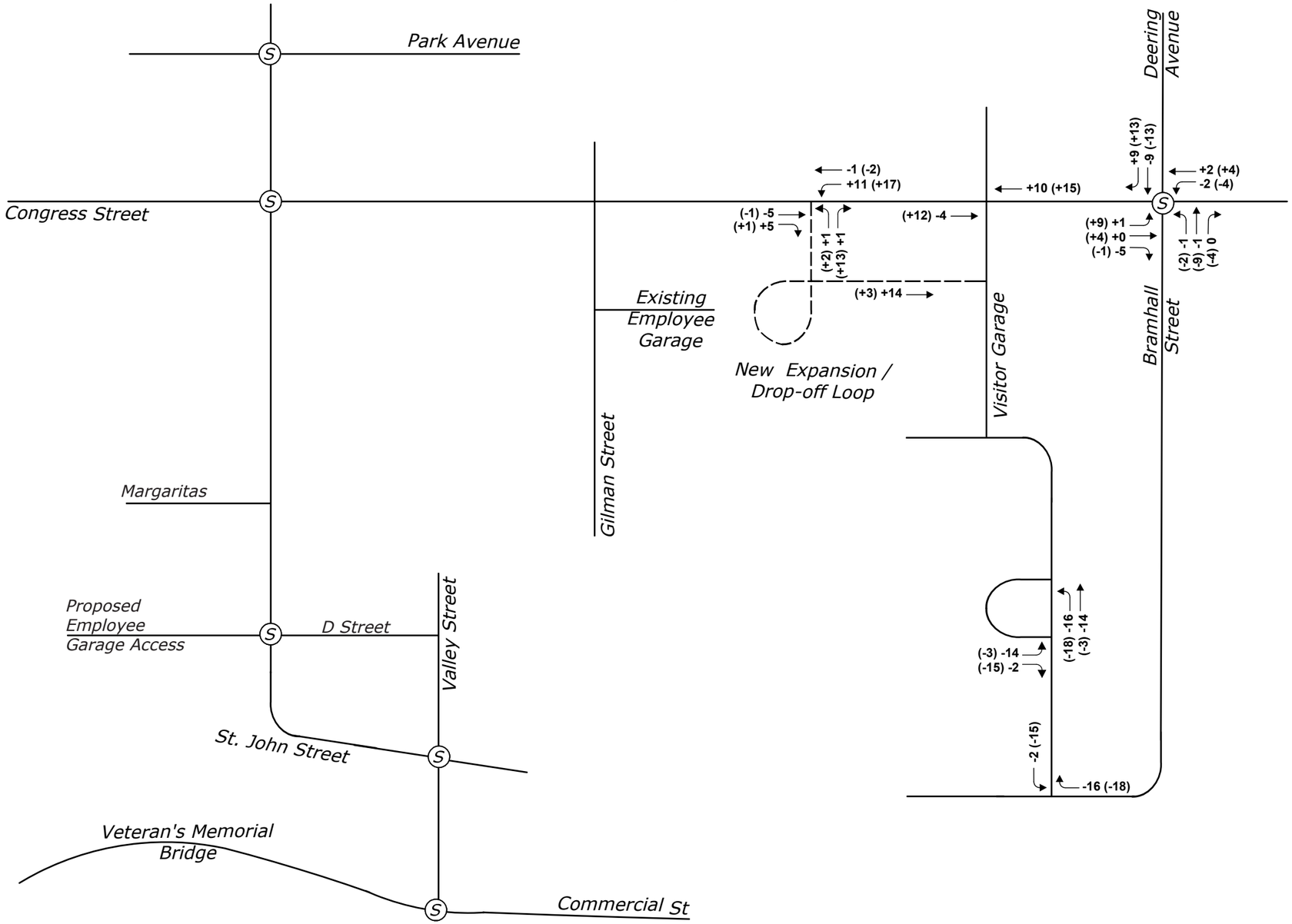
Phase 3 Drop Off Reassignment

Figure No. 8

Peak Hour of the Adjacent Street



Proposed Signalized Intersection

Denotes Signalized Intersection

XX = AM Peak Hour of Adjacent Street
(XX) = PM Peak Hour of Adjacent Street

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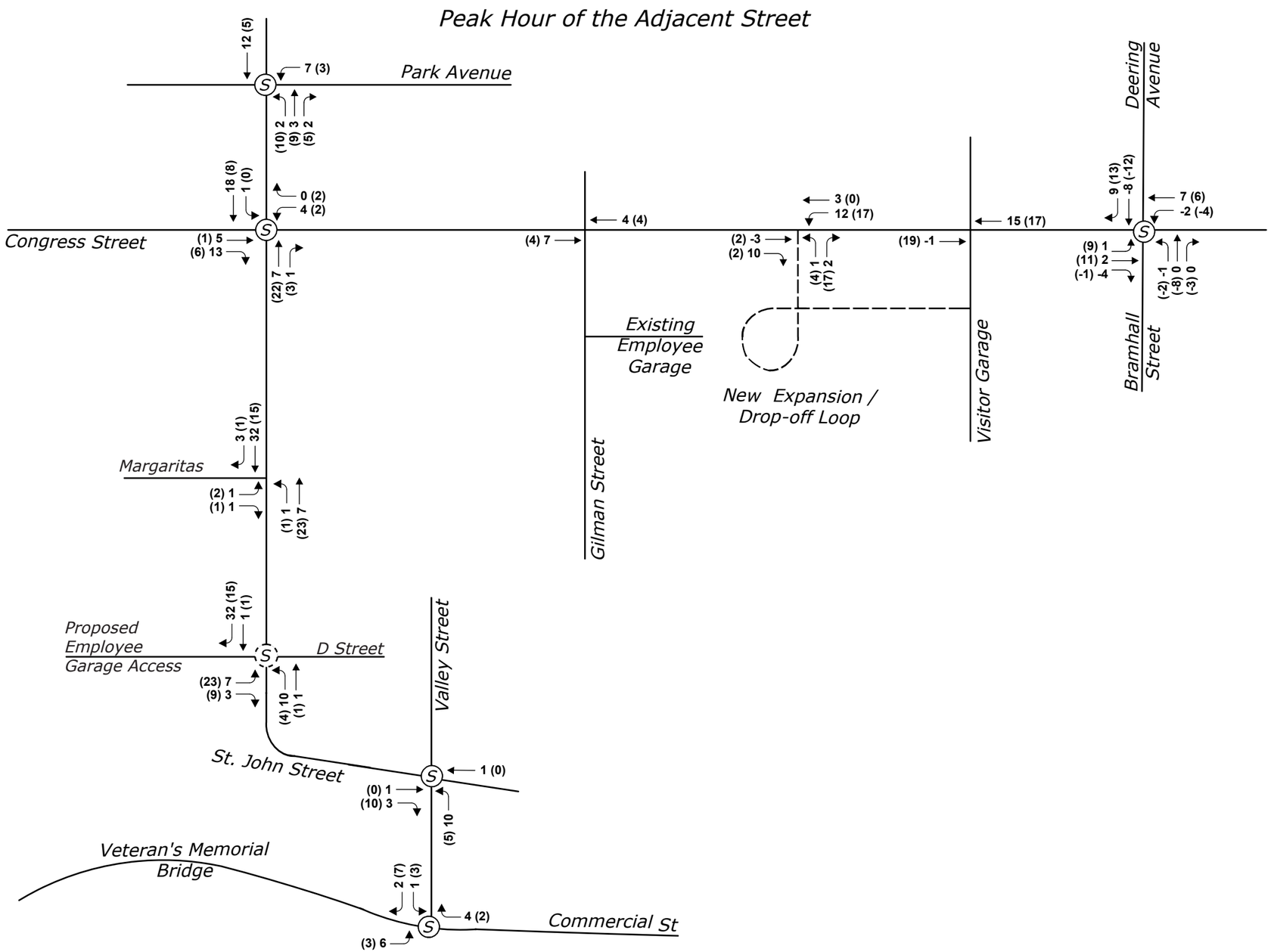

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Draft:		Date:	SEP 2018
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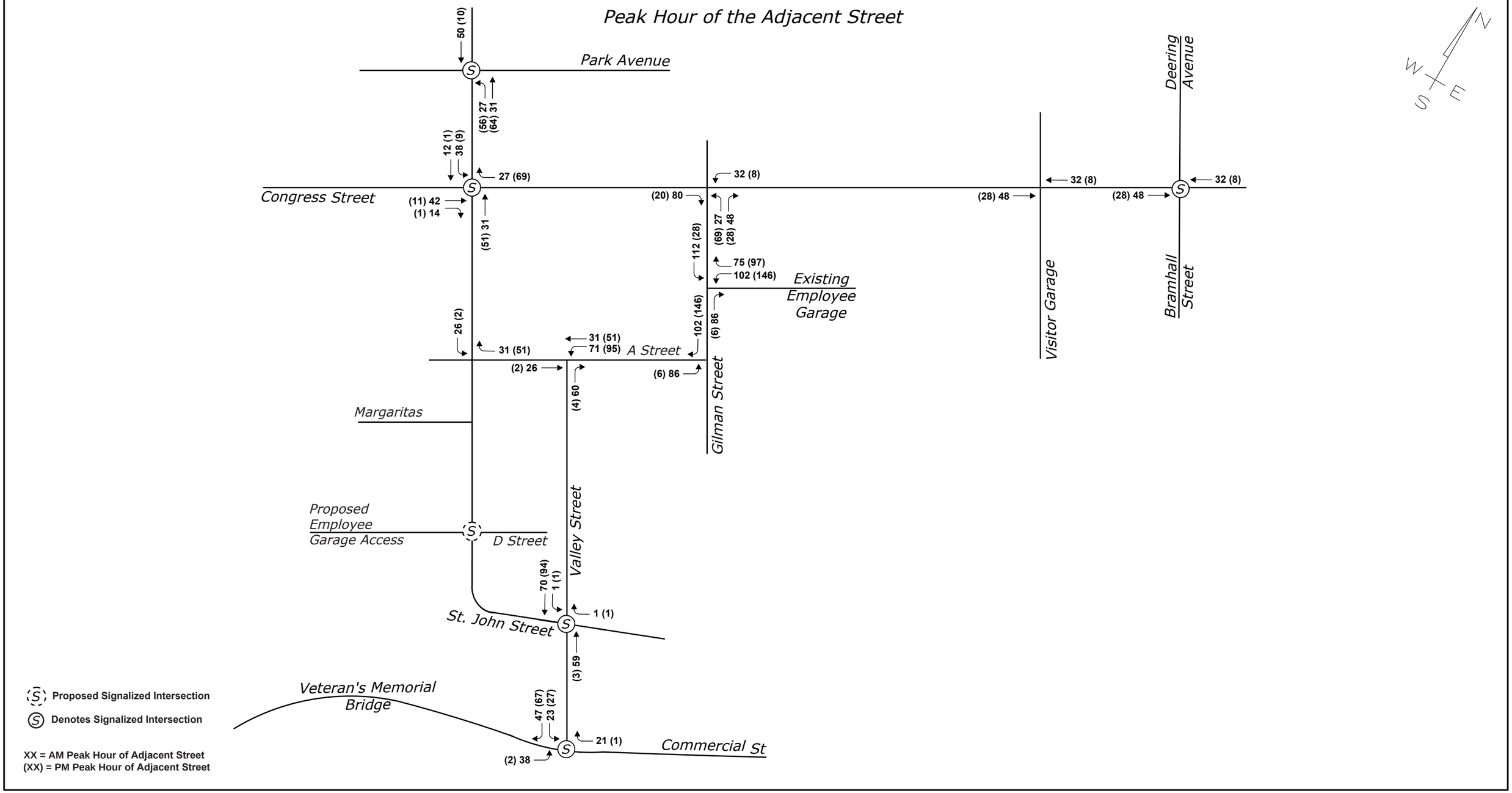
Existing Employee Garage Assignment

Figure No. 10



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Design:	EAL	Scale:	NONE
Draft:		Date:	SEP 2018
Checked:	RED	File Name:	28866.01 - TIS Figures

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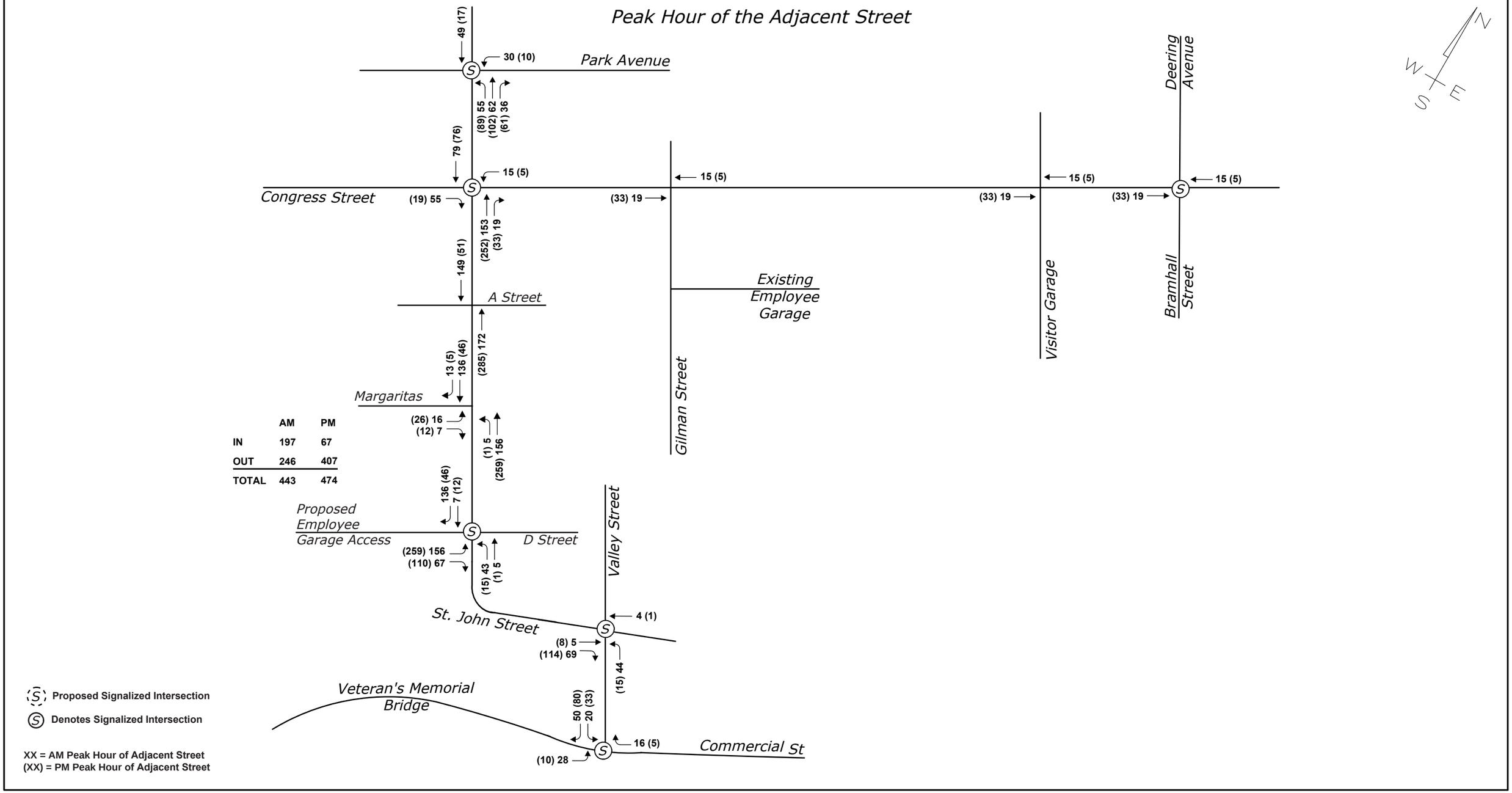
Proposed Garage Reassignment

Figure No. 11



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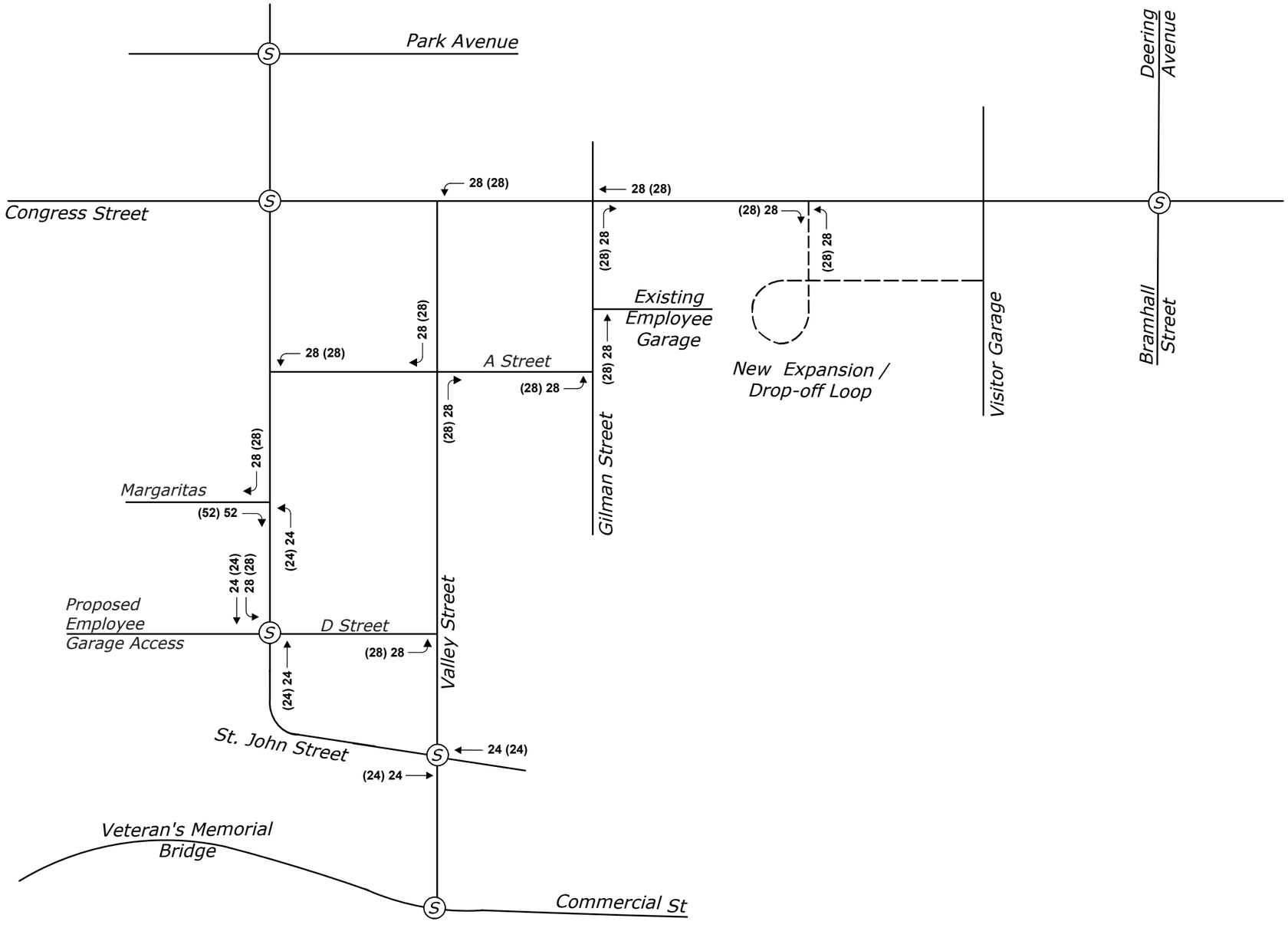
Shuttle Assignment

Figure No. 12

Peak Hour of the Adjacent Street



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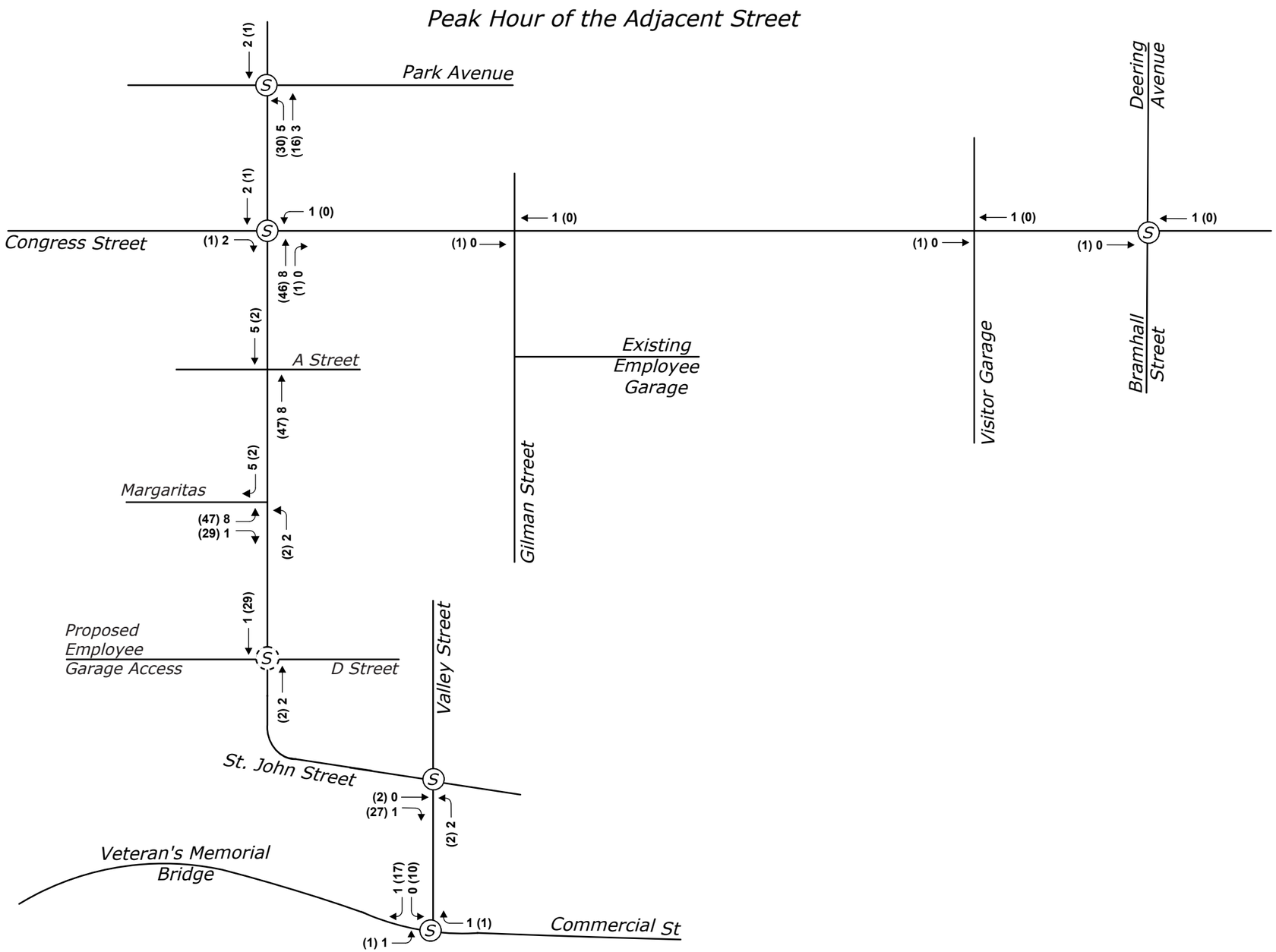
222 St. John Existing MMC Traffic

Figure No. 13



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Design: EAL Scale: NONE
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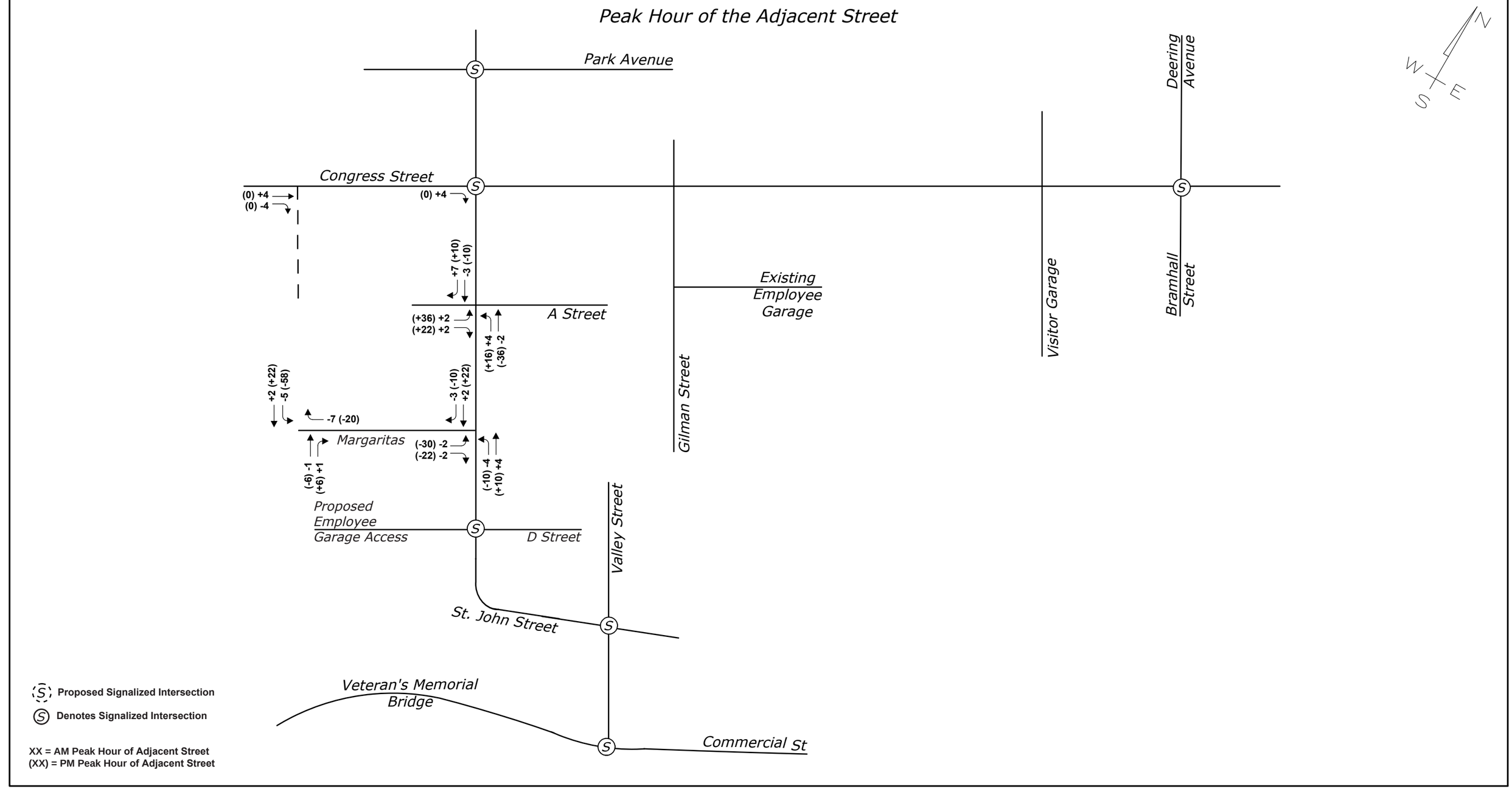

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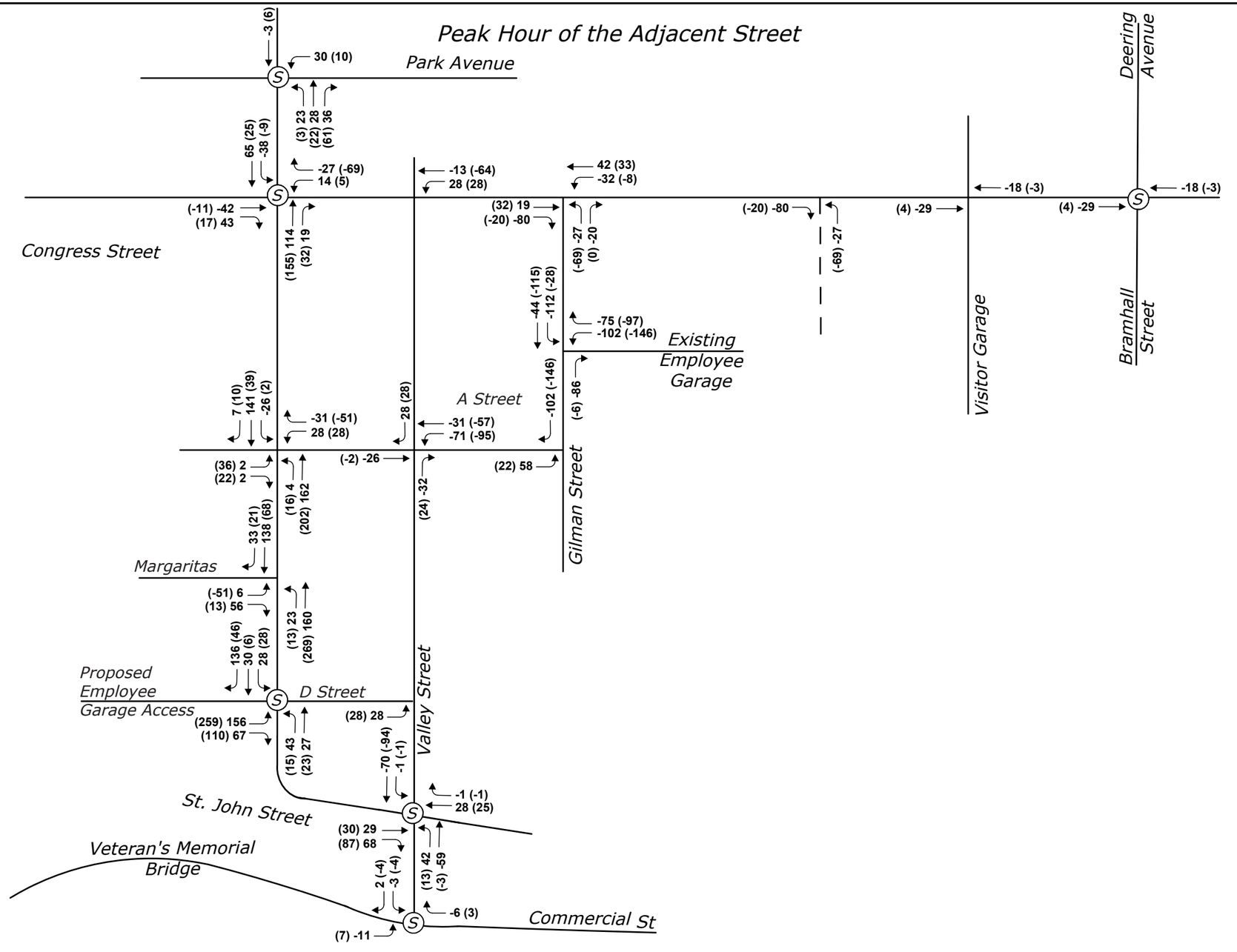
Net Impact Due to Proposed Employee Garage

Figure No. 15



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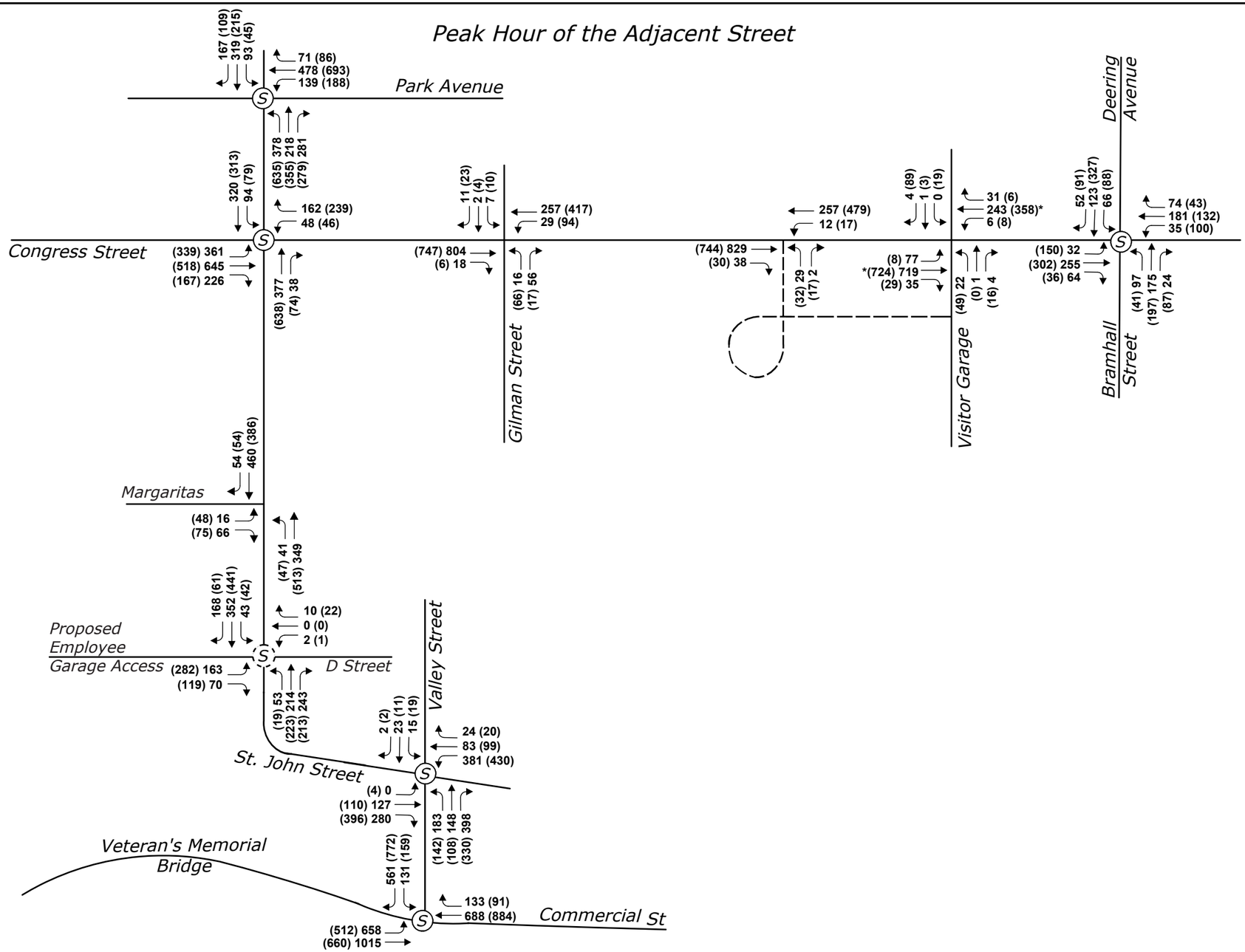

* Through volumes based on volumes at adjacent intersections.

Proposed Signalized Intersection

Denotes Signalized Intersection

XX = AM Peak Hour of Adjacent Street
(XX) = PM Peak Hour of Adjacent Street

Bramhall St. - 22; MMC Congress Street Building
PORTLAND, MAINE

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LEGEND

Bramhall Employees	1 mile	Travelshed
<1 mile	3 miles	295 North
1-3 miles	5 miles	35 - 302 - 117 North
3-5 miles	10 miles	95 North
5-10 miles	20 miles	95 South
10-20 miles	30 miles	Ferries
20-30 miles	40 miles	Peninsular Surface Streets
30-40 miles	50 miles	Rt 25 - Brighton Ave
40-50 miles		South Portland Surface Streets
>50 miles		Maine Medical Center

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Bramhall Employee Address Locations and Travelsheds
Maine Medical Center

vhb

0 2.5 5 Miles

Figure 1 – MMC Employee Parking Garage | Inbound Shuttle Routes, June 22, 2018
Garage to Hospital

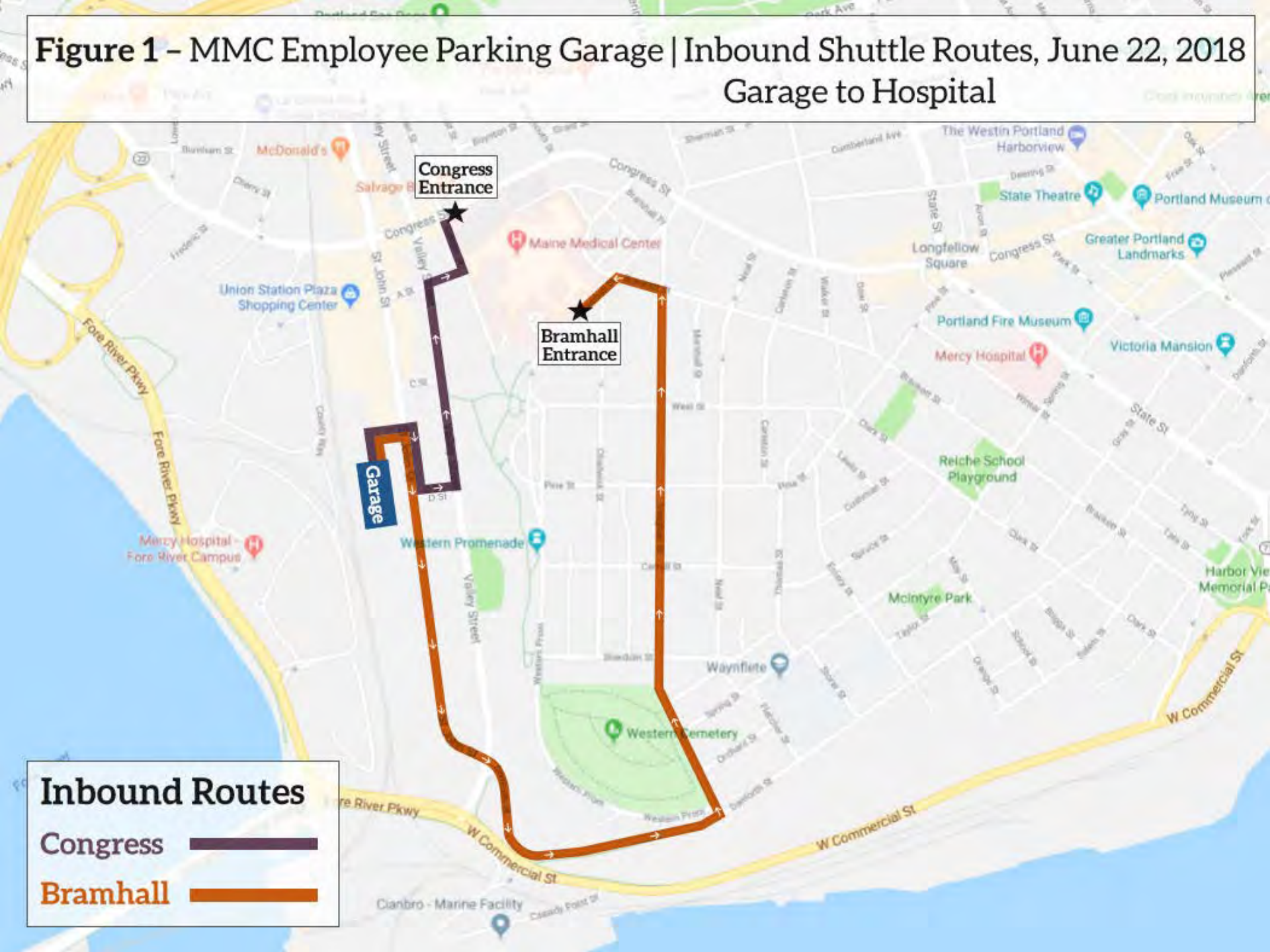
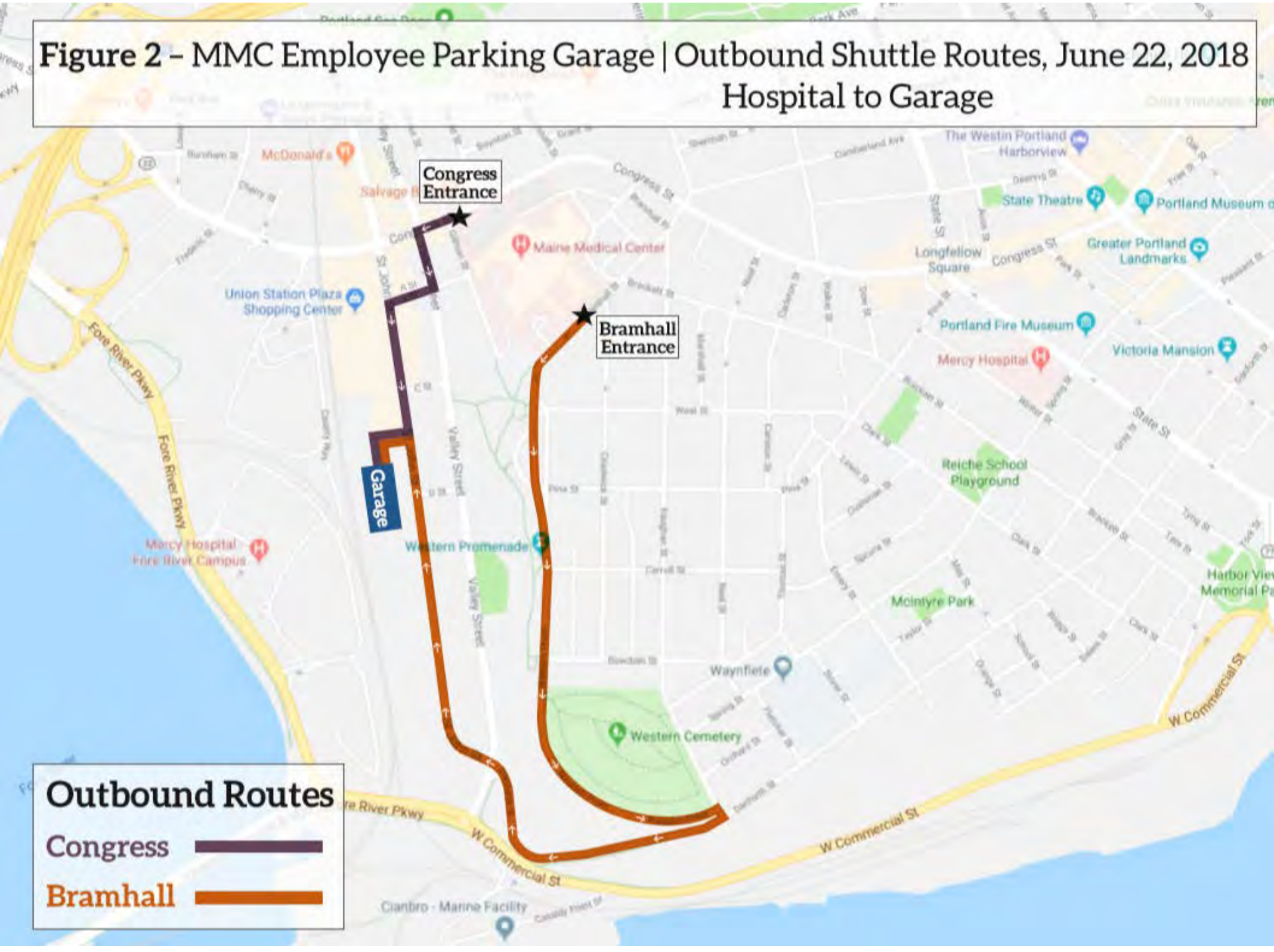


Figure 2 – MMC Employee Parking Garage | Outbound Shuttle Routes, June 22, 2018
Hospital to Garage



Attachment 7B

Trip Generation Calculations

JN: 2866.01
Project Description: Maine Medical Center Phase 3
Project Location: Portland, ME
Date: 08/14/18

Gorrill Palmer
707 Sable Oaks Drive
Suite 30
South Portland, Maine 04106

Hospital
Land Use Code (LUC) 610

Employees 200

Fitted Curve:

Time Period	ITE Trip Rate	Trip Ends	Directional Split*		Directional Distribution		Sample Size/R2
			IN	OUT	IN	OUT	
Weekday	T =4.40 (X) + 711.46	1591	50%	50%	796	795	19/.77
AM Peak Adjacent Street	T =0.32 (X) + 35.15	99	80%	20%	79	20	9/.77
PM Peak Adjacent Street	T =0.28 (X) + 75.75	132	35%	65%	46	86	8/.69
AM Peak of Generator	T = 0.33 (X) +66.57	133	65%	35%	86	47	8/.83
PM Peak of Generator	T = 0..36 (X) + 97.41	169	40%	60%	68	101	15/.73
Saturday	T = 2.95 (X)+ 691.43	1281	50%	50%	641	640	15/.84
Saturday Peak of Generator	Not given	-	55%	45%	-	-	4

* Percentages rounded to nearest 5%

Average Rate:

Time Period	ITE Trip Rate	Trip Ends	Directional Split*		Directional Distribution		Sample Size
			IN	OUT	IN	OUT	
Weekday	**T = 5.2 (X)**	**1040**	**50%**	**50%**	**520**	**520**	**19**
AM Peak Adjacent Street	**T = 0.34 (X)**	**68**	**80%**	**20%**	**54**	**14**	**9**
PM Peak Adjacent Street	**T = 0.33 (X)**	**66**	**35%**	**65%**	**23**	**43**	**8**
AM Peak of Generator	**T = 0.39 (X)**	**78**	**65%**	**35%**	**51**	**27**	**8**
PM Peak of Generator	**T = 0.47 (X)**	**94**	**40%**	**60%**	**38**	**56**	**15**
Saturday	**T = 3.78 (X)**	**756**	**50%**	**50%**	**378**	**378**	**15**
Saturday Peak of Generator	**T = 0.53 (X)**	**106**	**55%**	**45%**	**58**	**48**	**4**

* Percentages rounded to nearest 5%

St. John Street Parking Garage Trip Generation

September 12, 2018
JN 2866.01

Parking Area	St. John St Lot		Sportsman Lot		Gateway Garage		Classic Lot		321 Brackett Lot		On-Street Spaces		Gilman Garage -Shifted		All Parking Areas			Existing Parking Hourly Volumes			Proposed Parking 15-Min Volumes			Proposed Parking Hourly Volumes		
Count Date	1/18/2018		Estimated		Estimated		Estimated		Estimated		Estimated		11/2/2017					Total Spaces: 2023			Total Spaces: 2450			Total Spaces: 2450		
Number of Spaces	283 Spaces		60 Spaces		100 Spaces		97 Spaces		9 Spaces		200 Spaces		1274 Spaces		2023 Spaces											
	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting	Total	Hourly Vol.	%In	%Out	15-Min	Entering	Exiting	Hourly Vol.	Entering	Exiting
6:00 AM	23	0	5	0	8	0	8	0	1	0	16	0	89	1	150	1	151	**934**	98%	2%	183	182	1	**1131**	1103	28
6:15 AM	45	0	10	0	16	0	15	0	1	0	32	0	113	8	232	8	240	913	97%	3%	291	281	10	1106	1072	34
6:30 AM	85	1	18	0	30	0	29	0	3	0	60	1	118	6	343	8	351	865	95%	5%	425	415	10	1048	995	53
6:45 AM	51	1	11	0	18	0	17	0	2	0	36	1	51	4	186	6	192	687	84%	16%	233	226	7	832	695	137
7:00 AM	26	0	6	0	9	0	9	0	1	0	18	0	55	6	124	6	130	609	70%	30%	157	150	7	738	519	219
7:15 AM	41	0	9	0	14	0	14	0	1	0	29	0	60	24	168	24	192	573	60%	40%	233	204	29	694	414	280
7:30 AM	12	7	3	1	4	2	4	2	0	0	8	5	65	60	96	77	173	443	44%	56%	210	117	93	537	239	298
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	40	74	40	74	114				138	48	90			
8:00 AM	2	2	0	0	1	1	1	1	0	0	1	1	33	51	38	56	94				114	46	68			
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	23	39	23	39	62				75	28	47			
3:15 PM	1	8	0	2	0	3	0	3	0	0	1	6	12	38	14	60	74	382	12%	88%	90	17	73	463	57	406
3:30 PM	2	27	0	6	1	10	1	9	0	1	1	19	9	36	14	108	122	441	11%	89%	148	17	131	534	61	473
3:45 PM	1	15	0	3	0	5	0	5	0	0	1	11	6	60	8	99	107	425	12%	88%	130	10	120	515	64	451
4:00 PM	1	12	0	3	0	4	0	4	0	0	1	8	9	37	11	68	79	431	15%	85%	96	13	83	522	78	444
4:15 PM	3	22	1	5	1	8	1	8	0	1	2	16	9	56	17	116	133	**474**	14%	86%	161	21	140	**574**	81	493
4:30 PM	2	14	0	3	1	5	1	5	0	0	1	10	12	52	17	89	106	449	15%	85%	128	21	107	544	81	463
4:45 PM	6	9	1	2	2	3	2	3	0	0	4	6	4	71	19	94	113	431	17%	83%	137	23	114	522	90	432
5:00 PM	2	18	0	4	1	6	1	6	0	1	1	13	9	60	14	108	122	402	20%	80%	148	17	131	487	99	388
5:15 PM	3	12	1	3	1	4	1	4	0	0	2	8	9	60	17	91	108	364	32%	68%	131	21	110	441	143	298
5:30 PM	5	5	1	1	2	2	2	2	0	0	4	4	10	50	24	64	88	385	47%	53%	107	29	78	466	219	247
5:45 PM	2	5	0	1	1	2	1	2	0	0	1	4	22	43	27	57	84	391	53%	47%	102	33	69	474	253	221
6:00 PM	0	4	0	1	0	1	0	1	0	0	0	3	50	24	50	34	84	364	55%	45%	102	61	41	441	241	200
6:15 PM	1	1	0	0	0	0	0	0	0	0	1	1	78	47	80	49	129	316	49%	51%	156	97	59	383	189	194
6:30 PM	1	7	0	1	0	2	0	2	0	0	1	5	50	25	52	42	94				114	63	51			
6:45 PM	2	4	0	1	1	1	1	1	0	0	1	3	12	30	17	40	57				69	21	48			
7:00 PM	0	2	0	0	0	1	0	1	0	0	0	1	7	24	7	29	36				44	9	35			

Indicates peak hour volumes

Attachment 7C

Capacity and Queuing Analysis Results

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	6:57	6:57	6:57	6:57	6:57	6:57
End Time	8:00	8:00	8:00	8:00	8:00	8:00
Total Time (min)	63	63	63	63	63	63
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	6740	6752	6658	6699	6614	6691
Vehs Exited	6727	6685	6605	6628	6589	6646
Starting Vehs	251	220	223	227	223	224
Ending Vehs	264	287	276	298	248	268
Denied Entry Before	1	2	2	2	2	1
Denied Entry After	3	3	3	3	0	0
Travel Distance (mi)	5093	5125	5012	5064	5000	5059
Travel Time (hr)	259.0	290.9	255.4	264.1	258.5	265.6
Total Delay (hr)	75.8	106.4	75.1	82.0	78.5	83.5
Total Stops	7849	8817	7746	8126	7889	8085
Fuel Used (gal)	182.8	190.0	179.6	182.9	180.3	183.1

Interval #0 Information Seeding

Start Time	6:57
End Time	7:00
Total Time (min)	3

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:00
End Time	8:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	6740	6752	6658	6699	6614	6691
Vehs Exited	6727	6685	6605	6628	6589	6646
Starting Vehs	251	220	223	227	223	224
Ending Vehs	264	287	276	298	248	268
Denied Entry Before	1	2	2	2	2	1
Denied Entry After	3	3	3	3	0	0
Travel Distance (mi)	5093	5125	5012	5064	5000	5059
Travel Time (hr)	259.0	290.9	255.4	264.1	258.5	265.6
Total Delay (hr)	75.8	106.4	75.1	82.0	78.5	83.5
Total Stops	7849	8817	7746	8126	7889	8085
Fuel Used (gal)	182.8	190.0	179.6	182.9	180.3	183.1

1: St. John Street & Margaritas Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	2.4	0.0	0.0	0.1
Total Del/Veh (s)	5.3	1.1	1.6	1.6
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

3: St. John Street & Garage Access/D St Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	5.2	4.1	1.9	0.9	1.4
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

5: Valley & St. John Street Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	2.8	0.0	2.3	0.9
Total Del/Veh (s)	12.8	16.6	14.4	15.7	14.7
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

7: St. John Street & Congress Street Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.5	0.0	0.8	0.0	0.4
Total Del/Veh (s)	16.2	9.5	30.1	22.3	18.2
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

13: Fore River Pkwy & Valley Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.4	0.4	0.0	0.3
Total Del/Veh (s)	53.8	18.3	11.6	35.7
Denied Entry Before	0	1	0	1
Denied Entry After	0	0	0	0

19: St. John Street & Park Avenue Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	1.0	0.0	0.9	0.6
Total Del/Veh (s)	29.1	22.0	54.0	33.2
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

24: Gilman Street & Congress Street Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.3	0.0	0.2	0.1	0.2
Total Del/Veh (s)	3.5	3.1	20.0	9.6	5.1
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

29: Bramhall Street/Deering Avenue & Congress Street Performance by approach

Approach	EB	WB	NE	SW	All
Denied Del/Veh (s)	0.0	1.9	2.2	2.9	1.2
Total Del/Veh (s)	8.3	13.0	13.9	11.3	10.7
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

35: Visitor Garage/Forest Street Garage & Congress Street Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.1	0.0
Total Del/Veh (s)	3.0	2.1	20.6	9.9	3.2
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

Total Network Performance

Denied Del/Veh (s)	1.0
Total Del/Veh (s)	42.5
Denied Entry Before	1
Denied Entry After	0

Intersection: 1: St. John Street & Margaritas

Movement	EB	EB	NB
Directions Served	L	R	LT
Maximum Queue (ft)	30	30	40
Average Queue (ft)	5	7	5
95th Queue (ft)	24	27	25
Link Distance (ft)	626		678
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		125	
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: St. John Street & Garage Access/D St

Movement	EB	WB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	31	39	48
Average Queue (ft)	3	11	2
95th Queue (ft)	18	35	22
Link Distance (ft)	570	495	678
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: Valley & St. John Street

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	R	L	TR	L	TR	LT	TR
Maximum Queue (ft)	126	124	292	67	155	274	74	91
Average Queue (ft)	52	62	131	16	57	153	25	35
95th Queue (ft)	97	105	224	45	117	242	60	73
Link Distance (ft)	1618			1012	268	268	937	
Upstream Blk Time (%)						0		
Queuing Penalty (veh)						1		
Storage Bay Dist (ft)		110	335					265
Storage Blk Time (%)	1	1	0					
Queuing Penalty (veh)	1	1	0					

Intersection: 7: St. John Street & Congress Street

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	R	T	TR	L	T
Maximum Queue (ft)	249	380	314	87	129	121	137	159	207
Average Queue (ft)	125	214	57	24	62	50	66	72	93
95th Queue (ft)	206	336	174	63	109	94	119	131	174
Link Distance (ft)	1767	1767			367	670		794	794
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)			290	80			175		
Storage Blk Time (%)		2	0	0	4		0		
Queuing Penalty (veh)		3	0	1	1		0		

Intersection: 13: Fore River Pkwy & Valley

Movement	EB	EB	EB	EB	WB	WB	WB	SB	SB	SB
Directions Served	L	L	T	T	T	T	R	L	R	R
Maximum Queue (ft)	480	527	942	885	196	188	100	137	126	131
Average Queue (ft)	356	420	443	352	132	118	40	64	70	70
95th Queue (ft)	605	620	1249	1122	183	177	82	116	113	111
Link Distance (ft)			2719	2719	1454	1454		268	268	268
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	430	430					415			
Storage Blk Time (%)	7	37	2							
Queuing Penalty (veh)	35	190	14							

Intersection: 19: St. John Street & Park Avenue

Movement	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	TR	L	LT	R	LT	R
Maximum Queue (ft)	155	219	251	188	353	135	655	80
Average Queue (ft)	52	112	141	108	176	105	325	63
95th Queue (ft)	111	187	207	175	285	172	571	106
Link Distance (ft)			1678	794	794		2255	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	95	95				110		55
Storage Blk Time (%)	2	8	24		21	0	55	7
Queuing Penalty (veh)	6	26	83		52	1	92	27

Intersection: 24: Gilman Street & Congress Street

Movement	EB	WB	NB	SB
Directions Served	TR	L	LTR	LTR
Maximum Queue (ft)	28	68	153	55
Average Queue (ft)	2	30	59	15
95th Queue (ft)	15	64	109	44
Link Distance (ft)	367		1063	624
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		65		
Storage Blk Time (%)		1		
Queuing Penalty (veh)		2		

Intersection: 29: Bramhall Street/Deering Avenue & Congress Street

Movement	EB	EB	WB	WB	NE	NE	SW	SW
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	55	220	176	90	140	142	132	74
Average Queue (ft)	18	116	48	70	54	61	42	47
95th Queue (ft)	47	187	132	101	106	113	97	78
Link Distance (ft)	965		1272		1186		795	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)		400		65		135		50
Storage Blk Time (%)			0	11	0	0	3	9
Queuing Penalty (veh)			1	4	1	0	5	6

Intersection: 35: Visitor Garage/Forest Street Garage & Congress Street

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	163	35	47	30
Average Queue (ft)	30	2	22	5
95th Queue (ft)	100	16	50	23
Link Distance (ft)	425	965	508	434
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 553

Intersection: 5: Valley & St. John Street

Phase	2	3	4	6	8
Movement(s) Served	NBTL	WBL	EBTL	SBTL	WBT
Maximum Green (s)	34.0	23.0	18.0	34.0	46.0
Minimum Green (s)	5.0	5.0	5.0	5.0	5.0
Recall	None	None	None	None	None
Avg. Green (s)	15.3	15.8	10.0	15.3	27.6
g/C Ratio	-0.01	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	6	7	20	6	4
Cycles @ Minimum (%)	0	0	4	0	0
Cycles Maxed Out (%)	1	21	8	1	4
Cycles with Peds (%)	0	0	0	0	0

Controller Summary

Average Cycle Length (s): NA

Number of Complete Cycles : 0

Intersection: 7: St. John Street & Congress Street

Phase	1	2	3	4	5	6	8
Movement(s) Served	EBL	WBL	SBL	NBT	WBL	EBTL	SBT
Maximum Green (s)	15.3	27.2	6.7	8.0	5.0	37.5	21.5
Minimum Green (s)	8.0	8.0	3.0	8.0	5.0	8.0	5.0
Recall	None	Min	None	None	None	Min	None
Avg. Green (s)	13.0	15.9	6.7	8.4	5.5	31.3	20.1
g/C Ratio	-0.01	NA	-0.01	-0.01	-0.01	NA	NA
Cycles Skipped (%)	2	0	9	4	73	0	0
Cycles @ Minimum (%)	15	34	0	91	24	0	0
Cycles Maxed Out (%)	47	16	78	96	27	36	76
Cycles with Peds (%)	0	0	0	0	0	0	0

Controller Summary

Average Cycle Length (s): NA

Number of Complete Cycles : 0

Intersection: 13: Fore River Pkwy & Valley

Phase	4	6	7	8
Movement(s) Served	EBT	SBL	EBL	WBT
Maximum Green (s)	39.0	11.0	17.0	17.0
Minimum Green (s)	5.0	5.0	5.0	5.0
Recall	None	None	None	None
Avg. Green (s)	39.0	10.3	17.0	16.1
g/C Ratio	NA	NA	NA	NA
Cycles Skipped (%)	0	0	0	0
Cycles @ Minimum (%)	0	0	0	0
Cycles Maxed Out (%)	68	74	98	69
Cycles with Peds (%)	0	0	0	0

Controller Summary
Average Cycle Length (s): NA

Number of Complete Cycles : 0

Intersection: 19: St. John Street & Park Avenue

Phase	2	6	8
Movement(s) Served	NBTL	SBTL	WBTL
Maximum Green (s)	40.0	25.0	40.0
Minimum Green (s)	3.0	3.0	3.0
Recall	Min	Min	Min
Avg. Green (s)	27.2	24.5	24.6
g/C Ratio	NA	NA	NA
Cycles Skipped (%)	0	0	0
Cycles @ Minimum (%)	0	0	0
Cycles Maxed Out (%)	21	82	5
Cycles with Peds (%)	0	0	0

Controller Summary
Average Cycle Length (s): NA

Number of Complete Cycles : 0

Intersection: 29: Bramhall Street/Deering Avenue & Congress Street

Phase	1	2	3	4	5	6	7	8
Movement(s) Served	SWL	NETL	WBL	EBTL	NEL	SWTL	EBL	WBTL
Maximum Green (s)	5.5	13.5	5.5	17.5	5.5	13.5	5.5	17.5
Minimum Green (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Recall	None	Max	None	None	None	Max	None	None
Avg. Green (s)	5.5	14.9	5.7	14.9	5.5	16.7	7.1	15.2
g/C Ratio	-0.01	NA	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	50	0	76	3	65	1	79	4
Cycles @ Minimum (%)	0	0	13	0	9	0	0	0
Cycles Maxed Out (%)	45	100	10	41	25	99	19	38
Cycles with Peds (%)	0	0	0	0	0	0	0	0

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	6:57	6:57	6:57	6:57	6:57	6:57
End Time	8:00	8:00	8:00	8:00	8:00	8:00
Total Time (min)	63	63	63	63	63	63
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	7366	7440	7423	7329	7474	7405
Vehs Exited	7310	7424	7376	7305	7450	7372
Starting Vehs	220	237	220	225	249	227
Ending Vehs	276	253	267	249	273	263
Denied Entry Before	3	2	2	1	2	1
Denied Entry After	1	1	0	2	4	0
Travel Distance (mi)	5356	5472	5415	5335	5458	5407
Travel Time (hr)	262.5	270.7	271.1	259.9	269.4	266.7
Total Delay (hr)	69.2	73.4	75.9	67.7	72.1	71.7
Total Stops	8551	8779	8794	8373	8667	8630
Fuel Used (gal)	191.5	196.1	194.8	189.2	194.4	193.2

Interval #0 Information Seeding

Start Time	6:57
End Time	7:00
Total Time (min)	3

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:00
End Time	8:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	7366	7440	7423	7329	7474	7405
Vehs Exited	7310	7424	7376	7305	7450	7372
Starting Vehs	220	237	220	225	249	227
Ending Vehs	276	253	267	249	273	263
Denied Entry Before	3	2	2	1	2	1
Denied Entry After	1	1	0	2	4	0
Travel Distance (mi)	5356	5472	5415	5335	5458	5407
Travel Time (hr)	262.5	270.7	271.1	259.9	269.4	266.7
Total Delay (hr)	69.2	73.4	75.9	67.7	72.1	71.7
Total Stops	8551	8779	8794	8373	8667	8630
Fuel Used (gal)	191.5	196.1	194.8	189.2	194.4	193.2

1: St. John Street & Margaritas Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	3.4	0.0	0.0	0.3
Total Del/Veh (s)	5.6	2.3	2.0	2.4
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

3: St. John Street & Garage Access/D St Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	1.4	0.1	0.5	0.2	0.5
Total Del/Veh (s)	13.7	5.4	5.8	6.8	7.6
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

5: Valley & St. John Street Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	2.7	0.0	1.7	0.8
Total Del/Veh (s)	12.9	16.7	13.4	18.1	14.3
Denied Entry Before	0	1	0	0	1
Denied Entry After	0	0	0	0	0

7: St. John Street & Congress Street Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.5	0.0	0.3	0.0	0.3
Total Del/Veh (s)	18.7	9.8	30.6	22.8	20.6
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

12: Congress Street Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.0
Total Del/Veh (s)	1.3	1.5	19.2	1.8
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

13: Fore River Pkwy & Valley Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.4	0.5	0.0	0.3
Total Del/Veh (s)	25.3	18.7	11.7	20.7
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

19: St. John Street & Park Avenue Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	1.2	0.0	0.6	0.6
Total Del/Veh (s)	31.5	18.2	22.0	23.5
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

24: Gilman Street & Congress Street Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.1	0.1	0.1	0.2
Total Del/Veh (s)	2.4	1.2	13.4	8.9	2.9
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

29: Bramhall Street/Deering Avenue & Congress Street Performance by approach

Approach	EB	WB	NE	SW	All
Denied Del/Veh (s)	0.0	1.9	2.2	2.8	1.2
Total Del/Veh (s)	7.3	13.0	13.1	11.1	10.0
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

35: Visitor Garage/Forest Street Garage & Congress Street Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.1	0.1	0.1
Total Del/Veh (s)	2.2	2.1	16.4	8.6	2.5
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

Total Network Performance

Denied Del/Veh (s)	1.0
Total Del/Veh (s)	32.8
Denied Entry Before	1
Denied Entry After	0

Intersection: 1: St. John Street & Margaritas

Movement	EB	EB	NB	SB
Directions Served	L	R	LT	TR
Maximum Queue (ft)	34	64	95	9
Average Queue (ft)	11	29	21	0
95th Queue (ft)	34	49	68	4
Link Distance (ft)	620		678	670
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		125		
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: St. John Street & Garage Access/D St

Movement	EB	EB	WB	NB	NB	SB	SB
Directions Served	LT	R	LTR	L	TR	L	TR
Maximum Queue (ft)	126	65	39	61	114	91	169
Average Queue (ft)	63	29	11	19	52	24	83
95th Queue (ft)	105	53	36	46	98	63	145
Link Distance (ft)	564		489		1605		678
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)		150		100		75	
Storage Blk Time (%)	0				0	0	5
Queuing Penalty (veh)	0				0	1	2

Intersection: 5: Valley & St. John Street

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	R	L	TR	L	TR	LT	TR
Maximum Queue (ft)	164	133	270	70	154	247	40	56
Average Queue (ft)	58	70	138	23	74	141	14	10
95th Queue (ft)	114	118	228	54	131	224	39	37
Link Distance (ft)	1605			1012	268	268	937	
Upstream Blk Time (%)						0		
Queuing Penalty (veh)						0		
Storage Bay Dist (ft)		110	335					265
Storage Blk Time (%)	0	1						
Queuing Penalty (veh)	1	2						

Intersection: 7: St. John Street & Congress Street

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	R	T	TR	L	T
Maximum Queue (ft)	377	552	315	89	106	261	197	146	203
Average Queue (ft)	138	229	82	36	49	92	105	61	109
95th Queue (ft)	266	403	221	76	88	193	174	117	181
Link Distance (ft)	1767	1767			367	670		794	794
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)			290	80			175		
Storage Blk Time (%)		3	0	1	1	1	2		
Queuing Penalty (veh)		7	0	1	1	3	3		

Intersection: 12: Congress Street

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	44	111	71
Average Queue (ft)	2	14	27
95th Queue (ft)	20	62	63
Link Distance (ft)	169	202	174
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 13: Fore River Pkwy & Valley

Movement	EB	EB	EB	EB	WB	WB	WB	SB	SB	SB
Directions Served	L	L	T	T	T	T	R	L	R	R
Maximum Queue (ft)	377	428	335	325	238	238	98	128	140	148
Average Queue (ft)	177	267	86	98	136	126	40	62	72	73
95th Queue (ft)	372	419	243	199	202	198	79	112	118	120
Link Distance (ft)			2719	2719	1454	1454		268	268	268
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	430	430					415			
Storage Blk Time (%)	0	2								
Queuing Penalty (veh)	2	10								

Intersection: 19: St. John Street & Park Avenue

Movement	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	TR	L	LT	R	LT	R
Maximum Queue (ft)	162	228	255	194	286	135	326	80
Average Queue (ft)	71	114	139	92	151	100	169	64
95th Queue (ft)	128	197	214	157	253	168	290	102
Link Distance (ft)			1678	794	794		2255	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	95	95				110		55
Storage Blk Time (%)	4	9	29		14	1	33	4
Queuing Penalty (veh)	13	29	108		38	3	55	16

Intersection: 24: Gilman Street & Congress Street

Movement	EB	WB	NB	SB
Directions Served	TR	L	LTR	LTR
Maximum Queue (ft)	10	57	88	68
Average Queue (ft)	1	13	38	17
95th Queue (ft)	8	40	71	49
Link Distance (ft)	367		1063	624
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		65		
Storage Blk Time (%)		0		
Queuing Penalty (veh)		1		

Intersection: 29: Bramhall Street/Deering Avenue & Congress Street

Movement	EB	EB	WB	WB	NE	NE	SW	SW
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	61	213	190	90	140	140	143	75
Average Queue (ft)	18	102	43	68	51	62	39	49
95th Queue (ft)	46	173	122	98	105	116	96	80
Link Distance (ft)	965		1272		1186		795	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)		400		65		135		50
Storage Blk Time (%)			1	10	0	0	4	8
Queuing Penalty (veh)			1	4	0	0	6	6

Intersection: 35: Visitor Garage/Forest Street Garage & Congress Street

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	163	103	58	34
Average Queue (ft)	35	7	21	6
95th Queue (ft)	108	45	49	27
Link Distance (ft)	202	965	508	434
Upstream Blk Time (%)	0			
Queuing Penalty (veh)	0			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 314

Intersection: 3: St. John Street & Garage Access/D St

Phase	2	4	5	6	8
Movement(s) Served	NBTL	EBTL	NBL	SBTL	WBTL
Maximum Green (s)	45.0	5.0	6.5	34.0	5.0
Minimum Green (s)	5.0	5.0	5.0	5.0	5.0
Recall	Min	None	None	Min	None
Avg. Green (s)	26.1	5.0	5.7	22.0	5.0
g/C Ratio	-0.01	-0.01	-0.01	NA	-0.01
Cycles Skipped (%)	5	5	76	0	5
Cycles @ Minimum (%)	0	95	5	1	95
Cycles Maxed Out (%)	8	95	4	17	95
Cycles with Peds (%)	0	0	0	0	0

Controller Summary
Average Cycle Length (s): NA

Number of Complete Cycles : 0

Intersection: 5: Valley & St. John Street

Phase	2	3	4	6	8
Movement(s) Served	NBTL	WBL	EBTL	SBTL	WBT
Maximum Green (s)	26.0	21.0	18.0	26.0	44.0
Minimum Green (s)	5.0	5.0	5.0	5.0	5.0
Recall	None	None	None	None	None
Avg. Green (s)	13.9	15.7	11.5	13.9	30.6
g/C Ratio	-0.01	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	11	7	14	11	6
Cycles @ Minimum (%)	0	0	1	0	0
Cycles Maxed Out (%)	4	32	17	4	10
Cycles with Peds (%)	0	0	0	0	0

Controller Summary
Average Cycle Length (s): NA

Number of Complete Cycles : 0

Intersection: 7: St. John Street & Congress Street

Phase	1	2	3	4	5	6	8
Movement(s) Served	EBL	WBL	SBL	NBT	WBL	EBTL	SBT
Maximum Green (s)	15.6	24.4	5.7	11.5	5.0	35.0	24.0
Minimum Green (s)	8.0	8.0	3.0	8.0	5.0	8.0	5.0
Recall	None	Min	None	None	None	Min	None
Avg. Green (s)	13.7	15.5	5.9	11.9	5.6	29.8	22.6
g/C Ratio	-0.01	NA	-0.01	NA	-0.01	NA	NA
Cycles Skipped (%)	2	0	12	0	54	0	0
Cycles @ Minimum (%)	8	28	0	2	40	0	0
Cycles Maxed Out (%)	57	25	85	85	46	37	68
Cycles with Peds (%)	0	0	0	0	0	0	0

Controller Summary

Average Cycle Length (s): NA

Number of Complete Cycles : 0

Intersection: 13: Fore River Pkwy & Valley

Phase	4	6	7	8
Movement(s) Served	EBT	SBL	EBL	WBT
Maximum Green (s)	39.0	11.0	17.0	17.0
Minimum Green (s)	5.0	5.0	5.0	5.0
Recall	None	None	None	None
Avg. Green (s)	38.8	10.2	16.9	16.4
g/C Ratio	NA	NA	NA	NA
Cycles Skipped (%)	0	0	0	0
Cycles @ Minimum (%)	0	0	0	0
Cycles Maxed Out (%)	70	70	95	74
Cycles with Peds (%)	0	0	0	0

Controller Summary

Average Cycle Length (s): NA

Number of Complete Cycles : 0

Intersection: 19: St. John Street & Park Avenue

Phase	2	6	8
Movement(s) Served	NBTL	SBTL	WBTL
Maximum Green (s)	15.0	20.0	10.0
Minimum Green (s)	3.0	3.0	3.0
Recall	Min	Min	Min
Avg. Green (s)	14.5	17.3	10.0
g/C Ratio	NA	NA	NA
Cycles Skipped (%)	0	0	0
Cycles @ Minimum (%)	0	2	0
Cycles Maxed Out (%)	86	59	97
Cycles with Peds (%)	0	0	0

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 29: Bramhall Street/Deering Avenue & Congress Street

Phase	1	2	3	4	5	6	7	8
Movement(s) Served	SWL	NETL	WBL	EBTL	NEL	SWTL	EBL	WBTL
Maximum Green (s)	5.5	13.5	5.5	17.5	5.5	13.5	5.5	17.5
Minimum Green (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Recall	None	Max	None	None	None	Max	None	None
Avg. Green (s)	5.6	15.0	6.6	13.9	5.5	16.4	7.6	14.3
g/C Ratio	-0.01	NA	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	58	0	74	6	72	1	81	5
Cycles @ Minimum (%)	1	0	12	0	6	0	0	0
Cycles Maxed Out (%)	38	100	11	30	21	99	17	30
Cycles with Peds (%)	0	0	0	0	0	0	0	0

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	6:57	6:57	6:57	6:57	6:57	6:57
End Time	8:00	8:00	8:00	8:00	8:00	8:00
Total Time (min)	63	63	63	63	63	63
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	7331	7512	7399	7678	7334	7453
Vehs Exited	7265	7409	7298	7540	7291	7361
Starting Vehs	213	198	216	165	200	193
Ending Vehs	279	301	317	303	243	286
Denied Entry Before	4	2	3	3	0	2
Denied Entry After	2	1	5	1	3	1
Travel Distance (mi)	4625	4680	4600	4791	4585	4656
Travel Time (hr)	253.6	269.0	270.0	266.4	243.9	260.6
Total Delay (hr)	85.3	99.0	102.8	92.3	77.0	91.3
Total Stops	9003	9407	9298	9280	8484	9093
Fuel Used (gal)	173.1	178.4	176.6	180.5	169.3	175.6

Interval #0 Information Seeding

Start Time	6:57
End Time	7:00
Total Time (min)	3

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:00
End Time	8:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	7331	7512	7399	7678	7334	7453
Vehs Exited	7265	7409	7298	7540	7291	7361
Starting Vehs	213	198	216	165	200	193
Ending Vehs	279	301	317	303	243	286
Denied Entry Before	4	2	3	3	0	2
Denied Entry After	2	1	5	1	3	1
Travel Distance (mi)	4625	4680	4600	4791	4585	4656
Travel Time (hr)	253.6	269.0	270.0	266.4	243.9	260.6
Total Delay (hr)	85.3	99.0	102.8	92.3	77.0	91.3
Total Stops	9003	9407	9298	9280	8484	9093
Fuel Used (gal)	173.1	178.4	176.6	180.5	169.3	175.6

1: St. John Street & Margaritas Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	1.7	0.0	0.0	0.3
Total Del/Veh (s)	7.3	1.5	1.9	2.7
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

3: St. John Street & Garage Access/D St Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.1	0.1
Total Del/Veh (s)	7.3	3.3	2.1	0.8	1.3
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

5: Valley & St. John Street Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	2.8	0.0	2.3	1.1
Total Del/Veh (s)	10.7	19.6	14.0	16.4	15.2
Denied Entry Before	0	1	0	0	1
Denied Entry After	0	0	0	0	0

7: St. John Street & Congress Street Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.4	0.0	0.9	0.0	0.4
Total Del/Veh (s)	16.6	9.0	26.8	21.7	17.8
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

12: Gilman Street & Congress Street Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.3	0.0	0.2	0.1	0.2
Total Del/Veh (s)	2.4	2.4	37.2	12.8	6.5
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

13: Fore River Pkwy & Valley Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.9	0.3	0.0	0.5
Total Del/Veh (s)	53.1	18.4	12.4	29.5
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

18: Bramhall Street/Deering Avenue & Congress Street Performance by approach

Approach	EB	WB	NE	SW	All
Denied Del/Veh (s)	0.0	1.4	2.7	3.0	1.6
Total Del/Veh (s)	16.3	23.5	14.4	16.5	17.1
Denied Entry Before	0	0	0	1	1
Denied Entry After	0	0	0	1	1

19: St. John Street & Park Avenue Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	1.6	0.1	0.8	0.8
Total Del/Veh (s)	37.4	34.8	39.6	36.5
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

32: Visitor Garage/Forest Street Garage & Congress Street Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.1	0.1	0.2	0.1
Total Del/Veh (s)	1.8	1.7	17.2	9.0	3.2
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

Total Network Performance

Denied Del/Veh (s)	1.3
Total Del/Veh (s)	41.7
Denied Entry Before	2
Denied Entry After	1

Intersection: 1: St. John Street & Margaritas

Movement	EB	EB	NB
Directions Served	L	R	LT
Maximum Queue (ft)	77	59	80
Average Queue (ft)	37	27	11
95th Queue (ft)	63	50	47
Link Distance (ft)	424		678
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		125	
Storage Blk Time (%)	0		
Queuing Penalty (veh)	0		

Intersection: 3: St. John Street & Garage Access/D St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	31	36	41	29
Average Queue (ft)	4	15	3	2
95th Queue (ft)	21	40	23	15
Link Distance (ft)	436	550	1618	678
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Valley & St. John Street

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	R	L	TR	L	TR	LT	TR
Maximum Queue (ft)	163	133	274	152	144	175	102	135
Average Queue (ft)	44	76	156	27	58	83	36	62
95th Queue (ft)	106	117	258	100	110	154	77	110
Link Distance (ft)	1618			988	263	263	1083	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)		110	335					265
Storage Blk Time (%)	0	1	1					
Queuing Penalty (veh)	0	1	1					

Intersection: 7: St. John Street & Congress Street

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	R	T	TR	L	T
Maximum Queue (ft)	240	339	232	104	166	234	188	121	255
Average Queue (ft)	110	186	59	32	85	98	109	52	120
95th Queue (ft)	192	293	145	81	141	177	177	103	212
Link Distance (ft)	1767	1767			367	671		792	792
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)			290	80			175		
Storage Blk Time (%)		1	0	1	9	1	1		
Queuing Penalty (veh)		2	0	2	4	2	3		

Intersection: 12: Gilman Street & Congress Street

Movement	EB	WB	WB	NB	SB
Directions Served	TR	L	T	LTR	LTR
Maximum Queue (ft)	4	73	49	177	76
Average Queue (ft)	0	34	2	83	26
95th Queue (ft)	4	65	29	155	59
Link Distance (ft)	367		425	1063	624
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		65			
Storage Blk Time (%)		1	0		
Queuing Penalty (veh)		5	0		

Intersection: 13: Fore River Pkwy & Valley

Movement	EB	EB	EB	EB	WB	WB	WB	SB	SB	SB
Directions Served	L	L	T	T	T	T	R	L	R	R
Maximum Queue (ft)	446	491	725	696	229	230	60	146	145	151
Average Queue (ft)	255	323	279	244	153	142	23	64	89	94
95th Queue (ft)	530	561	903	828	216	213	53	116	133	141
Link Distance (ft)			1529	1529	1274	1274		263	263	263
Upstream Blk Time (%)			1	0						
Queuing Penalty (veh)			0	0						
Storage Bay Dist (ft)	430	430					415			
Storage Blk Time (%)	7	23	2							
Queuing Penalty (veh)	22	76	10							

Intersection: 18: Bramhall Street/Deering Avenue & Congress Street

Movement	EB	EB	WB	WB	NE	NE	SW	SW
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	225	285	217	90	140	156	284	75
Average Queue (ft)	75	136	77	68	33	87	119	69
95th Queue (ft)	156	240	167	102	101	147	241	84
Link Distance (ft)	965		1272		1186		795	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)		400		65		135		50
Storage Blk Time (%)		0	7	13	0	2	6	29
Queuing Penalty (veh)		0	11	14	0	1	24	25

Intersection: 19: St. John Street & Park Avenue

Movement	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	TR	L	LT	R	LT	R
Maximum Queue (ft)	164	235	596	406	520	135	365	80
Average Queue (ft)	101	189	262	228	324	106	183	54
95th Queue (ft)	178	269	481	357	492	179	310	105
Link Distance (ft)			1640	792	792		1989	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	95	95				110		55
Storage Blk Time (%)	10	26	42		44	0	47	4
Queuing Penalty (veh)	45	112	217		94	2	51	10

Intersection: 32: Visitor Garage/Forest Street Garage & Congress Street

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	123	81	82	87
Average Queue (ft)	8	6	37	40
95th Queue (ft)	59	43	69	67
Link Distance (ft)	425	965	508	434
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 734

Intersection: 5: Valley & St. John Street

Phase	2	3	4	6	8
Movement(s) Served	NBTL	WBL	EBTL	SBTL	WBT
Maximum Green (s)	18.0	19.0	18.0	18.0	42.0
Minimum Green (s)	5.0	5.0	5.0	5.0	5.0
Recall	None	None	None	None	None
Avg. Green (s)	14.6	16.3	11.2	14.6	30.4
g/C Ratio	-0.01	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	3	1	16	3	2
Cycles @ Minimum (%)	0	0	4	0	0
Cycles Maxed Out (%)	39	51	12	39	9
Cycles with Peds (%)	0	0	0	0	0

Controller Summary

Average Cycle Length (s): NA

Number of Complete Cycles : 0

Intersection: 7: St. John Street & Congress Street

Phase	1	2	3	4	5	6	8
Movement(s) Served	EBL	WBL	SBL	NBT	WBL	EBTL	SBT
Maximum Green (s)	13.7	33.2	5.7	14.6	4.5	42.4	27.1
Minimum Green (s)	8.0	8.0	3.0	8.0	4.5	8.0	5.0
Recall	None	Min	None	None	None	Min	None
Avg. Green (s)	12.3	14.5	5.7	13.8	5.8	27.8	24.5
g/C Ratio	-0.01	NA	-0.01	NA	-0.01	NA	NA
Cycles Skipped (%)	4	0	15	0	66	0	0
Cycles @ Minimum (%)	7	41	0	4	25	0	0
Cycles Maxed Out (%)	56	6	80	64	34	9	55
Cycles with Peds (%)	0	0	0	0	0	0	0

Controller Summary

Average Cycle Length (s): NA

Number of Complete Cycles : 0

Intersection: 13: Fore River Pkwy & Valley

Phase	4	6	7	8
Movement(s) Served	EBT	SBL	EBL	WBT
Maximum Green (s)	34.0	11.0	11.0	18.0
Minimum Green (s)	5.0	5.0	5.0	5.0
Recall	None	None	None	None
Avg. Green (s)	33.8	11.0	11.0	17.6
g/C Ratio	NA	NA	NA	NA
Cycles Skipped (%)	0	0	0	0
Cycles @ Minimum (%)	0	0	0	0
Cycles Maxed Out (%)	88	94	98	88
Cycles with Peds (%)	0	0	0	0

Controller Summary

Average Cycle Length (s): NA

Number of Complete Cycles : 0

Intersection: 18: Bramhall Street/Deering Avenue & Congress Street

Phase	1	2	3	4	5	6	7	8
Movement(s) Served	SWL	NETL	WBL	EBTL	NEL	SWTL	EBL	WBTL
Maximum Green (s)	5.5	18.5	5.5	12.5	5.5	18.5	7.5	10.5
Minimum Green (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Recall	None	Max	None	None	None	Max	None	None
Avg. Green (s)	5.5	19.5	6.2	13.5	5.5	22.9	9.8	12.1
g/C Ratio	-0.01	NA	-0.01	-0.01	-0.01	NA	-0.01	-0.01
Cycles Skipped (%)	44	0	31	3	78	0	23	17
Cycles @ Minimum (%)	0	0	15	0	3	0	0	0
Cycles Maxed Out (%)	55	100	51	74	17	100	63	61
Cycles with Peds (%)	0	0	0	0	0	0	0	0

Controller Summary

Average Cycle Length (s): NA

Number of Complete Cycles : 0

Intersection: 19: St. John Street & Park Avenue

Phase	2	6	8
Movement(s) Served	NBTL	SBTL	WBTL
Maximum Green (s)	40.0	25.0	40.0
Minimum Green (s)	3.0	3.0	3.0
Recall	Min	Min	Min
Avg. Green (s)	37.9	21.1	35.2
g/C Ratio	NA	NA	NA
Cycles Skipped (%)	0	0	0
Cycles @ Minimum (%)	0	0	0
Cycles Maxed Out (%)	79	47	48
Cycles with Peds (%)	0	0	0

Controller Summary
Average Cycle Length (s): NA

Number of Complete Cycles : 0

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	6:57	6:57	6:57	6:57	6:57	6:57
End Time	8:00	8:00	8:00	8:00	8:00	8:00
Total Time (min)	63	63	63	63	63	63
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	7831	7966	7847	8076	7814	7904
Vehs Exited	7813	7849	7783	8055	7757	7851
Starting Vehs	252	221	215	251	225	229
Ending Vehs	270	338	279	272	282	281
Denied Entry Before	0	3	2	4	4	1
Denied Entry After	3	3	3	2	5	1
Travel Distance (mi)	4829	4926	4831	4966	4830	4876
Travel Time (hr)	261.7	290.4	275.9	276.3	277.5	276.4
Total Delay (hr)	85.7	110.7	99.9	95.0	101.5	98.6
Total Stops	9846	11329	10407	10601	10702	10579
Fuel Used (gal)	181.4	191.5	185.7	189.1	186.0	186.7

Interval #0 Information Seeding

Start Time	6:57
End Time	7:00
Total Time (min)	3

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:00
End Time	8:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	7831	7966	7847	8076	7814	7904
Vehs Exited	7813	7849	7783	8055	7757	7851
Starting Vehs	252	221	215	251	225	229
Ending Vehs	270	338	279	272	282	281
Denied Entry Before	0	3	2	4	4	1
Denied Entry After	3	3	3	2	5	1
Travel Distance (mi)	4829	4926	4831	4966	4830	4876
Travel Time (hr)	261.7	290.4	275.9	276.3	277.5	276.4
Total Delay (hr)	85.7	110.7	99.9	95.0	101.5	98.6
Total Stops	9846	11329	10407	10601	10702	10579
Fuel Used (gal)	181.4	191.5	185.7	189.1	186.0	186.7

1: St. John Street & Margaritas Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	2.6	0.0	0.0	0.3
Total Del/Veh (s)	10.0	2.9	2.2	3.3
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

3: St. John Street & Garage Access/D St Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	1.4	0.1	0.4	0.1	0.6
Total Del/Veh (s)	12.0	4.9	8.9	12.7	11.2
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

5: Valley & St. John Street Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	2.7	0.0	1.3	0.9
Total Del/Veh (s)	13.3	18.1	14.4	19.2	15.3
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	1	0	0	1

7: St. John Street & Congress Street Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.4	0.0	0.7	0.0	0.4
Total Del/Veh (s)	21.6	9.0	29.1	21.5	21.2
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

12: Gilman Street & Congress Street Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.1	0.1	0.1	0.1
Total Del/Veh (s)	2.3	1.8	25.4	10.9	3.6
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

13: Fore River Pkwy & Valley Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.9	0.3	0.0	0.4
Total Del/Veh (s)	56.9	18.3	12.8	31.6
Denied Entry Before	1	0	0	1
Denied Entry After	0	0	0	0

18: Bramhall Street/Deering Avenue & Congress Street Performance by approach

Approach	EB	WB	NE	SW	All
Denied Del/Veh (s)	0.0	1.4	2.7	3.1	1.5
Total Del/Veh (s)	16.5	21.5	13.4	15.2	16.4
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

19: St. John Street & Park Avenue Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	1.6	0.1	1.0	0.8
Total Del/Veh (s)	42.8	23.3	28.5	31.5
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

22: Proposed Drop Off & Congress Street Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.0
Total Del/Veh (s)	1.0	1.2	16.3	1.6
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

32: Visitor Garage/Forest Street Garage & Congress Street Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.1	0.1	0.2	0.1
Total Del/Veh (s)	1.2	1.8	17.3	8.6	2.8
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

Total Network Performance

Denied Del/Veh (s)	1.3
Total Del/Veh (s)	42.4
Denied Entry Before	1
Denied Entry After	1

Intersection: 1: St. John Street & Margaritas

Movement	EB	EB	NB	SB
Directions Served	L	R	LT	TR
Maximum Queue (ft)	76	65	158	17
Average Queue (ft)	30	32	31	1
95th Queue (ft)	63	55	98	6
Link Distance (ft)	549		677	671
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		125		
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: St. John Street & Garage Access/D St

Movement	EB	EB	WB	NB	NB	SB	SB
Directions Served	LT	R	LTR	L	TR	L	TR
Maximum Queue (ft)	168	103	35	73	193	100	293
Average Queue (ft)	89	42	14	13	83	33	133
95th Queue (ft)	147	81	37	44	157	84	239
Link Distance (ft)	559		663		1605		677
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)		150		100		75	
Storage Blk Time (%)	0	0			3	0	16
Queuing Penalty (veh)	1	0			1	2	7

Intersection: 5: Valley & St. John Street

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	R	L	TR	L	TR	LT	TR
Maximum Queue (ft)	192	135	276	97	146	203	42	50
Average Queue (ft)	66	97	154	24	66	100	13	8
95th Queue (ft)	148	143	240	67	121	167	39	31
Link Distance (ft)	1605			988	270	270	1083	
Upstream Blk Time (%)						0		
Queuing Penalty (veh)						0		
Storage Bay Dist (ft)		110	335					265
Storage Blk Time (%)	1	4						
Queuing Penalty (veh)	3	5						

Intersection: 7: St. John Street & Congress Street

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	R	T	TR	L	T
Maximum Queue (ft)	237	372	313	104	159	439	200	103	240
Average Queue (ft)	136	222	71	40	74	168	156	50	109
95th Queue (ft)	217	340	199	87	130	330	214	93	211
Link Distance (ft)	1767	1767			367	671		792	792
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)			290	80			175		
Storage Blk Time (%)		2	0	1	6	3	5		
Queuing Penalty (veh)		4	0	2	3	12	17		

Intersection: 12: Gilman Street & Congress Street

Movement	EB	WB	WB	NB	SB
Directions Served	TR	L	T	LTR	LTR
Maximum Queue (ft)	10	69	20	105	66
Average Queue (ft)	0	30	1	46	27
95th Queue (ft)	7	59	14	81	57
Link Distance (ft)	367		170	1063	624
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		65			
Storage Blk Time (%)		1			
Queuing Penalty (veh)		3			

Intersection: 13: Fore River Pkwy & Valley

Movement	EB	EB	EB	EB	WB	WB	WB	SB	SB	SB
Directions Served	L	L	T	T	T	T	R	L	R	R
Maximum Queue (ft)	453	500	777	722	227	206	65	123	170	170
Average Queue (ft)	321	372	309	245	151	137	25	65	100	103
95th Queue (ft)	573	595	820	715	207	201	55	106	151	151
Link Distance (ft)			1519	1519	1275	1275		270	270	270
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	430	430					415			
Storage Blk Time (%)	9	28	3							
Queuing Penalty (veh)	29	91	14							

Intersection: 18: Bramhall Street/Deering Avenue & Congress Street

Movement	EB	EB	WB	WB	NE	NE	SW	SW
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	148	273	196	90	114	151	267	75
Average Queue (ft)	69	139	74	69	28	76	117	69
95th Queue (ft)	123	234	153	99	74	130	231	86
Link Distance (ft)	966		1272		1186		795	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)		400		65		135		50
Storage Blk Time (%)			5	11		1	5	27
Queuing Penalty (veh)			9	11		0	22	24

Intersection: 19: St. John Street & Park Avenue

Movement	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	TR	L	LT	R	LT	R
Maximum Queue (ft)	164	235	590	281	447	135	283	80
Average Queue (ft)	115	184	270	157	258	112	137	56
95th Queue (ft)	193	265	581	248	397	175	239	101
Link Distance (ft)			1640	792	792		1376	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	95	95				110		55
Storage Blk Time (%)	10	30	49		31	1	36	3
Queuing Penalty (veh)	44	128	260		87	6	39	8

Intersection: 22: Proposed Drop Off & Congress Street

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	19	147	74
Average Queue (ft)	1	18	30
95th Queue (ft)	8	79	61
Link Distance (ft)	170	201	194
Upstream Blk Time (%)		0	
Queuing Penalty (veh)		1	
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 32: Visitor Garage/Forest Street Garage & Congress Street

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	72	97	99	83
Average Queue (ft)	5	9	41	41
95th Queue (ft)	35	49	77	69
Link Distance (ft)	201	966	624	434
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 831

Intersection: 3: St. John Street & Garage Access/D St

Phase	2	4	5	6	8
Movement(s) Served	NBTL	EBTL	NBL	SBTL	WBTL
Maximum Green (s)	31.0	19.0	5.5	21.0	19.0
Minimum Green (s)	5.0	5.0	5.0	5.0	5.0
Recall	Min	None	None	Min	None
Avg. Green (s)	21.1	12.6	5.8	19.5	12.6
g/C Ratio	-0.01	-0.01	-0.01	NA	-0.01
Cycles Skipped (%)	1	1	88	0	1
Cycles @ Minimum (%)	0	2	1	0	2
Cycles Maxed Out (%)	16	20	9	53	20
Cycles with Peds (%)	0	0	0	0	0

Controller Summary
Average Cycle Length (s): NA

Number of Complete Cycles : 0

Intersection: 5: Valley & St. John Street

Phase	2	3	4	6	8
Movement(s) Served	NBTL	WBL	EBTL	SBTL	WBT
Maximum Green (s)	18.0	19.0	18.0	18.0	42.0
Minimum Green (s)	5.0	5.0	5.0	5.0	5.0
Recall	None	None	None	None	None
Avg. Green (s)	12.1	16.4	13.6	12.1	35.1
g/C Ratio	-0.01	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	8	1	9	8	5
Cycles @ Minimum (%)	0	0	1	0	0
Cycles Maxed Out (%)	20	52	34	20	24
Cycles with Peds (%)	0	0	0	0	0

Controller Summary
Average Cycle Length (s): NA

Number of Complete Cycles : 0

Intersection: 7: St. John Street & Congress Street

Phase	1	2	3	4	5	6	8
Movement(s) Served	EBL	WBL	SBL	NBT	WBL	EBTL	SBT
Maximum Green (s)	16.3	22.7	5.7	22.5	4.5	34.5	35.0
Minimum Green (s)	8.0	8.0	3.0	8.0	4.5	8.0	5.0
Recall	None	Min	None	None	None	Min	None
Avg. Green (s)	14.2	15.6	5.7	22.0	5.0	30.0	33.3
g/C Ratio	NA	NA	-0.01	NA	-0.01	NA	NA
Cycles Skipped (%)	0	0	11	0	49	0	0
Cycles @ Minimum (%)	7	24	0	0	44	0	0
Cycles Maxed Out (%)	56	26	82	73	51	36	62
Cycles with Peds (%)	0	0	0	0	0	0	0

Controller Summary

Average Cycle Length (s): NA

Number of Complete Cycles : 0

Intersection: 13: Fore River Pkwy & Valley

Phase	4	6	7	8
Movement(s) Served	EBT	SBL	EBL	WBT
Maximum Green (s)	34.0	11.0	11.0	18.0
Minimum Green (s)	5.0	5.0	5.0	5.0
Recall	None	None	None	None
Avg. Green (s)	33.8	10.8	11.0	17.5
g/C Ratio	NA	NA	NA	NA
Cycles Skipped (%)	0	0	0	0
Cycles @ Minimum (%)	0	0	0	0
Cycles Maxed Out (%)	89	91	98	89
Cycles with Peds (%)	0	0	0	0

Controller Summary

Average Cycle Length (s): NA

Number of Complete Cycles : 0

Intersection: 18: Bramhall Street/Deering Avenue & Congress Street

Phase	1	2	3	4	5	6	7	8
Movement(s) Served	SWL	NETL	WBL	EBTL	NEL	SWTL	EBL	WBTL
Maximum Green (s)	5.5	18.5	5.5	12.5	5.5	18.5	5.5	12.5
Minimum Green (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Recall	None	Max	None	None	None	Max	None	None
Avg. Green (s)	5.6	19.4	6.1	12.9	5.7	22.8	8.1	12.8
g/C Ratio	-0.01	NA	-0.01	-0.01	-0.01	NA	-0.01	-0.01
Cycles Skipped (%)	45	0	30	2	80	0	23	15
Cycles @ Minimum (%)	0	0	15	0	5	0	0	0
Cycles Maxed Out (%)	52	100	53	73	14	100	77	48
Cycles with Peds (%)	0	0	0	0	0	0	0	0

Controller Summary

Average Cycle Length (s): NA

Number of Complete Cycles : 0

Intersection: 19: St. John Street & Park Avenue

Phase	2	6	8
Movement(s) Served	NBTL	SBTL	WBTL
Maximum Green (s)	29.0	17.0	19.0
Minimum Green (s)	3.0	3.0	3.0
Recall	Min	Min	Min
Avg. Green (s)	28.5	14.8	19.2
g/C Ratio	NA	NA	NA
Cycles Skipped (%)	0	0	0
Cycles @ Minimum (%)	0	0	0
Cycles Maxed Out (%)	89	52	96
Cycles with Peds (%)	0	0	0

Controller Summary

Average Cycle Length (s): NA

Number of Complete Cycles : 0

Maine Medical Center
Bramhall Campus Environmental Graphics & Wayfinding Program

Site Submission
9.24.18

Leverage/

Response to City Comments and Recommendations

We appreciate the comments and direction offered by the City and have considered them. We believe the designs put forth the best approach for patients and families visiting MMC. Our overall design approach includes:

- Using existing sign foundations and locations (where possible)
- A 15% reduction in sign sizes from the current design
- Reduction in overall quantity of signs from the current system
- Better alignment with the MMC brand and architectural enhancements

City Comments and Recommendations (received Thursday, September 6, 2018)

- No signs will be permitted on properties not owned by MMC (e.g. 1b)
- There are concerns about sight line obstructions on several of the signs, including ST.1a, CS.2 and EG.1a. Please provide a sight line analysis NOTE: Site Line Analysis to be completed in the near future.
- There are concerns about the size of the signs in general. Could those proposed as 11' in height be brought to a more pedestrian scale (e.g 8'?) There are particular concerns about the size of 4a, which is replacing a much smaller sign and 6a. Both of these signs should be brought to a pedestrian scale
- Eliminate one of the signs marked 5.b and reduce the size of the remaining to the scale of the existing sign
- Please indicate dimensions of CS.1 and method of illumination. At first blush, this sign appears out of scale.
- The layout of EG.1a is inconsistent with the other signs of similar purpose (e.g.ST.3a). Is there a reason for this?

Masterplan Overview

01 Main Campus Signage
02 Congress Street Building Signage
03 Employee Garage Signage



01

Main Campus Signage

Existing Signage

















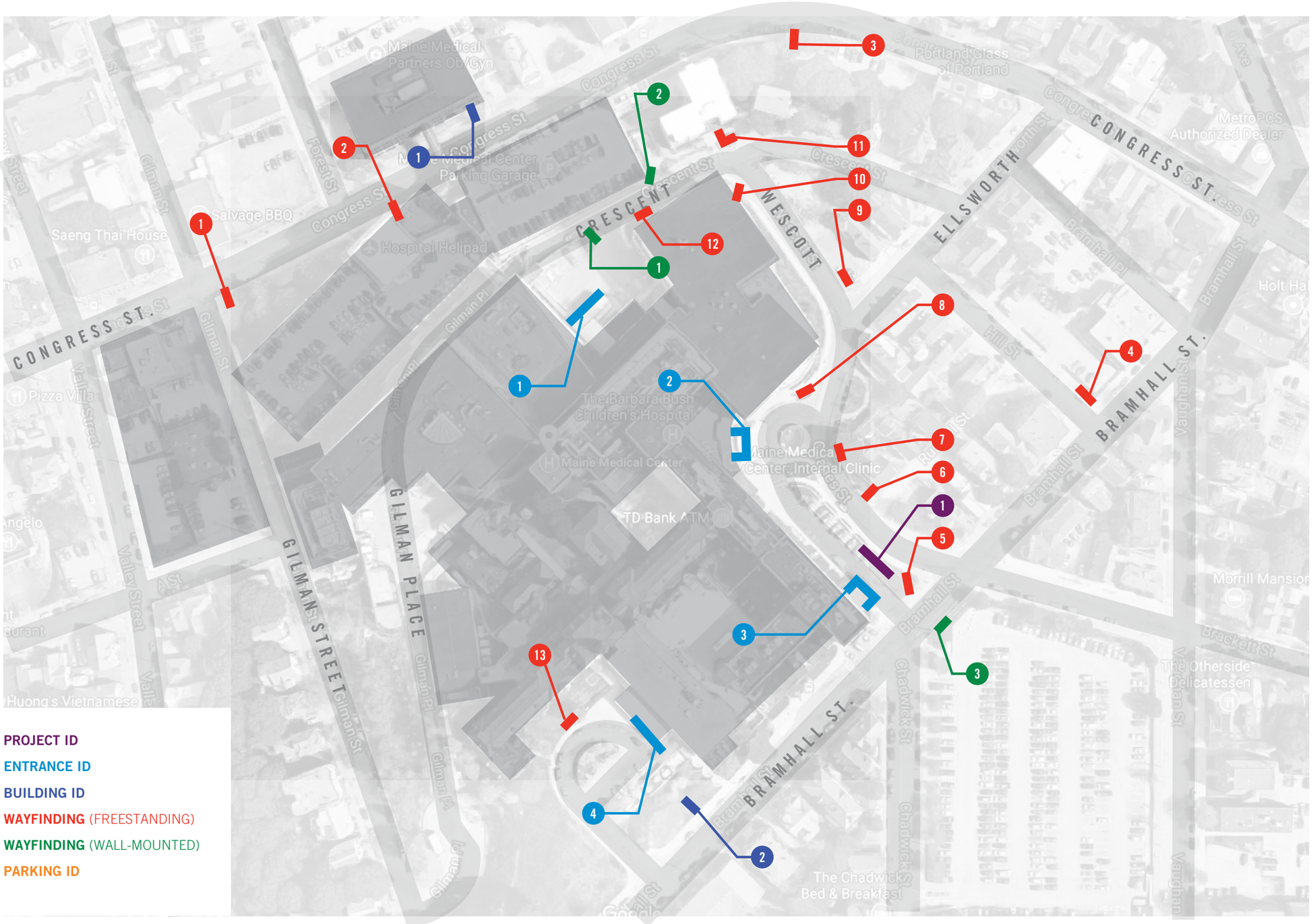




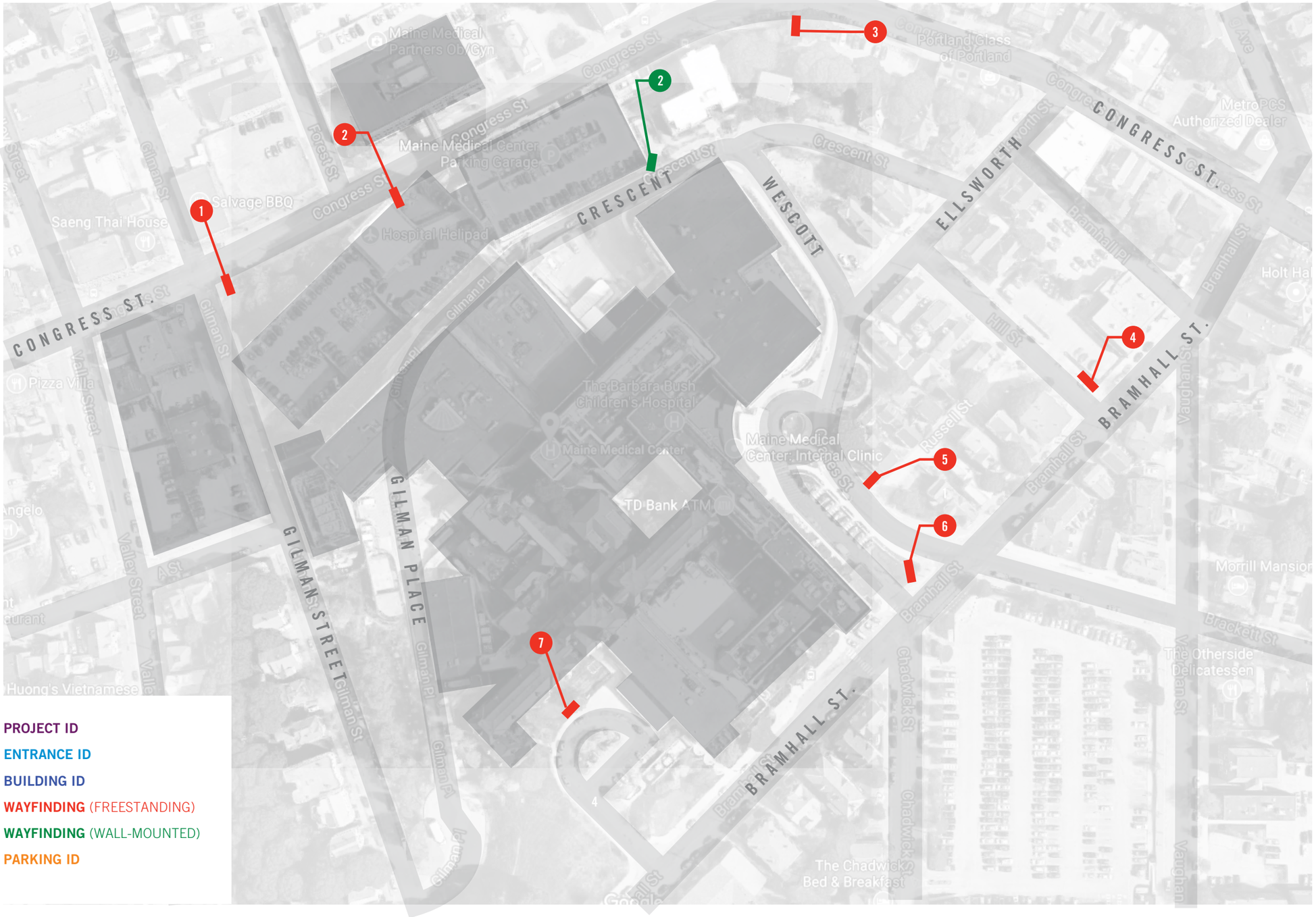




Existing Signage Location Plan



Demo Signage Elements



PROJECT ID

ENTRANCE ID

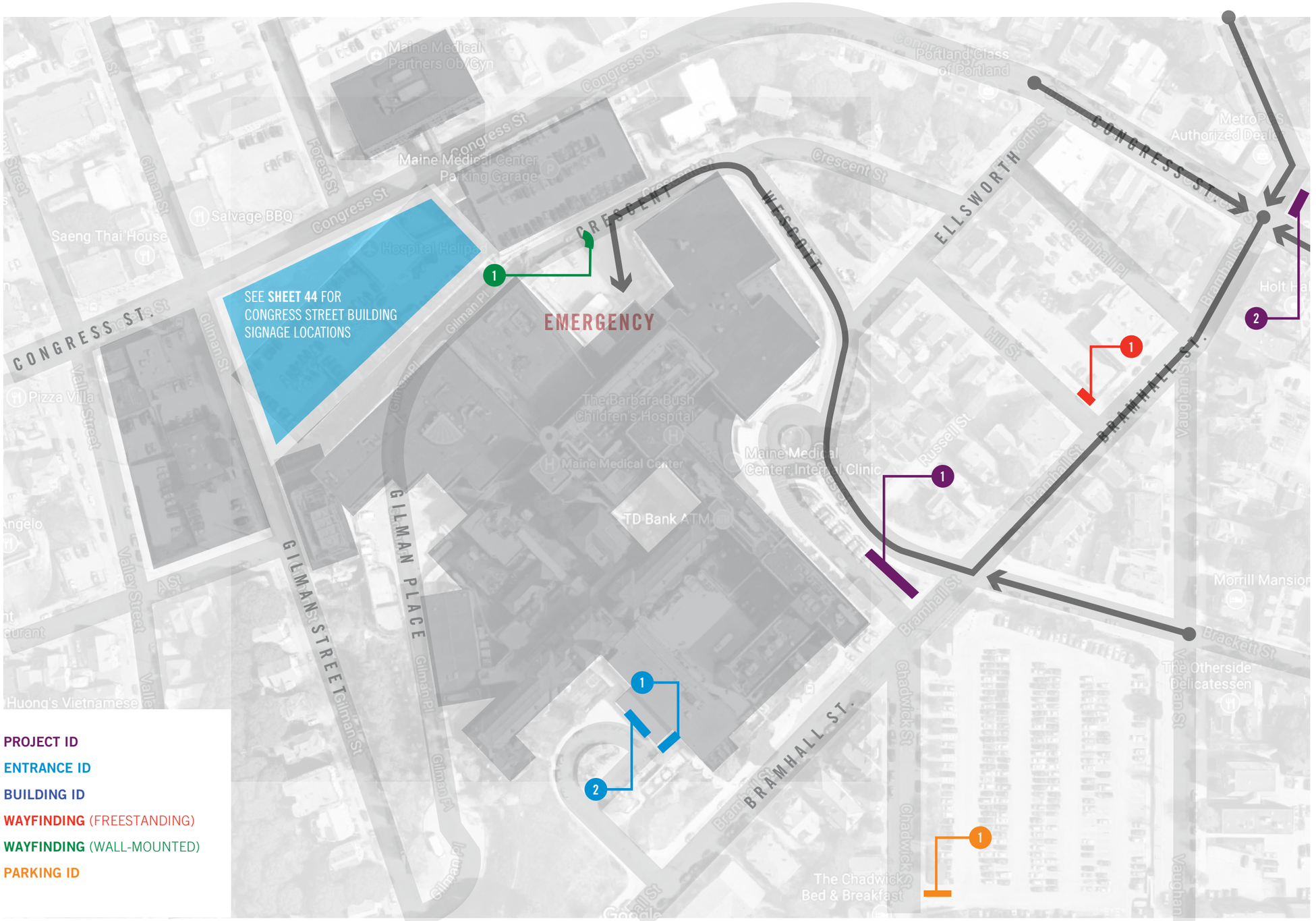
BUILDING ID

WAYFINDING (FREESTANDING)

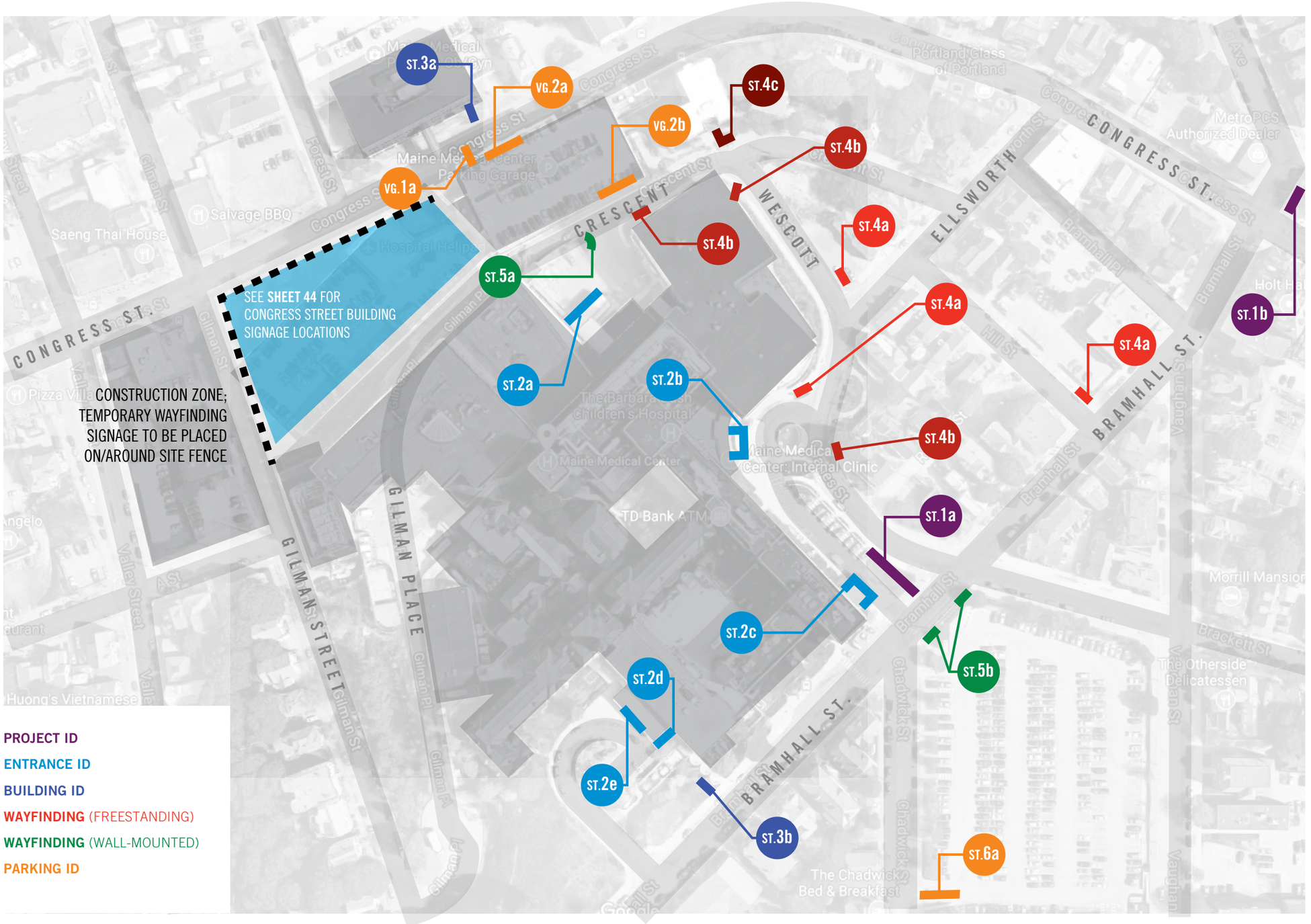
WAYFINDING (WALL-MOUNTED)

PARKING ID

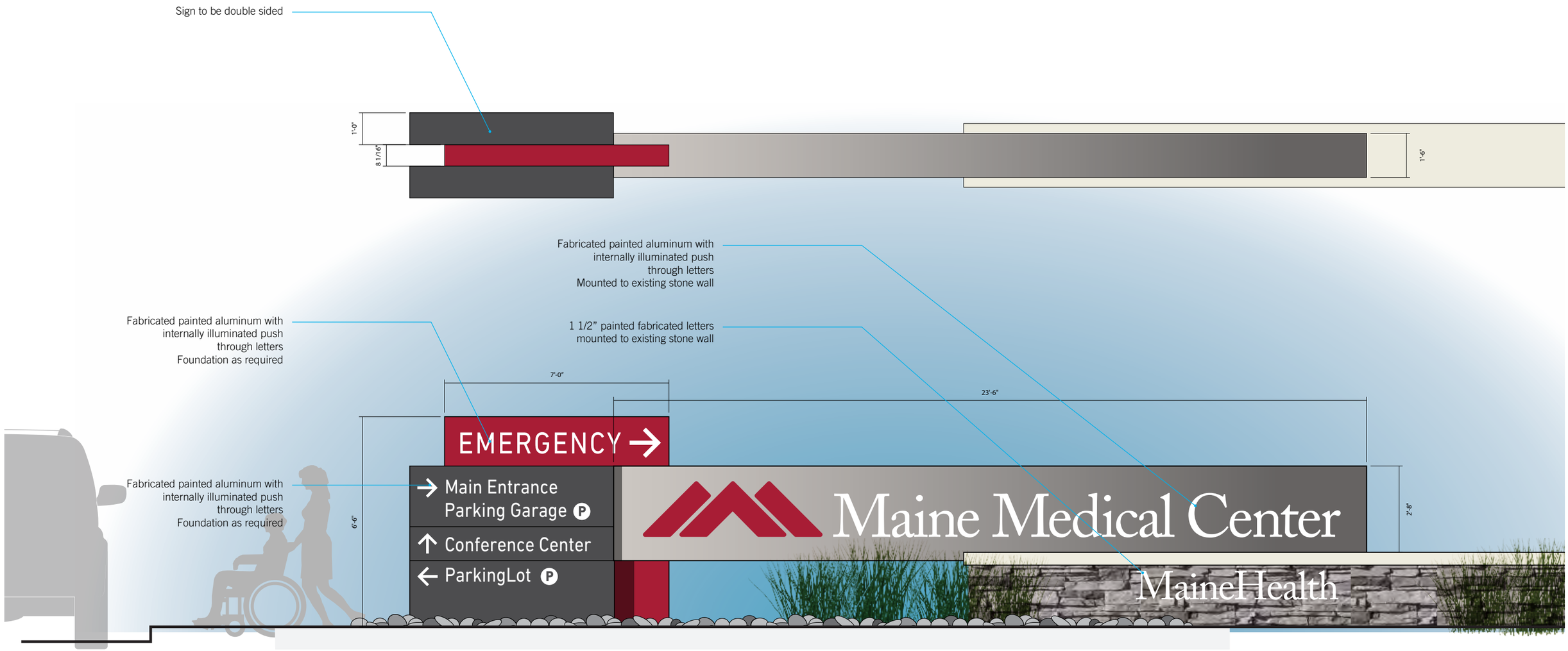
New Signage Elements



Preliminary Sign Location Plan



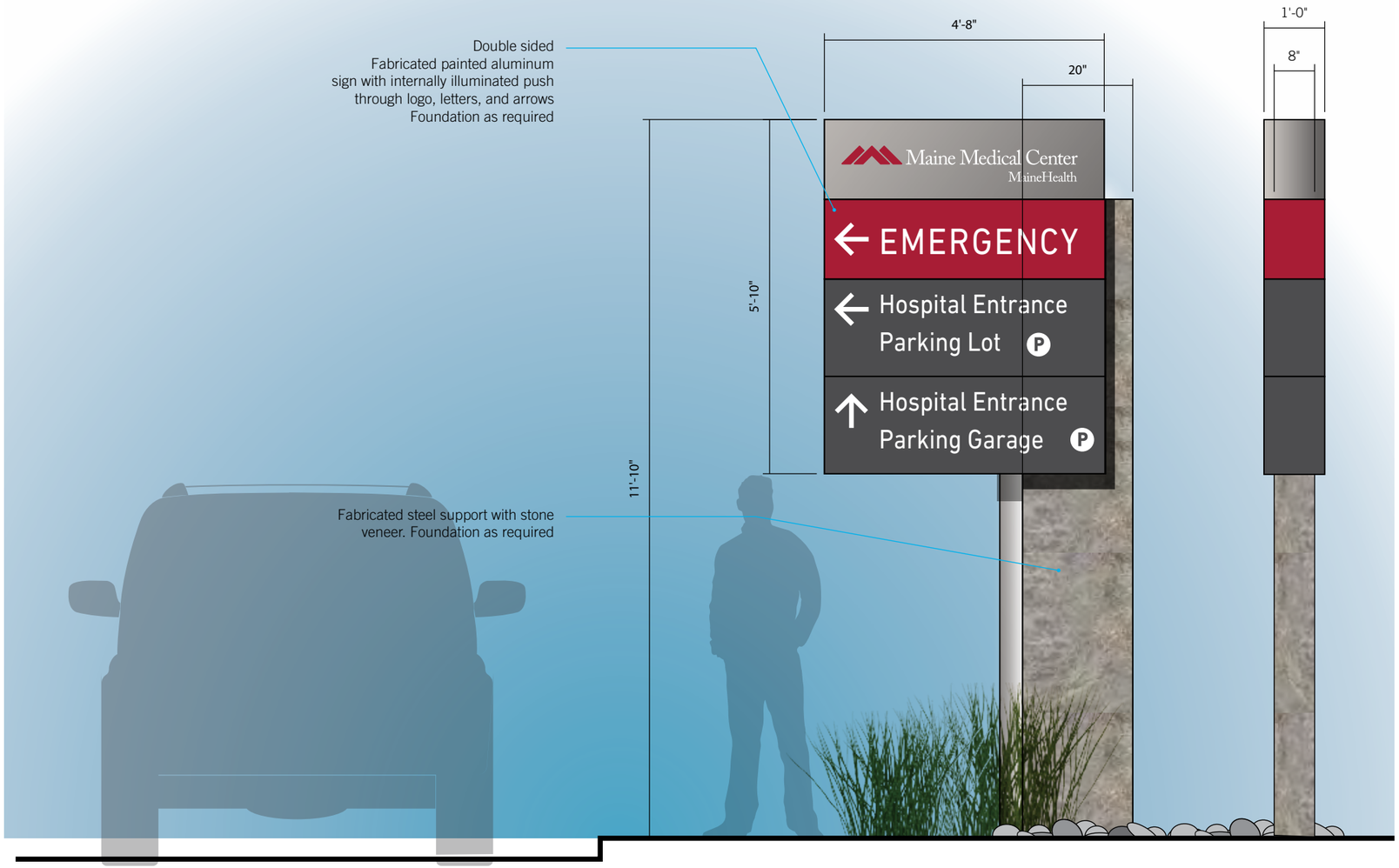
ST.1a Project ID (Bramhall Entry)



ST.1a View 1


EMERGENCY
Main Entrance
Parking Garage
Conference Center
Parking Lot
Maine Medical Center
MaineHealth
SOUTH

ST.1b Project ID (Bramhall Park)





ST.1b View 1


NO PARKING BUS STOP
ONLY
BUS STOP
METRO
STOP ID 122
Maine Medical Center
MaineHealth
EMERGENCY
Hospital Entrance
Parking Lot P
Hospital Entrance
Parking Garage P

ST.1b View 2



ST.2a Entrance ID (Emergency)

30”T x 24’W x 8”D VIF
Fabricated painted aluminum with internally illuminated push through letters
Mounted to existing columns as shown

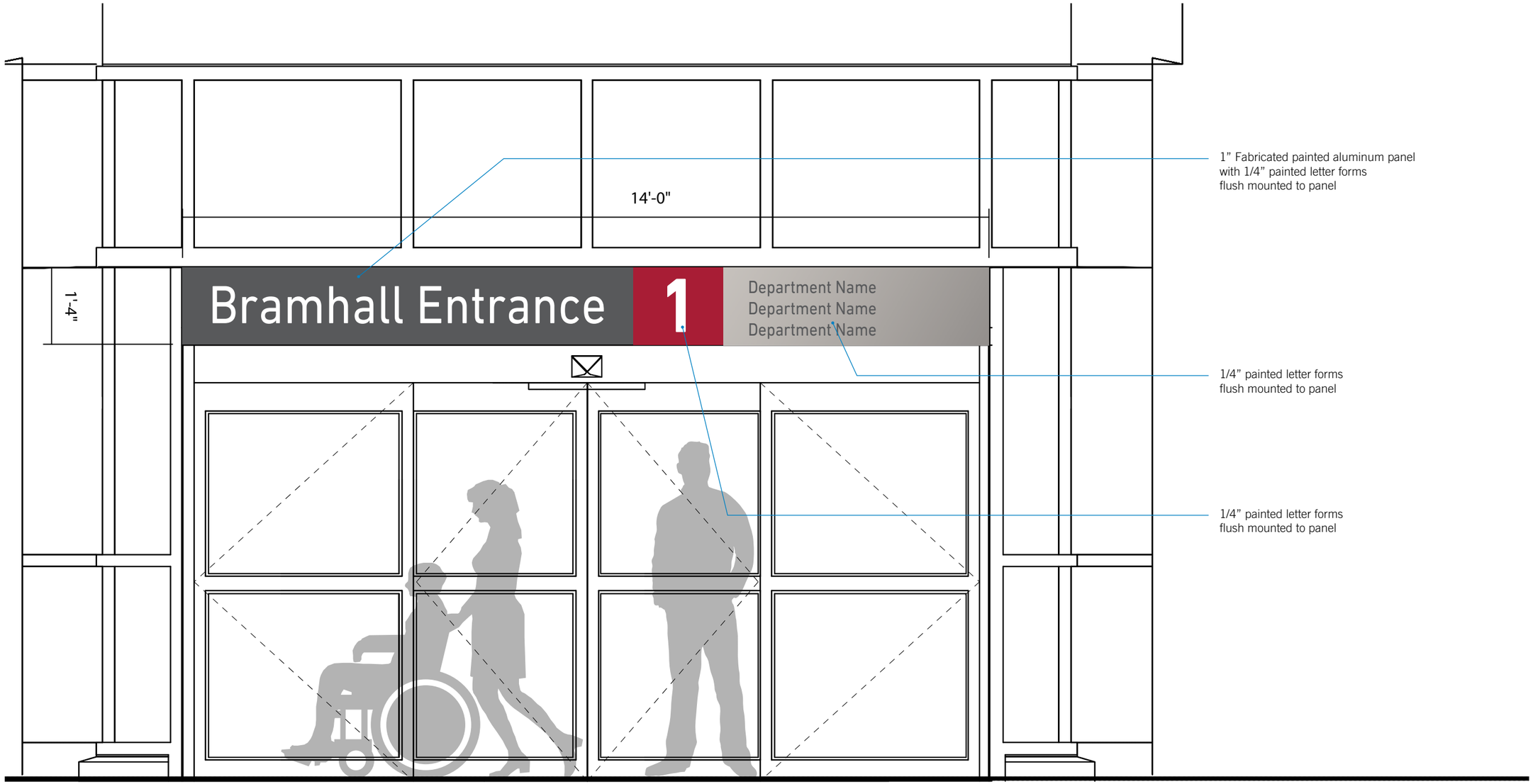
24” x 48” x 1” fabricated aluminum panel with direct printed graphics

Fabricated painted aluminum panel with 1/4” painted letter forms flush mounted

Fabricated painted aluminum panel with surface applied vinyl



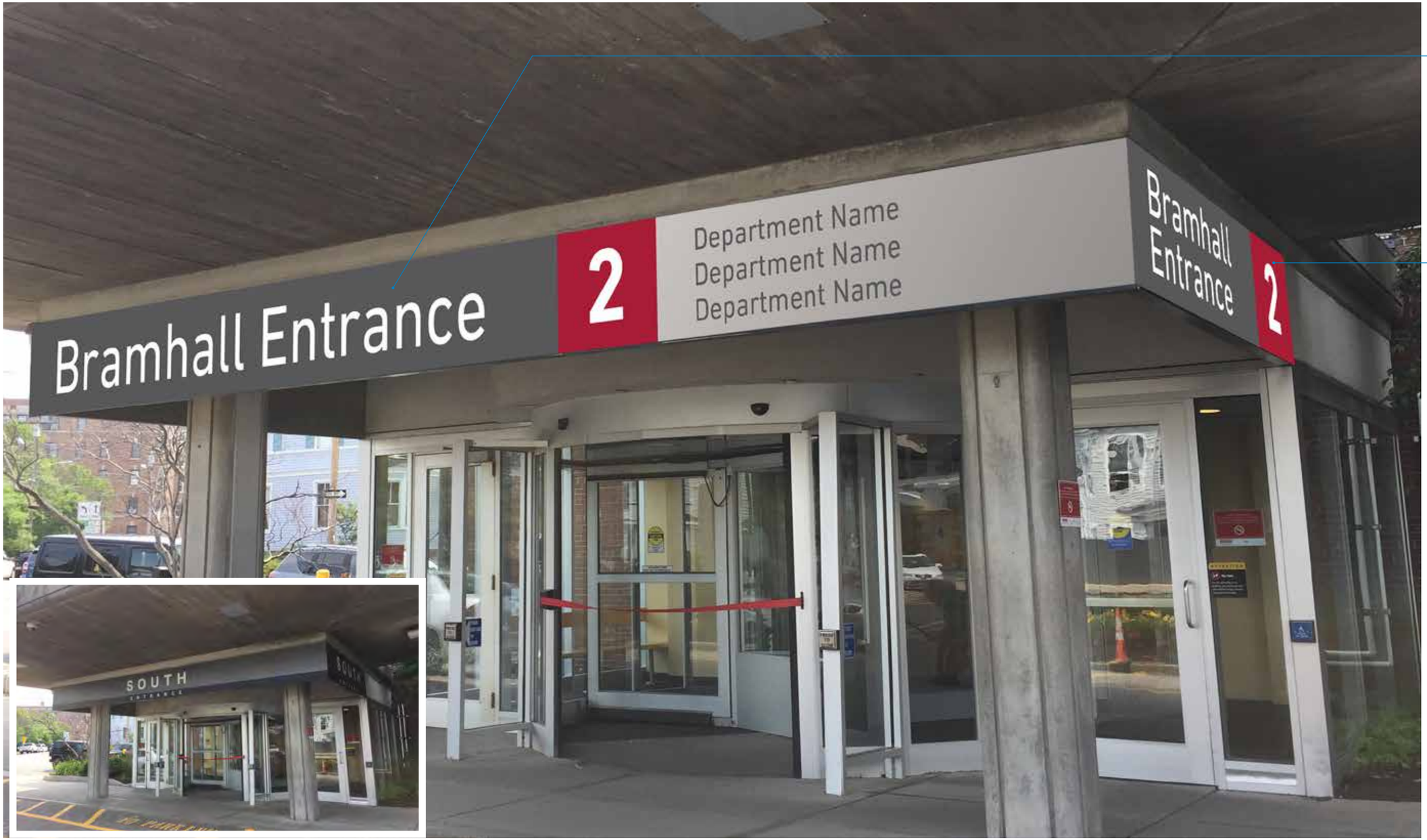
ST.2b Entrance ID (Bramhall 1)



ST.2b View 1


Bramhall Entrance
1
Department Name
Department Name
Department Name
MAIN
ENTRANCE

ST.2c Entrance ID (Bramhall 2)



FRONT
24”T x 25’-6”W x 1”D Fabricated painted aluminum panel with 1/4” painted letter forms flush mounted to panel

RIGHT/LEFT SIDES
24”T x 9’-10”W x 1”D Fabricated painted aluminum panel with 1/4” painted letter forms flush mounted to panel

ST.2d Entrance ID (Radiation)





8”T x 2”D Fabricated aluminum letter forms with enclosed back surfaces.
Mounted to top raceway, fastened to existing ceiling.

10”T x 60”W x 1/2”D Painted aluminum panel with 1/4” painted logo

12”T x 5”W x 1/4”D Painted aluminum panel with applied vinyl graphics

ST.2e Entrance ID (Dana Conference Center)



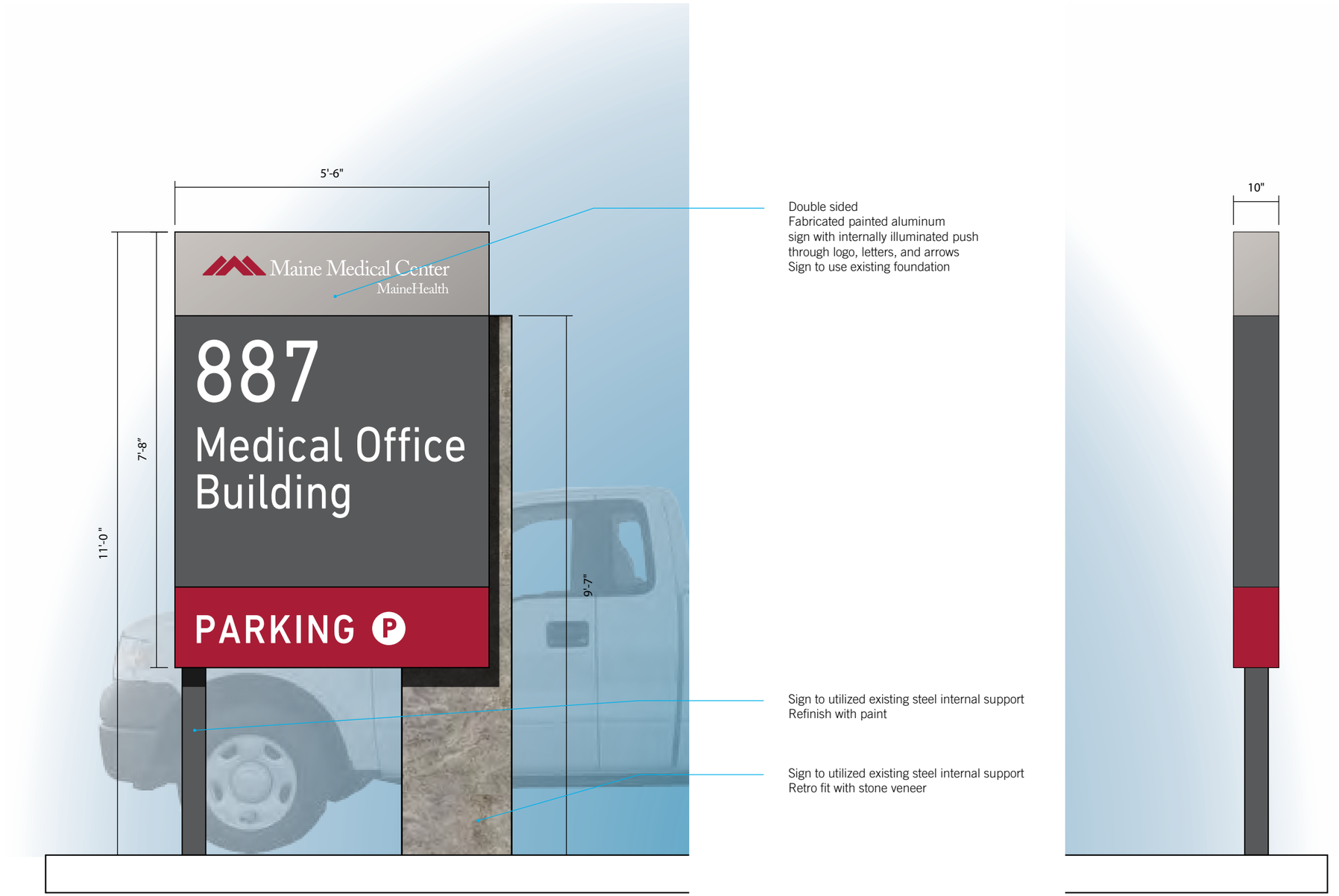


8”T x 2”D Fabricated aluminum letter forms with enclosed back surfaces.
Mounted to top raceway, fastened to existing ceiling.

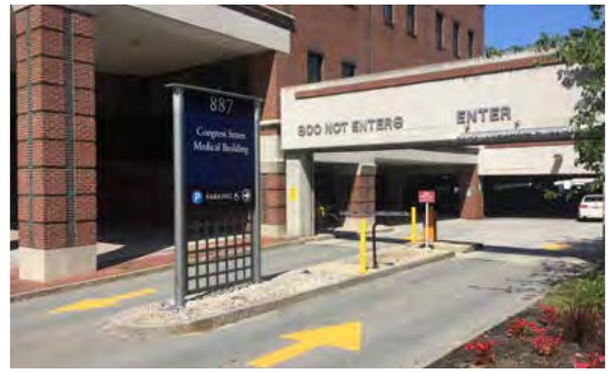
10”T x 72”W x 1/2”D Painted aluminum panel with 1/4” painted logo

24” x 36” x 1” fabricated aluminum panel with direct printed graphics

ST.3a Building ID (MOB 887)

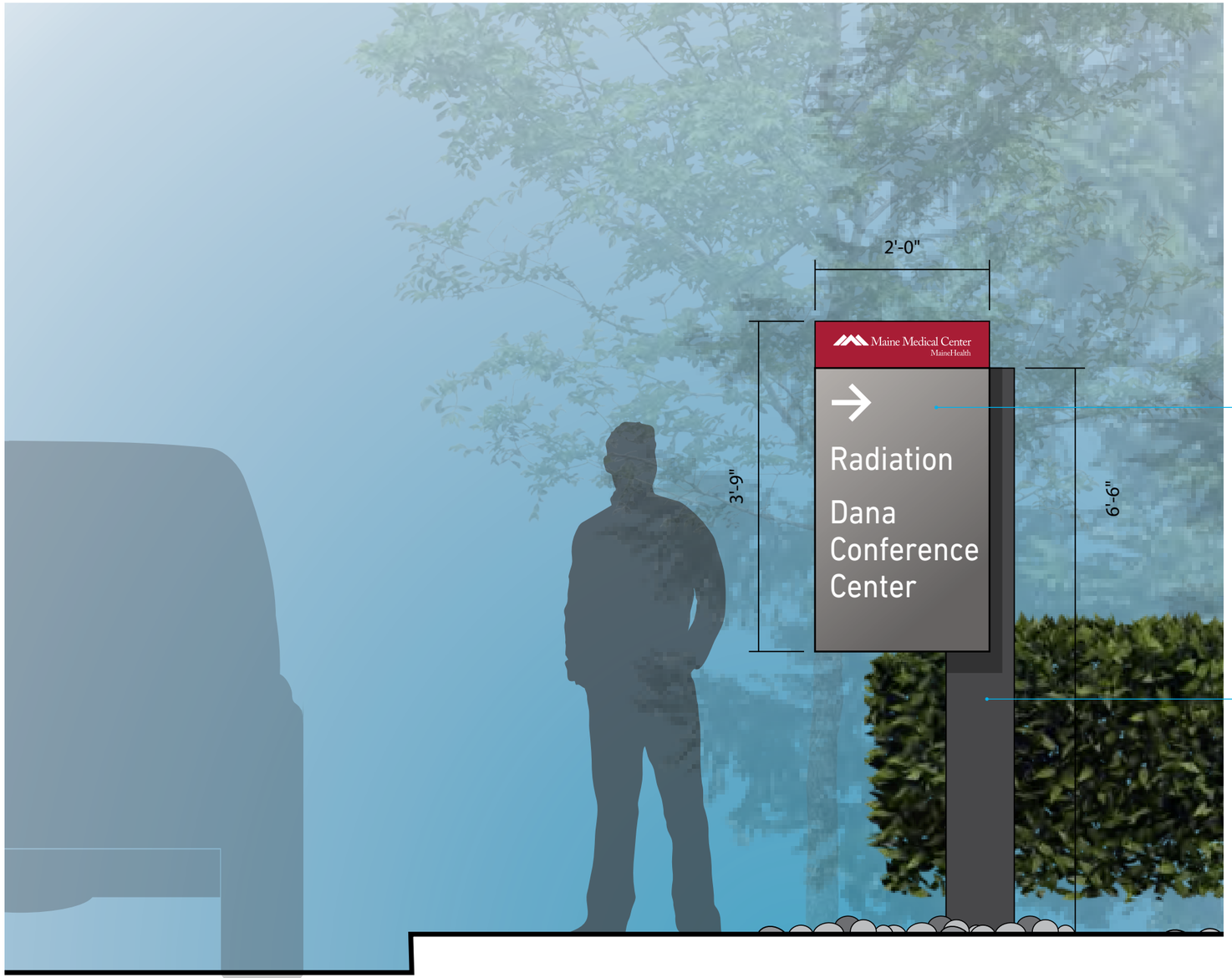


ST.3a View 1


887
Compton Street
Medical Building
DO NOT ENTER
ENTER

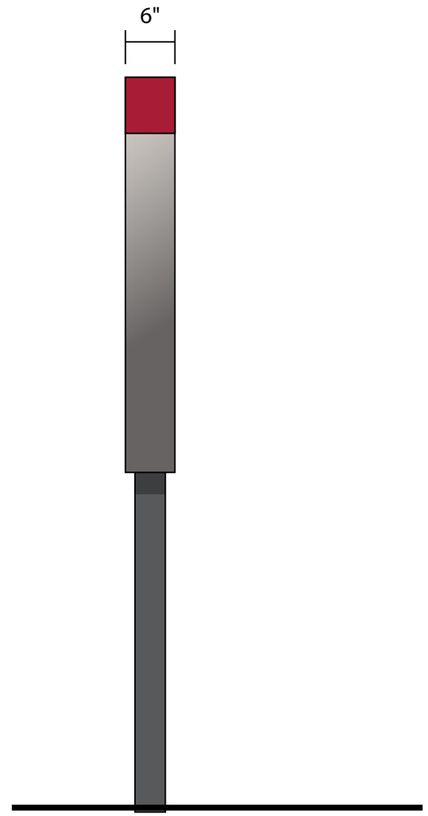
Maine Medical Center
MaineHealth
887
Medical Office
Building
PARKING P
DO NOT ENTER
ENTER
CLEARANCE
PATIENT
PARKING ONLY

ST.3b Building ID (Radiation/Dana)



Double sided
Fabricated painted aluminum with
applied vinyl graphics
Foundation as required

Fabricated painted aluminum
support

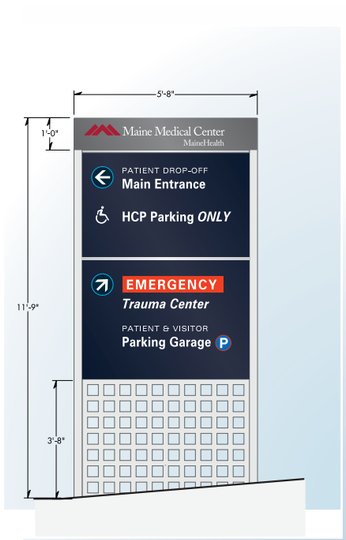


ST.3b View 1



Maine Medical Center
Radiation
Dana
Conference
Center
ESTERN

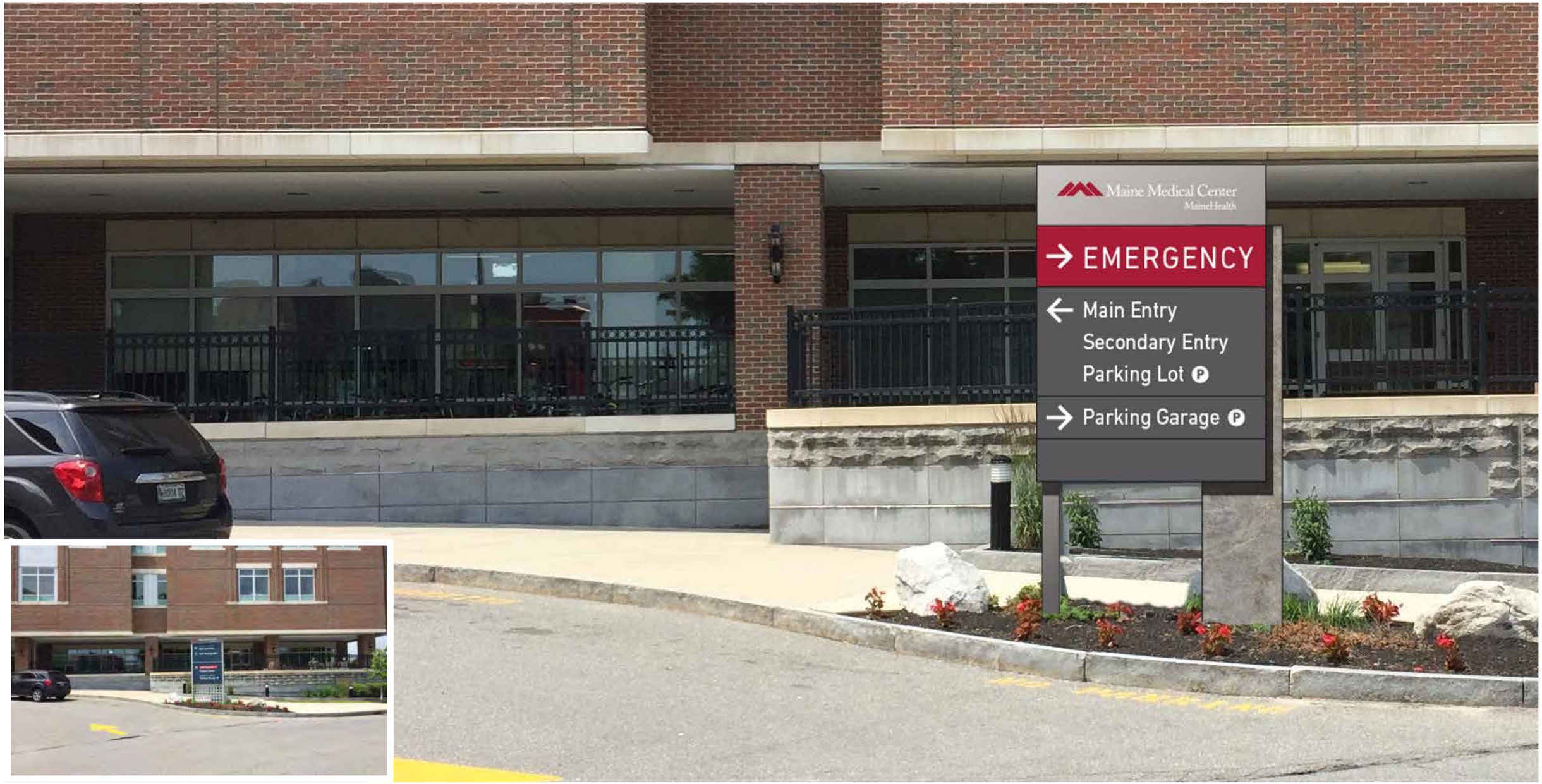
ST.4a Primary Vehicular Directional (Typical)



ST.4a Bramhall Street



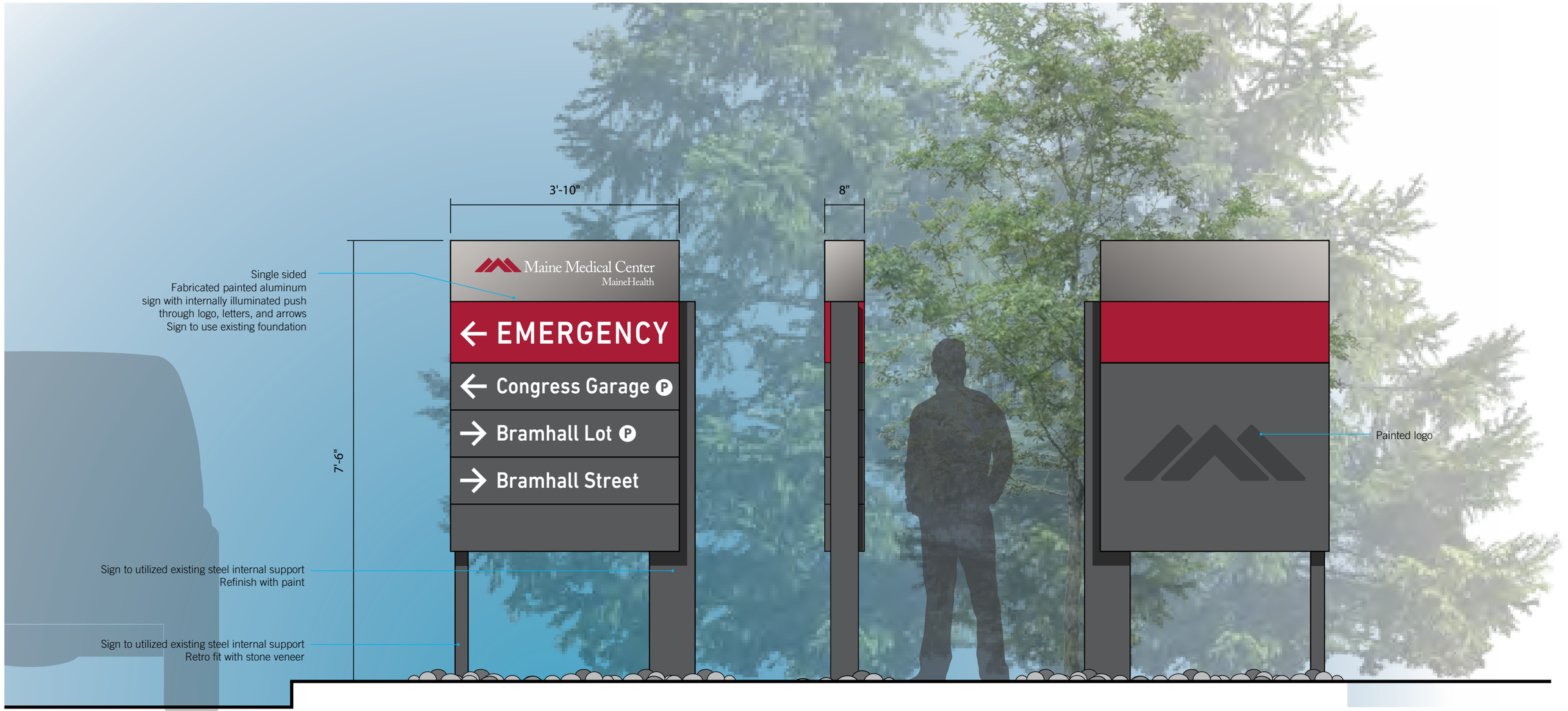
ST.4a Bramhall Circle



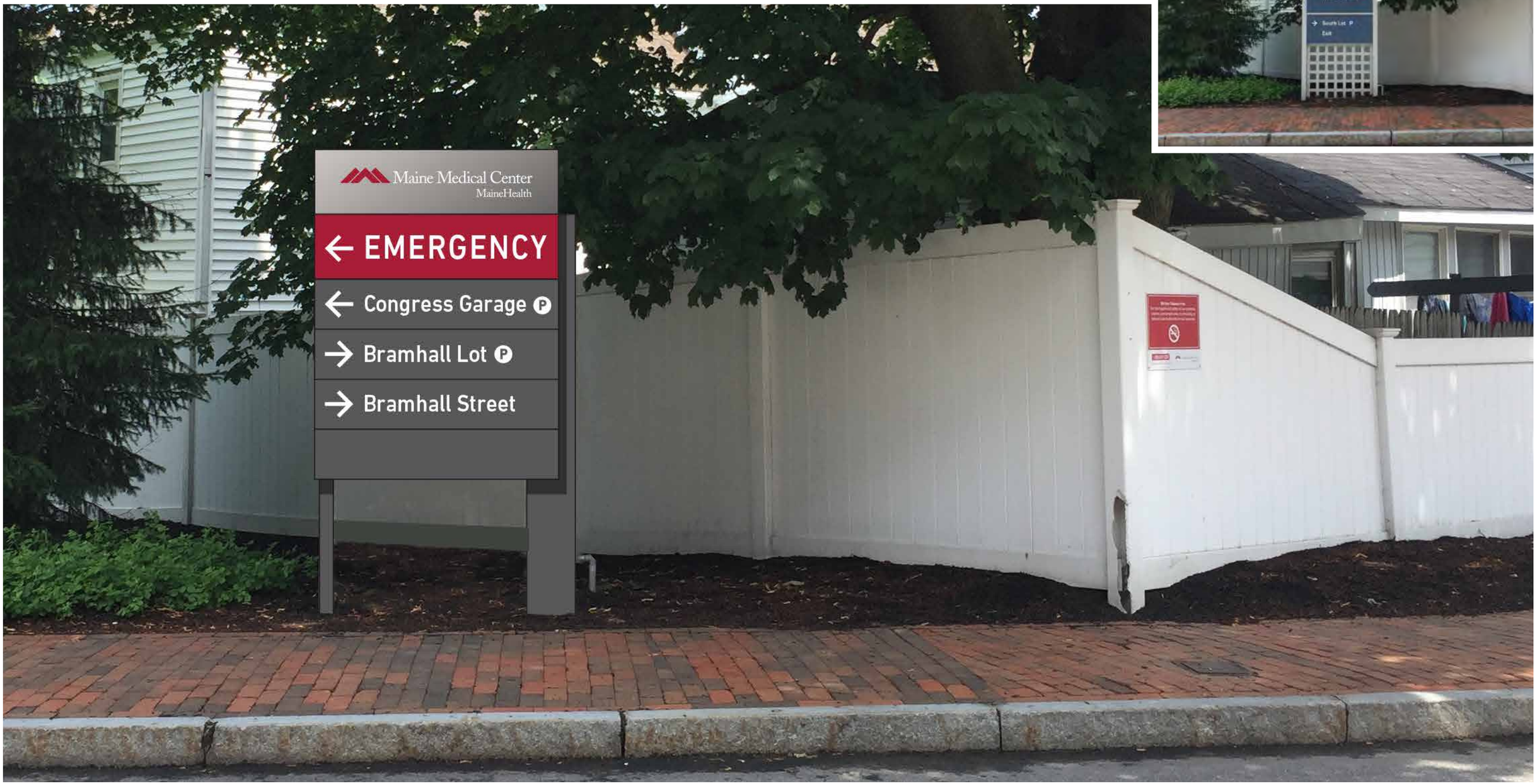
ST.4a Ellsworth



ST.4b Secondary Vehicular Directional



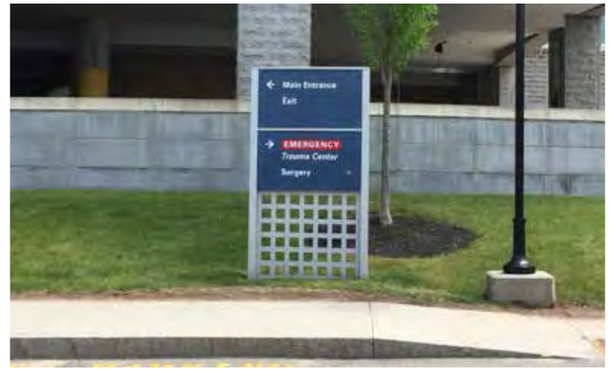
ST.4b Bramhall Circle



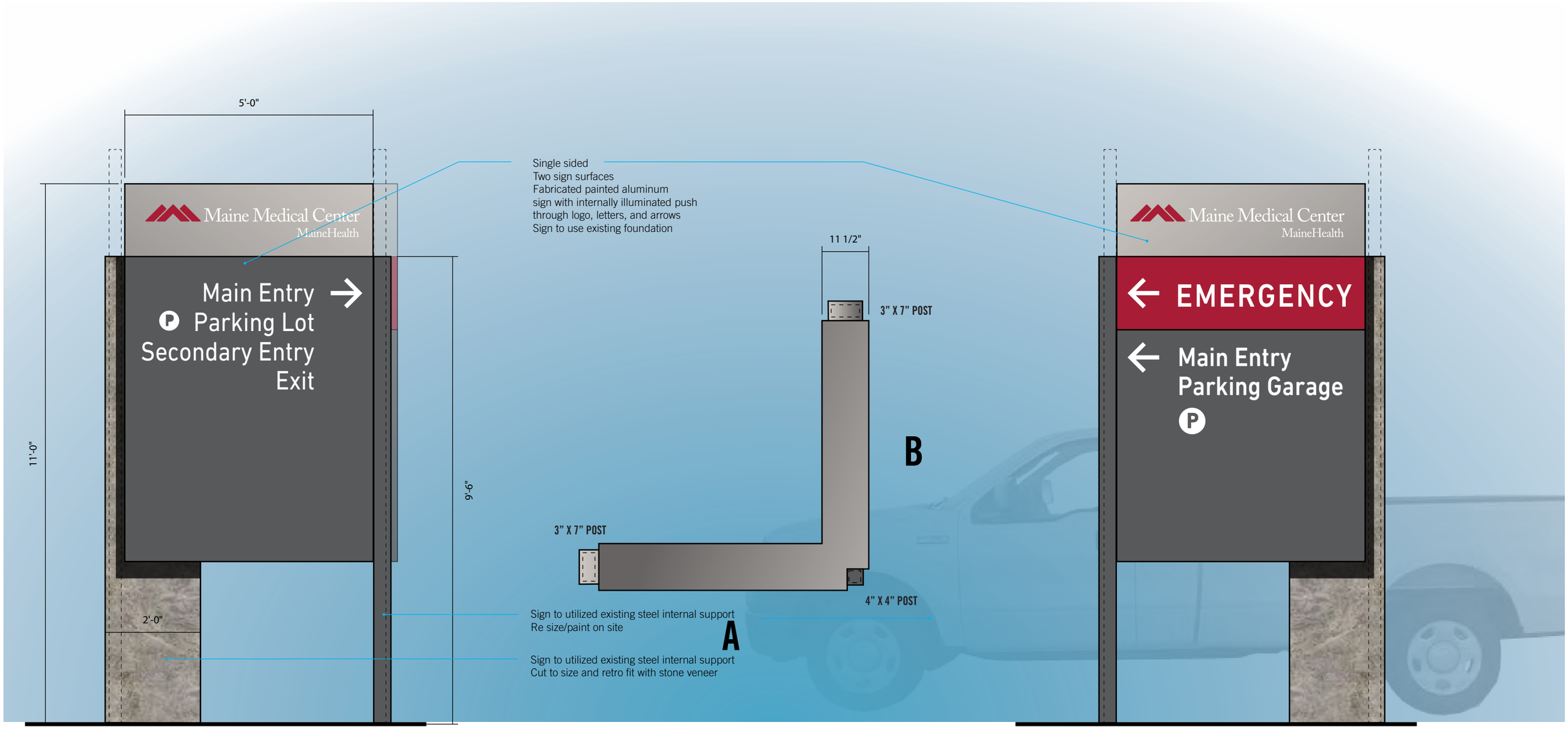
ST.4b Ambulance



ST.4b Congress Garage Parking



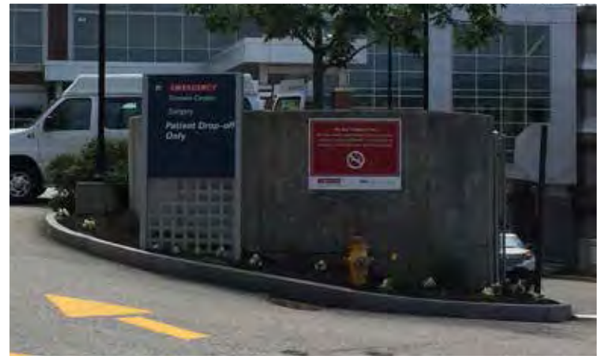
ST.4c L Vehicular Directional (Crescent & Wescott)



ST.4c View 1


Maine Medical Center
MaineHealth
EMERGENCY
Exit
Bramhall Lot
Bramhall Entrance
Maine Medical Center
MaineHealth
EMERGENCY
Congres Garage
Service
Facilities
NO PARKING

ST.5a Emergency Entrance Wall



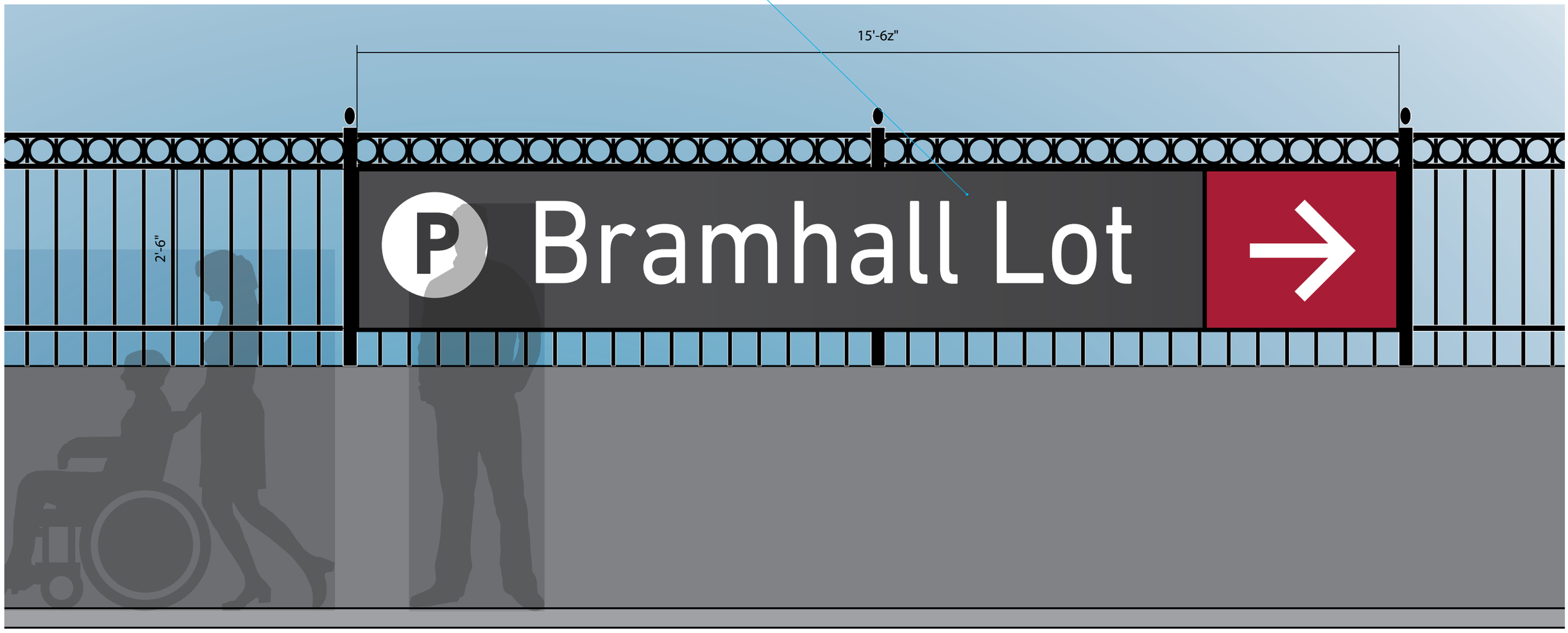
Single sided
16"T x 14'W x 6"D Fabricated painted aluminum sign with internally illuminated push through letters and arrows
Roll formed, flush mounted to existing precast

Single sided
12"T x 10'W x 4"D Fabricated painted aluminum sign with internally illuminated push through letters and arrows
Roll formed, flush mounted to existing precast

ST.5b Bramhall Lot Fence Panels

1” Fabricated painted aluminum
Mounted to existing fence
Surface applied reflective vinyl
copy and arrow

Quantity 2

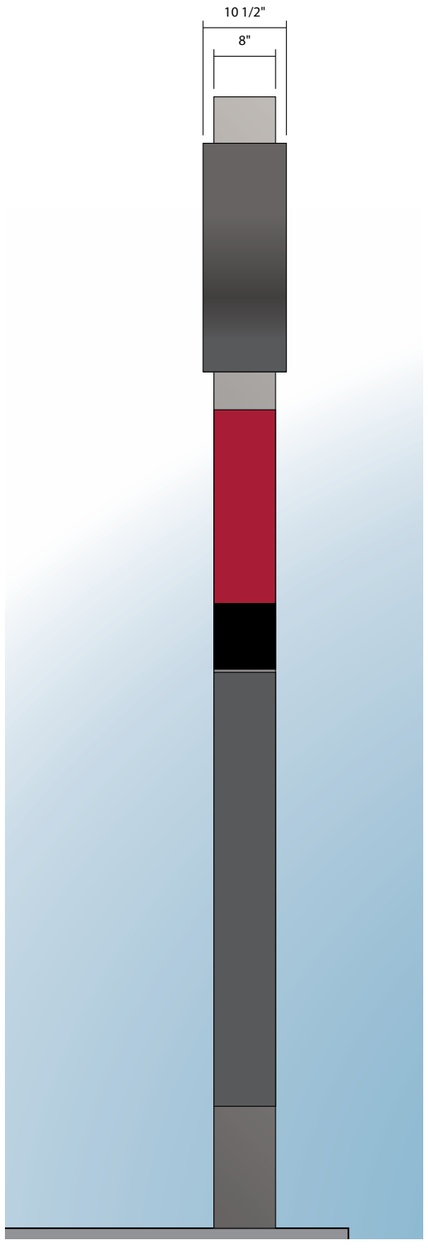


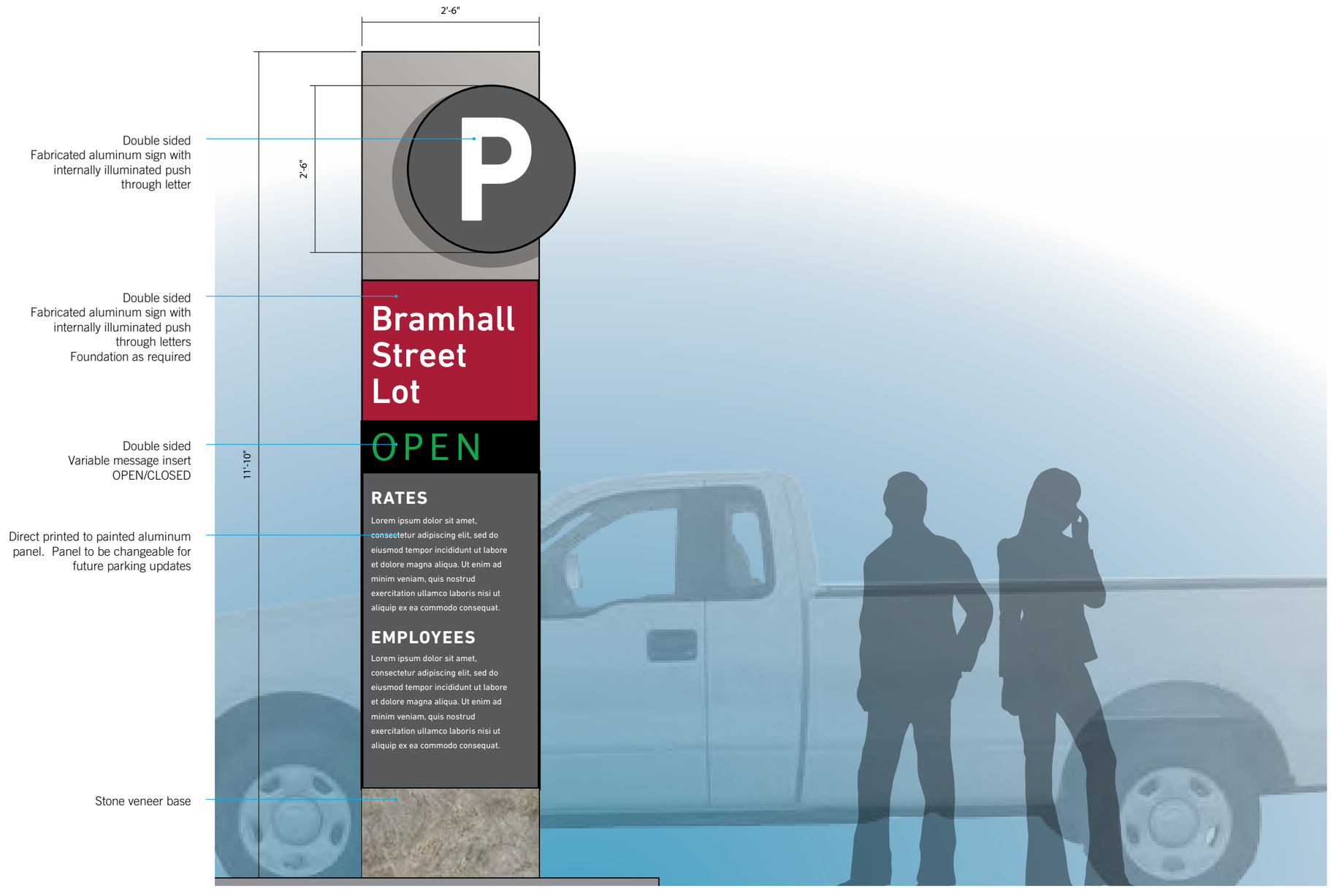
ST.5b View 1


P South Parking Lot

Bramhall Lot
772-8685
Rates
P Bramhall Lot

ST.6a Bramhall Lot Entrance





Double sided
Fabricated aluminum sign with
internally illuminated push
through letter

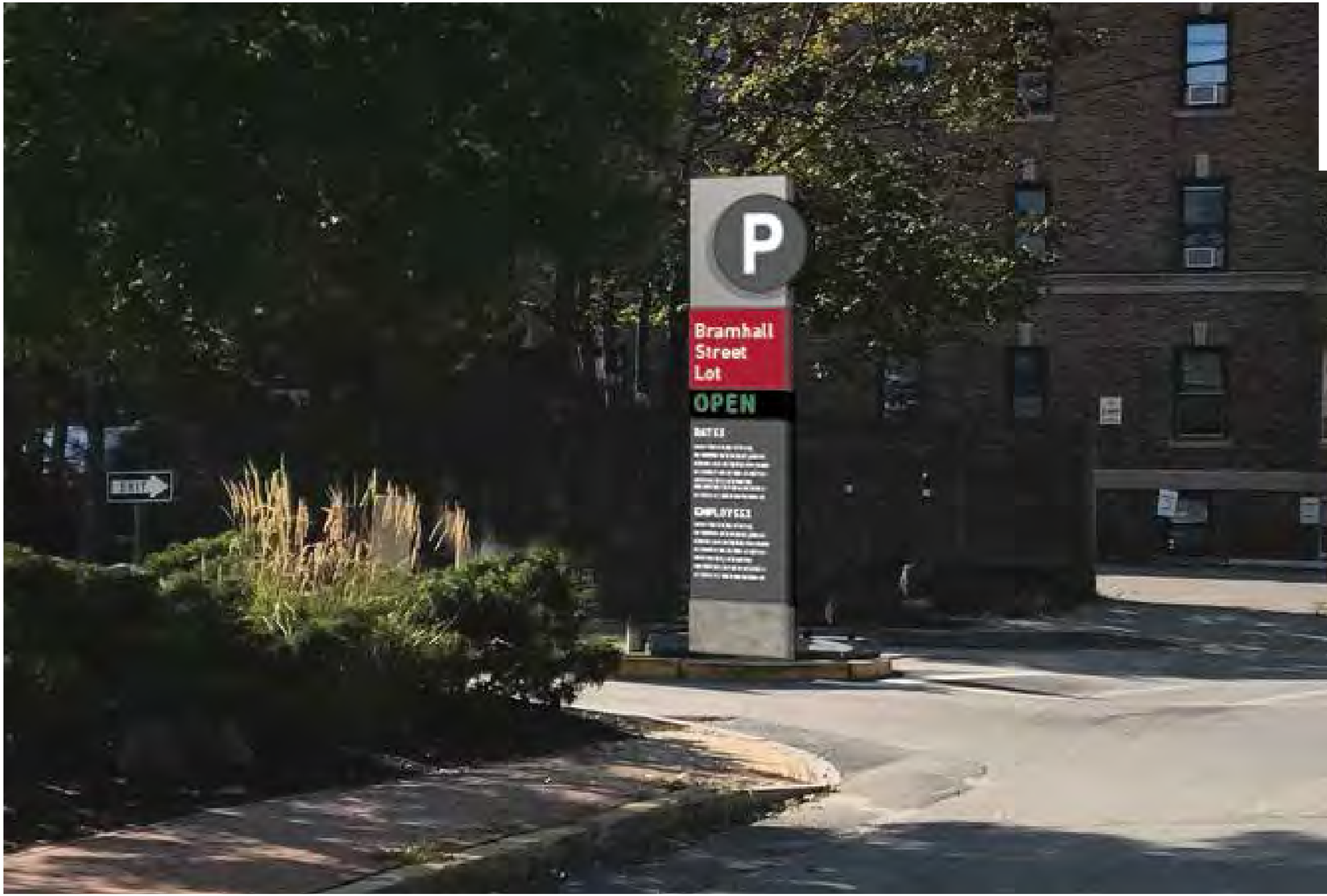
Double sided
Fabricated aluminum sign with
internally illuminated push
through letters
Foundation as required

Double sided
Variable message insert
OPEN/CLOSED

Direct printed to painted aluminum
panel. Panel to be changeable for
future parking updates

Stone veneer base

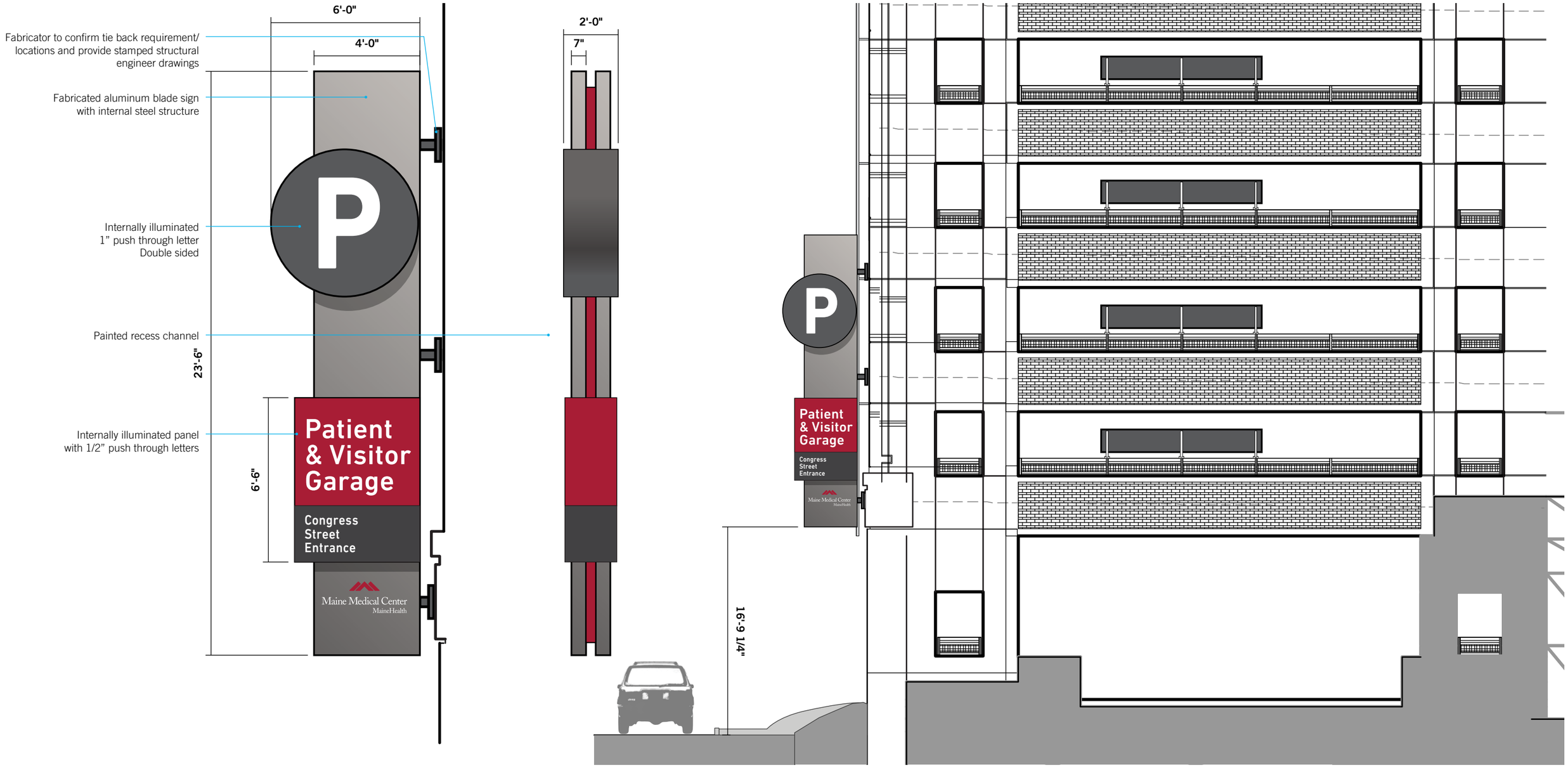
ST.6a View 1



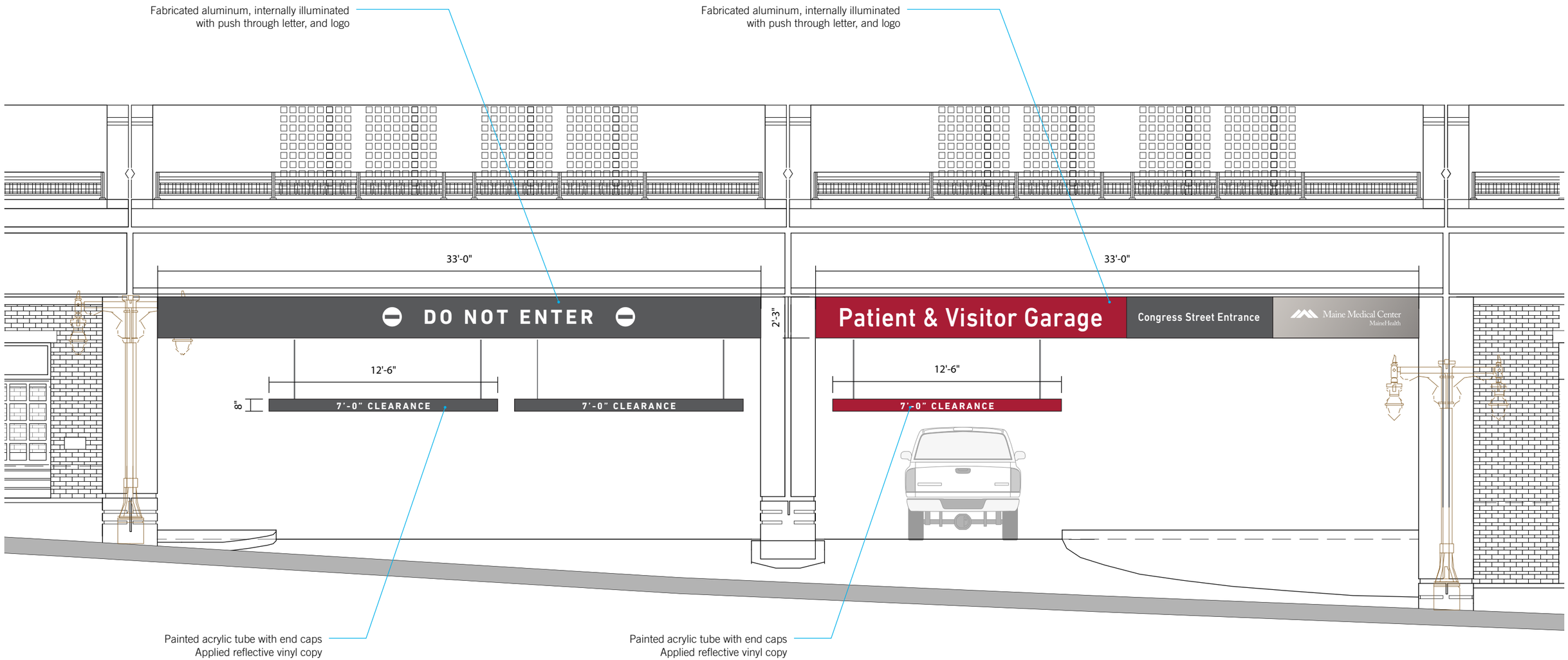




VG.1a Blade Sign (Congress)



VG.2a Garage Identification (Congress)



VG.1a & VG.2a View 1



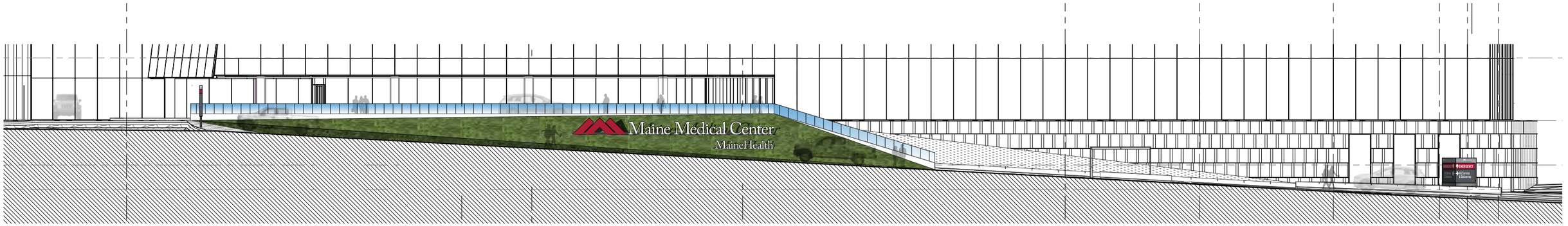
VG.2b Garage Identification (Crescent)



02

Congress Street Building Signage

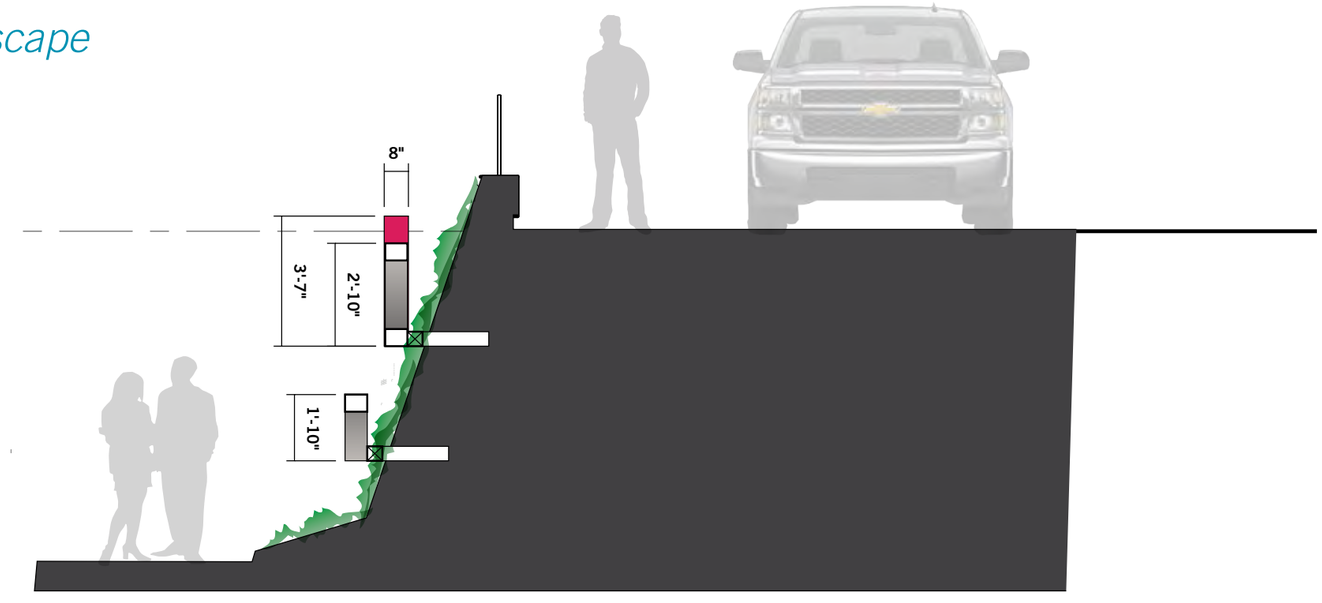
Preliminary
Sign Location
Plan

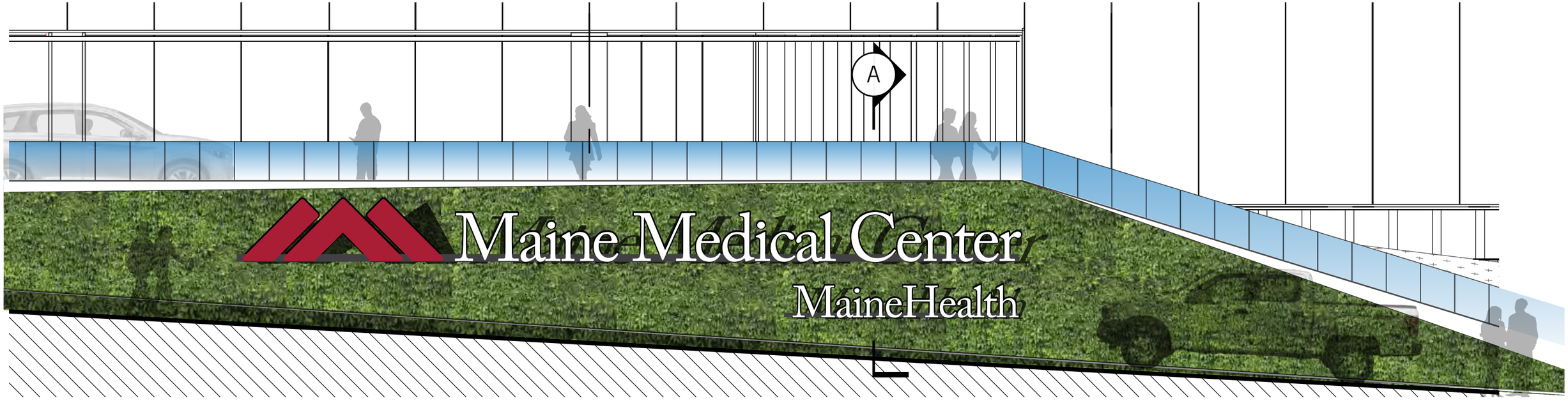




CS.1 Project Monument

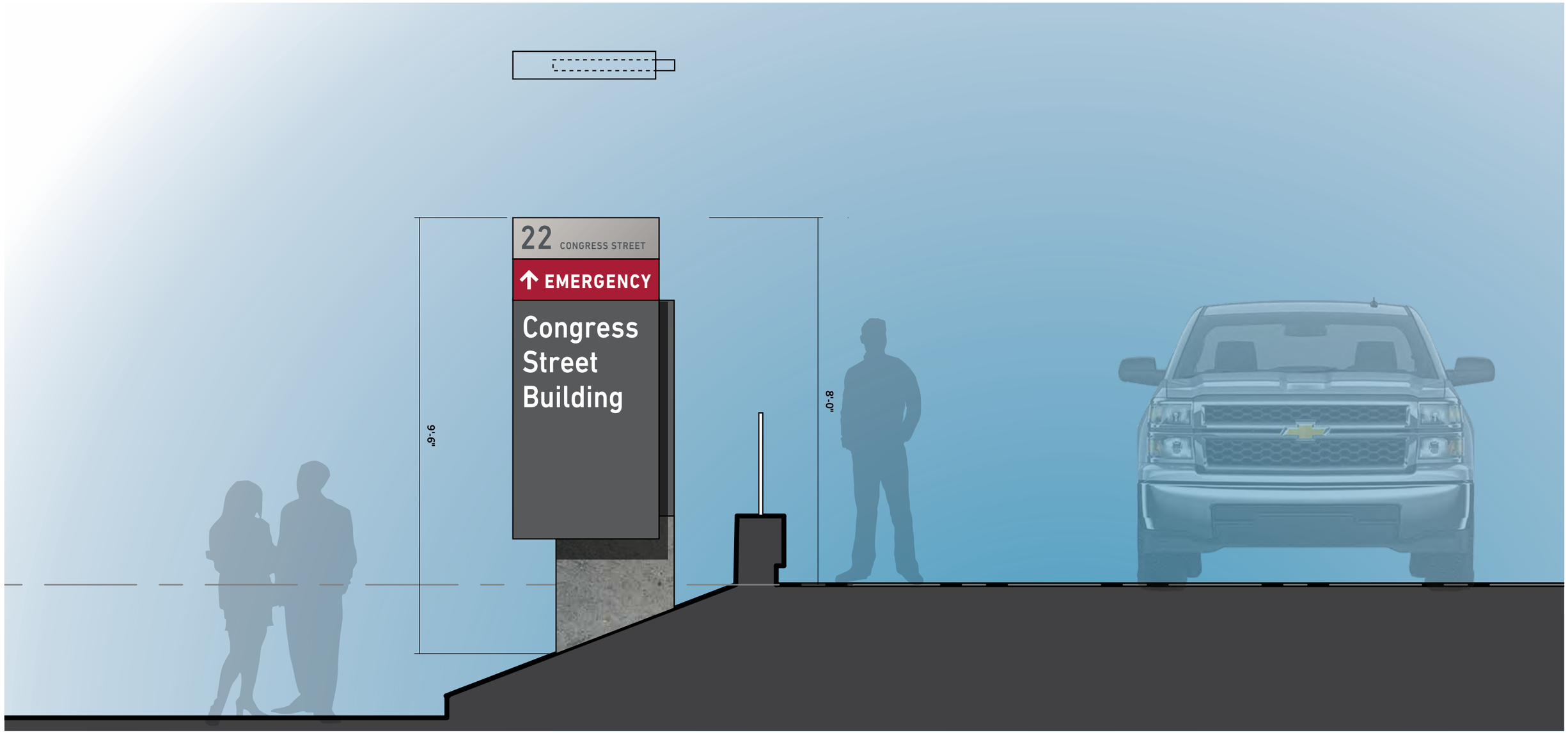
NOTE: Exact placement of signage to be determined once landscape design is finalized with the City of Portland.





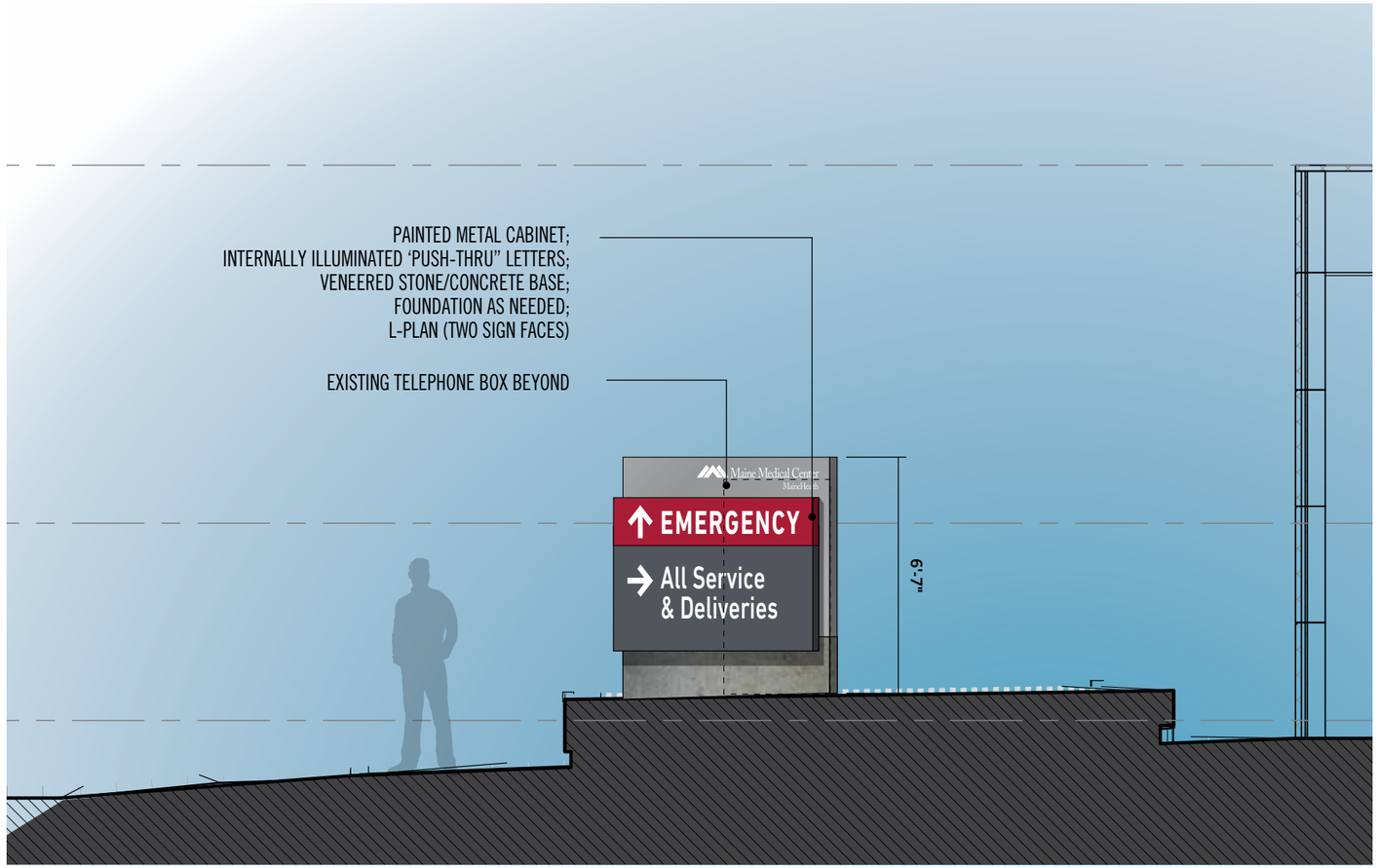
CS.2 Building Identification

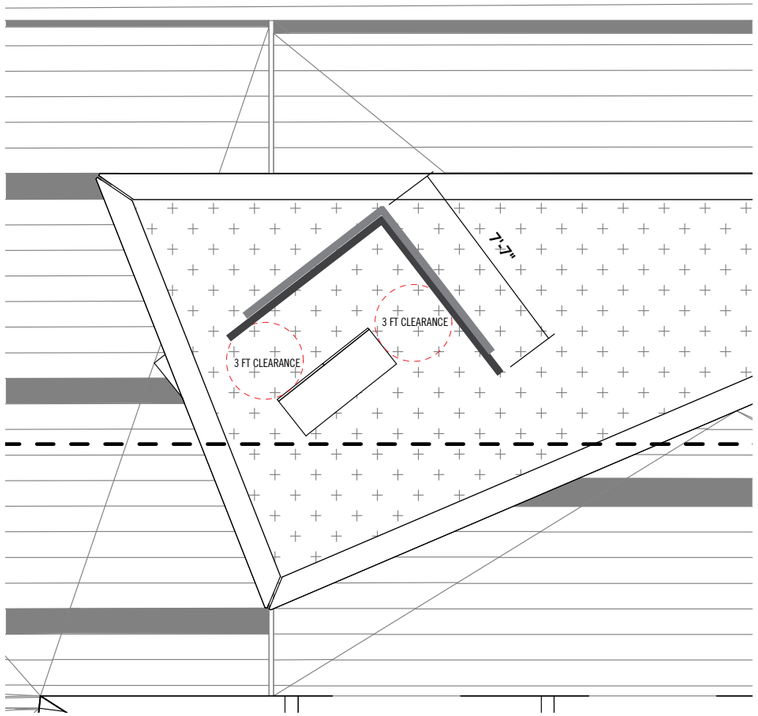
NOTE: Exact placement of signage to be determined once landscape design is finalized with the City of Portland.

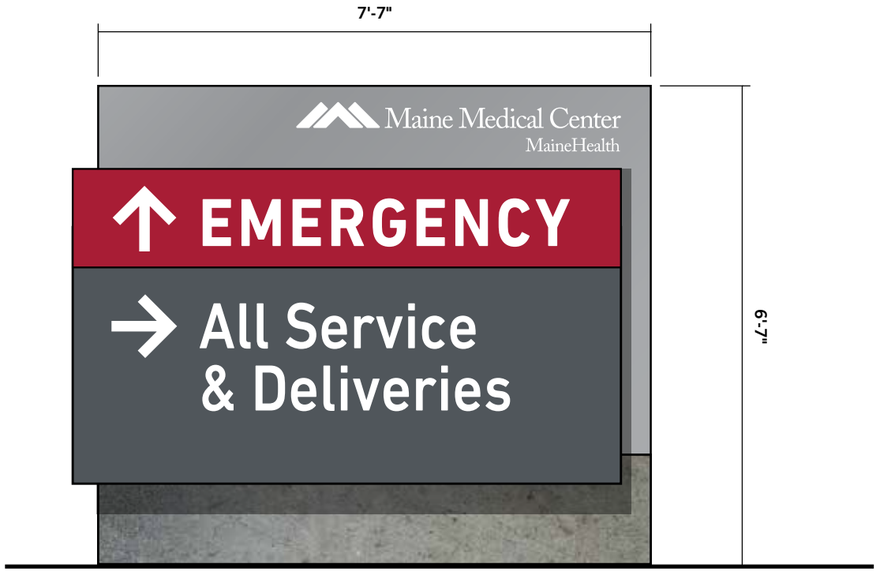


CS.3 Corner Directional

NOTE: Exact placement of signage to be determined once landscape design is finalized with the City of Portland.



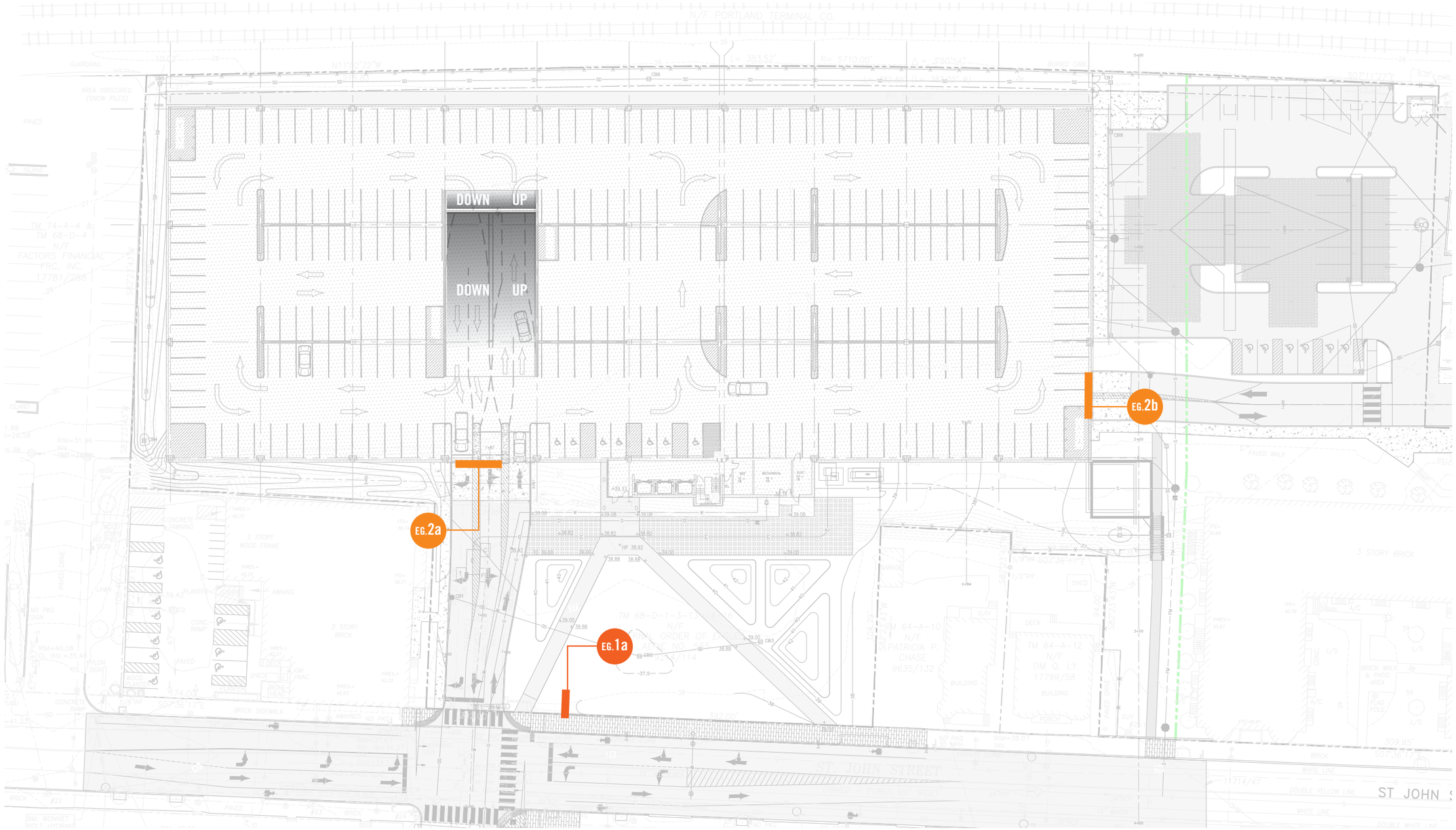




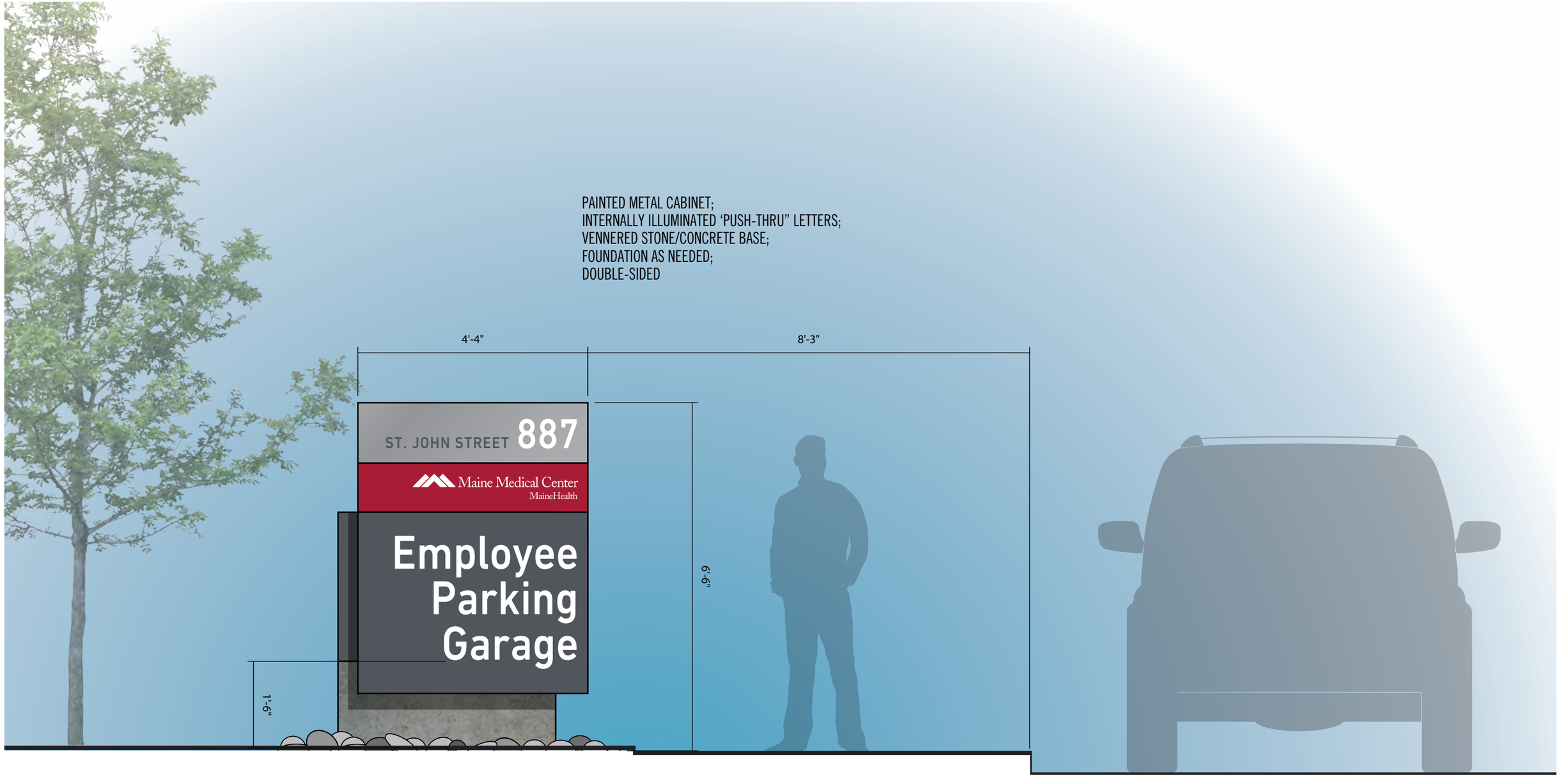
03

Employee Garage Signage

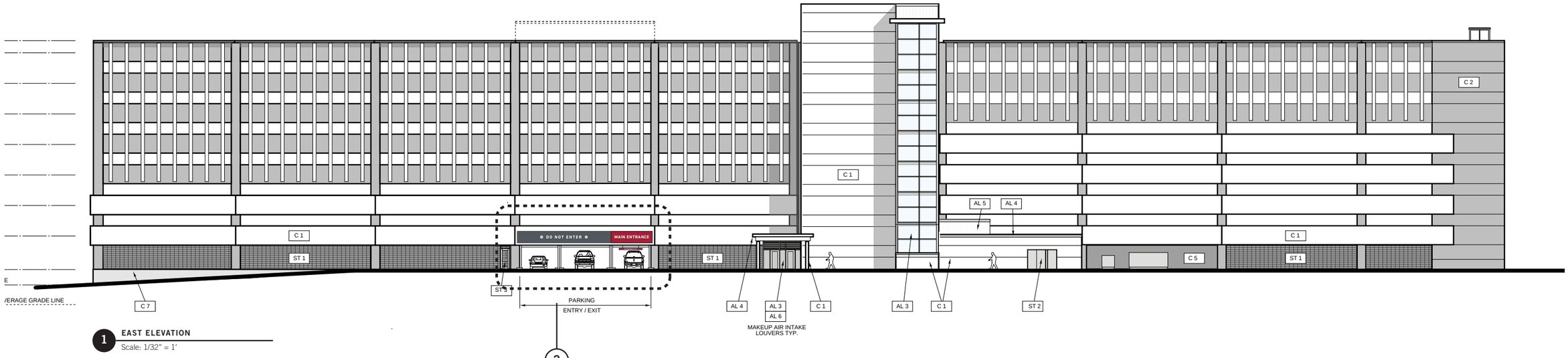
Preliminary Sign Location Plan (Level 1)



EG.1a Monument Sign



EG.2a Garage IDs (East Elevation)

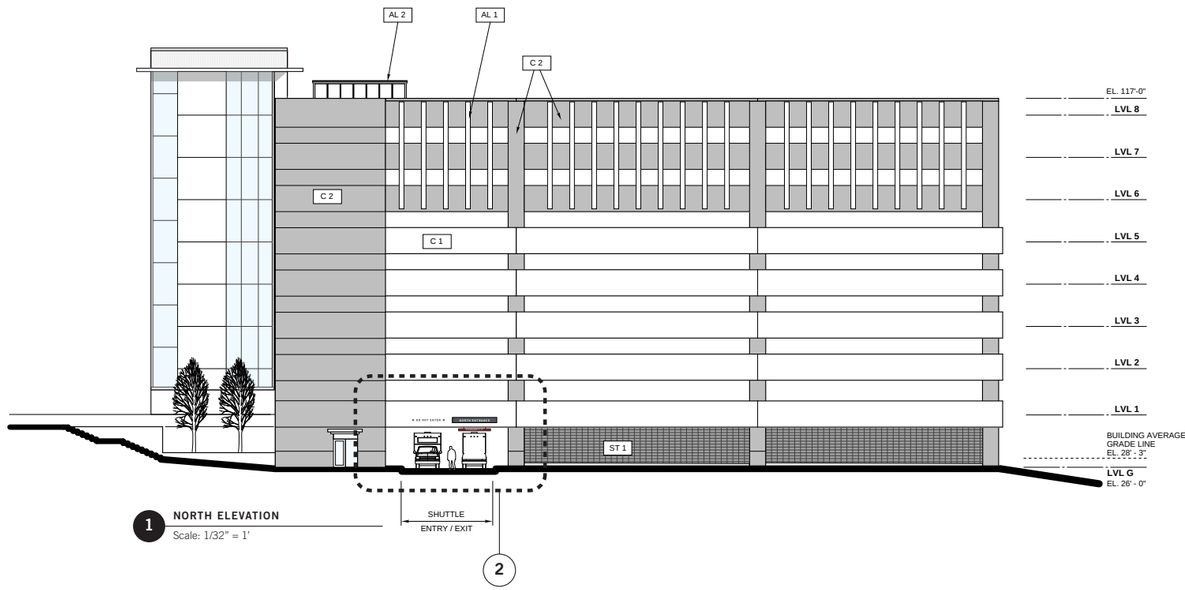


1 **EAST ELEVATION**
Scale: 1/32" = 1'

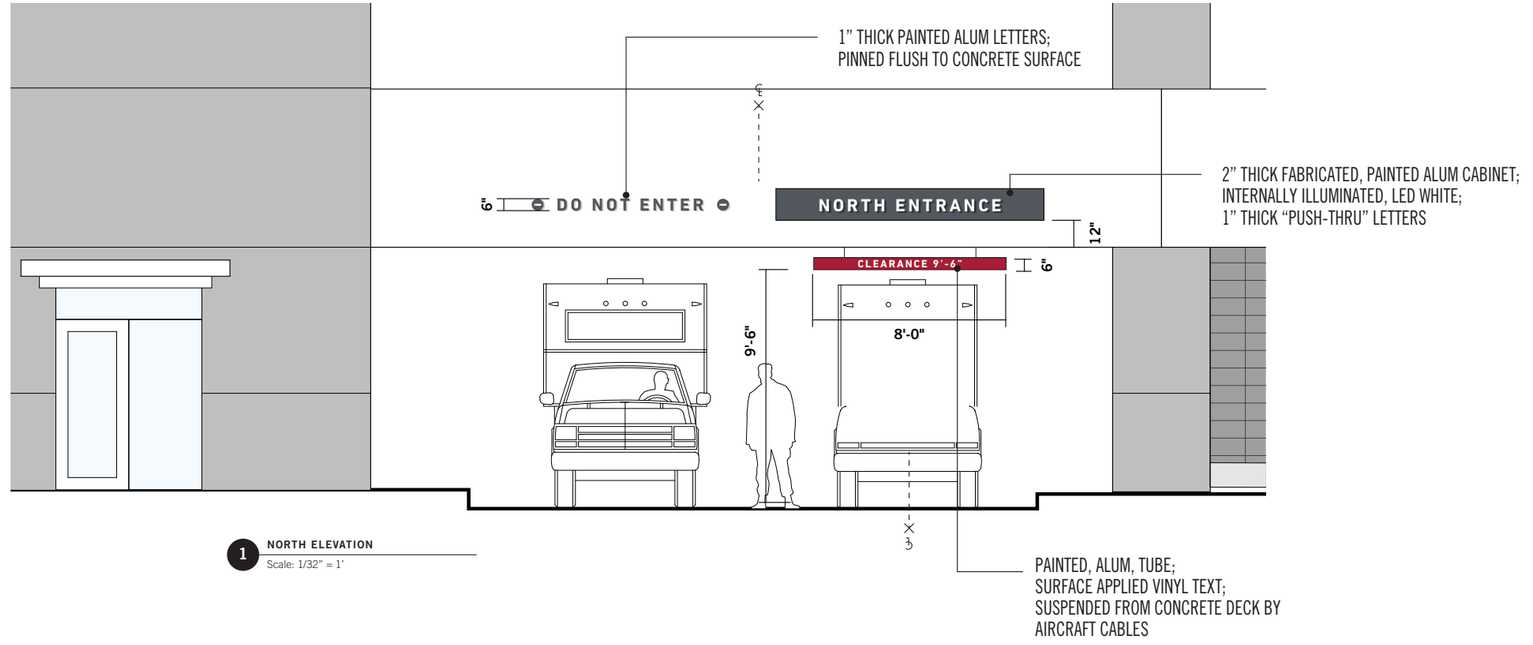


2 **SIGN TYPE F6: ENTRY SIGN**
Scale: 3/16" = 1'

EG.2b Garage IDs (North Elevation)



1 **NORTH ELEVATION**
Scale: 1/32" = 1'



1 **NORTH ELEVATION**
Scale: 1/32" = 1'

Thank You

Leverage/

WRITTEN SUBMISSION 10 – ACCESS AND CIRCULATION
BRAMHALL ST. -22; MMC CONGRESS STREET BUILDING

THE INFORMATION REQUESTED IN THIS SECTION MAY BE FOUND WITHIN OUR RESPONSE TO SECTION 9 – TRANSPORTATION ANALYSIS – TRAFFIC IMPACT.

Maine Medical Center
MaineHealth

PERKINS+WILL

MMC Congress Street - City Design Narrative

To: Al Green

From: Jeffrey Keilman

Date: September 14, 2018

Subject: **MMC Congress Street - City Design Narrative**

Attachments

The purpose of this memorandum is to document and provide design team process and responses to address the IOZ Design Review standards as required following up on conversations with City of Portland Planning Staff outlining design intent.

IDP Design Guidelines

Guideline No. 1
New buildings will be designed to contribute to the campus vision and organizational goals identified in the Master
FacilityPlan and the Transportation Plan, and best practice design
standards for healthcare.
Design Response
The design of the proposed Congress Street Patient Tower meets this guideline. The proposed building follows the design drivers outlined in MMC's Institutional Development Plan (Pgs. 100-102)

1. The building creates a new gateway to the hospital, highlighting a major axis in the City of Portland, along Congress Street and further expands upon the architectural character and vision of the MMC campus that was established by the Bean Expansion and East Tower. The Congress Street Patient Tower further defines the architectural character of the campus by articulating a design that adheres to best practice standards for healthcare as dictated by designing from the inside out in that the key plan and program requirements are expressed within the exterior massing. This massing relates to required scale for modern delivery of healthcare and further links to the architectural character and scale of the other building projects on the campus, including the East Tower addition and Bean Surgery expansion, both visible and reinforced in the layering of the buildings on campus.
2. The building will be an efficient and well-organized addition to campus. The Congress St. entrance, adjacent to the patient and visitor parking garage will be easy for patients and visitors to find. This entrance is glazed and highlighted by the multistory atrium that is visable from Congress Street and creates a destination for clarity of wayfinding.
3. The building design supports healing. The building is designed around the patient rooms and procedure rooms. Window heights, fenestration, and the façade articulation will all contribute to a better patient experience. The design aesthetics relate to the campus vision by epitomizing the top-quality, advanced healthcare delivered on campus. Attention to scale and proportions for the inhabitants drove design and massing decisions on the exterior. In

particular, decisions on where to include glazing, and more importantly, where solid wall is located was driven by the interior plan and program. A patient centric experience from the interior design was the key driver and critical in shaping the exterior expression of the architecture.

4. A sustainable and resilient campus is enhanced with the Congress St. Tower. Impervious surfaces are reduced with the use of green roofs, roof terraces & courtyards, and landscaped surfaces along Congress St.
5. The contextual landscape framework achieves a balance between the urban edge that the new building creates with Congress St. and providing landscaped amenities as appropriate. The landscape, in conjunction with the hardscape, create a layering of space from the public right-of-way to the new entry for the hospital. The landscape framework also mitigates the large grade changes and provides an urban plaza and pedestrian connections for the hospital previously lacking along Congress St. Decisions on landscape design and formal moves were considered not only from the context of the street experience, but also for patients who will be looking at these spaces from within the hospital with the understanding that a room with a view has clinically proven to improve patient outcomes

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 a timeless environment. This vision includes Sky, Sea, and Land as concepts for material/color selection. Although the design of the Congress Street Tower could be considered contemporary, the choice of materials, design details, and other elements relate to a sense of place, specifically, Maine.

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.

Design Response

This guideline is met because the design of Congress Street Patient Care Tower was envisioned in conjunction with both the East Tower and Visitor Garage, in particular how long views and campus identity are reinforced, including both current and future phase goals. This is demonstrated in the provided renderings that link the buildings on the hill with those along Congress Street in approach and scale.

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.

Design Response

This guideline is met as new entrances for vehicular drop-off, pedestrian access, and access from public transportation are created along Congress Street directly linked to the public right-of-way. The design of the landscape/hardscape along Congress Street further link the building to the public realm and assist in creating a pedestrian-oriented environment. The creation of a small plaza and an urban staircase

provide for a public space that mitigates the challenges created by grade at this location. Entrances were considered for their relation to the public, but also for their critical adjacencies within the facility. Ability for patients and visitors to quickly enter the building and access critical services through limited travel distances and intuitive wayfinding seamlessly link the exterior to the interior.

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

Design Response
This guideline is met because the design of Congress St. utilizes materials, scale, form, detail, to be compatible with adjacent MMC campus construction, while speaking to the required scale and aesthetics of modern healthcare. The design relates to both the East Tower and the recently completed Bean Addition. This is demonstrated through the rooflines, simplicity of details to adjacent construction, and materiality. Proportion, façade expression, 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 proposed Congress Street building.

Guideline No. 5
Façade materials of buildings will be of high quality, and contribute to an attractive public realm.
Design Response
This guideline is met because the design utilizes high quality, high performance systems that provide attractive aesthetic design but also high performing environmental design adding aesthetically to the public realm. Choices in materials were selected deliberately to meet the rigors required by healthcare interior environments.

Façade materials are of high quality and more importantly appropriate performance from a thermal standpoint to align with the clinical programs within the building. 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.

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).

Design Response

This guideline is met because the design of the Congress Street building 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. Inclusion of green roofs, both visual and occupied, further enrich the roofscape.

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.

Design Response

The Congress Street building provides this by aligning two entries along Congress St., providing activity and a sense of place along a key urban edge to the city. The inclusion of a major hospital entry along Congress St. that enables both vehicular and pedestrian connections enriches the streetscape but also provides identity to MMC in the place of a previously located parking garage. Linking this entry with a transparent concourse to the employee entry further activates the ground floor as activity will occur along this spine 24 hours a day, keeping eyes on the street.

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.

Design Response

This guideline is met because Congress Street is activated with the addition of new entrances and activities along the Congress St. edge. In addition, MMC is working with the City of Portland regarding street and pedestrian level lighting along Congress St. The use of transparency and properly located glazing further strengthen the visual interest and depth of the facades. Photometric calculations have been provided indicating that proper light levels will be maintained. The location and rhythm of fenestration was determined by the patient focused planning and interior program drivers.

September 14, 2018
Re: **MMC Congress Street - City Design Narrative**

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

Design Response

This guideline is not applicable to this submission because there is no proposed parking.

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.

Design Response

The Congress Street building was conceived as the link for the MMC Bramhall Campus to the urban edge that is Congress Street. The buildings massing, while expressing the critical healthcare programs, also reinforces the street wall. Use of cantilevers and other changes within massing provide a sense of enclosure along the street edge while allowing for space to the benefit of the community such as urban plazas.

The new building is also oriented to Congress St. with the public entrance and lobby visible and active from the street. Also, since this is a hospital, its primary purpose programmatically is to provide community oriented services.

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

Design Response

The new building is comprised of quality materials that are durable and resistant to abuse and vandalism. The public realm is properly lit, and designed to minimize potential areas for hideouts. Foot traffic, both on the sidewalk and within the concourse of the new facility will further activate the site and provide eyes on the street.

WRITTEN SUBMISSION 11 – LOADING AND SERVICING
BRAMHALL ST. – 22; MMC CONGRESS STREET BUILDING
LEVEL III SITE PLAN APPLICATION

THE PROJECT DOES NOT INCLUDE ANY LOADING OR SERVICE AREAS. THE NEW ADDITION WILL BE SERVICED FROM THE EXISTING LOADING DOCKS NEAR THE REAR OF THE BUILDING.

MAINE MEDICAL CENTER

Congress Street Building

New Clinical Tower

Construction Management Plan

September 25, 2018

Prepared for: Portland Department of Planning & Urban Development Department

Project Proponent: Colliers International

Construction Manager: Turner Construction

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MAINE MEDICAL CENTER

New Clinical Tower
Construction Management

Plan 09.25.18

Purpose Statement

The purpose of this document is to provide the details of the third phase of construction for MMC's Master Facility Plan - 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.

Turner Construction and its subcontractors shall schedule and conduct operations in a manner that will limit 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:

General Superintendent: Scott Griffin
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Project Superintendent: Chris Rodenhizer
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Project Director: Gregg Scholler
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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 36 months in duration.
- It is anticipated that the project is estimated to start on or about Winter 2019 (December) and last through Fall 2022.
- 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 Winter 2019 to Fall 2022

Congress Street Staff Garage- dismantle and remove

Structurally dismantle existing Staff parking garage. This project is expected to start in late Fall 2019 (December and complete in Spring 2020 (6 Months)

Congress Street Clinical Tower

A new 265,000 SF building. This project is expected to start in Spring 2020 and complete in Fall 2022. (30 Months)

2.3 Construction Updates Reporting

The following shall be reported to Maine Medical Center 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 Construction's 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.

Pedestrian Routes of travel are shown on Logistics Slides page number 2 - 5

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.
- Street lights will be taken down on Congress Street and stored offsite. The street lights will be reinstalled as part of the project completion.
- Concrete washout will be in concrete washout station, collected and placed in a dumpster. Concrete washout area to be located within the site fence.
- 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. See Logistics Slide page number 6 and 7
  - 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 - November 2019 to November 2022

- Fall/Winter 2019- Spring 2020 – average workers – 60
- Spring 2020- Spring 2021 – average workers – 100-125
- Spring 2021- Spring 2022 - average workers – 200-275
- Spring 2022 – Fall/Winter 2022 – 225 - 300

2.7 Truck Routes and Volumes – See Logistics Plans page number 6 & 7

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 structural steel and exterior wall.
- 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.

3.0 CONSTRUCTION

3.1 METHODOLOGY- Staff Garage Structural Removal- See Logistics slides page number 9 – 11

Turner and the Contractor will develop the sequencing and methodology of the Staff Garage removal. All sequencing will be approved by a Structural Engineer of Record. At mobilization of the garage removal, debris netting will be installed from the garage roof down to grade, with wire rope. This netting will be on all exposed faces of the garage elevations. All areas will be cordoned off and all utilities and transformers will be protected, or shut off. A level platform will be created at the west and north elevations.

A physical separation of the existing pedestrian bridge at the northeast corner of the garage will be created.

Upon separation of the garage, high reach excavators (Volvo EC 700 or equivalent) equipped with rotating concrete processors will be mobilized. Excavators will be mobilized to assist the high reach equipment in concrete processing and debris load out.
Brokks equipment will also potentially be utilized of the top two levels of the structure in areas where the high reach equipment cannot gain access.
Concrete materials will be placed in the existing building footprint to act as a bench surface for high reach progression and earth retention equipment.

The garage removal will commence on the west side of the garage. The high reach processors will move east working from the north to the south. Each long bay of the garage will be removed working to the east. The removal will start at the top of the garage, working downward, structural column bay. The concrete will be processed in place by the rotating concrete processors and reinforcement bars will be cut during the course of garage removal. The outer concrete on the north and south side of the garage will be pulled into the building footprint. On the south side each parking level will be cut free of the south garage retaining wall. This will keep the retaining wall in position as it will be reinforced with structural tiebacks.

Once the concrete has been processed in place by the high reach excavators, additional equipment will be used for the haul out of debris. Concrete materials will be placed at strategic elevations to create a work bench for equipment to work from.
As the demolition progresses east near the Stair Tower and Visitor garage, special care will be taken to remove the column bay, and hydraulic crane equipment with steel debris shields will act as protection from falling debris.

As the garage is razed, excess concrete materials will be shipped from the site via trucks, and disposed at a legal Maine disposal facility.
All debris will be sorted onsite and separated in the various waste streams.
During all concrete removals a constant water mist will be used to prevent the spread of dust from the site.

3.11 TRUCK TRAFFIC FOR STAFF GARAGE STRUCTURAL DEBRIS

- 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.
- Materials will be removed from the site by loading triaxles and roll off containers. Turner will closely coordinate the load out operation, and the staging of trucks.
- 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 hauling of these trucks will be at designated loadout periods near the end of the working day. (From 3 PM to 7 PM)

- **Average Trucks per day for Congress Street patient tower construction project:**

PROCESSED CONCRETE DEBRIS REMOVAL
TRUCKS LOADING IN AFTERNOONS
AVERAGE TRUCKS PER DAY

2020	WEEK 1					WEEK 2					WEEK 3					WEEK 4				
	M	T	W	R	F	M	T	W	R	F	M	T	W	R	F	M	T	W	R	F
February	10	10	10	10	10	10	10	10	10	10	16	16	16	16	16	16	16	16	16	16
March	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18
April	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18
May	14	14	14	14	14	10	10	10	10	10	0	0	0	0	0	0	0	0	0	0

3.2 Construction – New Clinical Tower– (Refer to Logistics Slides page number 12 to 18)

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 one gate on Congress Street and two gates on Gilman Street.
- During the mass cut excavation trucks will be removing earthwork material and concrete foundations to create the basement.

MASS EXCAVATION & FOUNDATION REMOVAL
TRUCKS LOADING ALL DAY - 2 to 3 TRUCKS/HOUR
AVERAGE TRUCKS PER DAY

2020	WEEK 1					WEEK 2					WEEK 3					WEEK 4				
	M	T	W	R	F	M	T	W	R	F	M	T	W	R	F	M	T	W	R	F
June	8	8	8	8	8	12	12	12	12	12	16	16	16	16	16	16	16	16	16	16
July	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
August	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24
September	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	18	18	18	18	18

- A tower crane will be built within the site fence. During the erection and dismantling of the Tower crane police details and minor traffic interruption will be required. The foundation of the Tower crane will be a permanent structure. The tower crane foundation will remain in the ground, and will be utilized in future expansions by Maine Medical Center.
- All detours and paths of travel shown on the Site Logistics 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.
- One lane of Congress Street will be closed during the construction timeframe. Congress Street will remain open for two way traffic. One lane of Gilman Street will be closed for the construction timeframe. Gilman Street will remain open for two way traffic.
- All subcontractors and vendors will be provided with instructions prior to their project start indicating the appropriate truck routes to access the site.

4.0 Dust Control, Noise, Air Monitoring, Vibration Monitoring

4.1 Dust Control

Control of dust is of paramount importance for this project, for Maine Medical Center, and for the city of Portland. There will be substantial dust control solutions on the site prior to the start of work. To reduce emission of dust and minimize impacts, physical barriers will be built to control spread of airborne dust, water – based dust suppression systems will be installed, specific storm water collection and filtering will be in place. It is a goal to have no visible emissions outside of the work limits.

4.11 Garage Removal Dust Control.

- Wetting agents will be used regularly to control and suppress dust that may come from the construction materials.
- Monsoon misting machines continually wetting down the perimeter of the work area
- Fire hoses spraying water above the work area, knocking down the dust.

- Water will be collected at the lowest part of the garage proper on the Gilman Street side of the garage. The water will be processed thru a Frac tank to remove sediment and concrete /stone pieces. The water will be recirculated to reuse for dust control.
- Tractor trailers, triaxles, and roll off containers will be used to remove processed concrete, ferrous, and nonferrous metals. All trucking will be fully covered with tarps during loadout.
- Trucks will enter and exit off of Gilman Street and Congress Street. Traffic flagmen will be positioned during all trucking operations to ensure safety and mitigate disruption and control traffic.
- Equipment will be fueled away from storm drains.
- Spill kits will be available to address any environmental issues. A hazardous materials response plan will be setup and approved. In the unlikely event of a spill, local authorities will be notified and an appropriate hazardous materials firm will provide the cleanup.
- Street and sidewalks will be cleaned to minimize dust accumulations as needed.

4.2 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 AM to 7:00 PM 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.).
- Should the noise level exceed the City of Portland noise standards, or a neighborhood or community complaint is made, the Contractor foreman will:
  - Notify the operator to cease the current method used to generate the noise, and look for another method or area to perform the task to see if it corrects the noise level
  - If still not within acceptable noise levels, a new dismantling plan or piece of equipment will be used.
- Turner Construction and all subcontractors shall use all reasonable efforts to implement noise reduction methods listed below to minimize construction noise emission levels.

- **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

4.3 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.

4.4 Vibration Monitoring

A preconstruction survey will be done via video taping of all structures and dwellings on Gilman and A Street, along with the buildings on Congress from Weymouth to Valley Street.

- The Maine Medical Center Project geotechnical engineer shall identify vibration-inducing: construction activities and work closely with the Turner to monitor vibration.

- Turner Construction Company and its subcontractors shall preauger Piles and other earthwork-induced vibrations (maximum peak particle velocity) to the limits outlined in the contract documents.
- The Owner shall conduct baseline vibration-level monitoring prior to construction and continuous monitoring of vibration during excavation. Vibration monitoring shall be conducted at the site perimeter locations and near adjacent buildings and other structures.
- It is acknowledged that episodic violations of the vibration criteria may result, primarily due to below grade obstructions. These obstructions shall be cleared in a manner that minimizes the impacts to neighbors.
- When a seismograph trigger level is reached or exceeded an email goes out to the Turner superintendent, Project Manager and Safety Engineer, the Maine Medical Center (MMC) Project Manager and Maine Medical Center safety and facilities staff. The following is the protocol that is followed.
- Events during work hours with the frequency between 5 hz. and 100 hz. and the peak particle velocity above the threshold values but below limiting values, Turner will investigate to determine if the event was caused by construction activities. If so determined, Turner will take steps to minimize the vibrations in the future.
- Turner will investigate and, if caused by construction, stop the activity, review the incident, and take steps to employ alternate means of construction to complete the task. Alternate means may include changes to the construction method being used or utilizing an alternate means of construction.
- The Contractor shall monitor groundwater levels before and during construction on a routine basis. Groundwater levels must be maintained within the allowable range.
- The discharge of pumped ground water shall be done in a manner as according to all required City, State and Federal Permits and approvals

5.0 Communication Strategies

5.1 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.

5.2 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 Maine Medical Center 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.

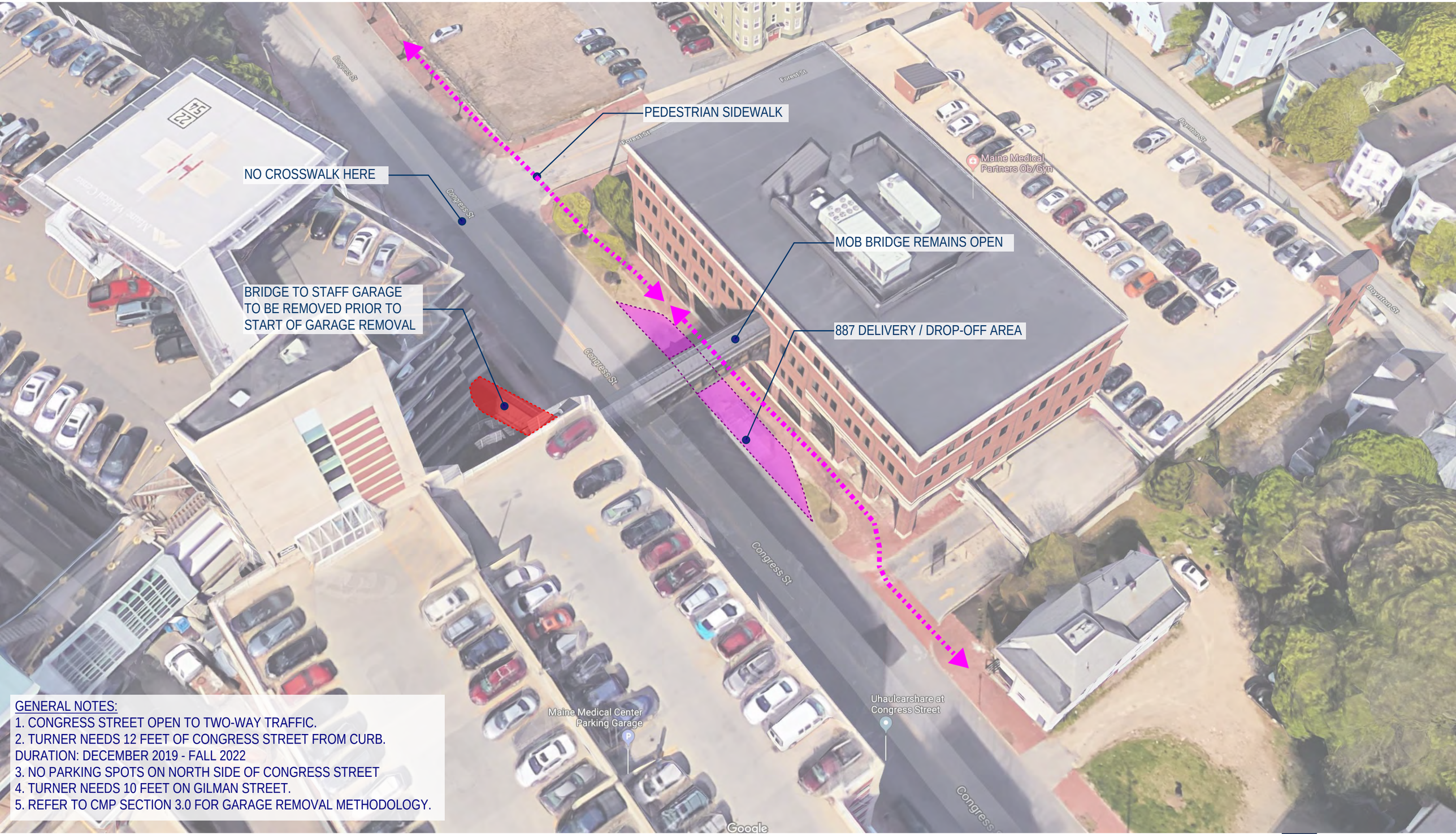
Maine Medical Center
MaineHealth

CONSTRUCTION MANAGEMENT PLAN

UPDATED [09-24-18]

[LOGISTICS PLANS & STUDIES]
CONGRESS STREET NEW CLINICAL TOWER

Turner

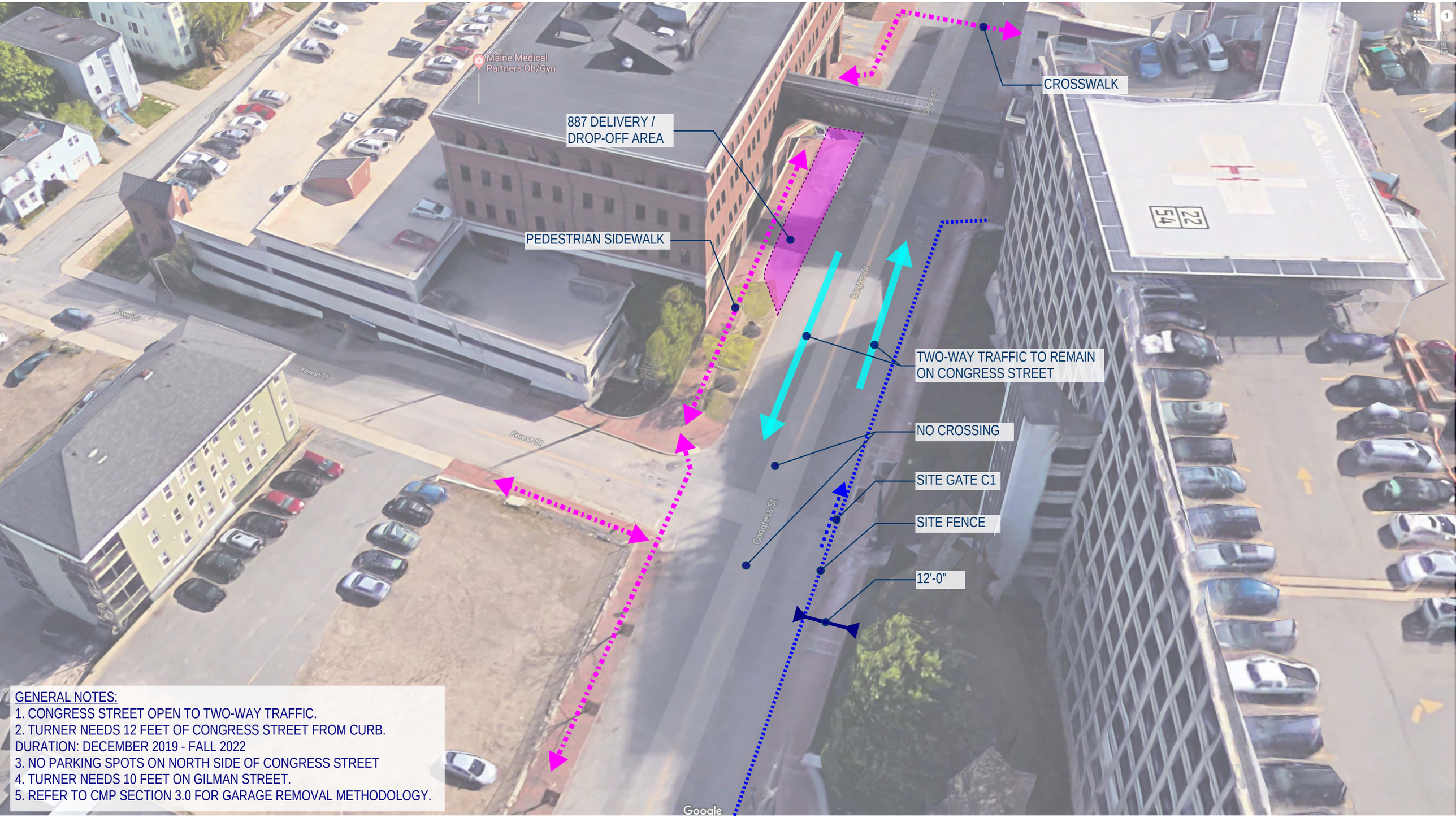


GENERAL NOTES:
1. CONGRESS STREET OPEN TO TWO-WAY TRAFFIC.
2. TURNER NEEDS 12 FEET OF CONGRESS STREET FROM CURB.
DURATION: DECEMBER 2019 - FALL 2022
3. NO PARKING SPOTS ON NORTH SIDE OF CONGRESS STREET
4. TURNER NEEDS 10 FEET ON GILMAN STREET.
5. REFER TO CMP SECTION 3.0 FOR GARAGE REMOVAL METHODOLOGY.

CONGRESS STREET NEW CLINICAL TOWER

Additions and Renovations [887 Delivery / Drop-Off] CONGRESS STREET PEDESTRIAN ROUTING

Turner



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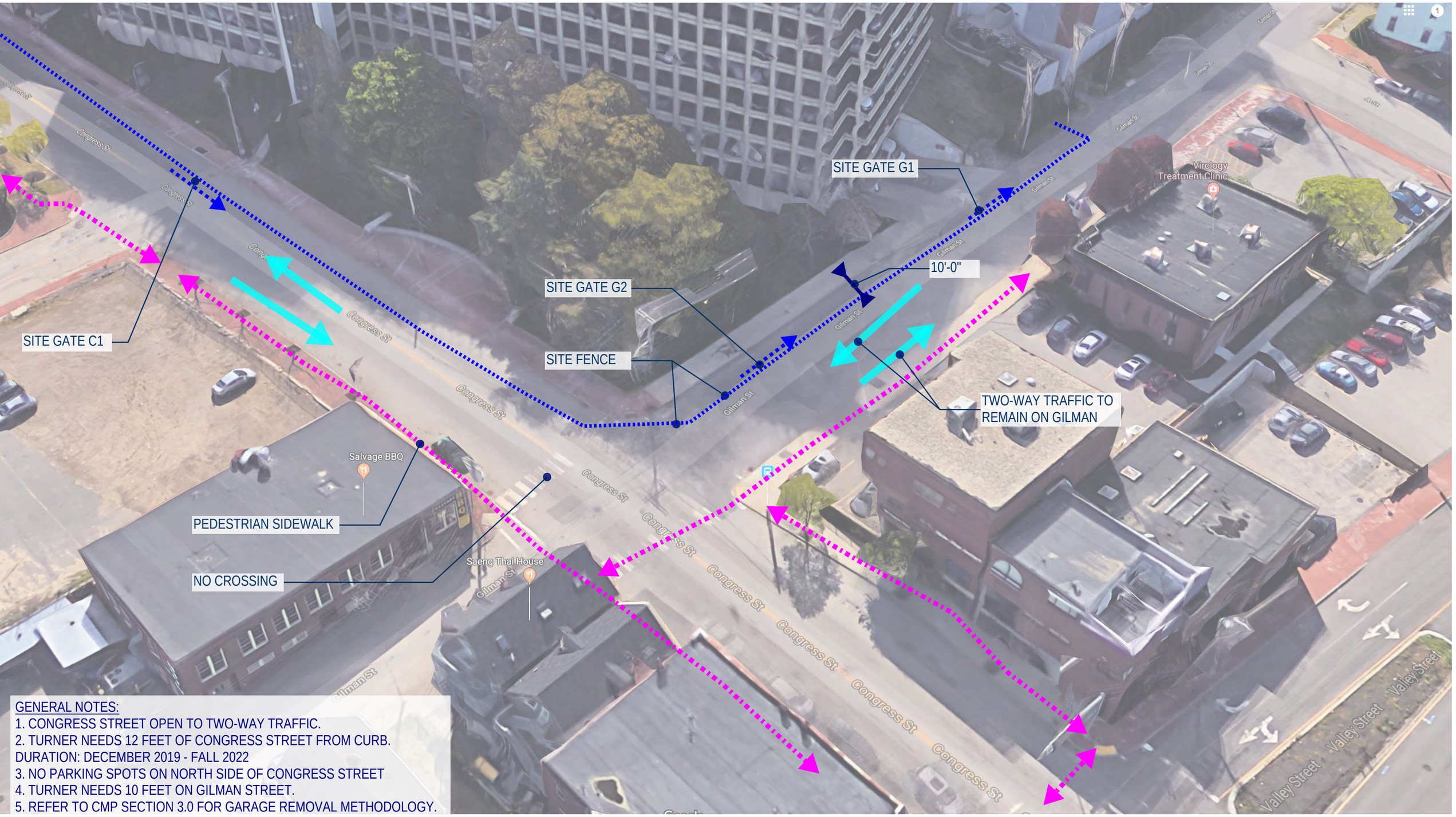
CONGRESS STREET NEW CLINICAL TOWER

Additions and Renovations [887 Delivery / Drop-Off] CONGRESS STREET PEDESTRIAN ROUTING

Turner



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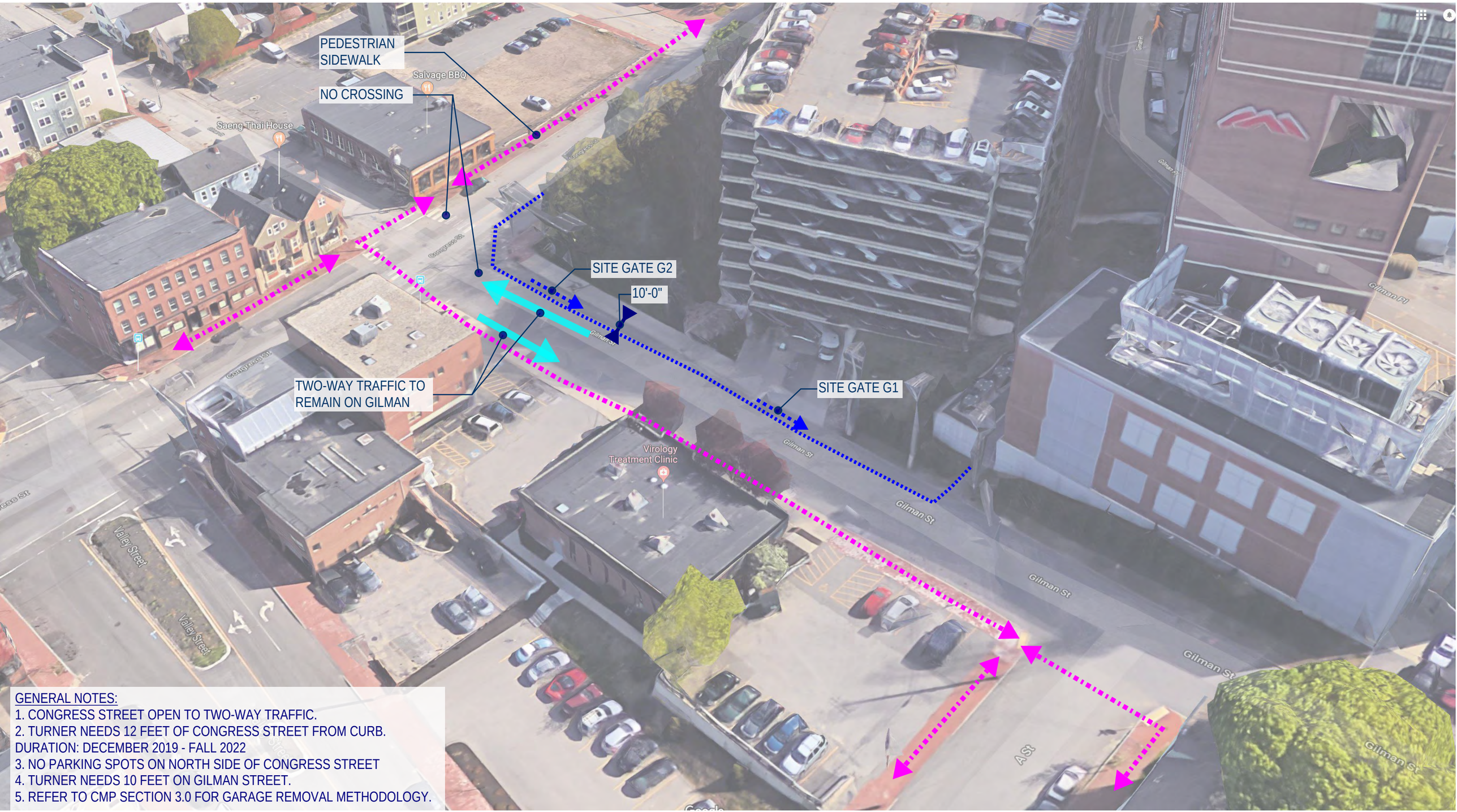
CONGRESS STREET NEW CLINICAL TOWER

Additions and Renovations [CONGRESS/GILMAN/VALLEY PEDESTRIAN ROUTING]

Turner



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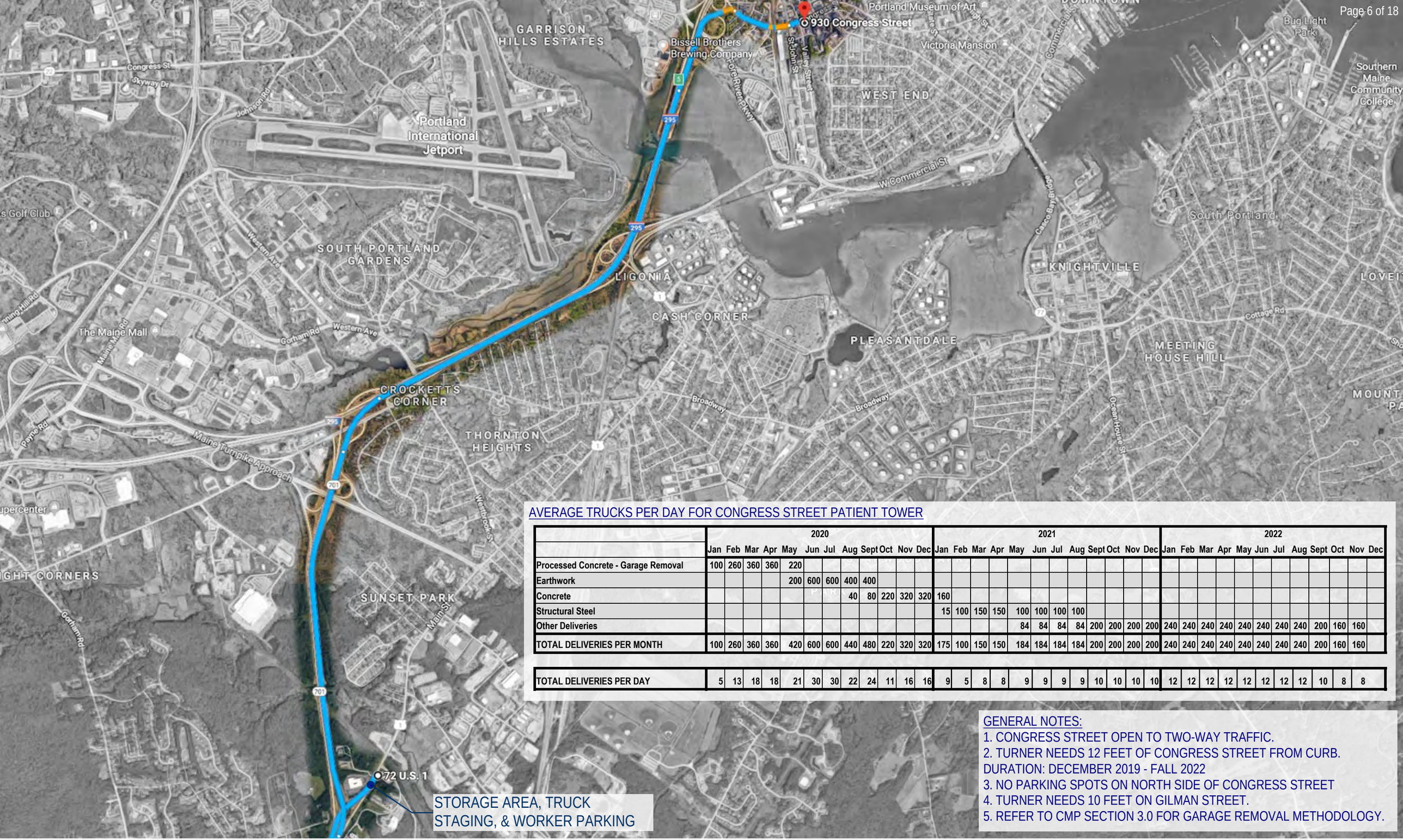
CONGRESS STREET NEW CLINICAL TOWER

Additions and Renovations [PEDESTRIAN ROUTING GIMAN & A STREET]

Turner



AVERAGE TRUCKS PER DAY FOR CONGRESS STREET PATIENT TOWER

	2020												2021												2022											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Processed Concrete - Garage Removal	100	260	360	360	220																															
Earthwork					200	600	600	400	400																												
Concrete								40	80	220	320	320	160																							
Structural Steel													15	100	150	150	100	100	100	100																
Other Deliveries																	84	84	84	84	200	200	200	200	240	240	240	240	240	240	240	240	200	160	160	
TOTAL DELIVERIES PER MONTH	100	260	360	360	420	600	600	440	480	220	320	320	175	100	150	150	184	184	184	184	200	200	200	200	240	240	240	240	240	240	240	240	200	160	160	
TOTAL DELIVERIES PER DAY	5	13	18	18	21	30	30	22	24	11	16	16	9	5	8	8	9	9	9	9	10	10	10	10	12	12	12	12	12	12	12	12	10	8	8	

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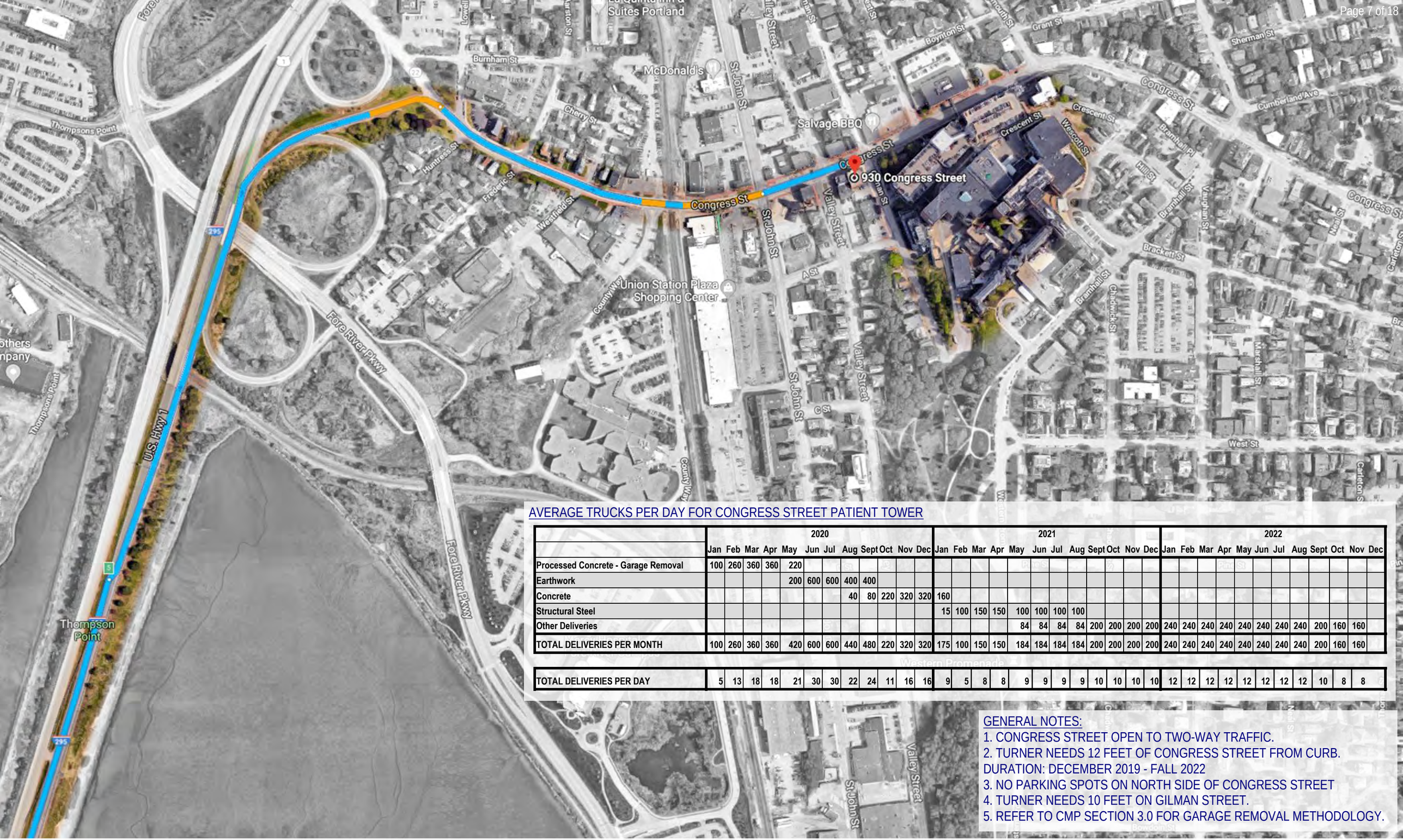
CONGRESS STREET NEW CLINICAL TOWER

Additions and Renovations [TRAFFIC ROUTES] FROM US ROUTE 1, SCARBOROUGH

Turner



AVERAGE TRUCKS PER DAY FOR CONGRESS STREET PATIENT TOWER

	2020												2021												2022											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Processed Concrete - Garage Removal	100	260	360	360	220																															
Earthwork					200	600	600	400	400																											
Concrete								40	80	220	320	320	160																							
Structural Steel													15	100	150	150	100	100	100	100																
Other Deliveries																	84	84	84	84	200	200	200	200	240	240	240	240	240	240	240	240	200	160	160	
TOTAL DELIVERIES PER MONTH	100	260	360	360	420	600	600	440	480	220	320	320	175	100	150	150	184	184	184	184	200	200	200	200	240	240	240	240	240	240	240	240	200	160	160	
TOTAL DELIVERIES PER DAY	5	13	18	18	21	30	30	22	24	11	16	16	9	5	8	8	9	9	9	9	10	10	10	10	12	12	12	12	12	12	12	12	10	8	8	

GENERAL NOTES:

1. CONGRESS STREET OPEN TO TWO-WAY TRAFFIC.
2. TURNER NEEDS 12 FEET OF CONGRESS STREET FROM CURB.
DURATION: DECEMBER 2019 - FALL 2022
3. NO PARKING SPOTS ON NORTH SIDE OF CONGRESS STREET
4. TURNER NEEDS 10 FEET ON GILMAN STREET.
5. REFER TO CMP SECTION 3.0 FOR GARAGE REMOVAL METHODOLOGY.

CONGRESS STREET NEW CLINICAL TOWER

Additions and Renovations [TRAFFIC ROUTES] FROM US ROUTE 1, SCARBOROUGH

Turner

2019						2020												2021												2022											
JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.

TEMPORARY PEDESTRIAN BRIDGE INSTALLED PRIOR TO STRUCTURAL GARAGE REMOVAL

FILTERS ADDED TO PROTECT EXISTING MECHANICAL LOUVERS

ALL GARAGE RETAINING WALL TIE-BACKS (BEYOND) INSTALLED PRIOR TO START OF STRUCTURAL GARAGE REMOVAL

BEGIN SIDEWALK CLOSURE AT PROJECT START - DECEMBER 2019

CONGRESS STREET

FOREST STREET

GILMAN STREET

OVERHEAD POWER LINES TO BE RELOCATED

ELECTRICAL WORK ACROSS CONGRESS STREET.

GENERAL NOTES:
1. CONGRESS STREET OPEN TO TWO-WAY TRAFFIC.
2. TURNER NEEDS 12 FEET OF CONGRESS STREET FROM CURB.
DURATION: DECEMBER 2019 - FALL 2022
3. NO PARKING SPOTS ON NORTH SIDE OF CONGRESS STREET
4. TURNER NEEDS 10 FEET ON GILMAN STREET.
5. REFER TO CMP SECTION 3.0 FOR GARAGE REMOVAL METHODOLOGY.

CONGRESS STREET NEW CLINICAL TOWER

Additions and Renovations [Structural Garage Removal Logistics Plan]

Turner

2019						2020												2021												2022											
JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.

DISONNECT BRIDGE TO STAFF GARAGE

BRIDGE TO MOB REMAINS OPEN

CONSTRUCTION GATE C1 - 30' ROLLING GATE

CONGRESS STREET

FOREST STREET

FAIRPOINT TELECOMM CABINET LOCATION

FILTERS ADDED TO PROTECT EXISTING MECHANICAL LOUVERS

ROAD (BEYOND) TO BE CLOSED DURING STRUCTURAL GARAGE REMOVAL.

PROTECT EXISTING TRANSFORMER BY TRENCH BOX & ROAD PLATES.

ALL GARAGE RETAINING WALL TIE-BACKS (BEYOND) INSTALLED PRIOR TO START OF STRUCTURAL GARAGE REMOVAL. WORK IN STAFF GARAGE TO START IN SPRING OF 2019

CONSTRUCTION ACCESS GATE G2 - 30' ROLLING GATE

AREA TO BE FILLED & LEVELED WITH GRAVEL (PRIOR TO STRUCTURAL GARAGE REMOVAL)

GILMAN STREET

OVERHEAD POWER LINES TO BE RELOCATED

CONSTRUCTION ACCESS GATE G1 - 30' ROLLING GATE

GENERAL NOTES:

1. CONGRESS STREET OPEN TO TWO-WAY TRAFFIC.
2. TURNER NEEDS 12 FEET OF CONGRESS STREET FROM CURB.

DURATION: DECEMBER 2019 - FALL 2022

3. NO PARKING SPOTS ON NORTH SIDE OF CONGRESS STREET
4. TURNER NEEDS 10 FEET ON GILMAN STREET.
5. REFER TO CMP SECTION 3.0 FOR GARAGE REMOVAL METHODOLOGY.

CONGRESS STREET NEW CLINICAL TOWER

Additions and Renovations [Structural Garage Removal Logistics Plan]

Turner

2019						2020												2021												2022											
JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.

DISONNECT BRIDGE TO STAFF GARAGE

BRIDGE TO MOB REMAINS OPEN

CONSTRUCTION GATE C1 - 30' ROLLING GATE

CONGRESS STREET

FOREST STREET

GILMAN STREET

DIRECTION OF STRUCTURAL GARAGE REMOVAL.

BEGIN STRUCTURAL GARAGE REMOVAL OF EXISTING CONGRESS STREET GARAGE WITH LONG ARM EXCAVATORS

INSTALL BREAK-AWAY TARPING SYSTEM FOR DUST AND DEBRIS CONTROL

HIGH REACH EXCAVATOR WITH CONCRETE PROCESSOR

CONSTRUCTION ACCESS GATE G2 - 30' ROLLING GATE

ROUGH TERRAIN CRANE WITH DEBRIS SHIELD TO BE UTILIZED AS PROTECTION.

SITE CLEARING AND REMOVAL OF EXISTING TREES AND FOLIAGE

REMOVAL OF EXISTING UTILITY POLES ON CONGRESS AND GILMAN STREET TO OCCUR BEFORE DEMOLITION STARTS

CONSTRUCTION ACCESS GATE G1 - 30' ROLLING GATE

GENERAL NOTES:

1. CONGRESS STREET OPEN TO TWO-WAY TRAFFIC.
2. TURNER NEEDS 12 FEET OF CONGRESS STREET FROM CURB.
DURATION: DECEMBER 2019 - FALL 2022
3. NO PARKING SPOTS ON NORTH SIDE OF CONGRESS STREET
4. TURNER NEEDS 10 FEET ON GILMAN STREET.
5. REFER TO CMP SECTION 3.0 FOR GARAGE REMOVAL METHODOLOGY.

CONGRESS STREET NEW CLINICAL TOWER

Additions and Renovations [Structural Garage Removal Logistics Plan]

Turner

2019						2020												2021												2022											
JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.

DISONNECT BRIDGE TO STAFF GARAGE

BRIDGE TO MOB REMAINS OPEN

CONSTRUCTION GATE C1 - 30' ROLLING GATE

CONGRESS STREET

FOREST STREET

GILMAN STREET

CONTINUE STRUCTURAL GARAGE REMOVAL OF CONGRESS STREET GARAGE WITH LONG ARM EXCAVATORS

INSTALL BREAK-AWAY TARPING SYSTEM FOR DUST AND DEBRIS CONTROL

CONSTRUCTION ACCESS GATE G2 - 30' ROLLING GATE

REMOVAL OF EXISTING UTILITY POLES ON CONGRESS AND GILMAN STREET TO OCCUR BEFORE DEMOLITION STARTS

CONSTRUCTION ACCESS GATE G1 - 30' ROLLING GATE

GENERAL NOTES:

1. CONGRESS STREET OPEN TO TWO-WAY TRAFFIC.
2. TURNER NEEDS 12 FEET OF CONGRESS STREET FROM CURB.

DURATION: DECEMBER 2019 - FALL 2022

3. NO PARKING SPOTS ON NORTH SIDE OF CONGRESS STREET
4. TURNER NEEDS 10 FEET ON GILMAN STREET.
5. REFER TO CMP SECTION 3.0 FOR GARAGE REMOVAL METHODOLOGY.

CONGRESS STREET NEW CLINICAL TOWER

Additions and Renovations [Structural Garage Removal Logistics Plan]

Turner

2019						2020												2021												2022											
JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.

UNDERPINNING OF EXISTING GARAGE FOUNDATION WALLS AND ELEVATOR LOBBY WALLS

BRIDGE ACCESS TO GARAGE TO REMAIN.

CONSTRUCTION GATE C1 - 30' ROLLING GATE

MANGATE

ALL GARAGE RETAINING WALL TIE-BACKS (BEYOND) INSTALLED PRIOR TO START OF STRUCTURAL GARAGE REMOVAL

CONSTRUCTION ACCESS GATE G2 - 30' ROLLING GATE

TEMPORARY EARTH RETENTION.

CONSTRUCTION ACCESS GATE G1 - 30' ROLLING GATE

GENERAL NOTES:
1. CONGRESS STREET OPEN TO TWO-WAY TRAFFIC.
2. TURNER NEEDS 12 FEET OF CONGRESS STREET FROM CURB.
DURATION: DECEMBER 2019 - FALL 2022
3. NO PARKING SPOTS ON NORTH SIDE OF CONGRESS STREET
4. TURNER NEEDS 10 FEET ON GILMAN STREET.
5. REFER TO CMP SECTION 3.0 FOR GARAGE REMOVAL METHODOLOGY.

WORK SCOPE:
1. EXCAVATION
2. EARTH RETENTION - PERMANENT
3. FOUNDATIONS REMOVAL
4. NEW FOUNDATIONS
5. UTILITIES INSTALLATION
6. TEMP. SUPPORT OF EXCAVATION

CONGRESS STREET NEW CLINICAL TOWER

Construction Management Plan [Logistics Plan] - Earth Retention

Turner

2019						2020												2021												2022											
JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.

CONSTRUCTION GATE C1
- 30' ROLLING GATE

CONSTRUCTION ACCESS
GATE G2 - 30' ROLLING GATE

CONSTRUCTION ACCESS GATE G1 -
30' ROLLING GATE

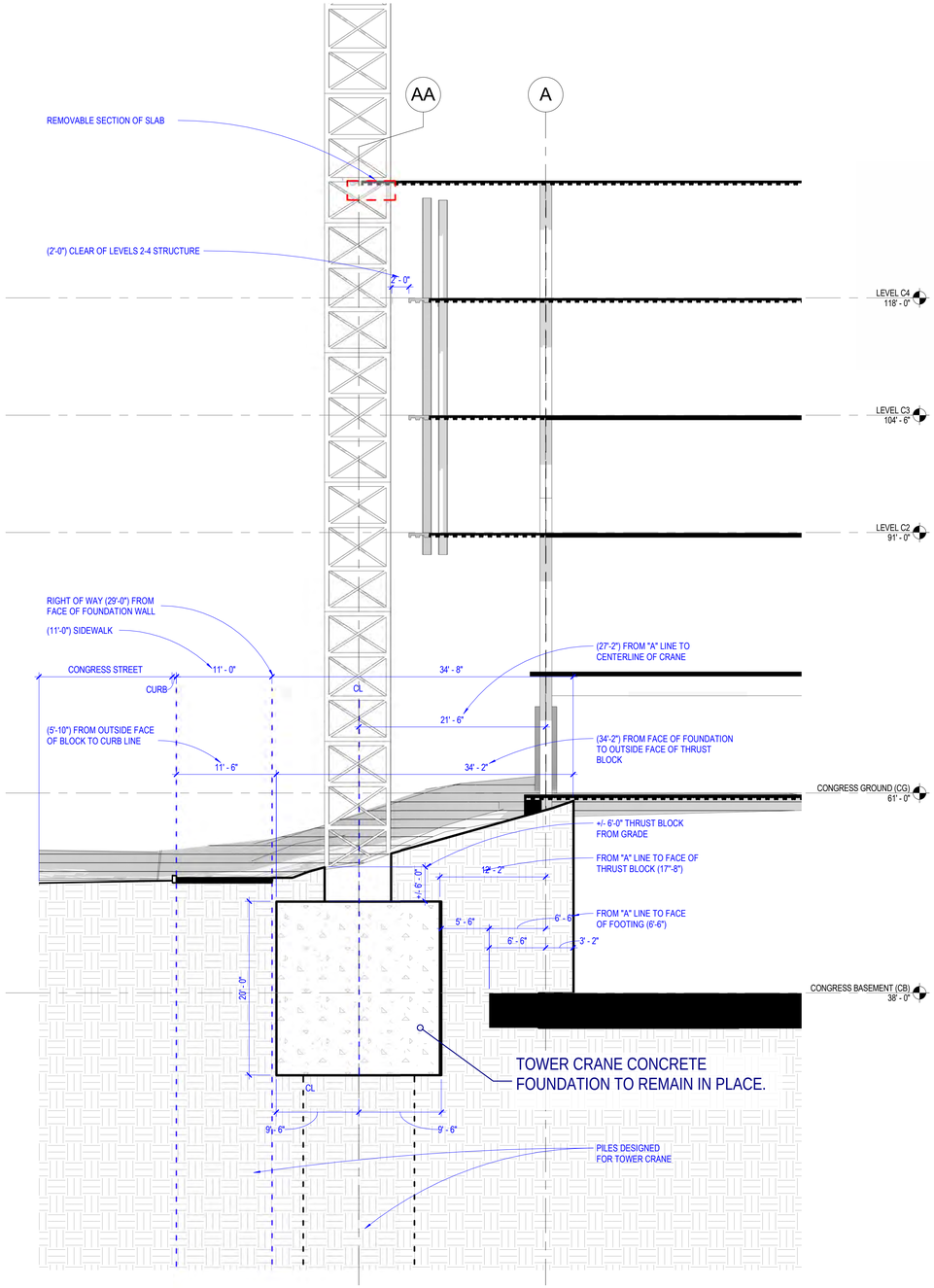
GENERAL NOTES:
1. CONGRESS STREET OPEN TO TWO-WAY TRAFFIC.
2. TURNER NEEDS 12 FEET OF CONGRESS STREET FROM CURB.
DURATION: DECEMBER 2019 - FALL 2022
3. NO PARKING SPOTS ON NORTH SIDE OF CONGRESS STREET
4. TURNER NEEDS 10 FEET ON GILMAN STREET.
5. REFER TO CMP SECTION 3.0 FOR GARAGE REMOVAL METHODOLOGY.

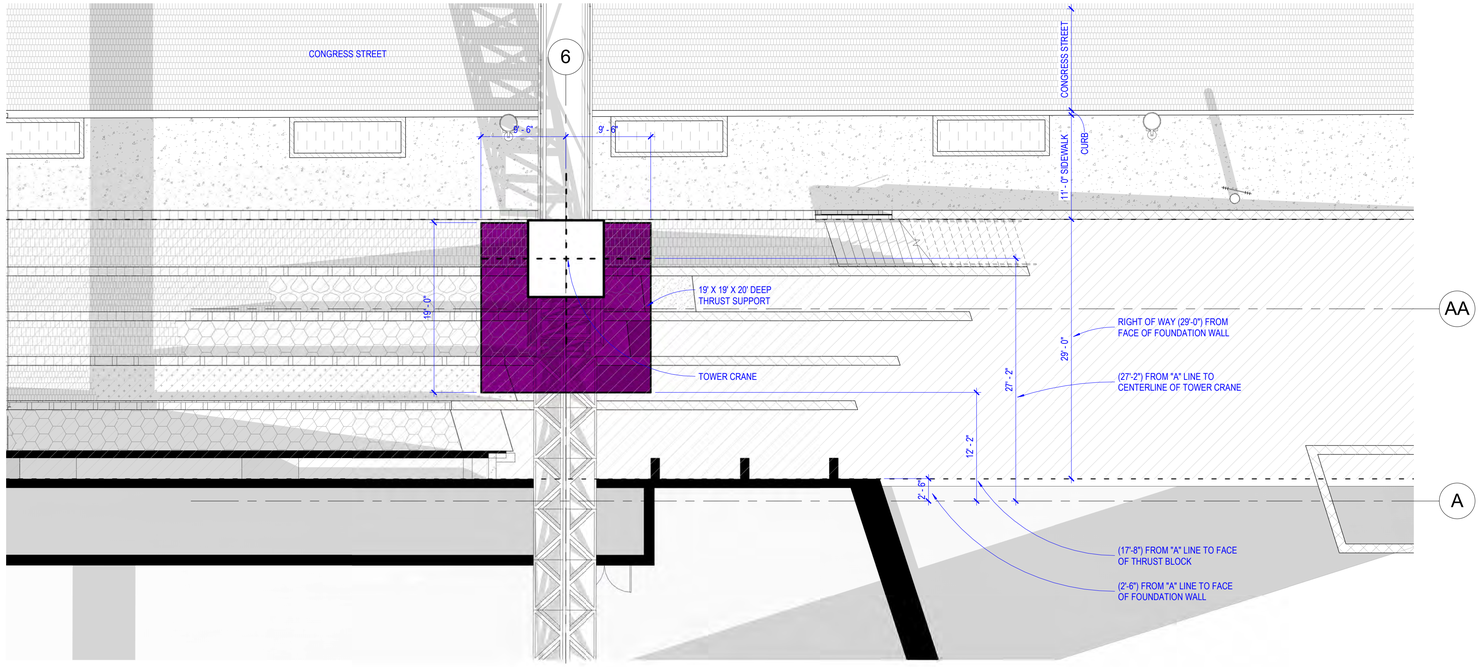
WORK SCOPE:
1. FOUNDATIONS - FOOTINGS & WALLS
2. MATT BASEMENT SLAB
3. RIGID INSULATION AND SECANT EARTH RETENTION
4. INSTALL TOWER CRANE BASE

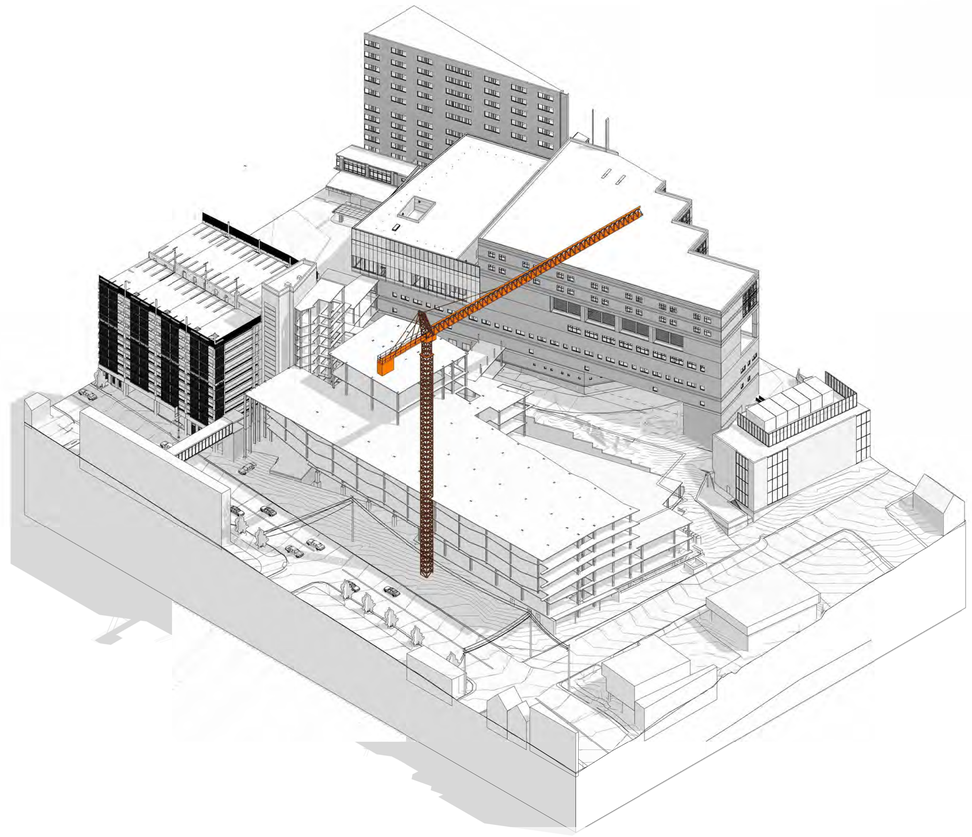
CONGRESS STREET NEW CLINICAL TOWER

Construction Management Plan [Logistics Plan] - Foundations

Turner







WORK SCOPE:

1. CONCRETE BASE INSTALLATION IN SUMMER OF 2020
2. TOWER CRANE BUILD IN NOVEMBER/DECEMBER 2020
3. LOCALIZED CONGRESS STREET ROAD CLOSURE - TWO WAY TRAFFIC MAINTAINED

CONGRESS STREET NEW CLINICAL TOWER

Congress Street Tower Crane Location & Detail [Logistics Plan]

Turner

2019						2020												2021												2022											
JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.

TRUCK PATH THROUGH SITE.

CONSTRUCTION GATE C1
- 30' ROLLING GATE

TOWER
CRANE

HOIST

CONSTRUCTION ACCESS
GATE G2 - 30' ROLLING GATE

CONSTRUCTION ACCESS GATE G1 -
30' ROLLING GATE

GENERAL NOTES:
1. CONGRESS STREET OPEN TO TWO-WAY TRAFFIC.
2. TURNER NEEDS 12 FEET OF CONGRESS STREET FROM CURB.
DURATION: DECEMBER 2019 - FALL 2022
3. NO PARKING SPOTS ON NORTH SIDE OF CONGRESS STREET
4. TURNER NEEDS 10 FEET ON GILMAN STREET.
5. REFER TO CMP SECTION 3.0 FOR GARAGE REMOVAL METHODOLOGY.

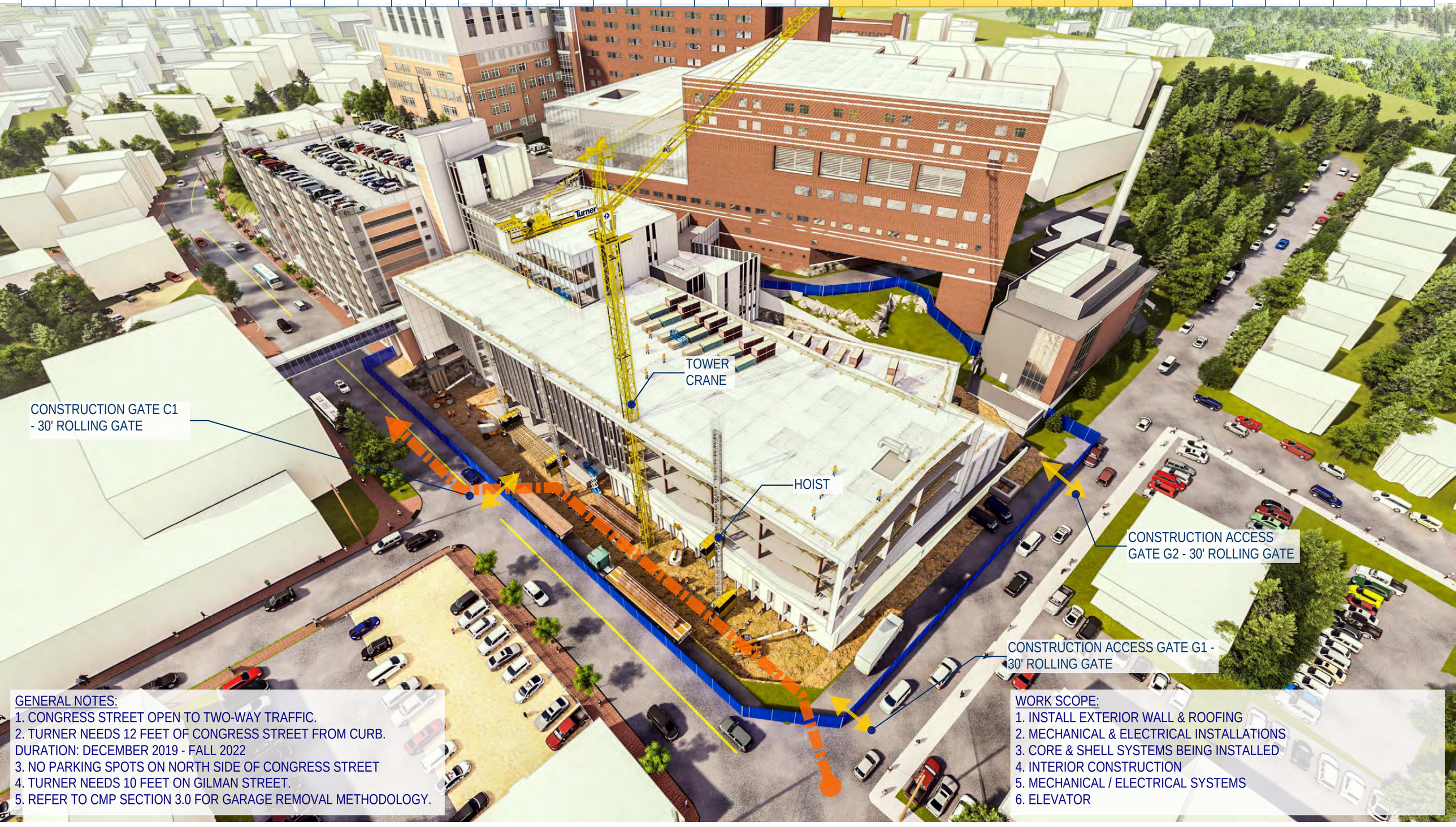
WORK SCOPE:
1. CONCRETE BASE INSTALLATION IN SUMMER OF 2020
2. TOWER CRANE BUILD IN NOVEMBER/DECEMBER 2020
3. LOCALIZED CONGRESS STREET ROAD CLOSURE - TWO WAY TRAFFIC MAINTAINED
4. INSTALL STRUCTURAL STEEL & DECK
5. PLACE CONCRETE SLAB
6. SPRAY ON FIREPROOFING

CONGRESS STREET NEW CLINICAL TOWER

Construction Management Plan [Logistics Plan] - Structure

Turner

2019						2020												2021												2022											
JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.



CONGRESS STREET NEW CLINICAL TOWER

Construction Management Plan [Logistics Plan] - Exterior Envelope

Turner

2019						2020												2021												2022											
JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.

CONSTRUCTION GATE C1
- 30' ROLLING GATE

CONSTRUCTION ACCESS
GATE G2 - 30' ROLLING GATE

CONSTRUCTION ACCESS GATE G1 -
30' ROLLING GATE

GENERAL NOTES:
1. CONGRESS STREET OPEN TO TWO-WAY TRAFFIC.
2. TURNER NEEDS 12 FEET OF CONGRESS STREET FROM CURB.
DURATION: DECEMBER 2019 - FALL 2022
3. NO PARKING SPOTS ON NORTH SIDE OF CONGRESS STREET
4. TURNER NEEDS 10 FEET ON GILMAN STREET.
5. REFER TO CMP SECTION 3.0 FOR GARAGE REMOVAL METHODOLOGY.

WORK SCOPE:
1. INTERIOR PATIENT ROOM FITOUT
2. CRITICAL CARE SUITES & ORs
3. MAIN LOBBY & PLUMBING SPACES FITOUT
4. SITE WORK AND HARDSCAPE

CONGRESS STREET NEW CLINICAL TOWER

Construction Management Plan [Logistics Plan] - Interior Fitout

Turner

2019						2020												2021												2022											
JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.

WORK SCOPE:
1. INSPECTIONS
2. CLEANING
3. MEDICAL EQUIPMENT
4. SITE IMPROVEMENTS

CONGRESS STREET NEW CLINICAL TOWER

Construction Management Plan [Logistics Plan] - Commissioning and Completion

Turner

WRITTEN SUBMISSION 12 – SIDEWALKS
BRAMHALL ST. – 22; MMC CONGRESS STREET BUILDING
LEVEL III SITE PLAN APPLICATION

THE PROJECT WILL INCLUDE NEW SIDEWALKS INCLUDING PUBLIC SIDEWALKS ALONG CONGRESS STREET AND GILMAN STREET. IN ACCORADNCE WITH THE IDP, THESE WILL BE BRROM FINISH CONCERTE SURFACES. TACTILE WARNING SURFACES AT CROSSWALK LOCATIONS ARE DESIGNED TO COMPLY WITH THE CITY TECHNICAL MANUAL, SECTION 1.

WRITTEN SUBMISSION 13 – PUBLIC TRANSIT
BRAMHALL ST. – 22; MMC CONGRESS STREET BUILDING
LEVEL III SITE PLAN APPLICATION

THE APPLICANT HAS MET WITH REPRESENTATIVES FROM METRO ON SEVERAL OCCASIONS, AND THE SITE PLAN INCLUDES A PROPOSED LOCATION FOR A NEW METRO STOP, IN FRONT OF THE NEW BUILDING ON CONGRESS STREET. THE SITE PLAN ALSO INCLUDES A NEW CROSS WALK NEAR FOREST STREET. THE APPLICANT WILL CONTINUE TO MEET WITH METRO UNTIL THESE LOCATIONS ARE FINALIZED.

Maine Medical Center
MaineHealth

centered around you

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 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: Existing MMC Bramhall Campus Parking Supply Summary 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

MMC has continued to witness intensifying demands on the existing parking supply 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.

Patients, visitors, and staff at MMC often comment on the lack of adequate and predictable parking. MMC parking facilities do not have integrated technologies to accurately report parking utilization. Therefore, current demand was estimated using a combination of observed data and comparisons to facilities similar to MMC's Bramhall Campus.

Observations:

On behalf of MMC, VHB conducted on-site parking usage observations in January and March 2017. These months were ideal for parking observations because of the poor weather resulting in increased parking utilization. VHB collected parking count data during peak hours, which included late afternoon, evening, and overnight occupancy and turnover. Parking observations were completed during weekdays when MMC typically sees its biggest parking challenges – Tuesday – Friday. Historically, the highest patient volumes at MMC are on Thursdays and Fridays according to the MMC team responsible for managing parking. High patient volumes coincide with higher volumes of staff. The counts indicate that the parking system typically operates at or above capacity during weekday daytime hours. During the observations, it was difficult for VHB to differentiate staff from patients and visitors. Therefore, a total demand estimate is provided.

The observed data reveals that parking demand at the Bramhall campus among patients, visitors, physicians, and staff total roughly 3,125. MMC parking facilities have capacity of 2,877. The observed parking demand is almost 110% of supply. The observed parking demand 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.[1] The difference equates to a shortage of 139 parking spaces.

In addition to VHB's observations, the MMC staff responsible for managing parking has estimated the employee parking deficit to be between 200 and 300 spaces.

Comparison to Peer Group:

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 which is low compared to peers. The midpoint patient and visitor parking space/licensed bed ratio among MMC peers is 1.87. It is important to note that based on a review of peer institutions, MMC would need to increase its patient/visitor allocation by 341 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 which is also low when compared to other peer institutions. The midpoint employee parking space/licensed bed ratio among MMC peers is 4.38. MMC has 637 licensed beds.

When compared to peers, MMC has a shortage of 341 patient and visitor parking spaces and 763 staff parking spaces.

$$\begin{aligned} &\textit{MMC Licensed Beds}\ (637) * \textit{Comparison Group Patient \& Visitor Parking Space per Bed}\ (1.87) \\ &\quad = \textit{Peer Equivalent Patient \& Visitor Parking Spaces}\ (1{,}191) \\ &\quad - \textit{MMC Patient \& Visitor Parking Space}\ (850) \\ &\quad = \boldsymbol{\textit{Patient \& Visitor Parking Space Deficit at MMC}\ (341)} \end{aligned}$$

$$\begin{aligned} &\textit{MMC Licensed Beds}\ (637) * \textit{Peer Group Staff Parking Spaces per Bed}\ (4.38) \\ &\quad = \textit{Peer Group Equivalent Staff Parking Spaces}\ (2{,}790) - \textit{MMC Staff Parking Spaces}\ (2{,}027) \\ &\quad = \boldsymbol{\textit{Staff Parking Space Deficit at MMC}\ (763)} \end{aligned}$$

Current Demand:

MMC used the observed and peer group data to determine the estimated parking demand.

Based on data available, the estimated current MMC parking demand exceeds patient and visitor supply by approximately 25 parking spaces and exceeds employee parking supply by approximately 220 parking spaces. Therefore, the estimated parking demand in 2017 is:

Table 2: 2017 Estimated Parking Demand

- 875 for patient and visitor parking ($875 = \textit{Current Patient Visitor Parking Supply}\ (850) + 25$)
- 2,250 for employees ($2{,}250 = \textit{Current Employee Parking Supply}\ (2{,}027) + 220$)
- 3,125 total estimated parking demand

The current parking demand for MMC's Bramhall campus is approximately 3,125 parking spaces.

[1] This approach is consistent with the City of Portland's Technical Manual, which recommends using ITE for parking demand projections. https://www.portlandmaine.gov/2148/TDM-Parking

MMC feels that the appropriate metric to measure parking utilization is parking demand per Bramhall campus employee. This metric is ideal because the number of employees will change over time. Other metrics such as parking space per bed or parking space per square foot would not accurately account for all factors impacting parking demand on campus. This metric allows for changes in both factors – the number of employees and parking demand. In addition, this metric focuses on MMC employees who are the target population of this transportation demand management plan.

MMC's Bramhall campus has roughly 6,000 employees as of 2017. Therefore the current employee parking demand per Bramhall campus employee is 0.375.

$$\frac{Estimated\ Employee\ Parking\ Demand\ (2{,}250)}{MMC\ Bramhall\ Employees\ (6{,}000)} = Employee\ Parking\ per\ Bramhall\ Employee\ (0.375)$$

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: Expected 2021 MMC Bramhall Campus Parking Supply Summary**.

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 627 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 Commuter Choice 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 Transportation Demand Management 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 TDM 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 TDM 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 Transportation Demand Management 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 2026 parking surplus in **Table 8** is roughly 4% of the total employee parking spaces shown in **Table 3** 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 Transportation Demand Management program.

WRITTEN SUBMISSION 15 – BICYCLE PARKING
BRAMHALL ST. – 22; MMC CONGRESS STREET BUILDING
LEVEL III SITE PLAN APPLICATION

THE TOTAL NUMBER OF PARKING SPACES SERVING THE CAMPUS IS 3,825 PARKING SPACES, INCLUDING THE ST. JOHN STREET PARKING GARAGE.

REQUIRED BICYCLE PARKING :
20 BIKE SPACES FOR THE FIRST 100 VEHICLE SPACES = 20 SPACES
3,825 TOTAL VEHICLE SPACES – 100 = 3,725 / 1 BIKE PER 20 VEHICLES = 186 BICYCLE SPACES
TOTAL REQUIRED BICYCLE SPACES - 20 + 186 = 206 SPACES

BICYCLE SPACES PROVIDED :
PER THE IDP PAGE 58 THERE ARE 193 SPACES ON CAMPUS
40 ADDITIONAL SPACES ARE PROPOSED AT THE ST. JOHN STREET PARKING GARAGE
TOTAL PROPOSED BICYCLE SPACES = 193 + 40 = 233 SPACES

THE APPLICANT IS CURRENTLY EVALUATING ON CAMPUS BICYCLE PARKING PER THE CONDITIONS OF APPROVAL FOR THE EAST TOWER AND VISITOR GARGE EXPANSIONS.

WRITTEN SUBMISSION 16 – SNOW STORAGE
BRAMHALL ST. – 22; MMC CONGRESS STREET BUILDING
LEVEL III SITE PLAN APPLICATION

THE APPLICANT WILL CONTRACT WITH A PROPERTY MANAGEMENT COMPANY TO REMOVE SNOW FROM THE SITE. A SNOW MELT SYSTEM IS CONTEMPLATED AT THE PASSENGER ARRIVAL / DEPARTURE PLAZA, HOWEVER, MAY NOT BE INSTALLED PENDING REVIEW OF CONSTRUCTION COSTS.

Maine Medical Center
MaineHealth

centered around you

Get on Board!

Maine Medical Center

Transportation Demand Management Program
August 22, 2018



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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 8,000 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 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, Maine Medical Center, the state's largest hospital and calls for increasing the number of single rooms available to patients as well as replacing surgical and treatment areas with ones that adhere to 21st century standards. In addition, patient rooms will be universal meaning that each rooms can meet the needs of patients at any point during their stay whether they require critical care or acute care services. About $50 million of the total project cost will be invested in 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 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 employees will be encouraged 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, public transportation, 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.

Contributors to this Plan

MMC would like to thank the City of Portland, the West End, Western Promenade, Libbytown, St John Valley, and Parkside neighborhoods, and Vanasse Hangen Brustlin, Inc. (VHB) for contributing to this Transportation Demand Management Plan.

MMC engaged VHB to assist in the creation of this plan. VHB is a national consulting firm specializing in transportation engineering and a leader in the development and management of Transportation Demand Management plans.

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	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.

PARKING DEMAND

MMC has continued to witness intensifying demands on the existing parking supply 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.

Patients, visitors, and staff at MMC often comment on the lack of adequate and predictable parking. MMC parking facilities do not have integrated technologies to accurately report parking utilization. Therefore, current demand was estimated using a combination of observed data and comparisons to facilities similar to MMC's Bramhall Campus.

Observations:

On behalf of MMC, VHB conducted on-site parking usage observations in January and March 2017. These months were ideal for parking observations because of the poor weather resulting in increased parking utilization. VHB collected parking count data during peak hours, which included late afternoon, evening, and overnight occupancy and turnover. Parking observations were completed during weekdays when MMC typically sees its biggest parking challenges – Tuesday – Friday. Historically, the highest patient volumes at MMC are on Thursdays and Fridays according to the MMC team responsible for managing parking. High patient volumes coincide with higher volumes of staff. The counts indicate that the parking system typically operates at or above capacity during weekday daytime hours. During the observations, it was difficult for VHB to differentiate staff from patients and visitors. Therefore, a total demand estimate is provided.

The observed data reveals that parking demand at the Bramhall campus among patients, visitors, physicians, and staff total roughly 3,125. MMC parking facilities have capacity of 2,877. The observed

parking demand is almost 110% of supply. The observed parking demand 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.[1] The difference equates to a shortage of 139 parking spaces.

In addition to VHB's observations, the MMC staff responsible for managing parking has estimated the employee parking deficit to be between 200 and 300 spaces.

Comparison to Peer Group:

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 which is low compared to peers. The midpoint patient and visitor parking space/licensed bed ratio among MMC peers is 1.87. It is important to note that based on a review of peer institutions, MMC would need to increase its patient/visitor allocation by 341 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 which is also low when compared to other peer institutions. The midpoint employee parking space/licensed bed ratio among MMC peers is 4.38. MMC has 637 licensed beds.

When compared to peers, MMC has a shortage of 341 patient and visitor parking spaces and 763 staff parking spaces.

$$\begin{aligned} &MMC\ Licensed\ Beds\ (637) * \ Comparison\ Group\ Patient\ \&\ Visitor\ Parking\ Space\ per\ Bed\ (1.87) \\ &\quad = Peer\ Equivalent\ Patient\ \&\ Visitor\ Parking\ Spaces\ (1{,}191) \\ &\quad - MMC\ Patient\ \&\ Visitor\ Parking\ Space\ (850) \\ &\quad = \boldsymbol{Patient\ \&\ Visitor\ Parking\ Space\ Deficit\ at\ MMC\ (341)} \end{aligned}$$

$$\begin{aligned} &MMC\ Licensed\ Beds\ (637) * \ Peer\ Group\ Staff\ Parking\ Spaces\ per\ Bed\ (4.38) \\ &\quad = \ Peer\ Group\ Equivalent\ Staff\ Parking\ Spaces\ (2{,}790) \\ &\quad - MMC\ Staff\ Parking\ Spaces\ (2{,}027) = \boldsymbol{Staff\ Parking\ Space\ Deficit\ at\ MMC\ (763)} \end{aligned}$$

Current Demand:

MMC used the observed and peer group data to determine the estimated parking demand.

Based on data available, the estimated current MMC parking demand exceeds patient and visitor supply by approximately 25 parking spaces and exceeds employee parking supply by approximately 220 parking spaces. Therefore, the estimated parking demand in 2017 is:

2017 Estimated Parking Demand
- 875 for patient and visitor parking ($875 = Current\ Patient\ Visitor\ Parking\ Supply\ (850) + 25$)
- 2,250 for employees ($2{,}250 = \ Current\ Employee\ Parking\ Supply\ (2{,}027) + 220$)
- 3,125 total estimated parking demand

The current parking demand for MMC's Bramhall campus is approximately 3,125 parking spaces.

MMC feels that the appropriate metric to measure parking utilization is parking demand per Bramhall campus employee. This metric is ideal because the number of employees will change over time. Other

[1] This approach is consistent with the City of Portland's Technical Manual, which recommends using ITE for parking demand projections. https://www.portlandmaine.gov/2148/TDM-Parking

metrics such as parking space per bed or parking space per square foot would not accurately account for all factors impacting parking demand on campus. This metric allows for changes in both factors – the number of employees and parking demand. In addition, this metric focuses on MMC employees who are the target population of this transportation demand management plan.

MMC's Bramhall campus has roughly 6,000 employees as of 2017. Therefore the current employee parking demand per Bramhall campus employee is 0.375.

$$\frac{Estimated\ Employee\ Parking\ Demand\ (2{,}250)}{MMC\ Bramhall\ Employees\ (6{,}000)} = Employee\ Parking\ per\ Bramhall\ Employee\ (0.375)$$

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, in new parking buildings.

In addition, MMC is exploring various commute management platforms to better understand, manage, and influence employee commute behavior. The commute platforms can help raise awareness for alternative transportation choices, engage (and possibly reward) employees, and provide the data and tools to make informed transportation decisions. Many of the platforms also enable employees to participate in commuting challenges with colleagues (e.g. most cycling trips).

MMC has contacted several commute management companies that are used by employers to explore how commuting platforms can enhance MMC's data collection efforts while potentially rewarding its employees. One Seattle-based commute management provider is currently used by organizations, like Seattle Children's Hospital, Delta Dental of Washington, Boeing, and the Bill and Melinda Gates Foundation. Another provider is located in Santa Monica and is used by companies and institutions, such as Google, Patagonia, the University of Maryland, and MIT. Both platforms are mobile and desktop-friendly and allow employees to easily track their daily commutes, while giving employers the ability to manage commuting programs, data, resources, and rewards in one centralized system. These platforms, among others, will be explored as MMC looks to improve its data collection capabilities.

FIGURE 1: Commute Management Platforms



Commute management platforms offer enhanced opportunities to understand employee commuting behavior and potentially incentivize and reward staff who commute by alternative modes of transportation. Many of these platforms are mobile-friendly and offer easy ways in which to track personal commutes.

Source: Luum

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 2: 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 7 below. In addition, the hilly nature of the Western Promenade impacts bicycling and walking in this area.

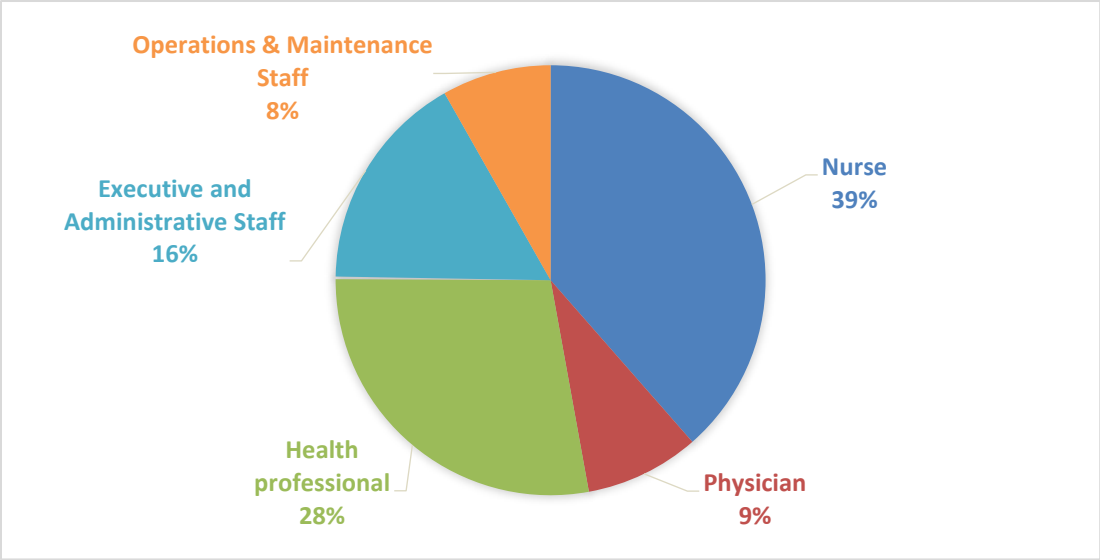
Current Travel Behavior

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 3 illustrates the various roles held by the survey participants.

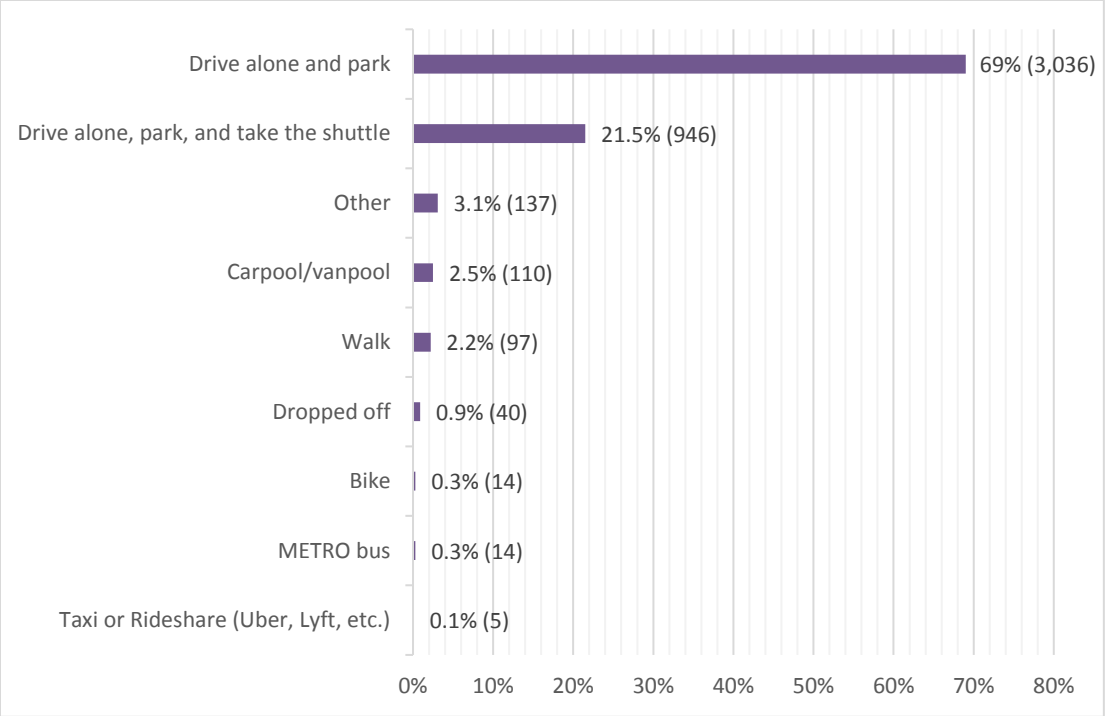
FIGURE 3: Survey Respondents by Hospital Affiliation



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 4 illustrates the commuting modes of MMC employees.

FIGURE 4: 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 once every two 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 employee commuting patterns. 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 5 and 6). Three miles is generally considered a reasonable biking distance by industry standards.

FIGURE 5: MMC Bramhall Campus Employees, Distance to Work by Type of Employee

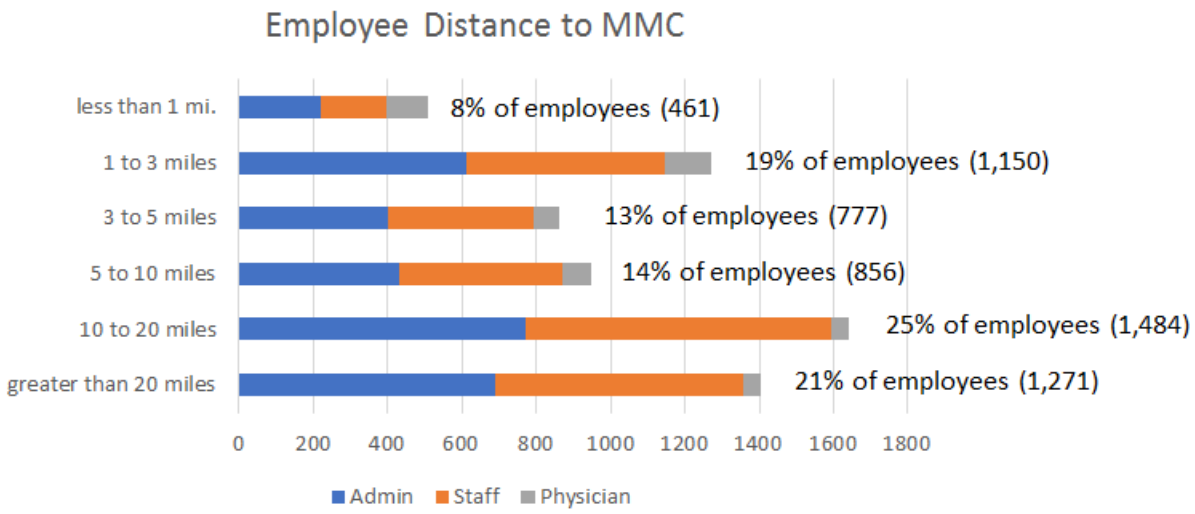
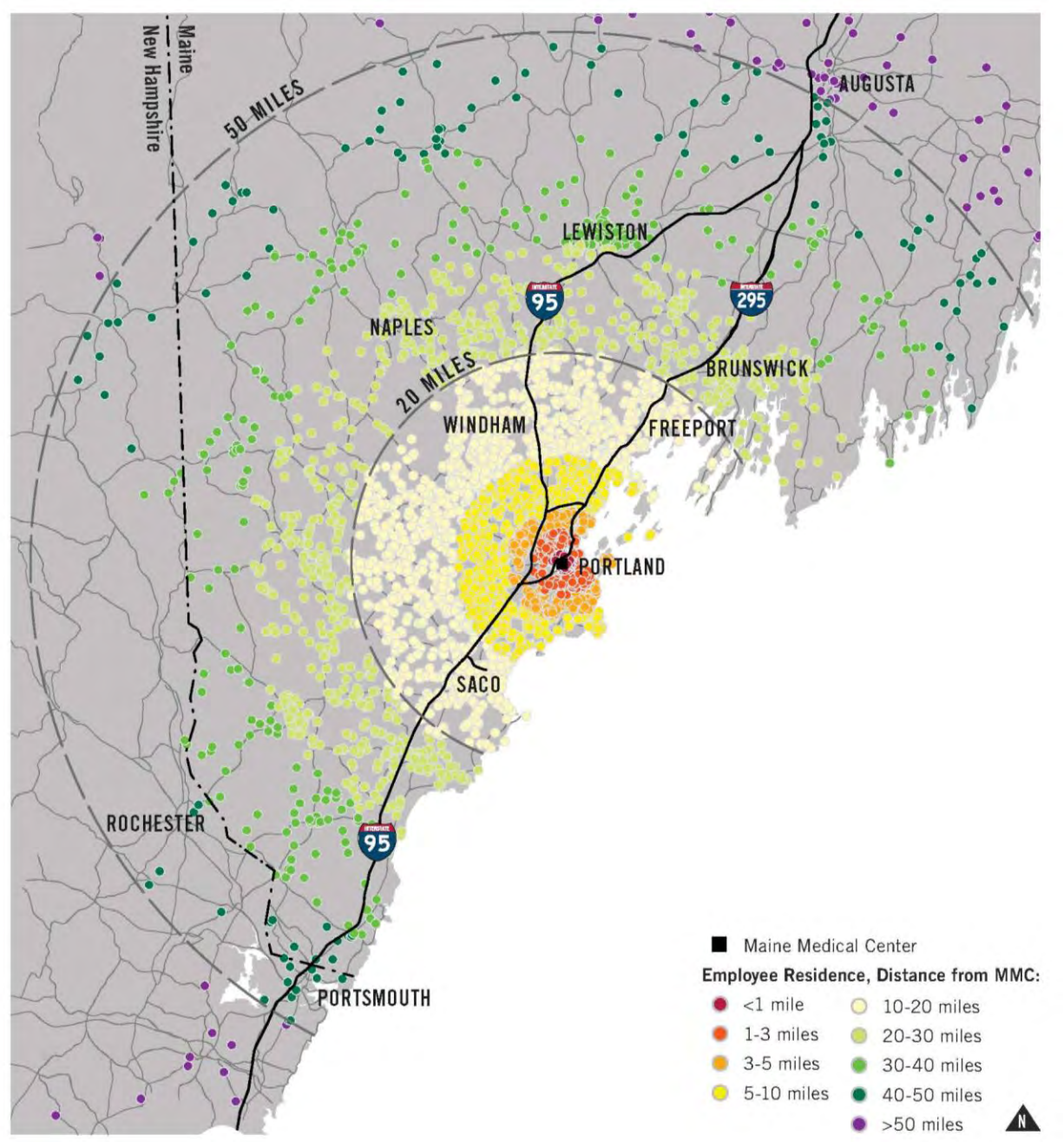


FIGURE 6: Map of MMC Bramhall Campus Employee Residences Illustrating Distance to Work and Travelsheds



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 and as data collection improves, new goals and metrics may be identified. MMC will also continue to conduct surveys as a way to measure the share of employees who commute by alternative modes of transportation.

VHB conducted a study to determine the existing parking demand for employees (refer to the Context section of this document). VHB's observations and peer group comparison 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	0.367	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.

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.

Active Transportation

The MMC campus is located in close proximity to existing and planned routes in the City of Portland's growing bicycle and pedestrian network as shown in Figure 7. MMC offers a variety of bike facilities to make bicycle commuters feel welcome and safe. In 2008, MMC installed five (5) strategically-located bike racks and ten (10) bike lockers on its main campus. Three (3) 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. MMC will conduct a bike rack inventory in July/August 2018 to evaluate the location, condition, and model (or style) of existing bike racks. This assessment will ensure that the racks meet the City's standards regarding the quantity, quality, and distribution of bike parking across the Bramhall campus. MMC understands the city's strong preference for inverted u-racks and bike hitch (or post and ring) racks.

Bicycle and other active transportation commuters also have access to showers facilities across campus, including at Environmental Services, Engineering, the 5th floor of the Maine General Building, and at 229 Vaughan Street.

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", whose design treatments help reduce vehicle speeds and create a safer environment for active transportation users. Neighborhood byway design could 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 7 and add neighborhood byways.

FIGURE 7: Portland Bikeway and Pedestrian Network



Source: City of Portland

In the winter months, some employees choose to leverage their wintertime hobbies, like cross-country skiing, to get to work.



Public Transportation

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 MMC's current Greater Portland METRO Bus and Shuttle-Bus Zoom discounts provided through "Get on Board!". Note: MMC is dedicated to providing a 100% METRO discount in the short term (as discussed in the recommended Program Enhancements section).

TABLE 2: MMC Transit Discounts

	Regular Price	MMC Sale Price	% Discount
METRO	$13.50	$8.00	40%
S. Portland	$13.50	$8.00	40%
Zoom 10 Ride	$39.00	$29.60	25%
Zoom Monthly	$100.00	$84.50	15%
Zoom Quarterly	$260.00	$197.50	25%

The *Portland Peninsula Transit Study* [2]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*[3] 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.

In addition, an MMC representative was recently appointed to the PACTS/GPCOG Transit Committee. MMC is excited to participate in this dynamic group and looks forward to exploring ways in which to improve transit accessibility, connectivity, and reliability in the Greater Portland region.

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.

[2] Portland Transit Committee. *Portland Peninsula Transit Study* (2009), Retrieved from: https://www.portlandmaine.gov/DocumentCenter/Home/View/3383.

[3] Portland Area Comprehensive Transportation System (PACTS). *Portland "Hub Link" Feasibility Study* (2015), Retrieved from: http://www.portlandmaine.gov/DocumentCenter/View/14793 .

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 every three months 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. MMC will explore opportunities to help automate this process. For example, commute management platforms (discussed in Data Collection section of the Plan) could allow employees to easily track and manage their daily commutes, potentially reducing the need to submit paperwork.

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 995 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.

Electric Vehicle (EV) Charging

Electric vehicle (EV) charging stations can encourage motorists to commute by electric vehicles, thereby reducing carbon emissions. MMC offers free charging stations for staff and visitors.

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. Therefore, the annual employee parking cost is $78.

$$\$3\ per\ paycheck\ \times 26\ pay\ periods\ =\ \$78$$

Enhanced Get on Board Program Elements

Program enhancements, discussed below, are anticipated to occur within 1-3 years.

Active Transportation

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.

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 is exploring additional active transportation incentives through commuter challenges, like a Bike Month Challenge (discussed in Education and Marketing section) with corporate-sponsored giveways, like gift cards to local businesses.

MMC will also consider purchasing Bicycle Benefits memberships for bicycle commuters. The memberships cost $5 (one-time fee) and include a helmet sticker, which provides discounts to dozens of local businesses in the Portland region.

MMC understands that Portland Bike Share, a non-profit organization with a goal to establish a bike share system in the City of Portland, plans to launch a bike share pilot in 2018. MMC has contacted the Executive Director of the North American Bikeshare Association regarding bike share opportunities and has conducted preliminary research on private bike share systems, which, if implemented, could help connect employees at MMC and MaineHealth, located on Free Street.

MMC also recognizes the importance of safe and accessible infrastructure to active transportation. The presence of infrastructure can provide the sense of safety and 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 pedestrians 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 expand its active transportation network.

The City of Portland has proposed a bike lane on Congress St. and a Neighborhood Byway on Bramhall St., both of which are adjacent to MMC's Bramhall campus. These improvements, among others, can help address gaps in the community's active transportation network and could help encourage more MMC employees to bike, walk, skate, and ski to work.





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 (100% subsidy) for employees who elect to use transit as their primary mode of commuting 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).

METRO's electronic fare deployment, scheduled for 2019, represents an opportune time for MMC to launch this enhanced subsidy program. MMC will explore ways in which employees can "purchase" transit passes up front, rather than on a reimbursement basis. This "payment-in-advance" option may be contingent on MMC's capacity to verify transit ridership (e.g. through electronic boarding data) in order to minimize abuse of this benefit. It also possible that electronic fare collection and/or commute management platforms (discussed in Data Collection section), if implemented, could allow staff to easily log trips, potentially helping verify transit usage.

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 has hired 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 is responsible for program evaluation, 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 challenge in the future.

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.

Improving Data Collection Capabilities

MMC will improve its data collection capabilities as described below.

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 holistic 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 Public Transportation

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. The new TDM Coordinator provides MMC with an unprecedented opportunity to help educate and inform employees about the hospital's TDM programs.

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 is committed to reorganizing information on its intranet site within the first six months following the hiring of the TDM Coordinator.

MMC will develop and deliver information about the Get on Board program using communications best practices that are refined throughout the program's lifespan. Communication 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 currently shares information about the Get on Board program with new employees during orientation and understands that this information can be overlooked amidst all of the materials that are provided to new employees. MMC will transform its existing TDM orientation brochure into a more graphical, eye-catching pamphlet or postcard. MMC will also consider incorporating a brief TDM presentation at 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 Booths: To supplement information available on the Get on Board intranet site, MMC will explore opportunities to setup Get On Board booths to help market the program and potentially offer free giveaways, like bike lights or helmets. The booth could be installed and staffed at a high visibility location, such as the hospital's South entrance or outside the future employee parking garage.
- Leveraging Existing MMC Programs: The TDM Coordinator will explore possibilities to leverage (and learn from) other MMC employee programs, such as "Work on Wellness" and Moment to Shine. Work on Wellness (WOW!) allows employees to earn rewards for participating in various health and wellbeing programs, while Moment to Shine allows employees to recognize and reward colleagues for exemplary performance. Moment to Shine, available on the MMC intranet and on iPhone and Android apps, also allows "shining" employees to redeem their rewards through a user-friendly shopping portal. While it is important that the MMC employee programs maintain their autonomy, there could be opportunities for Get on Board to utilize some of the same features, like the rewards portal.
- Branding: There may also be opportunities to rebrand the Get on Board program as MMC looks to add new life to the program.

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.

Commuter Challenges

MMC will explore internal commuter challenges, such as a bicycle commuter challenge in the month of May, which has been nationally designated as "Bike Month" by the League of American Bicyclists. As discussed in the Data Collection section, commute management platforms could help MMC manage these friendly competitions and allow participants to log commutes and view leaderboards. MMC will contact businesses regarding potential sponsorships for the monthly commuter challenges.

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 EZ-Pass technology to automatically collect information about the vehicles 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. These systems will provide quantifiable information to assist in determining future utilization of MMC's parking facilities. MMC will utilize this parking usage data to assess its parking arrangement twice every year.

MMC has received feedback 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 Surveys

MMC conducted an employee travel survey in 2017 to understand employee commuter preferences and intends to administer the survey once every two years going forward. The survey is administered electronically using a survey platform and produces data that MMC (or a third party) can use to identify changes and progress from one period to the next. The surveys 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

Employee Surveys

As discussed earlier, MMC is also exploring contracts with various commute management platforms to help encourage, track, and incentivize alternative commutes. These platforms can provide robust data related to commuting patterns, trends, and changes.

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. While the program's success partially relies on a cultural shift away from personal vehicles, Maine Medical Center is committed to exploring and identifying the most impactful TDM strategies to reduce single-occupancy vehicle travel and encourage alternative commuting choices.

WRITTEN SUBMISSION 18 – PRESERVATION OF SIGNIFICANT NATURAL FEATURES
BRAMHALL ST. – 22; MMC CONGRESS STREET BUILDING
LEVEL III SITE PLAN APPLICATION

THER ARE NO SUCH FEATURES WITHIN THE PROJECT SITE.

WRITTEN SUBMISSION 19 – LANDSCAPING AND LANDSCAPE PRESERVATION
BRAMHALL ST. – 22; MMC CONGRESS STREET BUILDING
LEVEL III SITE PLAN APPLICATION

THERE ARE MATURE EXISTING TREES ON THE SITE, HOWEVER, IT IS NOT POSSIBLE TO PRESERVE THEM WITH DEMOLITION OPERATIONS AND NEW CONSTRUCTION .

WRITTEN SUBMISSION 20 – SITE LANDSCAPING
BRAMHALL ST. – 22; MMC CONGRESS STREET BUILDING
LEVEL III SITE PLAN APPLICATION

THE LANDSCAPE PLAN FOR THE NEW BUILDING IS DESIGNED TO COMPLIMENT THE UNIFORMITY AND SIMPLE NATURE OF THE BUILDING DESIGN.

THERE ARE FOUR LANDSCAPE ZONES WITHIN THE SITE :

1. PASSENGER ARRIVAL AND DEPARTURE PLAZA – THIS AREA WILL BE COMPLETELY IN SHADE. THE CENTER ISLAND WILL BE PLANTED WITH EUROPEAN WILD GINGER WITH ACCENTS OF TRILLIUM. THESE SELECTIONS WILL PROVIDE EVERGREEN COLOR ALL YEAR AND WILL NOT OBSTRUCT VISIBILITY IN THE PLAZA.
2. TRIANGLE PLANTER BELOW RETAINING WALL – THIS AREA INCLUDE ENGLISH IVY, PLANTED AT THE BASE OF THE RETAINING WALL, AS WELL AS EUONYMUS GROUNDCOVER (EVERGREEN), WITH VERTICAL ACCENTS OF FEATHER REED GRASS.
3. TWO TRIANGLE PLANTERS AT THE PUBLIC PLAZA – THESE AREAS REPEAT THE USE OF EUONYMUS GROUNDCOVER WITH ACCENTS OF FEATHER REED GRASS, AFFORDING A SIMPLE YET ELEGANT FOREGROUND TO THE VERTICAL BUILDING BEYOND.
4. THE GREEN ROOF WILL BE PLANTED WITH GREEN AND RED SEDUM, LOWBUSH BLUEBERRY, AND TALLER SWITCH GRASS ALONG THE PATIENT BEDROOM EDGE OF THE ROOF.

WRITTEN SUBMISSION 21 – PARKING LOT LANDSCAPING
BRAMHALL ST. – 22; MMC CONGRESS STREET BUILDING
LEVEL III SITE PLAN APPLICATION

THIS SUBMISSION ITEM IS NOT APPLICABLE TO THIS APPLICATION.

WRITTEN SUBMISSION 22 – STREET TREES
BRAMHALL ST. – 22; MMC CONGRESS STREET BUILDING
LEVEL III SITE PLAN APPLICATION

THE LANDSCAPE PLAN INCLUDES (5) NEW HONEY LOCUST TREES ALONG CONGRESS STREET. HONEY LOCUST TREES ARE SUITED FOR THE URBAN CONDITIONS AND ARE FOUND ON MANY PORTLAND STREETS TODAY.

SEBAGO TECHNICS

CIVIL ENGINEERING • SURVEYING • LANDSCAPE ARCHITECTURE

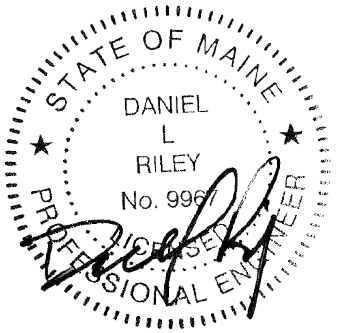
STORMWATER MANAGEMENT PLAN

Maine Medical Center
Congress Street Building
Portland, Maine

Prepared for

Maine Medical Center
22 Bramhall Street
Portland, ME 04102

September 25, 2018



09/25/2018

STORMWATER MANAGEMENT PLAN

Maine Medical Center Congress Street Building
Portland, ME

Introduction

This Stormwater Management Plan has been prepared to address the potential impacts on stormwater runoff associated with the construction of a new hospital building on Maine Medical Center's Bramhall Campus.

The Congress Street Building project will consist of a new 6 story, 264,300 square foot hospital building with an approximately 43,900 sf footprint area. The proposed building replaces the existing employee-parking garage located at the corner of Congress Street and Gilman Street and includes redevelopment of the site along Congress Street. The total area of the campus affected by the work, as shown on the exhibits attached to this report is approximately 1.95 acres.

As discussed in this report, the Stormwater analysis and treatment/detention system has been designed to detain and treat rooftop runoff from the existing Visitors Parking Garage adjacent to the new building. Providing treatment from an additional 26,400 sf of parking deck that currently drains un-detained into the combined sewer system in Congress Street.

The impact of the new building is mitigated in part by redeveloping an existing parking structure with the new building whose rooftop includes green roof components.

Development on the Maine Medical Center Bramhall Campus is subject to the Maine Department of Environmental Protection (MDEP) Site location of Development Act and Chapter 500 Stormwater standards, reviewed by the City of Portland under its delegated review authority from MDEP. Based on the proposed development, the project is subject to the MDEP Chapter 500 Basic, General, and Flooding standards, including the redevelopment standards for a Site Law project, as incorporated into the City of Portland Land Use Ordinance and Site Plan review regulations.

The site is located in an area served by a combined sewer system where the City of Portland seeks to mitigate and reduce combined sewer overflow (CSO) events. The design storm events for CSO evaluation is a 1" rainfall, 24-hour design storm (CSO Storm).

Based on discussions with the City staff, the stormwater analysis and the proposed detention/treatment system has been designed to reduce the rate of runoff from the project site including both the new Congress Street Building and the existing Visitor Garage, to the greatest extent possible during this 1" CSO Storm event.

The proposed erosion controls, inspection and maintenance criteria, and the stormwater management systems have been designed to meet MDEP and City of Portland requirements. The proposed design includes a subsurface sand filter Best Management Practice (BMP) which has been designed to meet

the system sizing and treatment requirements for the new building's and redevelopment project standard. The system has been expanded to the extent practicable and to provide treatment for runoff from the adjacent parking garage.

The proposed design meets the applicable standards for system volume, but due to the limited site area, incorporating the runoff from the Visitor Garage will require waiver of the system surface area design criteria. The waiver is simply a trade-off to allow detention of existing runoff volume to address the CSO flows reduction desired by the City.

Permitting and Analysis History

A comprehensive stormwater analysis of the Maine Medical Center Bramhall Campus was completed in January 2004 as part of the Site Location of Development review, by the City of Portland, of the Bramhall Campus Expansion project. This project constructed from 2004-2007 was significant redevelopment of the campus including the construction of the Visitors Garage, Central Utility Plant and East Tower and renovations of the Emergency Department. The 2004 project also included the reconstruction and re-alignment of Crescent Street and separation of storm drainage in Gilman Street.

The redevelopment project fully separated stormwater runoff from the combined sewers within hospital property the campus and the immediately adjacent streets. The separated runoff re-enters the City's combined system at 7 locations abutting the site to facilitate future separation projects that may be undertaken by the City as part if its CSO program.

The 2004 redevelopment project included the installation of two hydrodynamic separator treatment units and separated runoff from approximately 6.3 acres of the campus and Gilman Street (uphill of A Street) the municipal separated storm drain in A Street, fully utilizing the design capacity of the A Street Storm drain.

The 2004 analysis is presented in a Stormwater Management Report dated January 2004 attached to the Maine Medical Center's January 2004 Site Location of Development Application on file in the City of Portland Planning office.

The 2004 post-development analysis subdivided the campus and tributary offsite areas into 20 onsite and offsite sub catchment areas. These sub catchment areas are the basis of the current study's pre-development analysis. The full campus watershed plan is attached for reference, identifying the sub catchments affected by the currently proposed redevelopment.

The discussion of our current analysis focuses on those sub catchments and study points affected by the proposed project, the analysis of off site areas of the campus remains unchanged from the 2004 analysis with exception of the design rainfall events which have been updated in accordance with the design rainfall adopted by the MDEP Chapter 500 regulations in August of 2015.

Site Existing Conditions

The project site includes the area occupied by the hospital's existing employee garage at the corner of Congress Street and Gilman Street. The runoff evaluation area includes portions of Congress Street to the north and east, Gilman Street to the west and the access road between the existing garage and the LL Bean Wing of the hospital to the south.

The campus 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 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 the combined sanitary/stormwater sewers located within public streets abutting the site. There are currently two Downstream Defender units, installed in 2005, which provide stormwater quality treatment to runoff from the site. One Downstream Defender unit is located in the Visitor Garage on Congress Street, tributary to the municipal combined sewer system that runs down Forest Street to Park Avenue. The outfall of the Visitor Garage's downstream defender will be redirected to a proposed detention and treatment system associated with new Congress Street building to provide peak flow mitigation during the CSO design storm.

The second Downstream Defender unit is located along Gilman Street, in front of the Central Utility Plant, treating stormwater before it enters the municipal separated storm drain in A Street.

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.

Proposed Development

Maine Medical Center proposes to construct a new 6 story, 264,300 square foot hospital building with an approximately 43,900 sf footprint area. The new building incorporates green roof elements and replaces the impervious surfaces associated with the existing employee-parking garage.

The Visitors Garage east of the site will remain. The drainage system from the Visitors Garage will be modified for redirect runoff to the proposed building's stormwater treatment system. The stormwater analysis was developed to consider treatment for both the proposed hospital expansion and the existing parking garage.

The site is subject to the Chapter 500 redevelopment standards as a Site Law, although the proposed development will result in the following:

Total Developed Area Subject to Treatment Standards	= 1.53 acres
Total Post Development Impervious area	= 1.19 acres
Redevelopment Impact Rating	= (- 0.5)
Redeveloped Area Requiring Treatment (50%)	= 0.77 acres
Redeveloped Area Receiving Treatment	= 1.95 acres

Regulatory Requirements

City of Portland:

The project is subject to the City of Portland's land use ordinance and Technical Standards applicable to a project with an existing Site Location of Development Permit and reviewed under the City's delegated review authority. The City's standards incorporate the MDEP Chapter 500 standards as follows.

Maine Department of Environmental Protection (MDEP)

MDEP Rule Chapters 500 and 502 describe stormwater management requirements for new development projects. These rules describe performance standards divided into five major categories: Basic Standard, General Standard, Phosphorous Standard, Urban Impaired Stream Standard, and Flooding Standard. The following sections describe how this project will address these stormwater management performance standards.

Basic Standard: A project must meet basic standards if it disturbs an area greater than one (1) acre. As this development will disturb approximately 1.53 acres, it must meet the basic standard. The standard includes various erosion and sedimentation controls, inspection and maintenance procedures, and general housekeeping requirements.

General Standard: A project is subject to the general standard if it results in the creation of one (1) or more acres of impervious area or developed areas greater than five (5) acres. As this project will include approximately 1.19 acres of impervious area, it must meet the general standard, including provisions in the General Standards for Redevelopment projects.

The redevelopment standard applicable to this project is outlined in the Chapter 500.4.C(2)(d). This standard establishes treatment requirements based on a pre and post development pollutant impact rating which establishes a sliding scale of the percentage of Developed Area which must be treated. For Site Law projects, the scale ranges from a minimum of 50% of the developed area to a maximum treatment equal to a new development.

The redevelopment calculations for the current project indicates that a minimum of 50% of the site's redevelopment must be treated. The treatment system proposed exceeds the minimum requirement

as a stand alone project including the Congress Street building and significantly exceeds the minimum standards by providing treatment for the Visitor Garage runoff.

Standard BMPs have been defined by the MDEP and are described thoroughly in their publication Stormwater Management for Maine: Best Management Practices manual, as revised March 2016.

Phosphorous Standard: A project must meet the phosphorous standards if located within a lake watershed. As this project is not tributary to a lake watershed, it is not subject to the phosphorus standard.

Urban Impaired Stream Standard: A project must meet the urban impaired stream standards if located within an urban impaired stream watershed. As this project is not tributary to an Urban Impaired Stream as defined by MDEP Chapter 502, this project is not subject to the urban impaired stream standard.

Flooding Standard: A project must meet to the flooding standards if it creates impervious areas greater than three (3) acres, or developed areas greater than twenty (20) acres. This project includes approximately 1.19 acres of impervious area; however, the City of Portland Technical Manual Section II-C states that all Level III site plans are required to meet the Maine DEP Chapter 500 flooding standard.

City of Portland Combined Sewers

In addition to the Stormwater Management provisions of the Land Use Ordinance and Technical Standards, the project is located in an area served by a combined sewer system where the City seeks to mitigate the rate of flow in the system that contribute to Combined Sewer Overflow (CSO) events. Discussions with the City Public works department in July 2018 have defined the CSO storm event to be a 1" rainfall event modeled using a 24-hour duration Type III storm distribution. The City has requested that the proposed treatment system be designed to mitigate to the extent practicable the rate of runoff from the site during this storm event, and to detain if practicable the runoff from the existing parking garage.

Quality Treatment

To meet the stormwater quality treatment requirements for the site, a subsurface sand filter BMP and a vegetated roof BMP are proposed to treat runoff from proposed development.

A subsurface sand filter utilizing a Cultec pretreatment row and ACF R-Tank detention modules is proposed to treat and store runoff generated from the roof surface of the proposed Congress Street building. Runoff from the roof will be collected in the building's roof drainage system and directed to the subsurface sand filter installed beneath the paved area of the proposed main entrance. The treated stormwater will discharge to the existing combined sewer at a new Manhole in Congress Street, tributary to Study Point C2.

The proposed subsurface sand filter has been sized based on chapter 7.3 of the Maine Department of Environmental Protection (MDEP) BMP Manual: Subsurface Sand Filters, to provide adequate treatment for the water quality volume, pretreatment of the one-year storm using an inlet control structure and isolator row, and detention for larger storm events.

Redevelopment standards apply because the proposed building will replace existing buildings and pavement areas. After completing the calculations outlined in §4.C(2)(d) of Chapter 500, the ranked impact change due to redevelopment is calculated to be -0.5. Because the project is subject to an existing Site Law Permit the minimum level of treatment required 50% of the redeveloped area.

The redevelopment impact ratings are included in Attachment A to this report.

Also included in Attachment A are tables summarizing the impervious and developed areas for the proposed development and the BMP measures treating these areas. The conclusion is a tabulation of the effective treatment percentages for the proposed development. The results of this tabulation indicate the following:

- The post-development area subject to treatment standards includes 1.53 acres of developed area on the Congress Street building site. This area is comprised of approximately 1.19 acres of impervious area (rooftop, driveway and sidewalk areas) and 0.34 acres of landscaped areas.

- The redevelopment standard requires treatment for 50% of this developed areas for a minimum of 0.77 acres.

- The total area receiving treatment is approximately 1.95 acres of developed area including the new Congress Street Building roof and entrance driveway area (1.34 acres) and the Visitor Garage (0.61 acres).

The redevelopment standard requires treatment for 50% of the new developed areas. As such, the site is required to provide treatment for a minimum of 0.77 acres. The total area receiving treatment is approximately 1.95 acres or 128% of the required area.

<u>Stormwater Treatment System</u>

A subsurface soil filter system is proposed below the Congress Street building's entrance plaza at Congress Street is proposed to provide Stormwater Quality and Quantity Treatment. The system presented on the plans is based on R-Tank chambers with Cultec chamber isolator rows for pre treatment

The system sizing criteria is provided in Attachment A to this report and summarized as follows:

Storage Volume Required	= 5,279 cf
Storage Volume Provided	= 5,385 cf
Surface Area Required (Congress Building only)	= 2,564 sf
Surface Area Required (Congress Building and Visitor Garage)	= 3,883 sf
Surface Area Provided	= 3,082 sf

Methodology:

In order to evaluate drainage characteristics as a result of the proposed development activities, a quantitative analysis was performed to determine peak runoff rates in the pre-development and post-development conditions. The evaluation was performed using the methodology outlined in the USDA Soil Conservation Service's "Urban Hydrology for Small Watersheds - Technical Release #55 (TR-55)". HydroCAD computer software was utilized to perform the calculations.

The peak runoff rates were calculated using a 24-hour duration storm event with a Type III rainfall distribution. The rainfall amounts for Cumberland County have recently been updated and the following 24-hour duration rainfall amounts were used for this report:

Storm Frequency	24-hr Duration Rainfall (in.)
CSO Storm	1.0
2-yr	3.1
10-yr	4.6
25-yr	5.8

Twenty sub catchments were analyzed in the pre-development condition, and twenty-two watersheds in the post-development condition. The pre development sub catchment delineations are based the 2004 study post-development watersheds modified to reflect site improvements constructed as part of the 2004-2007 Bramhall Campus Expansion project construction along with record drawings, and field surveys of the drainage infrastructure.

Sub catchment 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.

Five Study Points, identified on the attached watershed plans and hydrologic model output as points SP-C1 through SP-C5 have historically been used to evaluate pre and post-developed runoff conditions from the campus. 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 points represent the total stormwater discharge at the study point including both gutter flow and flow into the sewer.

Of these study points only two SP-C2 and SP-C3 are affected by the proposed redevelopment.

Study Point SP-C1 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-25868 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-C2 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 a manhole SMH-13952 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-C3 represents the point where runoff from areas of the project site east of the existing visitor garage 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-C4 represents at the intersection of Gilman Street and A Street where runoff from areas of the site including the existing emergency room parking area, L.L. Bean wing, and service areas abutting the central utility plant is directed to the A Street storm drain. A Downstream Defender stormwater treatment system was installed in 2005.

Study Point SP-C5 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.

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 six minutes. A minimum time of concentration of six 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 Peak Discharge Summary Table									
Study Point	2-Year Storm			10-Year Storm			25-Year Storm		
	Pre (cfs)	Post (cfs)	Diff. (cfs)	Pre (cfs)	Post (cfs)	Diff. (cfs)	Pre (cfs)	Post (cfs)	Diff. (cfs)
SP-C1	1.28	1.28	0.00	2.39	2.39	0.00	3.31	3.31	0.00
SP-C2	6.45	3.78	-2.67	9.14	6.88	-2.26	11.23	11.15	-0.08
SP-C3	1.72	1.53	-0.19	4.28	4.05	-0.23	5.76	5.21	-0.55
SP-C4	14.04	13.78	-0.26	25.22	24.94	-0.28	34.61	34.33	-0.28
SP-C5	1.60	1.60	0.00	3.01	3.01	0.00	4.07	4.07	0.00

The results of the stormwater modeling at Study Point SP-C1 to SP-C5 indicate that the peak rates of runoff in the post-development condition will be less than the pre-developed condition for the 2-year, 10-year, and 25-year storm events.

Study points SP-C2 and SP-C3 were further evaluated to determine the impact on peak flow rate and runoff duration from the project site during the 1" CSO Storm event. The proposed subsurface sand filter has been expanded in size to allow for the detention of runoff from the Congress building and the Parking Garage. The system outlets have been designed to maximize the detention of runoff generated from a 1" rainfall to reduce the peak rate of runoff during this storm and to extend the duration of that runoff as long as practicable to mitigate and reduce the site's contribution to offsite CSO events. The results during this event are summarized in Table 2 below.

The modeling node used to evaluate the connection point to the City system is node SMH-1 representing ESMH-13952.

Table 2 CSO Event Summary Table			
Study Point	1"- 24 Hour Type III Storm		
	Peak Runoff		
	Pre (cfs)	Post (cfs)	Diff. (cfs)
ESMH-13952	1.34	0.28	-1.06 (80%)

The results of the analysis indicates that the proposed system reduces the rate of runoff at the connection to the City's combined sewer by approximately 80%.

To further evaluate the attenuation of flow from the project site during smaller storm events, Table 3 below summarized the performance of the proposed subsurface sand filter detention system identified as Node 1P+G(R-Tank System with Garage) in the model. The table below evaluates the inflow

hydrograph into the system and the outflow hydrograph to the City system during a 1" storm event. This summary most closely represents the contribution of the project site runoff, without the influence of offsite runoff.

The proposed design will reduce the peak rate of runoff from a 1" storm event by 97% compared to the un detained discharge

Table 3 CSO Event Summary Table

Study Point	1"- 24 Hour Type III Storm		
	Peak Runoff		
	Pre (cfs)	Post (cfs)	Diff. (cfs)
R-Tank System	1.48	0.04	-1.44 (97%)

Conclusion

Erosion and sedimentation controls, inspection and maintenance procedures and general housekeeping requirements have been outlined to prevent unreasonable impacts on the site and to the surrounding environment.

By utilizing Best Management practices, stormwater quality treatment has been provided for at least 50% of the total impervious area and at least 50% of the total developed area. Based on the modeling data, the post-development peak rates of runoff for the 2-year, 10-year, and 25-year storm events demonstrate decreases in the peak rates of runoff when compared to the pre-development peak rates of runoff.

The proposed detention and treatment system meets all of the applicable sizing criteria for minimum surface area, channel protection volume, sediment pretreatment volume to address the requirements for the Congress Street Building project. At the City's request, the system has been expanded to accept runoff from the adjacent Visitor Garage for the purpose of detaining runoff from the existing development during a CSO event storm.

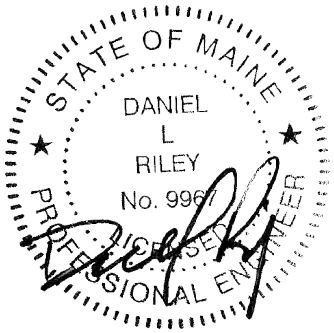
With the addition of this area, the system continues to meet the applicable sizing criteria with the exception of the minimum surface area criteria. The proposed system provides approximately 120% of the required area for the Congress Street Building alone. The proposed system provides 80% of the required area for the combined Congress Building and parking garage footprint. Meeting the full area requirement would require an additional 800 sf of system area which is not available on this site.

With the incorporation of the above referenced erosion control, treatment and detention measures, the project has been designed in conformance with the Maine Department of Environmental Protection Chapter 500 Stormwater Law and City of Portland Stormwater Management Standards.

Accordingly, it is anticipated that stormwater runoff from the proposed development will not cause a significant adverse effect to off-site receiving channels or downstream properties.

Prepared by,

SEBAGO TECHNICS, INC.



Daniel L. Riley, P.E.
Vice President, Engineering

09/25/2018

September 25, 2018

Appendix A

STORWATER QUALITY CALCULATIONS

Table 3: MDEP GENERAL STANDARD CALCULATIONS: MMC Congress Street Building, Portland, Maine

AREA ID	WATERSHED SIZE (S.F.)	EXISTING IMPERVIOUS AREA (To Remain) (S.F.)	NEW IMPERVIOUS AREA (S.F.)	EXISTING LANDSCAPED AREA (To Remain) (S.F.)	NEW LANDSCAPED AREA (S.F.)	NEW DEVELOPED AREA (S.F.)	UNDEVELOPED AREAS (S.F.)	TREATMENT PROVIDED?	NEW IMPERVIOUS AREA TREATED* (S.F.)	NEW LANDSCAPED AREA TREATED* (S.F.)	NEW DEVELOPED AREA TREATED* (S.F.)	TREATMENT BMP
3.1	10,051	8,335	0	1,716	0	0	0	NO	0	0	0	NONE
3.2	4,089	4,089	0	0	0	0	0	NO	0	0	0	NONE
14.1	22,477	14,929	5,018	0	2,530	7,548	0	NO	0	0	0	NONE
15.1	18,644	10,163	443	8,038	0	443	0	NO	0	0	0	NONE
17.1A	43,616	0	43,616	0	0	43,616	0	YES	43,616	0	43,616	SSSF
17.1B	14,879	0	2,836	0	12,043	14,879	0	YES	2,836	12,043	14,879	Green Roof
18	26,386	26,386	0	0	0	0	0	YES	26,386	0	26,386	SSSF
SUM	**140,142**	**63,902**	**51,913**	**9,754**	**14,573**	**66,486**	**0**	**-**	**72,838**	**12,043**	**84,881**	**-**

Designations: SSSF=Subsurface Sand Filter

TOTAL NEW IMPERVIOUS AREA (S.F.)	**51,913**	**TOTAL NEW DEVELOPED AREA (S.F.)**	**66,486**
TOTAL IMPERVIOUS AREA RECEIVING TREATMENT (S.F.)	**72,838**	**TOTAL DEV. AREA RECEIVING TREATMENT (S.F.)**	**84,881**
% OF IMPERVIOUS AREA RECEIVING TREATMENT	**140.3%**	**% OF DEV. AREA RECEIVING TREATMENT**	**127.7%**

Table 4: MDEP REDEVELOPMENT STANDARD CALCULATIONS: MMC Congress Street Building, Portland, Maine

Existing Areas by Pollutant Ranking (S.F.)							Proposed Areas by Pollutant Ranking (S.F.)						
0	1	2	3	4	5	SUM	0	1	2	3	4	5	SUM
0	6,538	17,424	1,739	43,699	0	69,400	0	328	22,153	46,919	0	0	69,400

Existing Areas by Pollutant Ranking (acres)							Proposed Areas by Pollutant Ranking (acres)						
0	1	2	3	4	5	SUM	0	1	2	3	4	5	SUM
0.000	0.150	0.400	0.040	1.003	0.000	1.593	0.000	0.008	0.509	1.077	0.000	0.000	1.593

Existing Weighted Average (Item C)	Proposed Weighted Average (Item D)
5.083	**4.256**

Total Development Area (acres)	Total Redevelopment Area (acres)
1.593	**1.593**

Ranked Impact Change Due to Redevelopment (Item E)
-0.5

Percent Increase in Developed Area
0.00%

Treatment Levels for Redevelopment Projects

Ranked Impact Change Due to Redevelopment (Item E)	Percentage of Developed Area that Must be Treated
0.0 or less	**0% (Stormwater projects)** **50% (Site projects)**
≤ 0.0 to ≥ 1.0	**60%**
> 1.0 to ≥ 2.0	**70%**
> 2.0 to ≥ 3.0	**80%**
> 3.0	**Same treatment level as for new development**

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JOB	15466 - Congress Street Building				
SHEET NO.	1	OF	3		
CALCULATED BY	DLR	DATE	7/18/2018		
FILE NAME	15466 - Stormwater calcs Congre:	PRNT DATE	9/24/2018		

UNDERDRAINED SUBSURFACE SAND FILTER

Task: Calculate water quality volume per MDEP chapter 500 regulations

References
1. Maine DEP Chapter 500, Section 4.B.(2)(b)
   a. "must detain a runoff volume equal to 1.0 inch times the subcatchment's impervious area plus 0.4 inch times the subcatchment's landscaped area"

Proposed Congress Building

Tributary to Subsurface Sand Filter #1

Landscaped Area	12,043	SF					
Impervious Area	46,452	SF					

Minimum Surface Area for sand filter and chamber system

Required (2% X Landscaped + 5% X Impervious)

Total Landscaped Area	12,043	SF	Area	240.9	SF	
Total Impervious Area	46,452	SF	Area	2,322.6	SF	
Required Minimum Surface Area				2,563.5	SF	
Provided Surface Area				3,082.0	SF	

Channel Protection Volume (CPV)

Required (0.4" X Landscaped + 1.0" X Impervious)

Landscaped Area	12,043	SF	Volume	401.4				
Impervious Area	46,452	SF	Volume	3,871.0				
CPV Required				4,272.4	CF	0.098	AF	
Provided CPV				6,800.0	CF	4,790 cf@ Elev 52.75		

Sediment Pre-Treatment

Per Reference 2.c above

One year flow rate out put from Hydrocad:		3.32	cfs		
Iso Row sizing for:	902HD	**0.2**	cfs		
Total number of Isolator Row Chambers required:		17		25	Provided

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JOB	15466 - Congress Street Building		
SHEET NO.	2	OF	3
CALCULATED BY	DLR	DATE	7/18/2018
FILE NAME	15466 - Stormwater calcs Congre	PRNT DATE	9/24/2018

UNDERDRAINED SUBSURFACE SAND FILTER

Task: Calculate water quality volume per MDEP chapter 500 regulations

References 1. Maine DEP Chapter 500, Section 4.B.(2)(b)

a. "must detain a runoff volume equal to 1.0 inch times the subcatchment's impervious area plus 0.4 inch times the subcatchment's landscaped area"

Existing Visitor Garage

Tributary to Subsurface Sand Filter #1

Landscaped Area	0	SF					
Impervious Area	26,386	SF					

Minimum Surface Area for sand filter and chamber system

Required	(2% X Landscaped + 5% X Impervious)					
Total Landscaped Area	0	SF	Area	0.0	SF	
Total Impervious Area	26,386	SF	Area	1,319.3	SF	
Required Minimum Surface Area				1,319.3	SF	
Provided Surface Area				*	SF	

Channel Protection Volume (CPV)

Required	(0.4" X Landscaped + 1.0" X Impervious)							
Landscaped Area	0	SF	Volume	0.0				
Impervious Area	26,386	SF	Volume	2,198.8				
Pre Treatment Credit (%)	25%							
CPV Required				1,649.1	CF	0.038	AF	
Provided CPV				*	CF			

Sediment Pre-Treatment

Per Reference 2.c above

One year flow rate out put from Hydrocad:		1.53	cfs
Iso Row sizing for:	902HD	**0.2**	cfs
Total number of Isolator Row Chambers required:		8	

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JOB	15466 - Congress Street Building		
SHEET NO.	3	OF	3
CALCULATED BY	DLR	DATE	7/18/2018
FILE NAME	15466 - Stormwater calcs Congre:	PRNT DATE	9/24/2018

UNDERDRAINED SUBSURFACE SAND FILTER

Task: Calculate water quality volume per MDEP chapter 500 regulations

References 1. Maine DEP Chapter 500, Section 4.B.(2)(b)

a. "must detain a runoff volume equal to 1.0 inch times the subcatchment's impervious area plus 0.4 inch times the subcatchment's landscaped area"

Congress Building and Visitor Garage

Tributary to Subsurface Sand Filter #1

Landscaped Area	12,073	SF				
Impervious Area	72,838	SF				

Minimum Surface Area for sand filter and chamber system

Required (2% X Landscaped + 5% X Impervious)

Total Landscaped Area	12,073	SF	Area	241	SF	
Total Impervious Area	72,838	SF	Area	3,642	SF	
Required Minimum Surface Area				3,883	SF	
Provided Surface Area				3,082	SF	

Channel Protection Volume (CPV)

Required (0.4" X Landscaped + 1.0" X Impervious)

Landscaped Area	12,073	SF	Volume	402			
Impervious Area (Bldg)	43,558	SF	Volume	3,630			
Site Pavement	2,894						
Impervious Area (Garage)	26,386			2,199			
Pretreatment Credit (Garage, 25%)		-25%		-550		(ASSUMES 25% Pretreament Credit for HIL Unit)	
CPV Required				5,279	CF	0.121	AF
Provided CPV				5,385	CF	@ Elev 51.2	

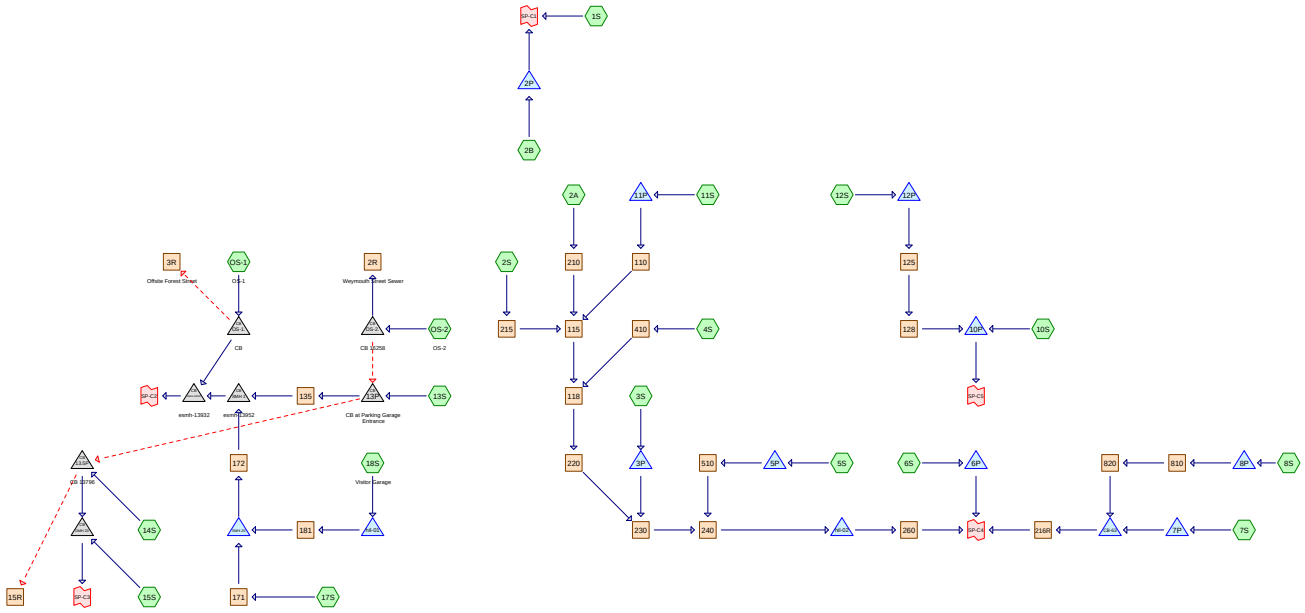
Sediment Pre-Treatment

Per Reference 2.c above

One year flow rate out put from Hydrocad:	4.50	cfs	
Iso Row sizing for: 902HD	**0.2**	cfs	
Total number of Isolator Row Chambers required:	23	25	

Appendix B

HYDROCAD OUTPUT



Subcat Reach Pond Link

Routing Diagram for 15466 - Congress CD PRE
Prepared by Sebago Technics, Inc., Printed 9/24/2018
HydroCAD® 10.00-15 s/n 01856 © 2015 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
2.354	39	>75% Grass cover, Good, HSG A (1S, 2B, 3S, 5S, 6S, 8S, 10S, 14S, 15S)
7.080	98	Paved parking (1S, 2A, 2B, 2S, 3S, 4S, 5S, 6S, 7S, 8S, 10S, 11S, 12S, 13S, 14S, 15S, 17S)
2.834	98	Roofs (5S, 6S, 8S, 10S, 18S)
1.998	89	Urban commercial, 85% imp, HSG A (13S, OS-1, OS-2)
1.517	43	Woods/grass comb., Fair, HSG A (7S, 8S, 13S)
15.783	**83**	**TOTAL AREA**

Summary for Subcatchment 1S:

Runoff = 0.03 cfs @ 12.16 hrs, Volume= 0.004 af, Depth= 0.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Inch Rainfall=1.00"

	Area (sf)	CN	Description
*	14,272	98	Paved parking
	5,174	39	>75% Grass cover, Good, HSG A
	19,446	82	Weighted Average
	5,174		26.61% Pervious Area
	14,272		73.39% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.4	40	0.0500	0.20		**Sheet Flow, SHEET A TO B** Grass: Short n= 0.150 P2= 3.00"
0.2	33	0.0500	3.35		**Shallow Concentrated Flow, SHALLOW B TO C** Grassed Waterway Kv= 15.0 fps
0.3	82	0.0420	4.16		**Shallow Concentrated Flow, SHALLOW C TO D** Paved Kv= 20.3 fps
0.1	74	0.0500	10.99	8.63	**Pipe Channel, PIPE D TO E** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
2.0					**Direct Entry, DIRECT**
6.0	229	Total			

Summary for Subcatchment 2A:

Runoff = 0.50 cfs @ 12.09 hrs, Volume= 0.038 af, Depth= 0.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Inch Rainfall=1.00"

	Area (sf)	CN	Description
*	25,217	98	Paved parking
	25,217		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	30	0.0050	0.60		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
1.3	112	0.0050	1.44		**Shallow Concentrated Flow, SHALLOW B TO C** Paved Kv= 20.3 fps
3.9					**Direct Entry, DIRECT**
6.0	142	Total			

Summary for Subcatchment 2B:

Runoff = 0.02 cfs @ 12.16 hrs, Volume= 0.003 af, Depth= 0.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Inch Rainfall=1.00"

	Area (sf)	CN	Description
*	10,133	98	Paved parking
	3,735	39	>75% Grass cover, Good, HSG A
	13,868	82	Weighted Average
	3,735		26.93% Pervious Area
	10,133		73.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.6	30	0.0100	0.79		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
0.5	123	0.0380	3.96		**Shallow Concentrated Flow, SHALLOW B TO C** Paved Kv= 20.3 fps
2.0	131	0.0005	1.10	0.86	**Pipe Channel, PIPE C TO D** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
2.9					**Direct Entry, DIRECT**
6.0	284	Total			

Summary for Subcatchment 2S:

Runoff = 0.32 cfs @ 12.09 hrs, Volume= 0.024 af, Depth= 0.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Inch Rainfall=1.00"

	Area (sf)	CN	Description
*	16,157	98	Paved parking
	16,157		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	30	0.0180	1.00		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
0.3	78	0.0370	3.90		**Shallow Concentrated Flow, SHALLOW B TO C** Paved Kv= 20.3 fps
0.4	136	0.0107	5.08	3.99	**Pipe Channel, PIPE C TO D** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
4.8					**Direct Entry, DIRECT**
6.0	244	Total			

Summary for Subcatchment 3S:

Runoff = 0.06 cfs @ 12.11 hrs, Volume= 0.006 af, Depth= 0.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Inch Rainfall=1.00"

	Area (sf)	CN	Description
	3,076	39	>75% Grass cover, Good, HSG A
*	11,898	98	Paved parking
	14,974	86	Weighted Average
	3,076		20.54% Pervious Area
	11,898		79.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	30	0.0250	1.14		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
0.3	106	0.0810	5.78		**Shallow Concentrated Flow, SHALLOW B TO C** Paved Kv= 20.3 fps
0.2	222	0.0530	14.83	26.20	**Pipe Channel, PIPE C TO D** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
5.1					**Direct Entry, DIRECT**
6.0	358	Total			

Summary for Subcatchment 4S:

Runoff = 0.46 cfs @ 12.09 hrs, Volume= 0.035 af, Depth= 0.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Inch Rainfall=1.00"

	Area (sf)	CN	Description
*	23,249	98	Paved parking
	23,249		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	50	0.0050	0.67		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
1.3	110	0.0050	1.44		**Shallow Concentrated Flow, SHALLOW B TO C** Paved Kv= 20.3 fps
3.4					**Direct Entry, DIRECT**
6.0	160	Total			

Summary for Subcatchment 5S:

Runoff = 0.53 cfs @ 12.11 hrs, Volume= 0.047 af, Depth= 0.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Inch Rainfall=1.00"

	Area (sf)	CN	Description
*	25,085	98	Paved parking
	26,415	39	>75% Grass cover, Good, HSG A
*	73,528	98	Roofs
	125,028	86	Weighted Average
	26,415		21.13% Pervious Area
	98,613		78.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	35	0.0050	0.62		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
2.2	355	0.0050	2.65	0.93	**Pipe Channel, PIPE B TO C** 8.0" Round Area= 0.3 sf Perim= 2.1' r= 0.17' n= 0.012
0.1	35	0.0300	8.51	6.69	**Pipe Channel, PIPE C TO D** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
0.2	85	0.0160	6.22	4.88	**Pipe Channel, PIPE D TO E** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
2.6					**Direct Entry, DIRECT**
6.0	510	Total			

Summary for Subcatchment 6S:

Runoff = 0.05 cfs @ 12.11 hrs, Volume= 0.004 af, Depth= 0.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Inch Rainfall=1.00"

	Area (sf)	CN	Description
	2,282	39	>75% Grass cover, Good, HSG A
*	501	98	Paved parking
*	8,302	98	Roofs
	11,085	86	Weighted Average
	2,282		20.59% Pervious Area
	8,803		79.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.6	30	0.0100	0.79		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
0.3	64	0.0100	3.75	1.31	**Pipe Channel, PIPE B TO C (ROOF DRAIN)** 8.0" Round Area= 0.3 sf Perim= 2.1' r= 0.17' n= 0.012
0.0	27	0.0740	10.20	3.56	**Pipe Channel, PIPE C TO D** 8.0" Round Area= 0.3 sf Perim= 2.1' r= 0.17' n= 0.012
5.1					**Direct Entry, DIRECT**
6.0	121	Total			

Summary for Subcatchment 7S:

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Inch Rainfall=1.00"

	Area (sf)	CN	Description
	56,212	43	Woods/grass comb., Fair, HSG A
*	36,084	98	Paved parking
	92,296	65	Weighted Average
	56,212		60.90% Pervious Area
	36,084		39.10% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	75	0.0400	1.66		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
0.5	78	0.0180	2.72		**Shallow Concentrated Flow, SHALLOW B TO C** Paved Kv= 20.3 fps
0.7	219	0.0590	4.93		**Shallow Concentrated Flow, SHALLOW C TO D** Paved Kv= 20.3 fps
0.2	72	0.0970	6.32		**Shallow Concentrated Flow, SHALLOW D TO E** Paved Kv= 20.3 fps
0.2	190	0.1020	15.70	12.33	**Pipe Channel, PIPE E TO F** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
3.6					**Direct Entry, DIRECT**
6.0	634	Total			

Summary for Subcatchment 8S:

Runoff = 0.01 cfs @ 12.44 hrs, Volume= 0.004 af, Depth= 0.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Inch Rainfall=1.00"

	Area (sf)	CN	Description
*	16,895	98	Paved parking
	7,542	43	Woods/grass comb., Fair, HSG A
	8,958	39	>75% Grass cover, Good, HSG A
*	12,138	98	Roofs
	45,533	77	Weighted Average
	16,500		36.24% Pervious Area
	29,033		63.76% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	40	0.0050	0.64		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
0.3	93	0.0100	4.91	3.86	**Pipe Channel, PIPE B TO C** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
0.5	135	0.0100	4.91	3.86	**Pipe Channel, PIPE C TO D** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
0.4	131	0.0100	4.91	3.86	**Pipe Channel, PIPE D TO E** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
3.8					**Direct Entry, DIRECT**
6.0	399	Total			

Summary for Subcatchment 10S:

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Inch Rainfall=1.00"

	Area (sf)	CN	Description
	25,937	39	>75% Grass cover, Good, HSG A
*	9,276	98	Paved parking
*	2,034	98	Roofs
	37,247	57	Weighted Average
	25,937		69.64% Pervious Area
	11,310		30.36% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	30	0.0400	1.38		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
0.1	37	0.0540	4.72		**Shallow Concentrated Flow, SHALLOW B TO C** Paved Kv= 20.3 fps
0.4	75	0.0200	2.87		**Shallow Concentrated Flow, SHALLOW C TO D** Paved Kv= 20.3 fps
0.3	113	0.0210	7.12	5.59	**Pipe Channel, PIPE D TO E** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
0.3	71	0.0050	3.47	2.73	**Pipe Channel, PIPE E TO F** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
4.5					**Direct Entry, DIRECT**
6.0	326	Total			

Summary for Subcatchment 11S:

Runoff = 0.22 cfs @ 12.09 hrs, Volume= 0.017 af, Depth= 0.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Inch Rainfall=1.00"

	Area (sf)	CN	Description
*	11,050	98	Paved parking
	11,050		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	30	0.0050	0.60		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
0.7	60	0.0050	1.44		**Shallow Concentrated Flow, SHALLOW B TO C** Paved Kv= 20.3 fps
4.5					**Direct Entry, DIRECT**
6.0	90	Total			

Summary for Subcatchment 12S:

Runoff = 0.46 cfs @ 12.09 hrs, Volume= 0.035 af, Depth= 0.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Inch Rainfall=1.00"

	Area (sf)	CN	Description
*	23,268	98	Paved parking
	23,268		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	30	0.0050	0.60		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
0.9	80	0.0050	1.44		**Shallow Concentrated Flow, SHALLOW B TO C** Paved Kv= 20.3 fps
0.4	90	0.0100	3.75	1.31	**Pipe Channel, PIPE C TO D** 8.0" Round Area= 0.3 sf Perim= 2.1' r= 0.17' n= 0.012
3.9					**Direct Entry, DIRECT**
6.0	200	Total			

Summary for Subcatchment 13S:

Runoff = 0.29 cfs @ 12.10 hrs, Volume= 0.022 af, Depth= 0.32"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Inch Rainfall=1.00"

	Area (sf)	CN	Description
*	14,571	98	Paved parking
	2,309	43	Woods/grass comb., Fair, HSG A
	19,134	89	Urban commercial, 85% imp, HSG A
	36,014	90	Weighted Average
	5,179		14.38% Pervious Area
	30,835		85.62% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.6	40	0.1000	0.12		**Sheet Flow, SHEET A TO B** Woods: Light underbrush n= 0.400 P2= 3.00"
0.2	51	0.6400	4.00		**Shallow Concentrated Flow, SHALLOW B TO C** Woodland Kv= 5.0 fps
0.4	105	0.0420	4.16		**Shallow Concentrated Flow, SHALLOW C TO D** Paved Kv= 20.3 fps
6.2	196	Total			

Summary for Subcatchment 14S:

Runoff = 0.00 cfs @ 23.95 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Inch Rainfall=1.00"

	Area (sf)	CN	Description
*	14,684	98	Paved parking
	15,059	39	>75% Grass cover, Good, HSG A
	29,743	68	Weighted Average
	15,059		50.63% Pervious Area
	14,684		49.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.3	45	0.0680	0.23		**Sheet Flow, SHEET A TO B** Grass: Short n= 0.150 P2= 3.00"
1.0	217	0.0320	3.63		**Shallow Concentrated Flow, SHALLOW B TO C** Paved Kv= 20.3 fps
1.7					**Direct Entry, DIRECT**
6.0	262	Total			

Summary for Subcatchment 15S:

Runoff = 0.00 cfs @ 15.12 hrs, Volume= 0.001 af, Depth= 0.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Inch Rainfall=1.00"

	Area (sf)	CN	Description
	11,909	39	>75% Grass cover, Good, HSG A
*	15,681	98	Paved parking
	27,590	73	Weighted Average
	11,909		43.16% Pervious Area
	15,681		56.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	18	0.2770	0.33		**Sheet Flow, SHEET A TO B** Grass: Short n= 0.150 P2= 3.00"
0.5	190	0.1920	6.57		**Shallow Concentrated Flow, SHALLOW B TO C** Grassed Waterway Kv= 15.0 fps
0.5	176	0.0760	5.60		**Shallow Concentrated Flow, SHALLOW C TO D** Paved Kv= 20.3 fps
4.1					**Direct Entry, DIRECT**
6.0	384	Total			

Summary for Subcatchment 17S:

Runoff = 0.81 cfs @ 12.09 hrs, Volume= 0.061 af, Depth= 0.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Inch Rainfall=1.00"

	Area (sf)	CN	Description
*	40,392	98	Paved parking
	40,392		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	40	0.0100	0.84		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
0.1	14	0.0100	2.03		**Shallow Concentrated Flow, SHALLOW B TO C** Paved Kv= 20.3 fps
0.1	134	0.1600	15.00	5.24	**Pipe Channel, PIPE C TO D** 8.0" Round Area= 0.3 sf Perim= 2.1' r= 0.17' n= 0.012
5.0					**Direct Entry, DIRECT**
6.0	188	Total			

Summary for Subcatchment 18S: Visitor Garage

Runoff = 0.55 cfs @ 12.09 hrs, Volume= 0.042 af, Depth= 0.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Inch Rainfall=1.00"

	Area (sf)	CN	Description
*	27,443	98	Roofs
	27,443		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	40	0.0100	0.84		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
0.3	141	0.2000	9.08		**Shallow Concentrated Flow, SHALLOW B TO C** Paved Kv= 20.3 fps
0.4	135	0.0110	5.15	4.05	**Pipe Channel, PIPE C TO D** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
4.5					**Direct Entry, DIRECT**
6.0	316	Total			

Summary for Subcatchment OS-1: OS-1

Runoff = 0.10 cfs @ 12.16 hrs, Volume= 0.009 af, Depth= 0.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Inch Rainfall=1.00"

Area (sf)	CN	Description
17,031	89	Urban commercial, 85% imp, HSG A
2,555		15.00% Pervious Area
14,476		85.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.1	60	0.0400	0.20		**Sheet Flow, Sheet flow A-B** Grass: Short n= 0.150 P2= 3.00"
0.9	180	0.0250	3.21		**Shallow Concentrated Flow, Gutter Flow B-C (Russell Street)** Paved Kv= 20.3 fps
0.7	80	0.0100	2.03		**Shallow Concentrated Flow, Gutter Flow C-D (Hill Street)** Paved Kv= 20.3 fps
1.1	375	0.0800	5.74		**Shallow Concentrated Flow, Gutter Flow D-E (Ellsworth Street)** Paved Kv= 20.3 fps
2.2	605	0.0500	4.54		**Shallow Concentrated Flow, Gutter Flow E-F (Congress Street)** Paved Kv= 20.3 fps
10.0	1,300	Total			

Summary for Subcatchment OS-2: OS-2

Runoff = 0.31 cfs @ 12.16 hrs, Volume= 0.028 af, Depth= 0.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Inch Rainfall=1.00"

Area (sf)	CN	Description
50,885	89	Urban commercial, 85% imp, HSG A
7,633		15.00% Pervious Area
43,252		85.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.1	60	0.0400	0.20		**Sheet Flow, Sheet flow A-B** Grass: Short n= 0.150 P2= 3.00"
0.9	180	0.0250	3.21		**Shallow Concentrated Flow, Gutter Flow B-C (Russell Street)** Paved Kv= 20.3 fps
0.7	80	0.0100	2.03		**Shallow Concentrated Flow, Gutter Flow C-D (Hill Street)** Paved Kv= 20.3 fps
1.1	375	0.0800	5.74		**Shallow Concentrated Flow, Gutter Flow D-E (Ellsworth Street)** Paved Kv= 20.3 fps
2.2	605	0.0500	4.54		**Shallow Concentrated Flow, Gutter Flow E-F (Congress Street)** Paved Kv= 20.3 fps
10.0	1,300	Total			

Summary for Reach 2R: Weymouth Street Sewer

Inflow Area = 1.168 ac, 85.00% Impervious, Inflow Depth = 0.28" for 1-Inch event
Inflow = 0.31 cfs @ 12.16 hrs, Volume= 0.028 af
Outflow = 0.31 cfs @ 12.16 hrs, Volume= 0.028 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Summary for Reach 3R: Offsite Forest Street

Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Summary for Reach 15R:

Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

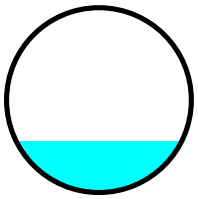
Summary for Reach 110:

Inflow Area = 0.254 ac,100.00% Impervious, Inflow Depth = 0.79" for 1-Inch event
Inflow = 0.22 cfs @ 12.09 hrs, Volume= 0.017 af
Outflow = 0.22 cfs @ 12.10 hrs, Volume= 0.017 af, Atten= 1%, Lag= 0.5 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.79 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 0.92 fps, Avg. Travel Time= 0.9 min

Peak Storage= 4 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.19'
Bank-Full Depth= 0.67' Flow Area= 0.3 sf, Capacity= 1.31 cfs

8.0" Round Pipe
n= 0.012
Length= 51.0' Slope= 0.0100 '/'
Inlet Invert= 110.51', Outlet Invert= 110.00'



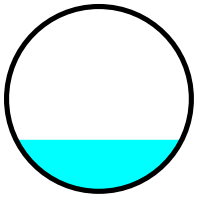
Summary for Reach 115:

Inflow Area = 1.203 ac,100.00% Impervious, Inflow Depth = 0.79" for 1-Inch event
Inflow = 1.04 cfs @ 12.10 hrs, Volume= 0.079 af
Outflow = 1.02 cfs @ 12.10 hrs, Volume= 0.079 af, Atten= 1%, Lag= 0.4 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.73 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 1.23 fps, Avg. Travel Time= 0.9 min

Peak Storage= 19 cf @ 12.10 hrs
Average Depth at Peak Storage= 0.35'
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 6.17 cfs

15.0" Round Pipe
n= 0.012
Length= 67.0' Slope= 0.0078 '/'
Inlet Invert= 110.11', Outlet Invert= 109.59'



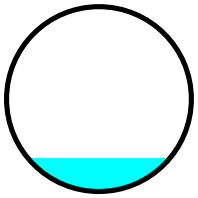
Summary for Reach 118:

Inflow Area = 1.737 ac,100.00% Impervious, Inflow Depth = 0.79" for 1-Inch event
Inflow = 1.48 cfs @ 12.10 hrs, Volume= 0.114 af
Outflow = 1.47 cfs @ 12.11 hrs, Volume= 0.114 af, Atten= 1%, Lag= 0.3 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 6.86 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 2.26 fps, Avg. Travel Time= 0.7 min

Peak Storage= 19 cf @ 12.10 hrs
Average Depth at Peak Storage= 0.27'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 20.98 cfs

18.0" Round Pipe
n= 0.012
Length= 90.0' Slope= 0.0340 '/'
Inlet Invert= 109.44', Outlet Invert= 106.38'



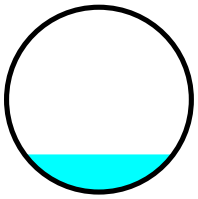
Summary for Reach 125:

Inflow Area = 0.534 ac,100.00% Impervious, Inflow Depth = 0.79" for 1-Inch event
Inflow = 0.46 cfs @ 12.09 hrs, Volume= 0.035 af
Outflow = 0.46 cfs @ 12.10 hrs, Volume= 0.035 af, Atten= 1%, Lag= 0.5 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 4.10 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 1.35 fps, Avg. Travel Time= 1.0 min

Peak Storage= 9 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.20'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 5.21 cfs

12.0" Round Pipe
n= 0.012
Length= 79.0' Slope= 0.0182 '/'
Inlet Invert= 131.87', Outlet Invert= 130.43'



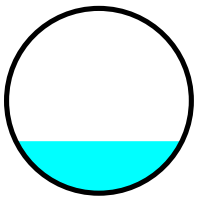
Summary for Reach 128:

Inflow Area = 0.534 ac,100.00% Impervious, Inflow Depth = 0.79" for 1-Inch event
Inflow = 0.46 cfs @ 12.10 hrs, Volume= 0.035 af
Outflow = 0.45 cfs @ 12.11 hrs, Volume= 0.035 af, Atten= 2%, Lag= 0.7 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.54 fps, Min. Travel Time= 0.5 min
Avg. Velocity = 0.84 fps, Avg. Travel Time= 1.4 min

Peak Storage= 13 cf @ 12.10 hrs
Average Depth at Peak Storage= 0.28'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.67 cfs

12.0" Round Pipe
n= 0.012
Length= 71.0' Slope= 0.0048 '/'
Inlet Invert= 130.40', Outlet Invert= 130.06'



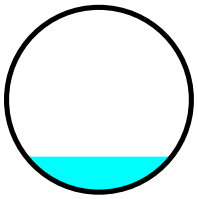
Summary for Reach 135:

Inflow Area = 0.827 ac, 85.62% Impervious, Inflow Depth = 0.32" for 1-Inch event
Inflow = 0.29 cfs @ 12.10 hrs, Volume= 0.022 af
Outflow = 0.28 cfs @ 12.12 hrs, Volume= 0.022 af, Atten= 3%, Lag= 1.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 6.13 fps, Min. Travel Time= 0.6 min
Avg. Velocity = 2.40 fps, Avg. Travel Time= 1.6 min

Peak Storage= 11 cf @ 12.11 hrs
Average Depth at Peak Storage= 0.13'
Bank-Full Depth= 0.67' Flow Area= 0.3 sf, Capacity= 3.58 cfs

8.0" Round Pipe
n= 0.012
Length= 225.0' Slope= 0.0747 '/'
Inlet Invert= 62.69', Outlet Invert= 45.89'



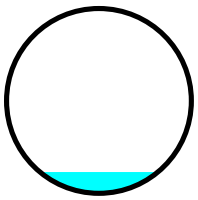
Summary for Reach 171:

Inflow Area = 0.927 ac,100.00% Impervious, Inflow Depth = 0.79" for 1-Inch event
Inflow = 0.81 cfs @ 12.09 hrs, Volume= 0.061 af
Outflow = 0.81 cfs @ 12.09 hrs, Volume= 0.061 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 10.40 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 3.51 fps, Avg. Travel Time= 0.1 min

Peak Storage= 2 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.14'
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 29.32 cfs

15.0" Round Pipe
n= 0.012
Length= 31.0' Slope= 0.1755 '/'
Inlet Invert= 57.44', Outlet Invert= 52.00'



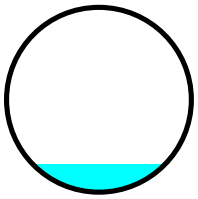
Summary for Reach 172:

Inflow Area = 1.557 ac,100.00% Impervious, Inflow Depth = 0.79" for 1-Inch event
Inflow = 1.35 cfs @ 12.09 hrs, Volume= 0.103 af
Outflow = 1.34 cfs @ 12.09 hrs, Volume= 0.103 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 11.53 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 3.82 fps, Avg. Travel Time= 0.2 min

Peak Storage= 4 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.19'
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 27.27 cfs

15.0" Round Pipe
n= 0.012
Length= 38.0' Slope= 0.1518 '/'
Inlet Invert= 51.66', Outlet Invert= 45.89'



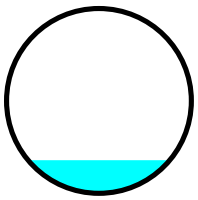
Summary for Reach 181:

Inflow Area = 0.630 ac,100.00% Impervious, Inflow Depth = 0.79" for 1-Inch event
Inflow = 0.55 cfs @ 12.09 hrs, Volume= 0.042 af
Outflow = 0.54 cfs @ 12.10 hrs, Volume= 0.042 af, Atten= 1%, Lag= 0.5 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 5.81 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 1.91 fps, Avg. Travel Time= 0.9 min

Peak Storage= 10 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.18'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 7.96 cfs

12.0" Round Pipe
n= 0.012
Length= 104.0' Slope= 0.0425 '/'
Inlet Invert= 56.28', Outlet Invert= 51.86'



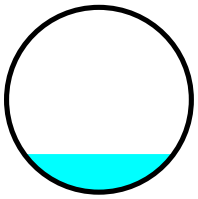
Summary for Reach 210:

Inflow Area = 0.579 ac,100.00% Impervious, Inflow Depth = 0.79" for 1-Inch event
Inflow = 0.50 cfs @ 12.09 hrs, Volume= 0.038 af
Outflow = 0.50 cfs @ 12.10 hrs, Volume= 0.038 af, Atten= 1%, Lag= 0.4 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 4.34 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 1.43 fps, Avg. Travel Time= 0.8 min

Peak Storage= 8 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.21'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 5.46 cfs

12.0" Round Pipe
n= 0.012
Length= 66.0' Slope= 0.0200 '/'
Inlet Invert= 122.35', Outlet Invert= 121.03'



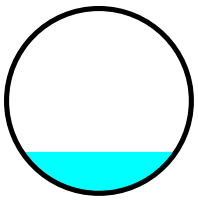
Summary for Reach 215:

Inflow Area = 0.371 ac,100.00% Impervious, Inflow Depth = 0.79" for 1-Inch event
Inflow = 0.32 cfs @ 12.09 hrs, Volume= 0.024 af
Outflow = 0.32 cfs @ 12.10 hrs, Volume= 0.024 af, Atten= 1%, Lag= 0.6 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.47 fps, Min. Travel Time= 0.4 min
Avg. Velocity = 0.81 fps, Avg. Travel Time= 1.1 min

Peak Storage= 7 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.22'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.96 cfs

12.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 52.0' Slope= 0.0069 '/'
Inlet Invert= 121.67', Outlet Invert= 121.31'



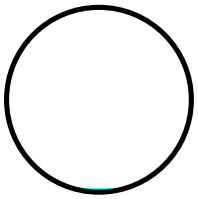
Summary for Reach 216R:

Inflow Area = 3.164 ac, 47.24% Impervious, Inflow Depth = 0.02" for 1-Inch event
Inflow = 0.01 cfs @ 12.52 hrs, Volume= 0.004 af
Outflow = 0.01 cfs @ 12.52 hrs, Volume= 0.004 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.12 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 2.27 fps, Avg. Travel Time= 0.1 min

Peak Storage= 0 cf @ 12.52 hrs
Average Depth at Peak Storage= 0.02'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 16.96 cfs

12.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 12.0' Slope= 0.2267 '/'
Inlet Invert= 60.11', Outlet Invert= 57.39'



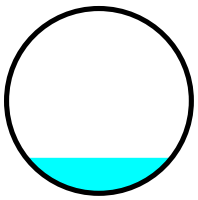
Summary for Reach 220:

Inflow Area = 1.737 ac,100.00% Impervious, Inflow Depth = 0.79" for 1-Inch event
Inflow = 1.47 cfs @ 12.11 hrs, Volume= 0.114 af
Outflow = 1.42 cfs @ 12.12 hrs, Volume= 0.114 af, Atten= 3%, Lag= 1.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 6.18 fps, Min. Travel Time= 0.6 min
Avg. Velocity = 2.05 fps, Avg. Travel Time= 1.8 min

Peak Storage= 51 cf @ 12.11 hrs
Average Depth at Peak Storage= 0.29'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 18.30 cfs

18.0" Round Pipe
n= 0.012
Length= 218.0' Slope= 0.0259 '/'
Inlet Invert= 105.99', Outlet Invert= 100.35'



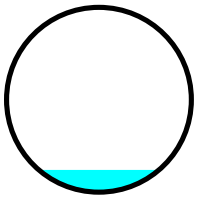
Summary for Reach 230:

Inflow Area = 2.081 ac, 96.61% Impervious, Inflow Depth = 0.69" for 1-Inch event
Inflow = 1.48 cfs @ 12.12 hrs, Volume= 0.120 af
Outflow = 1.47 cfs @ 12.13 hrs, Volume= 0.120 af, Atten= 1%, Lag= 0.2 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 12.41 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 4.27 fps, Avg. Travel Time= 0.3 min

Peak Storage= 10 cf @ 12.12 hrs
Average Depth at Peak Storage= 0.18'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 49.39 cfs

18.0" Round Pipe
n= 0.012
Length= 87.0' Slope= 0.1884 '/'
Inlet Invert= 100.16', Outlet Invert= 83.77'



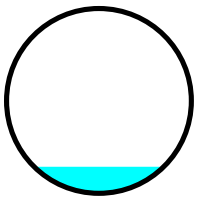
Summary for Reach 240:

Inflow Area = 4.951 ac, 86.33% Impervious, Inflow Depth = 0.41" for 1-Inch event
Inflow = 2.00 cfs @ 12.12 hrs, Volume= 0.167 af
Outflow = 1.97 cfs @ 12.13 hrs, Volume= 0.167 af, Atten= 2%, Lag= 0.3 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 12.83 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 4.43 fps, Avg. Travel Time= 0.4 min

Peak Storage= 15 cf @ 12.12 hrs
Average Depth at Peak Storage= 0.21'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 45.69 cfs

18.0" Round Pipe
n= 0.012
Length= 100.0' Slope= 0.1612 '/'
Inlet Invert= 67.96', Outlet Invert= 51.84'



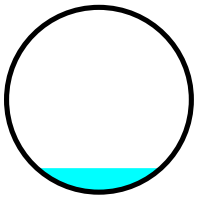
Summary for Reach 260:

Inflow Area = 4.951 ac, 86.33% Impervious, Inflow Depth = 0.41" for 1-Inch event
Inflow = 1.97 cfs @ 12.13 hrs, Volume= 0.167 af
Outflow = 1.96 cfs @ 12.13 hrs, Volume= 0.167 af, Atten= 0%, Lag= 0.2 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 8.28 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 2.87 fps, Avg. Travel Time= 0.3 min

Peak Storage= 11 cf @ 12.13 hrs
Average Depth at Peak Storage= 0.26'
Bank-Full Depth= 2.00' Flow Area= 3.1 sf, Capacity= 55.59 cfs

24.0" Round Pipe
n= 0.012
Length= 48.0' Slope= 0.0515 '/'
Inlet Invert= 51.84', Outlet Invert= 49.37'



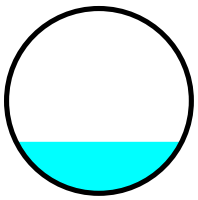
Summary for Reach 410:

Inflow Area = 0.534 ac,100.00% Impervious, Inflow Depth = 0.79" for 1-Inch event
Inflow = 0.46 cfs @ 12.09 hrs, Volume= 0.035 af
Outflow = 0.46 cfs @ 12.09 hrs, Volume= 0.035 af, Atten= 1%, Lag= 0.4 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.62 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 0.86 fps, Avg. Travel Time= 0.7 min

Peak Storage= 6 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.28'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.77 cfs

12.0" Round Pipe
n= 0.012
Length= 35.0' Slope= 0.0051 '/'
Inlet Invert= 110.68', Outlet Invert= 110.50'



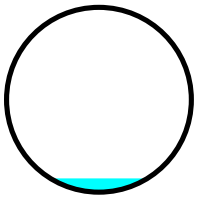
Summary for Reach 510:

Inflow Area = 2.870 ac, 78.87% Impervious, Inflow Depth = 0.20" for 1-Inch event
Inflow = 0.53 cfs @ 12.11 hrs, Volume= 0.047 af
Outflow = 0.52 cfs @ 12.11 hrs, Volume= 0.047 af, Atten= 1%, Lag= 0.2 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 8.95 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 3.94 fps, Avg. Travel Time= 0.3 min

Peak Storage= 4 cf @ 12.11 hrs
Average Depth at Peak Storage= 0.11'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 47.85 cfs

18.0" Round Pipe
n= 0.012
Length= 62.0' Slope= 0.1768 '/'
Inlet Invert= 95.90', Outlet Invert= 84.94'



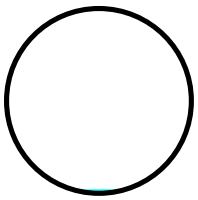
Summary for Reach 810:

Inflow Area = 1.045 ac, 63.76% Impervious, Inflow Depth = 0.05" for 1-Inch event
Inflow = 0.01 cfs @ 12.44 hrs, Volume= 0.004 af
Outflow = 0.01 cfs @ 12.47 hrs, Volume= 0.004 af, Atten= 1%, Lag= 1.9 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.26 fps, Min. Travel Time= 1.1 min
Avg. Velocity = 2.35 fps, Avg. Travel Time= 1.5 min

Peak Storage= 1 cf @ 12.45 hrs
Average Depth at Peak Storage= 0.02'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 17.81 cfs

12.0" Round Pipe
n= 0.012
Length= 210.0' Slope= 0.2129 '/'
Inlet Invert= 120.21', Outlet Invert= 75.50'



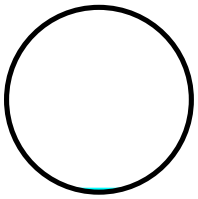
Summary for Reach 820:

Inflow Area = 1.045 ac, 63.76% Impervious, Inflow Depth = 0.05" for 1-Inch event
Inflow = 0.01 cfs @ 12.47 hrs, Volume= 0.004 af
Outflow = 0.01 cfs @ 12.50 hrs, Volume= 0.004 af, Atten= 2%, Lag= 2.1 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.55 fps, Min. Travel Time= 1.1 min
Avg. Velocity = 1.82 fps, Avg. Travel Time= 1.5 min

Peak Storage= 1 cf @ 12.48 hrs
Average Depth at Peak Storage= 0.02'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 12.32 cfs

12.0" Round Pipe
n= 0.012
Length= 164.0' Slope= 0.1020 '/'
Inlet Invert= 75.58', Outlet Invert= 58.86'



Summary for Pond 2P:

Inflow Area = 0.318 ac, 73.07% Impervious, Inflow Depth = 0.11" for 1-Inch event
Inflow = 0.02 cfs @ 12.16 hrs, Volume= 0.003 af
Outflow = 0.02 cfs @ 12.16 hrs, Volume= 0.003 af, Atten= 0%, Lag= 0.2 min
Primary = 0.02 cfs @ 12.16 hrs, Volume= 0.003 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 107.03' @ 12.16 hrs Surf.Area= 13 sf Storage= 0 cf

Plug-Flow detention time= 0.3 min calculated for 0.003 af (100% of inflow)
Center-of-Mass det. time= 0.3 min (928.3 - 928.0)

Volume	Invert	Avail.Storage	Storage Description
#1	107.00'	169 cf	**Custom Stage Data (Prismatic)**Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
107.00	13	0	0
120.00	13	169	169

Device	Routing	Invert	Outlet Devices
#1	Primary	107.00'	**18.0" Round Culvert** L= 50.0' RCP, square edge headwall, Ke= 0.500

Inlet / Outlet Invert= 107.00' / 106.50' S= 0.0100 '/' Cc= 0.900
n= 0.011, Flow Area= 1.77 sf

Primary OutFlow Max=0.00 cfs @ 12.16 hrs HW=107.03' (Free Discharge)
└**1=Culvert** (Barrel Controls 0.00 cfs @ 0.81 fps)

Summary for Pond 3P:

Inflow Area = 0.344 ac, 79.46% Impervious, Inflow Depth = 0.20" for 1-Inch event
Inflow = 0.06 cfs @ 12.11 hrs, Volume= 0.006 af
Primary = 0.06 cfs @ 12.11 hrs, Volume= 0.006 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Summary for Pond 5P:

Inflow Area = 2.870 ac, 78.87% Impervious, Inflow Depth = 0.20" for 1-Inch event
Inflow = 0.53 cfs @ 12.11 hrs, Volume= 0.047 af
Primary = 0.53 cfs @ 12.11 hrs, Volume= 0.047 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Summary for Pond 6P:

Inflow Area = 0.254 ac, 79.41% Impervious, Inflow Depth = 0.20" for 1-Inch event
Inflow = 0.05 cfs @ 12.11 hrs, Volume= 0.004 af
Primary = 0.05 cfs @ 12.11 hrs, Volume= 0.004 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Summary for Pond 7P:

Inflow Area = 2.119 ac, 39.10% Impervious, Inflow Depth = 0.00" for 1-Inch event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Summary for Pond 8P:

Inflow Area = 1.045 ac, 63.76% Impervious, Inflow Depth = 0.05" for 1-Inch event
Inflow = 0.01 cfs @ 12.44 hrs, Volume= 0.004 af
Primary = 0.01 cfs @ 12.44 hrs, Volume= 0.004 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Summary for Pond 10P:

Inflow Area = 1.389 ac, 57.14% Impervious, Inflow Depth = 0.30" for 1-Inch event
Inflow = 0.45 cfs @ 12.11 hrs, Volume= 0.035 af
Primary = 0.45 cfs @ 12.11 hrs, Volume= 0.035 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Summary for Pond 11P:

Inflow Area = 0.254 ac,100.00% Impervious, Inflow Depth = 0.79" for 1-Inch event
Inflow = 0.22 cfs @ 12.09 hrs, Volume= 0.017 af
Primary = 0.22 cfs @ 12.09 hrs, Volume= 0.017 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Summary for Pond 12P:

Inflow Area = 0.534 ac,100.00% Impervious, Inflow Depth = 0.79" for 1-Inch event
Inflow = 0.46 cfs @ 12.09 hrs, Volume= 0.035 af
Primary = 0.46 cfs @ 12.09 hrs, Volume= 0.035 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Summary for Pond 13.5P: CB 13796

Inflow Area = 0.683 ac, 49.37% Impervious, Inflow Depth = 0.00" for 1-Inch event
Inflow = 0.00 cfs @ 23.95 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 23.95 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 23.95 hrs, Volume= 0.000 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 42.50' @ 23.95 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	38.86'	**10.0" Round 12" SD** L= 15.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 38.86' / 37.64' S= 0.0813 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf
#2	Device 1	42.50'	**2.0' long Curb Inlet** 2 End Contraction(s)
#3	Secondary	43.00'	**10.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.00 cfs @ 23.95 hrs HW=42.50' (Free Discharge)
└**1=12" SD** (Passes 0.00 cfs of 4.72 cfs potential flow)
└**2=Curb Inlet** (Weir Controls 0.00 cfs @ 0.06 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=38.86' (Free Discharge)
└**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 13P: CB at Parking Garage Entrance

Inflow Area = 0.827 ac, 85.62% Impervious, Inflow Depth = 0.32" for 1-Inch event
Inflow = 0.29 cfs @ 12.10 hrs, Volume= 0.022 af
Outflow = 0.29 cfs @ 12.10 hrs, Volume= 0.022 af, Atten= 0%, Lag= 0.0 min
Primary = 0.29 cfs @ 12.10 hrs, Volume= 0.022 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 66.03' @ 12.10 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	66.00'	**1.0" x 3.0" Horiz. Grate X 24.00** C= 0.600 Limited to weir flow at low heads
#2	Secondary	66.20'	**10.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.28 cfs @ 12.10 hrs HW=66.03' (Free Discharge)
└**1=Grate** (Weir Controls 0.28 cfs @ 0.58 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=66.00' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond CB-63:

Inflow Area = 3.164 ac, 47.24% Impervious, Inflow Depth = 0.02" for 1-Inch event
Inflow = 0.01 cfs @ 12.50 hrs, Volume= 0.004 af
Outflow = 0.01 cfs @ 12.52 hrs, Volume= 0.004 af, Atten= 0%, Lag= 0.8 min
Primary = 0.01 cfs @ 12.52 hrs, Volume= 0.004 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 59.84' @ 12.52 hrs Surf.Area= 13 sf Storage= 1 cf

Plug-Flow detention time= 0.8 min calculated for 0.004 af (100% of inflow)
Center-of-Mass det. time= 0.8 min (1,000.9 - 1,000.1)

Volume	Invert	Avail.Storage	Storage Description
#1	59.80'	81 cf	**Custom Stage Data (Prismatic)**Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
59.80	13	0	0
66.00	13	81	81

Device	Routing	Invert	Outlet Devices
#1	Primary	59.80'	**12.0" Round Culvert** L= 10.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 59.80' / 58.46' S= 0.1340 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.01 cfs @ 12.52 hrs HW=59.84' (Free Discharge)
1=Culvert (Inlet Controls 0.01 cfs @ 0.71 fps)

Summary for Pond DMH 20:

Inflow Area = 1.316 ac, 52.96% Impervious, Inflow Depth = 0.01" for 1-Inch event
Inflow = 0.00 cfs @ 15.12 hrs, Volume= 0.001 af
Outflow = 0.00 cfs @ 15.12 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 15.12 hrs, Volume= 0.001 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 37.61' @ 15.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	37.59'	**12.0" Round 12" SD** L= 20.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 37.59' / 35.00' S= 0.1295 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.00 cfs @ 15.12 hrs HW=37.61' (Free Discharge)
1=12" SD (Inlet Controls 0.00 cfs @ 0.45 fps)

Summary for Pond hil-01:

Inflow Area = 0.630 ac,100.00% Impervious, Inflow Depth = 0.79" for 1-Inch event
Inflow = 0.55 cfs @ 12.09 hrs, Volume= 0.042 af
Primary = 0.55 cfs @ 12.09 hrs, Volume= 0.042 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Summary for Pond hil-02:

Inflow Area = 4.951 ac, 86.33% Impervious, Inflow Depth = 0.41" for 1-Inch event
Inflow = 1.97 cfs @ 12.13 hrs, Volume= 0.167 af
Primary = 1.97 cfs @ 12.13 hrs, Volume= 0.167 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Summary for Pond OS-1.: CB

Inflow Area = 0.391 ac, 85.00% Impervious, Inflow Depth = 0.28" for 1-Inch event
Inflow = 0.10 cfs @ 12.16 hrs, Volume= 0.009 af
Outflow = 0.10 cfs @ 12.16 hrs, Volume= 0.009 af, Atten= 0%, Lag= 0.0 min
Primary = 0.10 cfs @ 12.16 hrs, Volume= 0.009 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 55.05' @ 12.16 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	45.00'	**8.0" Round Stormdrain** L= 15.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 45.00' / 44.44' S= 0.0373 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf
#2	Device 1	55.00'	**2.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#3	Secondary	55.20'	**10.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.07 cfs @ 12.16 hrs HW=55.05' (Free Discharge)
↑└**1=Stormdrain** (Passes 0.07 cfs of 5.24 cfs potential flow)
↑└**2=Sharp-Crested Rectangular Weir** (Weir Controls 0.07 cfs @ 0.73 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=45.00' (Free Discharge)
↑└**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond OS-2.: CB 16258

Inflow Area = 1.168 ac, 85.00% Impervious, Inflow Depth = 0.28" for 1-Inch event
Inflow = 0.31 cfs @ 12.16 hrs, Volume= 0.028 af
Outflow = 0.31 cfs @ 12.16 hrs, Volume= 0.028 af, Atten= 0%, Lag= 0.0 min
Primary = 0.31 cfs @ 12.16 hrs, Volume= 0.028 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 83.13' @ 12.16 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	79.02'	**8.0" Round Stormdrain** L= 35.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 79.02' / 78.25' S= 0.0220 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf
#2	Device 1	83.00'	**2.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#3	Secondary	83.50'	**10.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.30 cfs @ 12.16 hrs HW=83.13' (Free Discharge)
└**1=Stormdrain** (Passes 0.30 cfs of 3.12 cfs potential flow)
└**2=Sharp-Crested Rectangular Weir** (Weir Controls 0.30 cfs @ 1.18 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=79.02' (Free Discharge)
└**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond SMH 1: esmh-13952

Inflow Area = 2.384 ac, 95.01% Impervious, Inflow Depth = 0.63" for 1-Inch event
Inflow = 1.61 cfs @ 12.10 hrs, Volume= 0.125 af
Outflow = 1.61 cfs @ 12.10 hrs, Volume= 0.125 af, Atten= 0%, Lag= 0.0 min
Primary = 1.61 cfs @ 12.10 hrs, Volume= 0.125 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 45.19' @ 12.10 hrs
Flood Elev= 52.64'

Device	Routing	Invert	Outlet Devices
#1	Primary	44.61'	**18.0" Round Sewer** L= 45.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 44.61' / 41.64' S= 0.0660 '/' Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 1.77 sf

Primary OutFlow Max=1.60 cfs @ 12.10 hrs HW=45.18' (Free Discharge)
└**1=Sewer** (Inlet Controls 1.60 cfs @ 2.58 fps)

Summary for Pond SMH-13932: esmh-13932

Inflow Area = 2.775 ac, 93.60% Impervious, Inflow Depth = 0.58" for 1-Inch event
Inflow = 1.70 cfs @ 12.10 hrs, Volume= 0.134 af
Outflow = 1.70 cfs @ 12.10 hrs, Volume= 0.134 af, Atten= 0%, Lag= 0.0 min
Primary = 1.70 cfs @ 12.10 hrs, Volume= 0.134 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 41.23' @ 12.10 hrs
Flood Elev= 52.64'

Device	Routing	Invert	Outlet Devices
#1	Primary	40.64'	**18.0" Round Sewer** L= 45.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 40.64' / 38.00' S= 0.0587 '/' Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 1.77 sf

Primary OutFlow Max=1.70 cfs @ 12.10 hrs HW=41.23' (Free Discharge)
└**1=Sewer** (Inlet Controls 1.70 cfs @ 2.62 fps)

Summary for Pond SMH-20:

Inflow Area = 1.557 ac,100.00% Impervious, Inflow Depth = 0.79" for 1-Inch event
Inflow = 1.35 cfs @ 12.09 hrs, Volume= 0.103 af
Primary = 1.35 cfs @ 12.09 hrs, Volume= 0.103 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Summary for Link SP-C1:

Inflow Area = 0.765 ac, 73.26% Impervious, Inflow Depth = 0.11" for 1-Inch event
Inflow = 0.05 cfs @ 12.16 hrs, Volume= 0.007 af
Primary = 0.05 cfs @ 12.16 hrs, Volume= 0.007 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Summary for Link SP-C2:

Inflow Area = 2.775 ac, 93.60% Impervious, Inflow Depth = 0.58" for 1-Inch event
Inflow = 1.70 cfs @ 12.10 hrs, Volume= 0.134 af
Primary = 1.70 cfs @ 12.10 hrs, Volume= 0.134 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Summary for Link SP-C3:

Inflow Area = 1.316 ac, 52.96% Impervious, Inflow Depth = 0.01" for 1-Inch event
Inflow = 0.00 cfs @ 15.12 hrs, Volume= 0.001 af
Primary = 0.00 cfs @ 15.12 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Summary for Link SP-C4:

Inflow Area = 8.370 ac, 71.34% Impervious, Inflow Depth = 0.25" for 1-Inch event
Inflow = 2.00 cfs @ 12.13 hrs, Volume= 0.176 af
Primary = 2.00 cfs @ 12.13 hrs, Volume= 0.176 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Summary for Link SP-C5:

Inflow Area = 1.389 ac, 57.14% Impervious, Inflow Depth = 0.30" for 1-Inch event
Inflow = 0.45 cfs @ 12.11 hrs, Volume= 0.035 af
Primary = 0.45 cfs @ 12.11 hrs, Volume= 0.035 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Runoff Area=19,446 sf 73.39% Impervious Runoff Depth=1.46"
Flow Length=229' Tc=6.0 min CN=82 Runoff=0.75 cfs 0.054 af

Subcatchment2A: Runoff Area=25,217 sf 100.00% Impervious Runoff Depth=2.87"
Flow Length=142' Slope=0.0050 '/' Tc=6.0 min CN=98 Runoff=1.70 cfs 0.138 af

Subcatchment2B: Runoff Area=13,868 sf 73.07% Impervious Runoff Depth=1.46"
Flow Length=284' Tc=6.0 min CN=82 Runoff=0.53 cfs 0.039 af

Subcatchment2S: Runoff Area=16,157 sf 100.00% Impervious Runoff Depth=2.87"
Flow Length=244' Tc=6.0 min CN=98 Runoff=1.09 cfs 0.089 af

Subcatchment3S: Runoff Area=14,974 sf 79.46% Impervious Runoff Depth=1.75"
Flow Length=358' Tc=6.0 min CN=86 Runoff=0.69 cfs 0.050 af

Subcatchment4S: Runoff Area=23,249 sf 100.00% Impervious Runoff Depth=2.87"
Flow Length=160' Slope=0.0050 '/' Tc=6.0 min CN=98 Runoff=1.57 cfs 0.128 af

Subcatchment5S: Runoff Area=125,028 sf 78.87% Impervious Runoff Depth=1.75"
Flow Length=510' Tc=6.0 min CN=86 Runoff=5.77 cfs 0.418 af

Subcatchment6S: Runoff Area=11,085 sf 79.41% Impervious Runoff Depth=1.75"
Flow Length=121' Tc=6.0 min CN=86 Runoff=0.51 cfs 0.037 af

Subcatchment7S: Runoff Area=92,296 sf 39.10% Impervious Runoff Depth=0.55"
Flow Length=634' Tc=6.0 min CN=65 Runoff=1.03 cfs 0.098 af

Subcatchment8S: Runoff Area=45,533 sf 63.76% Impervious Runoff Depth=1.14"
Flow Length=399' Tc=6.0 min CN=77 Runoff=1.33 cfs 0.099 af

Subcatchment10S: Runoff Area=37,247 sf 30.36% Impervious Runoff Depth=0.28"
Flow Length=326' Tc=6.0 min CN=57 Runoff=0.11 cfs 0.020 af

Subcatchment11S: Runoff Area=11,050 sf 100.00% Impervious Runoff Depth=2.87"
Flow Length=90' Slope=0.0050 '/' Tc=6.0 min CN=98 Runoff=0.74 cfs 0.061 af

Subcatchment12S: Runoff Area=23,268 sf 100.00% Impervious Runoff Depth=2.87"
Flow Length=200' Tc=6.0 min CN=98 Runoff=1.57 cfs 0.128 af

Subcatchment13S: Runoff Area=36,014 sf 85.62% Impervious Runoff Depth=2.08"
Flow Length=196' Tc=6.2 min CN=90 Runoff=1.94 cfs 0.143 af

Subcatchment14S: Runoff Area=29,743 sf 49.37% Impervious Runoff Depth=0.68"
Flow Length=262' Tc=6.0 min CN=68 Runoff=0.45 cfs 0.039 af

Subcatchment15S: Runoff Area=27,590 sf 56.84% Impervious Runoff Depth=0.92"
Flow Length=384' Tc=6.0 min CN=73 Runoff=0.62 cfs 0.049 af

Subcatchment 17S: Runoff Area=40,392 sf 100.00% Impervious Runoff Depth=2.87"
Flow Length=188' Tc=6.0 min CN=98 Runoff=2.72 cfs 0.222 af

Subcatchment 18S: Visitor Garage Runoff Area=27,443 sf 100.00% Impervious Runoff Depth=2.87"
Flow Length=316' Tc=6.0 min CN=98 Runoff=1.85 cfs 0.151 af

Subcatchment OS-1: OS-1 Runoff Area=17,031 sf 85.00% Impervious Runoff Depth=1.99"
Flow Length=1,300' Tc=10.0 min CN=89 Runoff=0.78 cfs 0.065 af

Subcatchment OS-2: OS-2 Runoff Area=50,885 sf 85.00% Impervious Runoff Depth=1.99"
Flow Length=1,300' Tc=10.0 min CN=89 Runoff=2.34 cfs 0.194 af

Reach 2R: Weymouth Street Sewer Inflow=2.28 cfs 0.194 af
Outflow=2.28 cfs 0.194 af

Reach 3R: Offsite Forest Street Inflow=0.13 cfs 0.001 af
Outflow=0.13 cfs 0.001 af

Reach 15R: Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Reach 110: Avg. Flow Depth=0.36' Max Vel=3.87 fps Inflow=0.74 cfs 0.061 af
8.0" Round Pipe n=0.012 L=51.0' S=0.0100 '/' Capacity=1.31 cfs Outflow=0.74 cfs 0.061 af

Reach 115: Avg. Flow Depth=0.68' Max Vel=5.19 fps Inflow=3.51 cfs 0.288 af
15.0" Round Pipe n=0.012 L=67.0' S=0.0078 '/' Capacity=6.17 cfs Outflow=3.48 cfs 0.288 af

Reach 118: Avg. Flow Depth=0.50' Max Vel=9.76 fps Inflow=5.04 cfs 0.415 af
18.0" Round Pipe n=0.012 L=90.0' S=0.0340 '/' Capacity=20.98 cfs Outflow=5.01 cfs 0.415 af

Reach 125: Avg. Flow Depth=0.38' Max Vel=5.80 fps Inflow=1.57 cfs 0.128 af
12.0" Round Pipe n=0.012 L=79.0' S=0.0182 '/' Capacity=5.21 cfs Outflow=1.56 cfs 0.128 af

Reach 128: Avg. Flow Depth=0.55' Max Vel=3.53 fps Inflow=1.56 cfs 0.128 af
12.0" Round Pipe n=0.012 L=71.0' S=0.0048 '/' Capacity=2.67 cfs Outflow=1.54 cfs 0.128 af

Reach 135: Avg. Flow Depth=0.28' Max Vel=9.40 fps Inflow=1.29 cfs 0.136 af
8.0" Round Pipe n=0.012 L=225.0' S=0.0747 '/' Capacity=3.58 cfs Outflow=1.28 cfs 0.136 af

Reach 171: Avg. Flow Depth=0.26' Max Vel=14.91 fps Inflow=2.72 cfs 0.222 af
15.0" Round Pipe n=0.012 L=31.0' S=0.1755 '/' Capacity=29.32 cfs Outflow=2.72 cfs 0.222 af

Reach 172: Avg. Flow Depth=0.35' Max Vel=16.46 fps Inflow=4.56 cfs 0.372 af
15.0" Round Pipe n=0.012 L=38.0' S=0.1518 '/' Capacity=27.27 cfs Outflow=4.55 cfs 0.372 af

Reach 181: Avg. Flow Depth=0.33' Max Vel=8.24 fps Inflow=1.85 cfs 0.151 af
12.0" Round Pipe n=0.012 L=104.0' S=0.0425 '/' Capacity=7.96 cfs Outflow=1.84 cfs 0.151 af

Reach 210: Avg. Flow Depth=0.38' Max Vel=6.13 fps Inflow=1.70 cfs 0.138 af
12.0" Round Pipe n=0.012 L=66.0' S=0.0200 '/' Capacity=5.46 cfs Outflow=1.69 cfs 0.138 af

Reach 215: Avg. Flow Depth=0.42' Max Vel=3.48 fps Inflow=1.09 cfs 0.089 af
12.0" Round Pipe n=0.013 L=52.0' S=0.0069 '/' Capacity=2.96 cfs Outflow=1.08 cfs 0.089 af

Reach 216R: Avg. Flow Depth=0.25' Max Vel=15.09 fps Inflow=2.33 cfs 0.197 af
12.0" Round Pipe n=0.013 L=12.0' S=0.2267 '/' Capacity=16.96 cfs Outflow=2.33 cfs 0.197 af

Reach 220: Avg. Flow Depth=0.54' Max Vel=8.82 fps Inflow=5.01 cfs 0.415 af
18.0" Round Pipe n=0.012 L=218.0' S=0.0259 '/' Capacity=18.30 cfs Outflow=4.91 cfs 0.415 af

Reach 230: Avg. Flow Depth=0.34' Max Vel=18.51 fps Inflow=5.59 cfs 0.465 af
18.0" Round Pipe n=0.012 L=87.0' S=0.1884 '/' Capacity=49.39 cfs Outflow=5.57 cfs 0.465 af

Reach 240: Avg. Flow Depth=0.51' Max Vel=21.42 fps Inflow=11.29 cfs 0.883 af
18.0" Round Pipe n=0.012 L=100.0' S=0.1612 '/' Capacity=45.69 cfs Outflow=11.25 cfs 0.883 af

Reach 260: Avg. Flow Depth=0.61' Max Vel=13.86 fps Inflow=11.25 cfs 0.883 af
24.0" Round Pipe n=0.012 L=48.0' S=0.0515 '/' Capacity=55.59 cfs Outflow=11.22 cfs 0.883 af

Reach 410: Avg. Flow Depth=0.54' Max Vel=3.63 fps Inflow=1.57 cfs 0.128 af
12.0" Round Pipe n=0.012 L=35.0' S=0.0051 '/' Capacity=2.77 cfs Outflow=1.56 cfs 0.128 af

Reach 510: Avg. Flow Depth=0.35' Max Vel=18.27 fps Inflow=5.77 cfs 0.418 af
18.0" Round Pipe n=0.012 L=62.0' S=0.1768 '/' Capacity=47.85 cfs Outflow=5.76 cfs 0.418 af

Reach 810: Avg. Flow Depth=0.19' Max Vel=13.33 fps Inflow=1.33 cfs 0.099 af
12.0" Round Pipe n=0.012 L=210.0' S=0.2129 '/' Capacity=17.81 cfs Outflow=1.32 cfs 0.099 af

Reach 820: Avg. Flow Depth=0.22' Max Vel=10.22 fps Inflow=1.32 cfs 0.099 af
12.0" Round Pipe n=0.012 L=164.0' S=0.1020 '/' Capacity=12.32 cfs Outflow=1.30 cfs 0.099 af

Pond 2P: Peak Elev=107.31' Storage=4 cf Inflow=0.53 cfs 0.039 af
18.0" Round Culvert n=0.011 L=50.0' S=0.0100 '/' Outflow=0.53 cfs 0.039 af

Pond 3P: Inflow=0.69 cfs 0.050 af
Primary=0.69 cfs 0.050 af

Pond 5P: Inflow=5.77 cfs 0.418 af
Primary=5.77 cfs 0.418 af

Pond 6P: Inflow=0.51 cfs 0.037 af
Primary=0.51 cfs 0.037 af

Pond 7P: Inflow=1.03 cfs 0.098 af
Primary=1.03 cfs 0.098 af

Pond 8P: Inflow=1.33 cfs 0.099 af
Primary=1.33 cfs 0.099 af

Pond 10P: Inflow=1.60 cfs 0.147 af
Primary=1.60 cfs 0.147 af

Pond 11P: Inflow=0.74 cfs 0.061 af
Primary=0.74 cfs 0.061 af

Pond 12P: Inflow=1.57 cfs 0.128 af
Primary=1.57 cfs 0.128 af

Pond 13.5P: CB 13796 Peak Elev=42.81' Inflow=1.10 cfs 0.045 af
Primary=1.10 cfs 0.045 af Secondary=0.00 cfs 0.000 af Outflow=1.10 cfs 0.045 af

Pond 13P: CB at Parking Garage Entrance Peak Elev=66.29' Inflow=1.94 cfs 0.143 af
Primary=1.29 cfs 0.136 af Secondary=0.65 cfs 0.007 af Outflow=1.94 cfs 0.143 af

Pond CB-63: Peak Elev=60.68' Storage=11 cf Inflow=2.33 cfs 0.197 af
12.0" Round Culvert n=0.012 L=10.0' S=0.1340 '/' Outflow=2.33 cfs 0.197 af

Pond DMH 20: Peak Elev=38.30' Inflow=1.72 cfs 0.094 af
12.0" Round Culvert n=0.010 L=20.0' S=0.1295 '/' Outflow=1.72 cfs 0.094 af

Pond hil-01: Inflow=1.85 cfs 0.151 af
Primary=1.85 cfs 0.151 af

Pond hil-02: Inflow=11.25 cfs 0.883 af
Primary=11.25 cfs 0.883 af

Pond OS-1.: CB Peak Elev=55.22' Inflow=0.78 cfs 0.065 af
Primary=0.65 cfs 0.064 af Secondary=0.13 cfs 0.001 af Outflow=0.78 cfs 0.065 af

Pond OS-2.: CB 16258 Peak Elev=83.51' Inflow=2.34 cfs 0.194 af
Primary=2.28 cfs 0.194 af Secondary=0.06 cfs 0.000 af Outflow=2.34 cfs 0.194 af

Pond SMH 1: esmh-13952 Peak Elev=45.84' Inflow=5.83 cfs 0.509 af
18.0" Round Culvert n=0.025 L=45.0' S=0.0660 '/' Outflow=5.83 cfs 0.509 af

Pond SMH-13932: esmh-13932 Peak Elev=41.96' Inflow=6.45 cfs 0.572 af
18.0" Round Culvert n=0.025 L=45.0' S=0.0587 '/' Outflow=6.45 cfs 0.572 af

Pond SMH-20: Inflow=4.56 cfs 0.372 af
Primary=4.56 cfs 0.372 af

Link SP-C1: Inflow=1.28 cfs 0.093 af
Primary=1.28 cfs 0.093 af

Link SP-C2: Inflow=6.45 cfs 0.572 af
Primary=6.45 cfs 0.572 af

Link SP-C3: Inflow=1.72 cfs 0.094 af
Primary=1.72 cfs 0.094 af

Link SP-C4: Inflow=14.04 cfs 1.117 af
Primary=14.04 cfs 1.117 af

Link SP-C5: Inflow=1.60 cfs 0.147 af
Primary=1.60 cfs 0.147 af

Total Runoff Area = 15.783 ac Runoff Volume = 2.219 af Average Runoff Depth = 1.69"
26.42% Pervious = 4.170 ac 73.58% Impervious = 11.613 ac

Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Runoff Area=19,446 sf 73.39% Impervious Runoff Depth=2.72"
Flow Length=229' Tc=6.0 min CN=82 Runoff=1.40 cfs 0.101 af

Subcatchment2A: Runoff Area=25,217 sf 100.00% Impervious Runoff Depth=4.36"
Flow Length=142' Slope=0.0050 '/' Tc=6.0 min CN=98 Runoff=2.54 cfs 0.211 af

Subcatchment2B: Runoff Area=13,868 sf 73.07% Impervious Runoff Depth=2.72"
Flow Length=284' Tc=6.0 min CN=82 Runoff=1.00 cfs 0.072 af

Subcatchment2S: Runoff Area=16,157 sf 100.00% Impervious Runoff Depth=4.36"
Flow Length=244' Tc=6.0 min CN=98 Runoff=1.63 cfs 0.135 af

Subcatchment3S: Runoff Area=14,974 sf 79.46% Impervious Runoff Depth=3.10"
Flow Length=358' Tc=6.0 min CN=86 Runoff=1.21 cfs 0.089 af

Subcatchment4S: Runoff Area=23,249 sf 100.00% Impervious Runoff Depth=4.36"
Flow Length=160' Slope=0.0050 '/' Tc=6.0 min CN=98 Runoff=2.34 cfs 0.194 af

Subcatchment5S: Runoff Area=125,028 sf 78.87% Impervious Runoff Depth=3.10"
Flow Length=510' Tc=6.0 min CN=86 Runoff=10.09 cfs 0.740 af

Subcatchment6S: Runoff Area=11,085 sf 79.41% Impervious Runoff Depth=3.10"
Flow Length=121' Tc=6.0 min CN=86 Runoff=0.89 cfs 0.066 af

Subcatchment7S: Runoff Area=92,296 sf 39.10% Impervious Runoff Depth=1.39"
Flow Length=634' Tc=6.0 min CN=65 Runoff=3.18 cfs 0.246 af

Subcatchment8S: Runoff Area=45,533 sf 63.76% Impervious Runoff Depth=2.29"
Flow Length=399' Tc=6.0 min CN=77 Runoff=2.75 cfs 0.200 af

Subcatchment10S: Runoff Area=37,247 sf 30.36% Impervious Runoff Depth=0.90"
Flow Length=326' Tc=6.0 min CN=57 Runoff=0.71 cfs 0.064 af

Subcatchment11S: Runoff Area=11,050 sf 100.00% Impervious Runoff Depth=4.36"
Flow Length=90' Slope=0.0050 '/' Tc=6.0 min CN=98 Runoff=1.11 cfs 0.092 af

Subcatchment12S: Runoff Area=23,268 sf 100.00% Impervious Runoff Depth=4.36"
Flow Length=200' Tc=6.0 min CN=98 Runoff=2.34 cfs 0.194 af

Subcatchment13S: Runoff Area=36,014 sf 85.62% Impervious Runoff Depth=3.49"
Flow Length=196' Tc=6.2 min CN=90 Runoff=3.19 cfs 0.241 af

Subcatchment14S: Runoff Area=29,743 sf 49.37% Impervious Runoff Depth=1.60"
Flow Length=262' Tc=6.0 min CN=68 Runoff=1.21 cfs 0.091 af

Subcatchment15S: Runoff Area=27,590 sf 56.84% Impervious Runoff Depth=1.97"
Flow Length=384' Tc=6.0 min CN=73 Runoff=1.42 cfs 0.104 af

Subcatchment 17S: Runoff Area=40,392 sf 100.00% Impervious Runoff Depth=4.36"
Flow Length=188' Tc=6.0 min CN=98 Runoff=4.07 cfs 0.337 af

Subcatchment 18S: Visitor Garage Runoff Area=27,443 sf 100.00% Impervious Runoff Depth=4.36"
Flow Length=316' Tc=6.0 min CN=98 Runoff=2.77 cfs 0.229 af

Subcatchment OS-1: OS-1 Runoff Area=17,031 sf 85.00% Impervious Runoff Depth=3.39"
Flow Length=1,300' Tc=10.0 min CN=89 Runoff=1.31 cfs 0.110 af

Subcatchment OS-2: OS-2 Runoff Area=50,885 sf 85.00% Impervious Runoff Depth=3.39"
Flow Length=1,300' Tc=10.0 min CN=89 Runoff=3.92 cfs 0.330 af

Reach 2R: Weymouth Street Sewer Inflow=2.95 cfs 0.318 af
Outflow=2.95 cfs 0.318 af

Reach 3R: Offsite Forest Street Inflow=0.46 cfs 0.008 af
Outflow=0.46 cfs 0.008 af

Reach 15R: Inflow=0.81 cfs 0.006 af
Outflow=0.81 cfs 0.006 af

Reach 110: Avg. Flow Depth=0.47' Max Vel=4.21 fps Inflow=1.11 cfs 0.092 af
8.0" Round Pipe n=0.012 L=51.0' S=0.0100 '/' Capacity=1.31 cfs Outflow=1.11 cfs 0.092 af

Reach 115: Avg. Flow Depth=0.89' Max Vel=5.64 fps Inflow=5.25 cfs 0.438 af
15.0" Round Pipe n=0.012 L=67.0' S=0.0078 '/' Capacity=6.17 cfs Outflow=5.21 cfs 0.438 af

Reach 118: Avg. Flow Depth=0.62' Max Vel=10.90 fps Inflow=7.54 cfs 0.632 af
18.0" Round Pipe n=0.012 L=90.0' S=0.0340 '/' Capacity=20.98 cfs Outflow=7.50 cfs 0.632 af

Reach 125: Avg. Flow Depth=0.47' Max Vel=6.45 fps Inflow=2.34 cfs 0.194 af
12.0" Round Pipe n=0.012 L=79.0' S=0.0182 '/' Capacity=5.21 cfs Outflow=2.33 cfs 0.194 af

Reach 128: Avg. Flow Depth=0.72' Max Vel=3.83 fps Inflow=2.33 cfs 0.194 af
12.0" Round Pipe n=0.012 L=71.0' S=0.0048 '/' Capacity=2.67 cfs Outflow=2.30 cfs 0.194 af

Reach 135: Avg. Flow Depth=0.31' Max Vel=9.87 fps Inflow=1.55 cfs 0.215 af
8.0" Round Pipe n=0.012 L=225.0' S=0.0747 '/' Capacity=3.58 cfs Outflow=1.54 cfs 0.215 af

Reach 171: Avg. Flow Depth=0.31' Max Vel=16.76 fps Inflow=4.07 cfs 0.337 af
15.0" Round Pipe n=0.012 L=31.0' S=0.1755 '/' Capacity=29.32 cfs Outflow=4.07 cfs 0.337 af

Reach 172: Avg. Flow Depth=0.43' Max Vel=18.44 fps Inflow=6.81 cfs 0.566 af
15.0" Round Pipe n=0.012 L=38.0' S=0.1518 '/' Capacity=27.27 cfs Outflow=6.81 cfs 0.566 af

Reach 181: Avg. Flow Depth=0.41' Max Vel=9.21 fps Inflow=2.77 cfs 0.229 af
12.0" Round Pipe n=0.012 L=104.0' S=0.0425 '/' Capacity=7.96 cfs Outflow=2.75 cfs 0.229 af

Reach 210: Avg. Flow Depth=0.48' Max Vel=6.82 fps Inflow=2.54 cfs 0.211 af
12.0" Round Pipe n=0.012 L=66.0' S=0.0200 '/' Capacity=5.46 cfs Outflow=2.53 cfs 0.211 af

Reach 215: Avg. Flow Depth=0.53' Max Vel=3.86 fps Inflow=1.63 cfs 0.135 af
12.0" Round Pipe n=0.013 L=52.0' S=0.0069 '/' Capacity=2.96 cfs Outflow=1.62 cfs 0.135 af

Reach 216R: Avg. Flow Depth=0.41' Max Vel=19.62 fps Inflow=5.88 cfs 0.446 af
12.0" Round Pipe n=0.013 L=12.0' S=0.2267 '/' Capacity=16.96 cfs Outflow=5.87 cfs 0.446 af

Reach 220: Avg. Flow Depth=0.67' Max Vel=9.84 fps Inflow=7.50 cfs 0.632 af
18.0" Round Pipe n=0.012 L=218.0' S=0.0259 '/' Capacity=18.30 cfs Outflow=7.37 cfs 0.632 af

Reach 230: Avg. Flow Depth=0.42' Max Vel=20.94 fps Inflow=8.56 cfs 0.720 af
18.0" Round Pipe n=0.012 L=87.0' S=0.1884 '/' Capacity=49.39 cfs Outflow=8.53 cfs 0.720 af

Reach 240: Avg. Flow Depth=0.67' Max Vel=24.51 fps Inflow=18.55 cfs 1.461 af
18.0" Round Pipe n=0.012 L=100.0' S=0.1612 '/' Capacity=45.69 cfs Outflow=18.50 cfs 1.461 af

Reach 260: Avg. Flow Depth=0.79' Max Vel=15.91 fps Inflow=18.50 cfs 1.461 af
24.0" Round Pipe n=0.012 L=48.0' S=0.0515 '/' Capacity=55.59 cfs Outflow=18.46 cfs 1.461 af

Reach 410: Avg. Flow Depth=0.71' Max Vel=3.95 fps Inflow=2.34 cfs 0.194 af
12.0" Round Pipe n=0.012 L=35.0' S=0.0051 '/' Capacity=2.77 cfs Outflow=2.33 cfs 0.194 af

Reach 510: Avg. Flow Depth=0.47' Max Vel=21.44 fps Inflow=10.09 cfs 0.740 af
18.0" Round Pipe n=0.012 L=62.0' S=0.1768 '/' Capacity=47.85 cfs Outflow=10.08 cfs 0.740 af

Reach 810: Avg. Flow Depth=0.27' Max Vel=16.46 fps Inflow=2.75 cfs 0.200 af
12.0" Round Pipe n=0.012 L=210.0' S=0.2129 '/' Capacity=17.81 cfs Outflow=2.73 cfs 0.200 af

Reach 820: Avg. Flow Depth=0.32' Max Vel=12.61 fps Inflow=2.73 cfs 0.200 af
12.0" Round Pipe n=0.012 L=164.0' S=0.1020 '/' Capacity=12.32 cfs Outflow=2.70 cfs 0.200 af

Pond 2P: Peak Elev=107.44' Storage=6 cf Inflow=1.00 cfs 0.072 af
18.0" Round Culvert n=0.011 L=50.0' S=0.0100 '/' Outflow=1.00 cfs 0.072 af

Pond 3P: Inflow=1.21 cfs 0.089 af
Primary=1.21 cfs 0.089 af

Pond 5P: Inflow=10.09 cfs 0.740 af
Primary=10.09 cfs 0.740 af

Pond 6P: Inflow=0.89 cfs 0.066 af
Primary=0.89 cfs 0.066 af

Pond 7P: Inflow=3.18 cfs 0.246 af
Primary=3.18 cfs 0.246 af

Pond 8P: Inflow=2.75 cfs 0.200 af
Primary=2.75 cfs 0.200 af

Pond 10P: Inflow=3.01 cfs 0.258 af
Primary=3.01 cfs 0.258 af

Pond 11P: Inflow=1.11 cfs 0.092 af
Primary=1.11 cfs 0.092 af

Pond 12P: Inflow=2.34 cfs 0.194 af
Primary=2.34 cfs 0.194 af

Pond 13.5P: CB 13796 Peak Elev=43.10' Inflow=3.67 cfs 0.129 af
Primary=2.86 cfs 0.123 af Secondary=0.81 cfs 0.006 af Outflow=3.67 cfs 0.129 af

Pond 13P: CB at Parking Garage Entrance Peak Elev=66.41' Inflow=4.01 cfs 0.253 af
Primary=1.55 cfs 0.215 af Secondary=2.47 cfs 0.038 af Outflow=4.01 cfs 0.253 af

Pond CB-63: Peak Elev=62.71' Storage=38 cf Inflow=5.88 cfs 0.446 af
12.0" Round Culvert n=0.012 L=10.0' S=0.1340 '/' Outflow=5.88 cfs 0.446 af

Pond DMH 20: Peak Elev=39.37' Inflow=4.28 cfs 0.227 af
12.0" Round Culvert n=0.010 L=20.0' S=0.1295 '/' Outflow=4.28 cfs 0.227 af

Pond hil-01: Inflow=2.77 cfs 0.229 af
Primary=2.77 cfs 0.229 af

Pond hil-02: Inflow=18.50 cfs 1.461 af
Primary=18.50 cfs 1.461 af

Pond OS-1.: CB Peak Elev=55.26' Inflow=1.31 cfs 0.110 af
Primary=0.85 cfs 0.102 af Secondary=0.46 cfs 0.008 af Outflow=1.31 cfs 0.110 af

Pond OS-2.: CB 16258 Peak Elev=83.61' Inflow=3.92 cfs 0.330 af
Primary=2.95 cfs 0.318 af Secondary=0.97 cfs 0.013 af Outflow=3.92 cfs 0.330 af

Pond SMH 1: esmh-13952 Peak Elev=46.32' Inflow=8.33 cfs 0.781 af
18.0" Round Culvert n=0.025 L=45.0' S=0.0660 '/' Outflow=8.33 cfs 0.781 af

Pond SMH-13932: esmh-13932 Peak Elev=42.54' Inflow=9.14 cfs 0.884 af
18.0" Round Culvert n=0.025 L=45.0' S=0.0587 '/' Outflow=9.14 cfs 0.884 af

Pond SMH-20: Inflow=6.81 cfs 0.566 af
Primary=6.81 cfs 0.566 af

Link SP-C1: Inflow=2.39 cfs 0.174 af
Primary=2.39 cfs 0.174 af

Link SP-C2: Inflow=9.14 cfs 0.884 af
Primary=9.14 cfs 0.884 af

Link SP-C3: Inflow=4.28 cfs 0.227 af
Primary=4.28 cfs 0.227 af

Link SP-C4: Inflow=25.22 cfs 1.972 af
Primary=25.22 cfs 1.972 af

Link SP-C5: Inflow=3.01 cfs 0.258 af
Primary=3.01 cfs 0.258 af

Total Runoff Area = 15.783 ac Runoff Volume = 3.847 af Average Runoff Depth = 2.92"
26.42% Pervious = 4.170 ac 73.58% Impervious = 11.613 ac

Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Runoff Area=19,446 sf 73.39% Impervious Runoff Depth=3.80"
Flow Length=229' Tc=6.0 min CN=82 Runoff=1.93 cfs 0.141 af

Subcatchment2A: Runoff Area=25,217 sf 100.00% Impervious Runoff Depth=5.56"
Flow Length=142' Slope=0.0050 '/' Tc=6.0 min CN=98 Runoff=3.21 cfs 0.268 af

Subcatchment2B: Runoff Area=13,868 sf 73.07% Impervious Runoff Depth=3.80"
Flow Length=284' Tc=6.0 min CN=82 Runoff=1.38 cfs 0.101 af

Subcatchment2S: Runoff Area=16,157 sf 100.00% Impervious Runoff Depth=5.56"
Flow Length=244' Tc=6.0 min CN=98 Runoff=2.06 cfs 0.172 af

Subcatchment3S: Runoff Area=14,974 sf 79.46% Impervious Runoff Depth=4.22"
Flow Length=358' Tc=6.0 min CN=86 Runoff=1.63 cfs 0.121 af

Subcatchment4S: Runoff Area=23,249 sf 100.00% Impervious Runoff Depth=5.56"
Flow Length=160' Slope=0.0050 '/' Tc=6.0 min CN=98 Runoff=2.96 cfs 0.247 af

Subcatchment5S: Runoff Area=125,028 sf 78.87% Impervious Runoff Depth=4.22"
Flow Length=510' Tc=6.0 min CN=86 Runoff=13.59 cfs 1.009 af

Subcatchment6S: Runoff Area=11,085 sf 79.41% Impervious Runoff Depth=4.22"
Flow Length=121' Tc=6.0 min CN=86 Runoff=1.20 cfs 0.089 af

Subcatchment7S: Runoff Area=92,296 sf 39.10% Impervious Runoff Depth=2.21"
Flow Length=634' Tc=6.0 min CN=65 Runoff=5.25 cfs 0.390 af

Subcatchment8S: Runoff Area=45,533 sf 63.76% Impervious Runoff Depth=3.31"
Flow Length=399' Tc=6.0 min CN=77 Runoff=3.97 cfs 0.288 af

Subcatchment10S: Runoff Area=37,247 sf 30.36% Impervious Runoff Depth=1.56"
Flow Length=326' Tc=6.0 min CN=57 Runoff=1.39 cfs 0.111 af

Subcatchment11S: Runoff Area=11,050 sf 100.00% Impervious Runoff Depth=5.56"
Flow Length=90' Slope=0.0050 '/' Tc=6.0 min CN=98 Runoff=1.41 cfs 0.118 af

Subcatchment12S: Runoff Area=23,268 sf 100.00% Impervious Runoff Depth=5.56"
Flow Length=200' Tc=6.0 min CN=98 Runoff=2.96 cfs 0.248 af

Subcatchment13S: Runoff Area=36,014 sf 85.62% Impervious Runoff Depth=4.65"
Flow Length=196' Tc=6.2 min CN=90 Runoff=4.19 cfs 0.320 af

Subcatchment14S: Runoff Area=29,743 sf 49.37% Impervious Runoff Depth=2.47"
Flow Length=262' Tc=6.0 min CN=68 Runoff=1.92 cfs 0.140 af

Subcatchment15S: Runoff Area=27,590 sf 56.84% Impervious Runoff Depth=2.92"
Flow Length=384' Tc=6.0 min CN=73 Runoff=2.13 cfs 0.154 af

Subcatchment 17S: Runoff Area=40,392 sf 100.00% Impervious Runoff Depth=5.56"
Flow Length=188' Tc=6.0 min CN=98 Runoff=5.15 cfs 0.430 af

Subcatchment 18S: Visitor Garage Runoff Area=27,443 sf 100.00% Impervious Runoff Depth=5.56"
Flow Length=316' Tc=6.0 min CN=98 Runoff=3.50 cfs 0.292 af

Subcatchment OS-1: OS-1 Runoff Area=17,031 sf 85.00% Impervious Runoff Depth=4.54"
Flow Length=1,300' Tc=10.0 min CN=89 Runoff=1.73 cfs 0.148 af

Subcatchment OS-2: OS-2 Runoff Area=50,885 sf 85.00% Impervious Runoff Depth=4.54"
Flow Length=1,300' Tc=10.0 min CN=89 Runoff=5.17 cfs 0.442 af

Reach 2R: Weymouth Street Sewer Inflow=3.31 cfs 0.412 af
Outflow=3.31 cfs 0.412 af

Reach 3R: Offsite Forest Street Inflow=0.73 cfs 0.016 af
Outflow=0.73 cfs 0.016 af

Reach 15R: Inflow=2.41 cfs 0.027 af
Outflow=2.41 cfs 0.027 af

Reach 110: Avg. Flow Depth=0.61' Max Vel=4.27 fps Inflow=1.41 cfs 0.118 af
8.0" Round Pipe n=0.012 L=51.0' S=0.0100 '/' Capacity=1.31 cfs Outflow=1.39 cfs 0.118 af

Reach 115: Avg. Flow Depth=1.15' Max Vel=5.72 fps Inflow=6.64 cfs 0.558 af
15.0" Round Pipe n=0.012 L=67.0' S=0.0078 '/' Capacity=6.17 cfs Outflow=6.57 cfs 0.558 af

Reach 118: Avg. Flow Depth=0.71' Max Vel=11.58 fps Inflow=9.50 cfs 0.805 af
18.0" Round Pipe n=0.012 L=90.0' S=0.0340 '/' Capacity=20.98 cfs Outflow=9.46 cfs 0.805 af

Reach 125: Avg. Flow Depth=0.54' Max Vel=6.84 fps Inflow=2.96 cfs 0.248 af
12.0" Round Pipe n=0.012 L=79.0' S=0.0182 '/' Capacity=5.21 cfs Outflow=2.95 cfs 0.248 af

Reach 128: Avg. Flow Depth=1.00' Max Vel=3.87 fps Inflow=2.95 cfs 0.248 af
12.0" Round Pipe n=0.012 L=71.0' S=0.0048 '/' Capacity=2.67 cfs Outflow=2.79 cfs 0.248 af

Reach 135: Avg. Flow Depth=0.32' Max Vel=10.11 fps Inflow=1.70 cfs 0.273 af
8.0" Round Pipe n=0.012 L=225.0' S=0.0747 '/' Capacity=3.58 cfs Outflow=1.69 cfs 0.273 af

Reach 171: Avg. Flow Depth=0.35' Max Vel=17.93 fps Inflow=5.15 cfs 0.430 af
15.0" Round Pipe n=0.012 L=31.0' S=0.1755 '/' Capacity=29.32 cfs Outflow=5.14 cfs 0.430 af

Reach 172: Avg. Flow Depth=0.48' Max Vel=19.67 fps Inflow=8.62 cfs 0.722 af
15.0" Round Pipe n=0.012 L=38.0' S=0.1518 '/' Capacity=27.27 cfs Outflow=8.61 cfs 0.722 af

Reach 181: Avg. Flow Depth=0.46' Max Vel=9.79 fps Inflow=3.50 cfs 0.292 af
12.0" Round Pipe n=0.012 L=104.0' S=0.0425 '/' Capacity=7.96 cfs Outflow=3.48 cfs 0.292 af

Reach 210: Avg. Flow Depth=0.55' Max Vel=7.22 fps Inflow=3.21 cfs 0.268 af
12.0" Round Pipe n=0.012 L=66.0' S=0.0200 '/' Capacity=5.46 cfs Outflow=3.20 cfs 0.268 af

Reach 215: Avg. Flow Depth=0.61' Max Vel=4.07 fps Inflow=2.06 cfs 0.172 af
12.0" Round Pipe n=0.013 L=52.0' S=0.0069 '/' Capacity=2.96 cfs Outflow=2.04 cfs 0.172 af

Reach 216R: Avg. Flow Depth=0.52' Max Vel=22.00 fps Inflow=9.15 cfs 0.678 af
12.0" Round Pipe n=0.013 L=12.0' S=0.2267 '/' Capacity=16.96 cfs Outflow=9.15 cfs 0.678 af

Reach 220: Avg. Flow Depth=0.76' Max Vel=10.44 fps Inflow=9.46 cfs 0.805 af
18.0" Round Pipe n=0.012 L=218.0' S=0.0259 '/' Capacity=18.30 cfs Outflow=9.32 cfs 0.805 af

Reach 230: Avg. Flow Depth=0.48' Max Vel=22.44 fps Inflow=10.92 cfs 0.926 af
18.0" Round Pipe n=0.012 L=87.0' S=0.1884 '/' Capacity=49.39 cfs Outflow=10.89 cfs 0.926 af

Reach 240: Avg. Flow Depth=0.78' Max Vel=26.27 fps Inflow=24.37 cfs 1.935 af
18.0" Round Pipe n=0.012 L=100.0' S=0.1612 '/' Capacity=45.69 cfs Outflow=24.31 cfs 1.935 af

Reach 260: Avg. Flow Depth=0.93' Max Vel=17.11 fps Inflow=24.31 cfs 1.935 af
24.0" Round Pipe n=0.012 L=48.0' S=0.0515 '/' Capacity=55.59 cfs Outflow=24.27 cfs 1.935 af

Reach 410: Avg. Flow Depth=0.90' Max Vel=4.02 fps Inflow=2.96 cfs 0.247 af
12.0" Round Pipe n=0.012 L=35.0' S=0.0051 '/' Capacity=2.77 cfs Outflow=2.94 cfs 0.247 af

Reach 510: Avg. Flow Depth=0.55' Max Vel=23.28 fps Inflow=13.59 cfs 1.009 af
18.0" Round Pipe n=0.012 L=62.0' S=0.1768 '/' Capacity=47.85 cfs Outflow=13.57 cfs 1.009 af

Reach 810: Avg. Flow Depth=0.32' Max Vel=18.26 fps Inflow=3.97 cfs 0.288 af
12.0" Round Pipe n=0.012 L=210.0' S=0.2129 '/' Capacity=17.81 cfs Outflow=3.94 cfs 0.288 af

Reach 820: Avg. Flow Depth=0.39' Max Vel=13.96 fps Inflow=3.94 cfs 0.288 af
12.0" Round Pipe n=0.012 L=164.0' S=0.1020 '/' Capacity=12.32 cfs Outflow=3.91 cfs 0.288 af

Pond 2P: Peak Elev=107.53' Storage=7 cf Inflow=1.38 cfs 0.101 af
18.0" Round Culvert n=0.011 L=50.0' S=0.0100 '/' Outflow=1.38 cfs 0.101 af

Pond 3P: Inflow=1.63 cfs 0.121 af
Primary=1.63 cfs 0.121 af

Pond 5P: Inflow=13.59 cfs 1.009 af
Primary=13.59 cfs 1.009 af

Pond 6P: Inflow=1.20 cfs 0.089 af
Primary=1.20 cfs 0.089 af

Pond 7P: Inflow=5.25 cfs 0.390 af
Primary=5.25 cfs 0.390 af

Pond 8P: Inflow=3.97 cfs 0.288 af
Primary=3.97 cfs 0.288 af

Pond 10P: Inflow=4.07 cfs 0.358 af
Primary=4.07 cfs 0.358 af

Pond 11P: Inflow=1.41 cfs 0.118 af
Primary=1.41 cfs 0.118 af

Pond 12P: Inflow=2.96 cfs 0.248 af
Primary=2.96 cfs 0.248 af

Pond 13.5P: CB 13796 Peak Elev=43.21' Inflow=6.05 cfs 0.218 af
Primary=3.64 cfs 0.190 af Secondary=2.41 cfs 0.027 af Outflow=6.05 cfs 0.218 af

Pond 13P: CB at Parking Garage Entrance Peak Elev=66.50' Inflow=5.84 cfs 0.351 af
Primary=1.70 cfs 0.273 af Secondary=4.14 cfs 0.077 af Outflow=5.84 cfs 0.351 af

Pond CB-63: Peak Elev=66.15' Storage=81 cf Inflow=9.16 cfs 0.678 af
12.0" Round Culvert n=0.012 L=10.0' S=0.1340 '/' Outflow=9.15 cfs 0.678 af

Pond DMH 20: Peak Elev=40.41' Inflow=5.76 cfs 0.345 af
12.0" Round Culvert n=0.010 L=20.0' S=0.1295 '/' Outflow=5.76 cfs 0.345 af

Pond hil-01: Inflow=3.50 cfs 0.292 af
Primary=3.50 cfs 0.292 af

Pond hil-02: Inflow=24.31 cfs 1.935 af
Primary=24.31 cfs 1.935 af

Pond OS-1.: CB Peak Elev=55.29' Inflow=1.73 cfs 0.148 af
Primary=1.00 cfs 0.132 af Secondary=0.73 cfs 0.016 af Outflow=1.73 cfs 0.148 af

Pond OS-2.: CB 16258 Peak Elev=83.68' Inflow=5.17 cfs 0.442 af
Primary=3.31 cfs 0.412 af Secondary=1.86 cfs 0.030 af Outflow=5.17 cfs 0.442 af

Pond SMH 1: esmh-13952 Peak Elev=46.82' Inflow=10.28 cfs 0.995 af
18.0" Round Culvert n=0.025 L=45.0' S=0.0660 '/' Outflow=10.28 cfs 0.995 af

Pond SMH-13932: esmh-13932 Peak Elev=43.13' Inflow=11.23 cfs 1.128 af
18.0" Round Culvert n=0.025 L=45.0' S=0.0587 '/' Outflow=11.23 cfs 1.128 af

Pond SMH-20: Inflow=8.62 cfs 0.722 af
Primary=8.62 cfs 0.722 af

Link SP-C1: Inflow=3.31 cfs 0.242 af
Primary=3.31 cfs 0.242 af

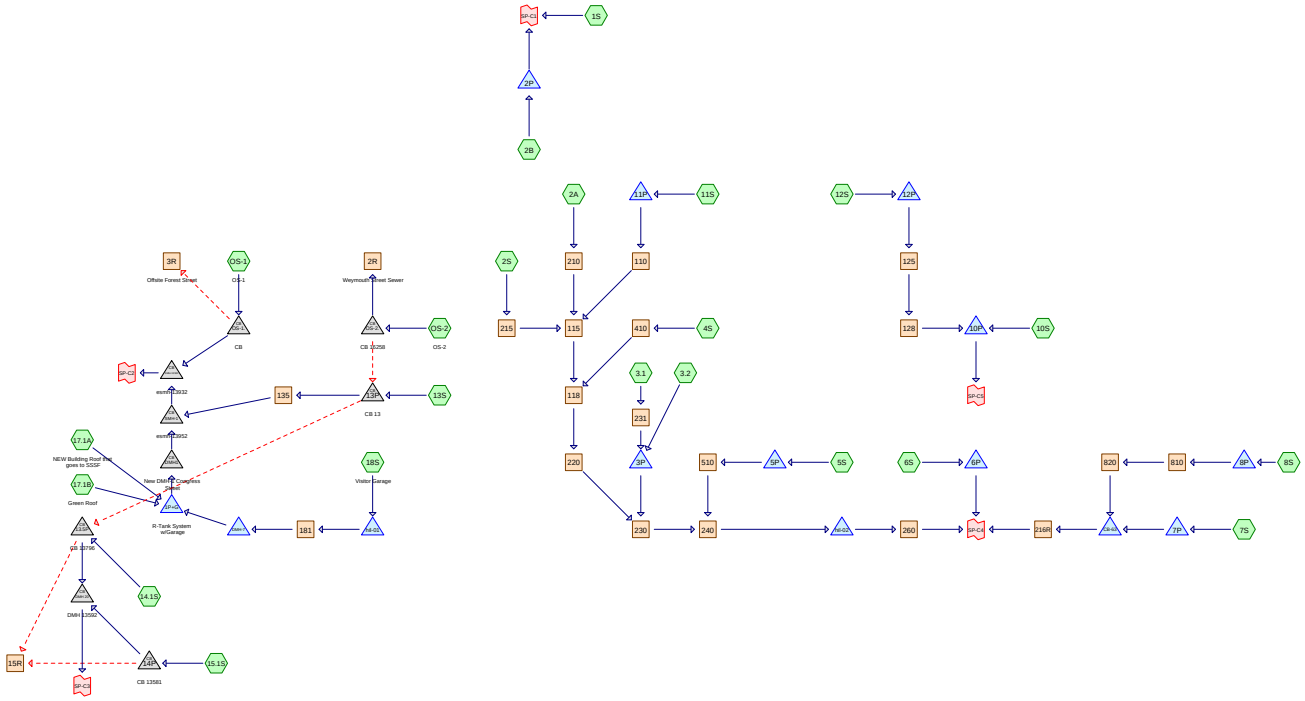
Link SP-C2: Inflow=11.23 cfs 1.128 af
Primary=11.23 cfs 1.128 af

Link SP-C3: Inflow=5.76 cfs 0.345 af
Primary=5.76 cfs 0.345 af

Link SP-C4: Inflow=34.61 cfs 2.702 af
Primary=34.61 cfs 2.702 af

Link SP-C5: Inflow=4.07 cfs 0.358 af
Primary=4.07 cfs 0.358 af

Total Runoff Area = 15.783 ac Runoff Volume = 5.230 af Average Runoff Depth = 3.98"
26.42% Pervious = 4.170 ac 73.58% Impervious = 11.613 ac



Subcat Reach Pond Link

Routing Diagram for 15466 - Congress CD Post Dev 20180207
Prepared by Sebago Technics, Inc., Printed 9/24/2018
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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
2.026	39	>75% Grass cover, Good, HSG A (1S, 2B, 2S, 3.1, 3.2, 5S, 6S, 8S, 10S, 14.1S, 15.1S)
0.276	86	Green roof (no Walkways) (17.1B)
6.639	98	Paved parking (1S, 2A, 2B, 2S, 3.1, 3.2, 4S, 5S, 6S, 7S, 8S, 10S, 11S, 12S, 13S, 14.1S, 15.1S, 18S)
0.028	98	Paved parking & roofs (17.1A)
3.260	98	Roofs (2S, 5S, 6S, 8S, 10S, 17.1A, 17.1B)
1.998	89	Urban commercial, 85% imp, HSG A (13S, OS-1, OS-2)
0.039	98	Walkways (17.1B)
1.517	43	Woods/grass comb., Fair, HSG A (7S, 8S, 13S)
15.783	**84**	**TOTAL AREA**

Summary for Subcatchment 1S:

Runoff = 0.03 cfs @ 12.16 hrs, Volume= 0.004 af, Depth= 0.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Inch Rainfall=1.00"

	Area (sf)	CN	Description
*	14,272	98	Paved parking
	5,174	39	>75% Grass cover, Good, HSG A
	19,446	82	Weighted Average
	5,174		26.61% Pervious Area
	14,272		73.39% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.4	40	0.0500	0.20		**Sheet Flow, SHEET A TO B** Grass: Short n= 0.150 P2= 3.00"
0.2	33	0.0500	3.35		**Shallow Concentrated Flow, SHALLOW B TO C** Grassed Waterway Kv= 15.0 fps
0.3	82	0.0420	4.16		**Shallow Concentrated Flow, SHALLOW C TO D** Paved Kv= 20.3 fps
0.1	74	0.0500	10.99	8.63	**Pipe Channel, PIPE D TO E** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
2.0					**Direct Entry, DIRECT**
6.0	229	Total			

Summary for Subcatchment 2A:

Runoff = 0.50 cfs @ 12.09 hrs, Volume= 0.038 af, Depth= 0.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Inch Rainfall=1.00"

	Area (sf)	CN	Description
*	25,217	98	Paved parking
	25,217		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	30	0.0050	0.60		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
1.3	112	0.0050	1.44		**Shallow Concentrated Flow, SHALLOW B TO C** Paved Kv= 20.3 fps
3.9					**Direct Entry, DIRECT**
6.0	142	Total			

Summary for Subcatchment 2B:

Runoff = 0.02 cfs @ 12.16 hrs, Volume= 0.003 af, Depth= 0.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Inch Rainfall=1.00"

	Area (sf)	CN	Description
*	10,133	98	Paved parking
	3,735	39	>75% Grass cover, Good, HSG A
	13,868	82	Weighted Average
	3,735		26.93% Pervious Area
	10,133		73.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.6	30	0.0100	0.79		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
0.5	123	0.0380	3.96		**Shallow Concentrated Flow, SHALLOW B TO C** Paved Kv= 20.3 fps
2.0	131	0.0005	1.10	0.86	**Pipe Channel, PIPE C TO D** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
2.9					**Direct Entry, DIRECT**
6.0	284	Total			

Summary for Subcatchment 2S:

Runoff = 0.13 cfs @ 12.10 hrs, Volume= 0.010 af, Depth= 0.32"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Inch Rainfall=1.00"

	Area (sf)	CN	Description
*	11,481	98	Paved parking
	2,220	39	>75% Grass cover, Good, HSG A
*	2,456	98	Roofs
	16,157	90	Weighted Average
	2,220		13.74% Pervious Area
	13,937		86.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	30	0.0180	1.00		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
0.3	78	0.0370	3.90		**Shallow Concentrated Flow, SHALLOW B TO C** Paved Kv= 20.3 fps
0.4	136	0.0107	5.08	3.99	**Pipe Channel, PIPE C TO D** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
4.8					**Direct Entry, DIRECT**
6.0	244	Total			

Summary for Subcatchment 3.1:

Runoff = 0.06 cfs @ 12.10 hrs, Volume= 0.005 af, Depth= 0.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Inch Rainfall=1.00"

	Area (sf)	CN	Description
	1,661	39	>75% Grass cover, Good, HSG A
*	8,390	98	Paved parking
	10,051	88	Weighted Average
	1,661		16.53% Pervious Area
	8,390		83.47% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	30	0.0250	1.14		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
0.6	220	0.0810	5.78		**Shallow Concentrated Flow, SHALLOW B TO C** Paved Kv= 20.3 fps
5.0					**Direct Entry, DIRECT**
6.0	250	Total			

Summary for Subcatchment 3.2:

Runoff = 0.00 cfs @ 12.36 hrs, Volume= 0.001 af, Depth= 0.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Inch Rainfall=1.00"

	Area (sf)	CN	Description
*	2,788	98	Paved parking
	1,301	39	>75% Grass cover, Good, HSG A
	4,089	79	Weighted Average
	1,301		31.82% Pervious Area
	2,788		68.18% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	66	0.0250	1.34		**Sheet Flow, SHEET A TO B**
					Smooth surfaces n= 0.011 P2= 3.00"
5.2					**Direct Entry, DIRECT**
6.0	66	Total			

Summary for Subcatchment 4S:

Runoff = 0.46 cfs @ 12.09 hrs, Volume= 0.035 af, Depth= 0.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Inch Rainfall=1.00"

	Area (sf)	CN	Description
*	23,249	98	Paved parking
	23,249		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	50	0.0050	0.67		**Sheet Flow, SHEET A TO B**
					Smooth surfaces n= 0.011 P2= 3.00"
1.3	110	0.0050	1.44		**Shallow Concentrated Flow, SHALLOW B TO C**
					Paved Kv= 20.3 fps
3.4					**Direct Entry, DIRECT**
6.0	160	Total			

Summary for Subcatchment 5S:

Runoff = 0.53 cfs @ 12.11 hrs, Volume= 0.047 af, Depth= 0.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Inch Rainfall=1.00"

	Area (sf)	CN	Description
*	25,085	98	Paved parking
	26,415	39	>75% Grass cover, Good, HSG A
*	73,528	98	Roofs
	125,028	86	Weighted Average
	26,415		21.13% Pervious Area
	98,613		78.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	35	0.0050	0.62		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
2.2	355	0.0050	2.65	0.93	**Pipe Channel, PIPE B TO C** 8.0" Round Area= 0.3 sf Perim= 2.1' r= 0.17' n= 0.012
0.1	35	0.0300	8.51	6.69	**Pipe Channel, PIPE C TO D** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
0.2	85	0.0160	6.22	4.88	**Pipe Channel, PIPE D TO E** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
2.6					**Direct Entry, DIRECT**
6.0	510	Total			

Summary for Subcatchment 6S:

Runoff = 0.05 cfs @ 12.11 hrs, Volume= 0.004 af, Depth= 0.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Inch Rainfall=1.00"

	Area (sf)	CN	Description
	2,282	39	>75% Grass cover, Good, HSG A
*	501	98	Paved parking
*	8,302	98	Roofs
	11,085	86	Weighted Average
	2,282		20.59% Pervious Area
	8,803		79.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.6	30	0.0100	0.79		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
0.3	64	0.0100	3.75	1.31	**Pipe Channel, PIPE B TO C (ROOF DRAIN)** 8.0" Round Area= 0.3 sf Perim= 2.1' r= 0.17' n= 0.012
0.0	27	0.0740	10.20	3.56	**Pipe Channel, PIPE C TO D** 8.0" Round Area= 0.3 sf Perim= 2.1' r= 0.17' n= 0.012
5.1					**Direct Entry, DIRECT**
6.0	121	Total			

Summary for Subcatchment 7S:

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Inch Rainfall=1.00"

	Area (sf)	CN	Description
*	36,084	98	Paved parking
	56,212	43	Woods/grass comb., Fair, HSG A
	92,296	65	Weighted Average
	56,212		60.90% Pervious Area
	36,084		39.10% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	75	0.0400	1.66		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
0.5	78	0.0180	2.72		**Shallow Concentrated Flow, SHALLOW B TO C** Paved Kv= 20.3 fps
0.7	219	0.0590	4.93		**Shallow Concentrated Flow, SHALLOW C TO D** Paved Kv= 20.3 fps
0.2	72	0.0970	6.32		**Shallow Concentrated Flow, SHALLOW D TO E** Paved Kv= 20.3 fps
0.2	190	0.1020	15.70	12.33	**Pipe Channel, PIPE E TO F** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
3.6					**Direct Entry, DIRECT**
6.0	634	Total			

Summary for Subcatchment 8S:

Runoff = 0.01 cfs @ 12.44 hrs, Volume= 0.004 af, Depth= 0.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Inch Rainfall=1.00"

	Area (sf)	CN	Description
*	16,895	98	Paved parking
	7,542	43	Woods/grass comb., Fair, HSG A
	8,958	39	>75% Grass cover, Good, HSG A
*	12,138	98	Roofs
	45,533	77	Weighted Average
	16,500		36.24% Pervious Area
	29,033		63.76% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	40	0.0050	0.64		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
0.3	93	0.0100	4.91	3.86	**Pipe Channel, PIPE B TO C** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
0.5	135	0.0100	4.91	3.86	**Pipe Channel, PIPE C TO D** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
0.4	131	0.0100	4.91	3.86	**Pipe Channel, PIPE D TO E** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
3.8					**Direct Entry, DIRECT**
6.0	399	Total			

Summary for Subcatchment 10S:

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Inch Rainfall=1.00"

	Area (sf)	CN	Description
	25,937	39	>75% Grass cover, Good, HSG A
*	9,276	98	Paved parking
*	2,034	98	Roofs
	37,247	57	Weighted Average
	25,937		69.64% Pervious Area
	11,310		30.36% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	30	0.0400	1.38		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
0.1	37	0.0540	4.72		**Shallow Concentrated Flow, SHALLOW B TO C** Paved Kv= 20.3 fps
0.4	75	0.0200	2.87		**Shallow Concentrated Flow, SHALLOW C TO D** Paved Kv= 20.3 fps
0.3	113	0.0210	7.12	5.59	**Pipe Channel, PIPE D TO E** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
0.3	71	0.0050	3.47	2.73	**Pipe Channel, PIPE E TO F** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
4.5					**Direct Entry, DIRECT**
6.0	326	Total			

Summary for Subcatchment 11S:

Runoff = 0.22 cfs @ 12.09 hrs, Volume= 0.017 af, Depth= 0.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Inch Rainfall=1.00"

	Area (sf)	CN	Description
*	11,050	98	Paved parking
	11,050		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	30	0.0050	0.60		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
0.7	60	0.0050	1.44		**Shallow Concentrated Flow, SHALLOW B TO C** Paved Kv= 20.3 fps
4.5					**Direct Entry, DIRECT**
6.0	90	Total			

Summary for Subcatchment 12S:

Runoff = 0.46 cfs @ 12.09 hrs, Volume= 0.035 af, Depth= 0.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Inch Rainfall=1.00"

	Area (sf)	CN	Description
*	23,268	98	Paved parking
	23,268		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	30	0.0050	0.60		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
0.9	80	0.0050	1.44		**Shallow Concentrated Flow, SHALLOW B TO C** Paved Kv= 20.3 fps
0.4	90	0.0100	3.75	1.31	**Pipe Channel, PIPE C TO D** 8.0" Round Area= 0.3 sf Perim= 2.1' r= 0.17' n= 0.012
3.9					**Direct Entry, DIRECT**
6.0	200	Total			

Summary for Subcatchment 13S:

Runoff = 0.29 cfs @ 12.10 hrs, Volume= 0.022 af, Depth= 0.32"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Inch Rainfall=1.00"

	Area (sf)	CN	Description
*	14,571	98	Paved parking
	2,309	43	Woods/grass comb., Fair, HSG A
	19,134	89	Urban commercial, 85% imp, HSG A
	36,014	90	Weighted Average
	5,179		14.38% Pervious Area
	30,835		85.62% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.6	40	0.1000	0.12		**Sheet Flow, SHEET A TO B** Woods: Light underbrush n= 0.400 P2= 3.00"
0.2	51	0.6400	4.00		**Shallow Concentrated Flow, SHALLOW B TO C** Woodland Kv= 5.0 fps
0.4	105	0.0420	4.16		**Shallow Concentrated Flow, SHALLOW C TO D** Paved Kv= 20.3 fps
6.2	196	Total			

Summary for Subcatchment 14.1S:

Runoff = 0.21 cfs @ 12.10 hrs, Volume= 0.015 af, Depth= 0.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Inch Rainfall=1.00"

	Area (sf)	CN	Description
*	19,947	98	Paved parking
	2,530	39	>75% Grass cover, Good, HSG A
	22,477	91	Weighted Average
	2,530		11.26% Pervious Area
	19,947		88.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	30	0.0500	1.51		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
1.4	295	0.0320	3.63		**Shallow Concentrated Flow, SHALLOW B TO C** Paved Kv= 20.3 fps
4.3					**Direct Entry, DIRECT ENTRY**
6.0	325	Total			

Summary for Subcatchment 15.1S:

Runoff = 0.00 cfs @ 15.12 hrs, Volume= 0.001 af, Depth= 0.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Inch Rainfall=1.00"

	Area (sf)	CN	Description
	8,038	39	>75% Grass cover, Good, HSG A
*	10,606	98	Paved parking
	18,644	73	Weighted Average
	8,038		43.11% Pervious Area
	10,606		56.89% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	18	0.2770	0.33		**Sheet Flow, SHEET A TO B** Grass: Short n= 0.150 P2= 3.00"
0.4	170	0.1920	6.57		**Shallow Concentrated Flow, SHALLOW B TO C** Grassed Waterway Kv= 15.0 fps
0.6	195	0.0760	5.60		**Shallow Concentrated Flow, SHALLOW C TO D** Paved Kv= 20.3 fps
4.1					**Direct Entry, DIRECT**
6.0	383	Total			

Summary for Subcatchment 17.1A: NEW Building Roof that goes to SSSF

Runoff = 0.87 cfs @ 12.09 hrs, Volume= 0.066 af, Depth= 0.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Inch Rainfall=1.00"

	Area (sf)	CN	Description
*	1,202	98	Paved parking & roofs
*	42,414	98	Roofs
	43,616	98	Weighted Average
	43,616		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment 17.1B: Green Roof

Runoff = 0.09 cfs @ 12.10 hrs, Volume= 0.007 af, Depth= 0.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Inch Rainfall=1.00"

	Area (sf)	CN	Description
*	12,043	86	Green roof (no Walkways)
*	1,692	98	Walkways
*	1,144	98	Roofs
	14,879	88	Weighted Average
	12,043		80.94% Pervious Area
	2,836		19.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	40	0.0100	0.84		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
0.1	14	0.0100	2.03		**Shallow Concentrated Flow, SHALLOW B TO C** Paved Kv= 20.3 fps
0.1	134	0.1600	15.00	5.24	**Pipe Channel, PIPE C TO D** 8.0" Round Area= 0.3 sf Perim= 2.1' r= 0.17' n= 0.012
5.0					**Direct Entry, DIRECT**
6.0	188	Total			

Summary for Subcatchment 18S: Visitor Garage

Runoff = 0.53 cfs @ 12.09 hrs, Volume= 0.040 af, Depth= 0.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Inch Rainfall=1.00"

	Area (sf)	CN	Description
*	26,386	98	Paved parking
	26,386		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	40	0.0100	0.84		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
0.3	141	0.2000	9.08		**Shallow Concentrated Flow, SHALLOW B TO C** Paved Kv= 20.3 fps
0.3	83	0.0110	5.15	4.05	**Pipe Channel, PIPE C TO D** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
4.6					**Direct Entry, DIRECT**
6.0	264	Total			

Summary for Subcatchment OS-1: OS-1

Runoff = 0.10 cfs @ 12.16 hrs, Volume= 0.009 af, Depth= 0.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Inch Rainfall=1.00"

Area (sf)	CN	Description
17,031	89	Urban commercial, 85% imp, HSG A
2,555		15.00% Pervious Area
14,476		85.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.1	60	0.0400	0.20		**Sheet Flow, Sheet flow A-B** Grass: Short n= 0.150 P2= 3.00"
0.9	180	0.0250	3.21		**Shallow Concentrated Flow, Gutter Flow B-C (Russell Street)** Paved Kv= 20.3 fps
0.7	80	0.0100	2.03		**Shallow Concentrated Flow, Gutter Flow C-D (Hill Street)** Paved Kv= 20.3 fps
1.1	375	0.0800	5.74		**Shallow Concentrated Flow, Gutter Flow D-E (Ellsworth Street)** Paved Kv= 20.3 fps
2.2	605	0.0500	4.54		**Shallow Concentrated Flow, Gutter Flow E-F (Congress Street)** Paved Kv= 20.3 fps
10.0	1,300	Total			

Summary for Subcatchment OS-2: OS-2

Runoff = 0.31 cfs @ 12.16 hrs, Volume= 0.028 af, Depth= 0.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Inch Rainfall=1.00"

Area (sf)	CN	Description
50,885	89	Urban commercial, 85% imp, HSG A
7,633		15.00% Pervious Area
43,252		85.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.1	60	0.0400	0.20		**Sheet Flow, Sheet flow A-B** Grass: Short n= 0.150 P2= 3.00"
0.9	180	0.0250	3.21		**Shallow Concentrated Flow, Gutter Flow B-C (Russell Street)** Paved Kv= 20.3 fps
0.7	80	0.0100	2.03		**Shallow Concentrated Flow, Gutter Flow C-D (Hill Street)** Paved Kv= 20.3 fps
1.1	375	0.0800	5.74		**Shallow Concentrated Flow, Gutter Flow D-E (Ellsworth Street)** Paved Kv= 20.3 fps
2.2	605	0.0500	4.54		**Shallow Concentrated Flow, Gutter Flow E-F (Congress Street)** Paved Kv= 20.3 fps
10.0	1,300	Total			

Summary for Reach 2R: Weymouth Street Sewer

Inflow Area = 1.168 ac, 85.00% Impervious, Inflow Depth = 0.28" for 1-Inch event
Inflow = 0.31 cfs @ 12.16 hrs, Volume= 0.028 af
Outflow = 0.31 cfs @ 12.16 hrs, Volume= 0.028 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Summary for Reach 3R: Offsite Forest Street

Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Summary for Reach 15R:

Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

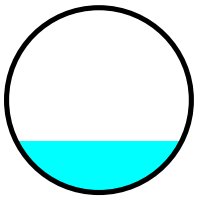
Summary for Reach 110:

Inflow Area = 0.254 ac,100.00% Impervious, Inflow Depth = 0.79" for 1-Inch event
Inflow = 0.22 cfs @ 12.09 hrs, Volume= 0.017 af
Outflow = 0.22 cfs @ 12.10 hrs, Volume= 0.017 af, Atten= 1%, Lag= 0.5 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.79 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 0.92 fps, Avg. Travel Time= 0.9 min

Peak Storage= 4 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.19'
Bank-Full Depth= 0.67' Flow Area= 0.3 sf, Capacity= 1.31 cfs

8.0" Round Pipe
n= 0.012
Length= 51.0' Slope= 0.0100 '/'
Inlet Invert= 110.51', Outlet Invert= 110.00'



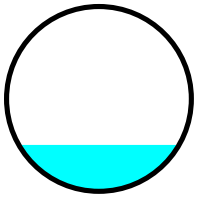
Summary for Reach 115:

Inflow Area = 1.203 ac, 95.77% Impervious, Inflow Depth = 0.65" for 1-Inch event
Inflow = 0.84 cfs @ 12.10 hrs, Volume= 0.065 af
Outflow = 0.83 cfs @ 12.11 hrs, Volume= 0.065 af, Atten= 1%, Lag= 0.5 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.52 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 1.16 fps, Avg. Travel Time= 1.0 min

Peak Storage= 16 cf @ 12.10 hrs
Average Depth at Peak Storage= 0.31'
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 6.17 cfs

15.0" Round Pipe
n= 0.012
Length= 67.0' Slope= 0.0078 '/'
Inlet Invert= 110.11', Outlet Invert= 109.59'



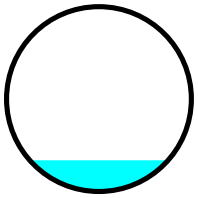
Summary for Reach 118:

Inflow Area = 1.737 ac, 97.07% Impervious, Inflow Depth = 0.69" for 1-Inch event
Inflow = 1.29 cfs @ 12.10 hrs, Volume= 0.100 af
Outflow = 1.28 cfs @ 12.11 hrs, Volume= 0.100 af, Atten= 1%, Lag= 0.3 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 6.58 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 2.18 fps, Avg. Travel Time= 0.7 min

Peak Storage= 18 cf @ 12.10 hrs
Average Depth at Peak Storage= 0.25'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 20.98 cfs

18.0" Round Pipe
n= 0.012
Length= 90.0' Slope= 0.0340 '/'
Inlet Invert= 109.44', Outlet Invert= 106.38'



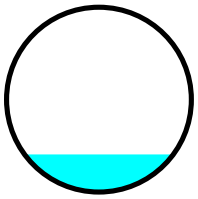
Summary for Reach 125:

Inflow Area = 0.534 ac,100.00% Impervious, Inflow Depth = 0.79" for 1-Inch event
Inflow = 0.46 cfs @ 12.09 hrs, Volume= 0.035 af
Outflow = 0.46 cfs @ 12.10 hrs, Volume= 0.035 af, Atten= 1%, Lag= 0.5 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 4.10 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 1.35 fps, Avg. Travel Time= 1.0 min

Peak Storage= 9 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.20'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 5.21 cfs

12.0" Round Pipe
n= 0.012
Length= 79.0' Slope= 0.0182 '/'
Inlet Invert= 131.87', Outlet Invert= 130.43'



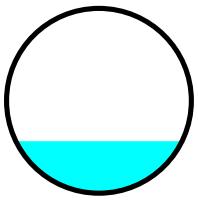
Summary for Reach 128:

Inflow Area = 0.534 ac,100.00% Impervious, Inflow Depth = 0.79" for 1-Inch event
Inflow = 0.46 cfs @ 12.10 hrs, Volume= 0.035 af
Outflow = 0.45 cfs @ 12.11 hrs, Volume= 0.035 af, Atten= 2%, Lag= 0.7 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.54 fps, Min. Travel Time= 0.5 min
Avg. Velocity = 0.84 fps, Avg. Travel Time= 1.4 min

Peak Storage= 13 cf @ 12.10 hrs
Average Depth at Peak Storage= 0.28'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.67 cfs

12.0" Round Pipe
n= 0.012
Length= 71.0' Slope= 0.0048 '/'
Inlet Invert= 130.40', Outlet Invert= 130.06'



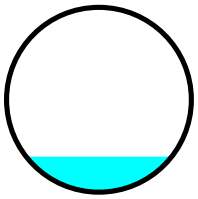
Summary for Reach 135:

Inflow Area = 0.827 ac, 85.62% Impervious, Inflow Depth = 0.32" for 1-Inch event
Inflow = 0.29 cfs @ 12.10 hrs, Volume= 0.022 af
Outflow = 0.28 cfs @ 12.12 hrs, Volume= 0.022 af, Atten= 3%, Lag= 1.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 6.13 fps, Min. Travel Time= 0.6 min
Avg. Velocity = 2.40 fps, Avg. Travel Time= 1.6 min

Peak Storage= 11 cf @ 12.11 hrs
Average Depth at Peak Storage= 0.13'
Bank-Full Depth= 0.67' Flow Area= 0.3 sf, Capacity= 3.58 cfs

8.0" Round Pipe
n= 0.012
Length= 225.0' Slope= 0.0747 '/'
Inlet Invert= 62.69', Outlet Invert= 45.89'



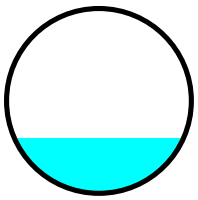
Summary for Reach 181:

Inflow Area = 0.606 ac,100.00% Impervious, Inflow Depth = 0.79" for 1-Inch event
Inflow = 0.53 cfs @ 12.09 hrs, Volume= 0.040 af
Outflow = 0.52 cfs @ 12.10 hrs, Volume= 0.040 af, Atten= 1%, Lag= 0.6 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.69 fps, Min. Travel Time= 0.4 min
Avg. Velocity = 0.88 fps, Avg. Travel Time= 1.1 min

Peak Storage= 12 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.30'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.73 cfs

12.0" Round Pipe
n= 0.012
Length= 60.0' Slope= 0.0050 '/'
Inlet Invert= 54.46', Outlet Invert= 54.16'



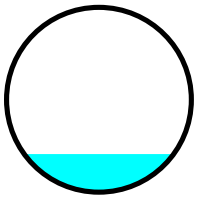
Summary for Reach 210:

Inflow Area = 0.579 ac,100.00% Impervious, Inflow Depth = 0.79" for 1-Inch event
Inflow = 0.50 cfs @ 12.09 hrs, Volume= 0.038 af
Outflow = 0.50 cfs @ 12.10 hrs, Volume= 0.038 af, Atten= 1%, Lag= 0.4 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 4.34 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 1.43 fps, Avg. Travel Time= 0.8 min

Peak Storage= 8 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.21'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 5.46 cfs

12.0" Round Pipe
n= 0.012
Length= 66.0' Slope= 0.0200 '/'
Inlet Invert= 122.35', Outlet Invert= 121.03'



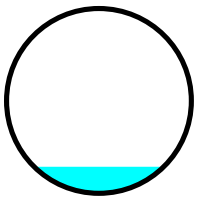
Summary for Reach 215:

Inflow Area = 0.371 ac, 86.26% Impervious, Inflow Depth = 0.32" for 1-Inch event
Inflow = 0.13 cfs @ 12.10 hrs, Volume= 0.010 af
Outflow = 0.13 cfs @ 12.11 hrs, Volume= 0.010 af, Atten= 2%, Lag= 0.7 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.89 fps, Min. Travel Time= 0.5 min
Avg. Velocity = 0.74 fps, Avg. Travel Time= 1.2 min

Peak Storage= 4 cf @ 12.11 hrs
Average Depth at Peak Storage= 0.14'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.96 cfs

12.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 52.0' Slope= 0.0069 '/'
Inlet Invert= 121.67', Outlet Invert= 121.31'



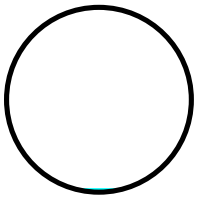
Summary for Reach 216R:

Inflow Area = 3.164 ac, 47.24% Impervious, Inflow Depth = 0.02" for 1-Inch event
Inflow = 0.01 cfs @ 12.52 hrs, Volume= 0.004 af
Outflow = 0.01 cfs @ 12.52 hrs, Volume= 0.004 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.12 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 2.27 fps, Avg. Travel Time= 0.1 min

Peak Storage= 0 cf @ 12.52 hrs
Average Depth at Peak Storage= 0.02'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 16.96 cfs

12.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 12.0' Slope= 0.2267 '/'
Inlet Invert= 60.11', Outlet Invert= 57.39'



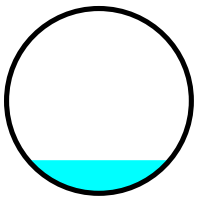
Summary for Reach 220:

Inflow Area = 1.737 ac, 97.07% Impervious, Inflow Depth = 0.69" for 1-Inch event
Inflow = 1.28 cfs @ 12.11 hrs, Volume= 0.100 af
Outflow = 1.23 cfs @ 12.13 hrs, Volume= 0.100 af, Atten= 4%, Lag= 1.1 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 5.93 fps, Min. Travel Time= 0.6 min
Avg. Velocity = 1.97 fps, Avg. Travel Time= 1.8 min

Peak Storage= 47 cf @ 12.12 hrs
Average Depth at Peak Storage= 0.27'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 18.30 cfs

18.0" Round Pipe
n= 0.012
Length= 218.0' Slope= 0.0259 '/'
Inlet Invert= 105.99', Outlet Invert= 100.35'



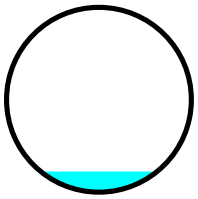
Summary for Reach 230:

Inflow Area = 2.062 ac, 94.23% Impervious, Inflow Depth = 0.61" for 1-Inch event
Inflow = 1.29 cfs @ 12.12 hrs, Volume= 0.105 af
Outflow = 1.28 cfs @ 12.13 hrs, Volume= 0.105 af, Atten= 1%, Lag= 0.3 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 11.91 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 4.13 fps, Avg. Travel Time= 0.4 min

Peak Storage= 9 cf @ 12.13 hrs
Average Depth at Peak Storage= 0.17'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 49.39 cfs

18.0" Round Pipe
n= 0.012
Length= 87.0' Slope= 0.1884 '/'
Inlet Invert= 100.16', Outlet Invert= 83.77'



Summary for Reach 231:

Inflow Area = 0.231 ac, 83.47% Impervious, Inflow Depth = 0.25" for 1-Inch event
Inflow = 0.06 cfs @ 12.10 hrs, Volume= 0.005 af
Outflow = 0.06 cfs @ 12.10 hrs, Volume= 0.005 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

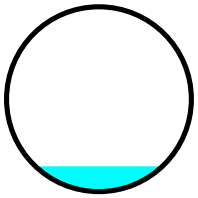
Summary for Reach 240:

Inflow Area = 4.932 ac, 85.29% Impervious, Inflow Depth = 0.37" for 1-Inch event
Inflow = 1.80 cfs @ 12.12 hrs, Volume= 0.153 af
Outflow = 1.78 cfs @ 12.13 hrs, Volume= 0.153 af, Atten= 1%, Lag= 0.3 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 12.45 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 4.31 fps, Avg. Travel Time= 0.4 min

Peak Storage= 14 cf @ 12.12 hrs
Average Depth at Peak Storage= 0.20'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 45.69 cfs

18.0" Round Pipe
n= 0.012
Length= 100.0' Slope= 0.1612 '/'
Inlet Invert= 67.96', Outlet Invert= 51.84'



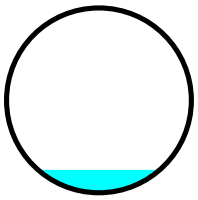
Summary for Reach 260:

Inflow Area = 4.932 ac, 85.29% Impervious, Inflow Depth = 0.37" for 1-Inch event
Inflow = 1.78 cfs @ 12.13 hrs, Volume= 0.153 af
Outflow = 1.77 cfs @ 12.13 hrs, Volume= 0.153 af, Atten= 0%, Lag= 0.2 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 8.04 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 2.79 fps, Avg. Travel Time= 0.3 min

Peak Storage= 11 cf @ 12.13 hrs
Average Depth at Peak Storage= 0.25'
Bank-Full Depth= 2.00' Flow Area= 3.1 sf, Capacity= 55.59 cfs

24.0" Round Pipe
n= 0.012
Length= 48.0' Slope= 0.0515 '/'
Inlet Invert= 51.84', Outlet Invert= 49.37'



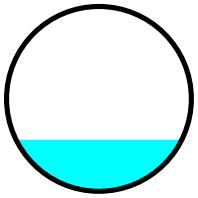
Summary for Reach 410:

Inflow Area = 0.534 ac,100.00% Impervious, Inflow Depth = 0.79" for 1-Inch event
Inflow = 0.46 cfs @ 12.09 hrs, Volume= 0.035 af
Outflow = 0.46 cfs @ 12.09 hrs, Volume= 0.035 af, Atten= 1%, Lag= 0.4 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.62 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 0.86 fps, Avg. Travel Time= 0.7 min

Peak Storage= 6 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.28'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.77 cfs

12.0" Round Pipe
n= 0.012
Length= 35.0' Slope= 0.0051 '/'
Inlet Invert= 110.68', Outlet Invert= 110.50'



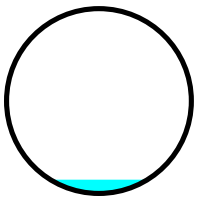
Summary for Reach 510:

Inflow Area = 2.870 ac, 78.87% Impervious, Inflow Depth = 0.20" for 1-Inch event
Inflow = 0.53 cfs @ 12.11 hrs, Volume= 0.047 af
Outflow = 0.52 cfs @ 12.11 hrs, Volume= 0.047 af, Atten= 1%, Lag= 0.2 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 8.95 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 3.94 fps, Avg. Travel Time= 0.3 min

Peak Storage= 4 cf @ 12.11 hrs
Average Depth at Peak Storage= 0.11'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 47.85 cfs

18.0" Round Pipe
n= 0.012
Length= 62.0' Slope= 0.1768 '/'
Inlet Invert= 95.90', Outlet Invert= 84.94'



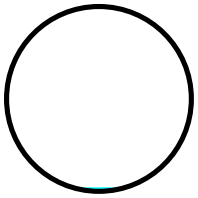
Summary for Reach 810:

Inflow Area = 1.045 ac, 63.76% Impervious, Inflow Depth = 0.05" for 1-Inch event
Inflow = 0.01 cfs @ 12.44 hrs, Volume= 0.004 af
Outflow = 0.01 cfs @ 12.47 hrs, Volume= 0.004 af, Atten= 1%, Lag= 1.9 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.26 fps, Min. Travel Time= 1.1 min
Avg. Velocity = 2.35 fps, Avg. Travel Time= 1.5 min

Peak Storage= 1 cf @ 12.45 hrs
Average Depth at Peak Storage= 0.02'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 17.81 cfs

12.0" Round Pipe
n= 0.012
Length= 210.0' Slope= 0.2129 '/'
Inlet Invert= 120.21', Outlet Invert= 75.50'



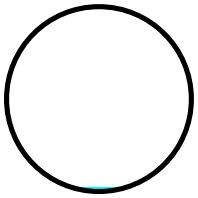
Summary for Reach 820:

Inflow Area = 1.045 ac, 63.76% Impervious, Inflow Depth = 0.05" for 1-Inch event
Inflow = 0.01 cfs @ 12.47 hrs, Volume= 0.004 af
Outflow = 0.01 cfs @ 12.50 hrs, Volume= 0.004 af, Atten= 2%, Lag= 2.1 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.55 fps, Min. Travel Time= 1.1 min
Avg. Velocity = 1.82 fps, Avg. Travel Time= 1.5 min

Peak Storage= 1 cf @ 12.48 hrs
Average Depth at Peak Storage= 0.02'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 12.32 cfs

12.0" Round Pipe
n= 0.012
Length= 164.0' Slope= 0.1020 '/'
Inlet Invert= 75.58', Outlet Invert= 58.86'



Summary for Pond 1P+G: R-Tank System w/Garage

Inflow Area = 1.949 ac, 85.81% Impervious, Inflow Depth = 0.70" for 1-Inch event
Inflow = 1.48 cfs @ 12.09 hrs, Volume= 0.113 af
Outflow = 0.04 cfs @ 14.20 hrs, Volume= 0.030 af, Atten= 98%, Lag= 126.4 min
Primary = 0.04 cfs @ 14.20 hrs, Volume= 0.030 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Peak Elev= 50.69' @ 17.15 hrs Surf.Area= 2,963 sf Storage= 3,942 cf

Plug-Flow detention time= 504.5 min calculated for 0.030 af (26% of inflow)
Center-of-Mass det. time= 345.5 min (1,139.4 - 794.0)

Volume	Invert	Avail.Storage	Storage Description
#1A	50.58'	973 cf	**8.50'W x 76.37'L x 5.75'H Field A** 3,732 cf Overall - 1,300 cf Embedded = 2,432 cf x 40.0% Voids
#2A	51.33'	1,300 cf	**Cultec R-902HD** x 20 Inside #1 Effective Size= 69.8"W x 48.0"H => 17.65 sf x 3.67'L = 64.7 cf Overall Size= 78.0"W x 48.0"H x 4.10'L with 0.44' Overlap Cap Storage= +2.8 cf x 2 x 1 rows = 5.5 cf
#3B	48.37'	3,596 cf	**10.56'W x 179.94'L x 8.96'H Field B** 17,019 cf Overall - 8,029 cf Embedded = 8,989 cf x 40.0% Voids
#4B	48.37'	7,628 cf	**ACF R-Tank HD 5.0** x 375 Inside #3 Inside= 15.7"W x 83.5"H => 8.67 sf x 2.35'L = 20.3 cf Outside= 15.7"W x 83.5"H => 9.13 sf x 2.35'L = 21.4 cf 5 Rows of 75 Chambers
#5C	50.83'	286 cf	**8.50'W x 21.37'L x 5.75'H Field C** 1,044 cf Overall - 329 cf Embedded = 715 cf x 40.0% Voids
#6C	51.58'	329 cf	**Cultec R-902HD** x 5 Inside #5 Effective Size= 69.8"W x 48.0"H => 17.65 sf x 3.67'L = 64.7 cf Overall Size= 78.0"W x 48.0"H x 4.10'L with 0.44' Overlap Cap Storage= +2.8 cf x 2 x 1 rows = 5.5 cf
#7D	48.37'	675 cf	**10.56'W x 39.19'L x 7.96'H Field D** 3,293 cf Overall - 1,606 cf Embedded = 1,687 cf x 40.0% Voids
#8D	48.37'	1,526 cf	**ACF R-Tank HD 5.0** x 75 Inside #7 Inside= 15.7"W x 83.5"H => 8.67 sf x 2.35'L = 20.3 cf Outside= 15.7"W x 83.5"H => 9.13 sf x 2.35'L = 21.4 cf 5 Rows of 15 Chambers
		16,312 cf	Total Available Storage

Storage Group A created with Chamber Wizard
Storage Group B created with Chamber Wizard
Storage Group C created with Chamber Wizard
Storage Group D created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	45.94'	**12.0" Round Stromdrain** L= 37.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 45.94' / 45.76' S= 0.0049 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	46.04'	**1.5" Vert. Orifice/Grate** C= 0.600
#3	Device 2	48.37'	**2.410 in/hr Filtration over Surface area above 48.37'** Excluded Surface area = 2,314 sf
#4	Device 1	51.20'	**6.0" Vert. Orifice** C= 0.600
#5	Primary	52.20'	**0.4' long x 2.00' rise Sharp-Crested Vee/Trap Weir** Cv= 2.62 (C= 3.28)
#6	Device 1	53.95'	**5.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Primary OutFlow Max=0.04 cfs @ 14.20 hrs HW=50.58' (Free Discharge)
- **1=Stromdrain** (Passes 0.04 cfs of 7.55 cfs potential flow)
  - **2=Orifice/Grate** (Passes 0.04 cfs of 0.13 cfs potential flow)
    - **3=Filtration** (Exfiltration Controls 0.04 cfs)
  - **4=Orifice** (Controls 0.00 cfs)
  - **6=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)
- **5=Sharp-Crested Vee/Trap Weir** (Controls 0.00 cfs)

Summary for Pond 2P:

Inflow Area = 0.318 ac, 73.07% Impervious, Inflow Depth = 0.11" for 1-Inch event
Inflow = 0.02 cfs @ 12.16 hrs, Volume= 0.003 af
Outflow = 0.02 cfs @ 12.16 hrs, Volume= 0.003 af, Atten= 0%, Lag= 0.2 min
Primary = 0.02 cfs @ 12.16 hrs, Volume= 0.003 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 107.03' @ 12.16 hrs Surf.Area= 13 sf Storage= 0 cf

Plug-Flow detention time= 0.3 min calculated for 0.003 af (100% of inflow)
Center-of-Mass det. time= 0.3 min (928.3 - 928.0)

Volume	Invert	Avail.Storage	Storage Description
#1	107.00'	169 cf	**Custom Stage Data (Prismatic)** Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
107.00	13	0	0
120.00	13	169	169

Device	Routing	Invert	Outlet Devices
#1	Primary	107.00'	**18.0" Round Culvert** L= 50.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 107.00' / 106.50' S= 0.0100 '/' Cc= 0.900 n= 0.011, Flow Area= 1.77 sf

Primary OutFlow Max=0.00 cfs @ 12.16 hrs HW=107.03' (Free Discharge)
- **1=Culvert** (Barrel Controls 0.00 cfs @ 0.81 fps)

Summary for Pond 3P:

Inflow Area = 0.325 ac, 79.05% Impervious, Inflow Depth = 0.20" for 1-Inch event
Inflow = 0.06 cfs @ 12.11 hrs, Volume= 0.005 af
Primary = 0.06 cfs @ 12.11 hrs, Volume= 0.005 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Summary for Pond 5P:

Inflow Area = 2.870 ac, 78.87% Impervious, Inflow Depth = 0.20" for 1-Inch event
Inflow = 0.53 cfs @ 12.11 hrs, Volume= 0.047 af
Primary = 0.53 cfs @ 12.11 hrs, Volume= 0.047 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Summary for Pond 6P:

Inflow Area = 0.254 ac, 79.41% Impervious, Inflow Depth = 0.20" for 1-Inch event
Inflow = 0.05 cfs @ 12.11 hrs, Volume= 0.004 af
Primary = 0.05 cfs @ 12.11 hrs, Volume= 0.004 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Summary for Pond 7P:

Inflow Area = 2.119 ac, 39.10% Impervious, Inflow Depth = 0.00" for 1-Inch event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Summary for Pond 8P:

Inflow Area = 1.045 ac, 63.76% Impervious, Inflow Depth = 0.05" for 1-Inch event
Inflow = 0.01 cfs @ 12.44 hrs, Volume= 0.004 af
Primary = 0.01 cfs @ 12.44 hrs, Volume= 0.004 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Summary for Pond 10P:

Inflow Area = 1.389 ac, 57.14% Impervious, Inflow Depth = 0.30" for 1-Inch event
Inflow = 0.45 cfs @ 12.11 hrs, Volume= 0.035 af
Primary = 0.45 cfs @ 12.11 hrs, Volume= 0.035 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Summary for Pond 11P:

Inflow Area = 0.254 ac,100.00% Impervious, Inflow Depth = 0.79" for 1-Inch event
Inflow = 0.22 cfs @ 12.09 hrs, Volume= 0.017 af
Primary = 0.22 cfs @ 12.09 hrs, Volume= 0.017 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Summary for Pond 12P:

Inflow Area = 0.534 ac,100.00% Impervious, Inflow Depth = 0.79" for 1-Inch event
Inflow = 0.46 cfs @ 12.09 hrs, Volume= 0.035 af
Primary = 0.46 cfs @ 12.09 hrs, Volume= 0.035 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Summary for Pond 13.5P: CB 13796

Inflow Area = 0.516 ac, 88.74% Impervious, Inflow Depth = 0.36" for 1-Inch event
Inflow = 0.21 cfs @ 12.10 hrs, Volume= 0.015 af
Outflow = 0.21 cfs @ 12.10 hrs, Volume= 0.015 af, Atten= 0%, Lag= 0.0 min
Primary = 0.21 cfs @ 12.10 hrs, Volume= 0.015 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 42.60' @ 12.10 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	38.86'	**10.0" Round 12" SD** L= 15.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 38.86' / 37.64' S= 0.0813 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf
#2	Device 1	42.50'	**2.0' long Curb Inlet** 2 End Contraction(s)
#3	Secondary	43.00'	**10.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.20 cfs @ 12.10 hrs HW=42.60' (Free Discharge)
└**1=12" SD** (Passes 0.20 cfs of 4.79 cfs potential flow)
└**2=Curb Inlet** (Weir Controls 0.20 cfs @ 1.03 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=38.86' (Free Discharge)
└**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 13P: CB 13

Inflow Area = 0.827 ac, 85.62% Impervious, Inflow Depth = 0.32" for 1-Inch event
Inflow = 0.29 cfs @ 12.10 hrs, Volume= 0.022 af
Outflow = 0.29 cfs @ 12.10 hrs, Volume= 0.022 af, Atten= 0%, Lag= 0.0 min
Primary = 0.29 cfs @ 12.10 hrs, Volume= 0.022 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 66.03' @ 12.10 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	66.00'	**1.0" x 3.0" Horiz. Grate X 24.00** C= 0.600 Limited to weir flow at low heads

#2	Secondary	66.20'	**5.0' long x 2.0' 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 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

Primary OutFlow Max=0.28 cfs @ 12.10 hrs HW=66.03' (Free Discharge)
└**1=Grate** (Weir Controls 0.28 cfs @ 0.58 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=66.00' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 14P: CB 13581

Inflow Area = 0.428 ac, 56.89% Impervious, Inflow Depth = 0.02" for 1-Inch event
Inflow = 0.00 cfs @ 15.12 hrs, Volume= 0.001 af
Outflow = 0.00 cfs @ 15.12 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 15.12 hrs, Volume= 0.001 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 42.50' @ 15.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	40.62'	**8.0" Round 12" SD** L= 15.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 40.62' / 39.00' S= 0.1080 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.35 sf
#2	Device 1	42.50'	**2.0' long Curb Inlet** 2 End Contraction(s)
#3	Secondary	43.00'	**10.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.00 cfs @ 15.12 hrs HW=42.50' (Free Discharge)
└**1=12" SD** (Passes 0.00 cfs of 2.09 cfs potential flow)
└**2=Curb Inlet** (Weir Controls 0.00 cfs @ 0.11 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=40.62' (Free Discharge)
└**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond CB-63:

Inflow Area = 3.164 ac, 47.24% Impervious, Inflow Depth = 0.02" for 1-Inch event
Inflow = 0.01 cfs @ 12.50 hrs, Volume= 0.004 af
Outflow = 0.01 cfs @ 12.52 hrs, Volume= 0.004 af, Atten= 0%, Lag= 0.8 min
Primary = 0.01 cfs @ 12.52 hrs, Volume= 0.004 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 59.84' @ 12.52 hrs Surf.Area= 13 sf Storage= 1 cf

Plug-Flow detention time= 0.8 min calculated for 0.004 af (100% of inflow)

Center-of-Mass det. time= 0.8 min (1,000.9 - 1,000.1)

Volume	Invert	Avail.Storage	Storage Description
#1	59.80'	81 cf	**Custom Stage Data (Prismatic)** Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
59.80	13	0	0
66.00	13	81	81

Device	Routing	Invert	Outlet Devices
#1	Primary	59.80'	**12.0" Round Culvert** L= 10.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 59.80' / 58.46' S= 0.1340 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.01 cfs @ 12.52 hrs HW=59.84' (Free Discharge)
1=Culvert (Inlet Controls 0.01 cfs @ 0.71 fps)

Summary for Pond DMH 20: DMH 13592

Inflow Area = 0.944 ac, 74.30% Impervious, Inflow Depth = 0.20" for 1-Inch event
Inflow = 0.21 cfs @ 12.10 hrs, Volume= 0.016 af
Outflow = 0.21 cfs @ 12.10 hrs, Volume= 0.016 af, Atten= 0%, Lag= 0.0 min
Primary = 0.21 cfs @ 12.10 hrs, Volume= 0.016 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 37.81' @ 12.10 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	37.59'	**12.0" Round 12" SD** L= 20.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 37.59' / 35.00' S= 0.1295 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.21 cfs @ 12.10 hrs HW=37.81' (Free Discharge)
1=12" SD (Inlet Controls 0.21 cfs @ 1.60 fps)

Summary for Pond DMH-7:

Inflow Area = 0.606 ac,100.00% Impervious, Inflow Depth = 0.79" for 1-Inch event
Inflow = 0.52 cfs @ 12.10 hrs, Volume= 0.040 af
Primary = 0.52 cfs @ 12.10 hrs, Volume= 0.040 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Summary for Pond DMH1: New DMH-1 Congress Street

Inflow Area = 1.949 ac, 85.81% Impervious, Inflow Depth = 0.18" for 1-Inch event
Inflow = 0.04 cfs @ 14.20 hrs, Volume= 0.030 af
Outflow = 0.04 cfs @ 14.20 hrs, Volume= 0.030 af, Atten= 0%, Lag= 0.0 min
Primary = 0.04 cfs @ 14.20 hrs, Volume= 0.030 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 45.77' @ 14.20 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	45.66'	**15.0" Round Stormdrain** L= 4.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 45.66' / 45.64' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.04 cfs @ 14.20 hrs HW=45.77' (Free Discharge)
1=Stormdrain (Barrel Controls 0.04 cfs @ 1.09 fps)

Summary for Pond hil-01:

Inflow Area = 0.606 ac,100.00% Impervious, Inflow Depth = 0.79" for 1-Inch event
Inflow = 0.53 cfs @ 12.09 hrs, Volume= 0.040 af
Primary = 0.53 cfs @ 12.09 hrs, Volume= 0.040 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Summary for Pond hil-02:

Inflow Area = 4.932 ac, 85.29% Impervious, Inflow Depth = 0.37" for 1-Inch event
Inflow = 1.78 cfs @ 12.13 hrs, Volume= 0.153 af
Primary = 1.78 cfs @ 12.13 hrs, Volume= 0.153 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Summary for Pond OS-1.: CB

Inflow Area = 0.391 ac, 85.00% Impervious, Inflow Depth = 0.28" for 1-Inch event
Inflow = 0.10 cfs @ 12.16 hrs, Volume= 0.009 af
Outflow = 0.10 cfs @ 12.16 hrs, Volume= 0.009 af, Atten= 0%, Lag= 0.0 min
Primary = 0.10 cfs @ 12.16 hrs, Volume= 0.009 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 55.05' @ 12.16 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	45.00'	**8.0" Round Stormdrain** L= 15.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 45.00' / 44.44' S= 0.0373 '/' Cc= 0.900

n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

#2	Device 1	55.00'	**2.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#3	Secondary	55.20'	**10.0' long x 10.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.07 cfs @ 12.16 hrs HW=55.05' (Free Discharge)
└**1=Stormdrain** (Passes 0.07 cfs of 5.24 cfs potential flow)
└**2=Sharp-Crested Rectangular Weir** (Weir Controls 0.07 cfs @ 0.73 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=45.00' (Free Discharge)
└**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond OS-2.: CB 16258

Inflow Area =	1.168 ac, 85.00% Impervious, Inflow Depth = 0.28"	for 1-Inch event		
Inflow	= 0.31 cfs @	12.16 hrs, Volume=	0.028 af	
Outflow	= 0.31 cfs @	12.16 hrs, Volume=	0.028 af,	Atten= 0%, Lag= 0.0 min
Primary	= 0.31 cfs @	12.16 hrs, Volume=	0.028 af	
Secondary	= 0.00 cfs @	0.00 hrs, Volume=	0.000 af	

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 83.13' @ 12.16 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	79.02'	**8.0" Round Stormdrain**
			L= 35.0' CPP, square edge headwall, Ke= 0.500
			Inlet / Outlet Invert= 79.02' / 78.25' S= 0.0220 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf
#2	Device 1	83.00'	**2.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#3	Secondary	83.50'	**10.0' long x 10.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.30 cfs @ 12.16 hrs HW=83.13' (Free Discharge)
└**1=Stormdrain** (Passes 0.30 cfs of 3.12 cfs potential flow)
└**2=Sharp-Crested Rectangular Weir** (Weir Controls 0.30 cfs @ 1.18 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=79.02' (Free Discharge)
└**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond SMH-1: esmh-13952

Inflow Area =	2.775 ac, 85.75% Impervious, Inflow Depth = 0.22"	for 1-Inch event		
Inflow	= 0.28 cfs @	12.12 hrs, Volume=	0.052 af	
Outflow	= 0.28 cfs @	12.12 hrs, Volume=	0.052 af,	Atten= 0%, Lag= 0.0 min
Primary	= 0.28 cfs @	12.12 hrs, Volume=	0.052 af	

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Peak Elev= 44.84' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	44.61'	**18.0" Round Culvert** L= 41.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 44.61' / 41.64' S= 0.0724 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=0.27 cfs @ 12.12 hrs HW=44.84' (Free Discharge)
└**1=Culvert** (Inlet Controls 0.27 cfs @ 1.62 fps)

Summary for Pond SMH-13932: esmh-13932

Inflow Area = 3.166 ac, 85.66% Impervious, Inflow Depth = 0.23" for 1-Inch event
Inflow = 0.37 cfs @ 12.13 hrs, Volume= 0.061 af
Outflow = 0.37 cfs @ 12.13 hrs, Volume= 0.061 af, Atten= 0%, Lag= 0.0 min
Primary = 0.37 cfs @ 12.13 hrs, Volume= 0.061 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 40.90' @ 12.13 hrs
Flood Elev= 52.64'

Device	Routing	Invert	Outlet Devices
#1	Primary	40.64'	**18.0" Round Sewer** L= 45.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 40.64' / 38.00' S= 0.0587 '/' Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 1.77 sf

Primary OutFlow Max=0.36 cfs @ 12.13 hrs HW=40.90' (Free Discharge)
└**1=Sewer** (Inlet Controls 0.36 cfs @ 1.74 fps)

Summary for Link SP-C1:

Inflow Area = 0.765 ac, 73.26% Impervious, Inflow Depth = 0.11" for 1-Inch event
Inflow = 0.05 cfs @ 12.16 hrs, Volume= 0.007 af
Primary = 0.05 cfs @ 12.16 hrs, Volume= 0.007 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Summary for Link SP-C2:

Inflow Area = 3.166 ac, 85.66% Impervious, Inflow Depth = 0.23" for 1-Inch event
Inflow = 0.37 cfs @ 12.13 hrs, Volume= 0.061 af
Primary = 0.37 cfs @ 12.13 hrs, Volume= 0.061 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Summary for Link SP-C3:

Inflow Area = 0.944 ac, 74.30% Impervious, Inflow Depth = 0.20" for 1-Inch event
Inflow = 0.21 cfs @ 12.10 hrs, Volume= 0.016 af
Primary = 0.21 cfs @ 12.10 hrs, Volume= 0.016 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Summary for Link SP-C4:

Inflow Area = 8.351 ac, 70.70% Impervious, Inflow Depth = 0.23" for 1-Inch event
Inflow = 1.82 cfs @ 12.13 hrs, Volume= 0.161 af
Primary = 1.82 cfs @ 12.13 hrs, Volume= 0.161 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Summary for Link SP-C5:

Inflow Area = 1.389 ac, 57.14% Impervious, Inflow Depth = 0.30" for 1-Inch event
Inflow = 0.45 cfs @ 12.11 hrs, Volume= 0.035 af
Primary = 0.45 cfs @ 12.11 hrs, Volume= 0.035 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Runoff Area=19,446 sf 73.39% Impervious Runoff Depth=1.46"
Flow Length=229' Tc=6.0 min CN=82 Runoff=0.75 cfs 0.054 af

Subcatchment2A: Runoff Area=25,217 sf 100.00% Impervious Runoff Depth=2.87"
Flow Length=142' Slope=0.0050 '/' Tc=6.0 min CN=98 Runoff=1.70 cfs 0.138 af

Subcatchment2B: Runoff Area=13,868 sf 73.07% Impervious Runoff Depth=1.46"
Flow Length=284' Tc=6.0 min CN=82 Runoff=0.53 cfs 0.039 af

Subcatchment2S: Runoff Area=16,157 sf 86.26% Impervious Runoff Depth=2.08"
Flow Length=244' Tc=6.0 min CN=90 Runoff=0.88 cfs 0.064 af

Subcatchment3.1: Runoff Area=10,051 sf 83.47% Impervious Runoff Depth=1.91"
Flow Length=250' Tc=6.0 min CN=88 Runoff=0.50 cfs 0.037 af

Subcatchment3.2: Runoff Area=4,089 sf 68.18% Impervious Runoff Depth=1.26"
Flow Length=66' Slope=0.0250 '/' Tc=6.0 min CN=79 Runoff=0.13 cfs 0.010 af

Subcatchment4S: Runoff Area=23,249 sf 100.00% Impervious Runoff Depth=2.87"
Flow Length=160' Slope=0.0050 '/' Tc=6.0 min CN=98 Runoff=1.57 cfs 0.128 af

Subcatchment5S: Runoff Area=125,028 sf 78.87% Impervious Runoff Depth=1.75"
Flow Length=510' Tc=6.0 min CN=86 Runoff=5.77 cfs 0.418 af

Subcatchment6S: Runoff Area=11,085 sf 79.41% Impervious Runoff Depth=1.75"
Flow Length=121' Tc=6.0 min CN=86 Runoff=0.51 cfs 0.037 af

Subcatchment7S: Runoff Area=92,296 sf 39.10% Impervious Runoff Depth=0.55"
Flow Length=634' Tc=6.0 min CN=65 Runoff=1.03 cfs 0.098 af

Subcatchment8S: Runoff Area=45,533 sf 63.76% Impervious Runoff Depth=1.14"
Flow Length=399' Tc=6.0 min CN=77 Runoff=1.33 cfs 0.099 af

Subcatchment10S: Runoff Area=37,247 sf 30.36% Impervious Runoff Depth=0.28"
Flow Length=326' Tc=6.0 min CN=57 Runoff=0.11 cfs 0.020 af

Subcatchment11S: Runoff Area=11,050 sf 100.00% Impervious Runoff Depth=2.87"
Flow Length=90' Slope=0.0050 '/' Tc=6.0 min CN=98 Runoff=0.74 cfs 0.061 af

Subcatchment12S: Runoff Area=23,268 sf 100.00% Impervious Runoff Depth=2.87"
Flow Length=200' Tc=6.0 min CN=98 Runoff=1.57 cfs 0.128 af

Subcatchment13S: Runoff Area=36,014 sf 85.62% Impervious Runoff Depth=2.08"
Flow Length=196' Tc=6.2 min CN=90 Runoff=1.94 cfs 0.143 af

Subcatchment14.1S: Runoff Area=22,477 sf 88.74% Impervious Runoff Depth=2.16"
Flow Length=325' Tc=6.0 min CN=91 Runoff=1.26 cfs 0.093 af

Subcatchment 15.1S: Runoff Area=18,644 sf 56.89% Impervious Runoff Depth=0.92"
Flow Length=383' Tc=6.0 min CN=73 Runoff=0.42 cfs 0.033 af

Subcatchment 17.1A: NEW Building Roof Runoff Area=43,616 sf 100.00% Impervious Runoff Depth=2.87"
Tc=6.0 min CN=98 Runoff=2.94 cfs 0.239 af

Subcatchment 17.1B: Green Roof Runoff Area=14,879 sf 19.06% Impervious Runoff Depth=1.91"
Flow Length=188' Tc=6.0 min CN=88 Runoff=0.75 cfs 0.054 af

Subcatchment 18S: Visitor Garage Runoff Area=26,386 sf 100.00% Impervious Runoff Depth=2.87"
Flow Length=264' Tc=6.0 min CN=98 Runoff=1.78 cfs 0.145 af

Subcatchment OS-1: OS-1 Runoff Area=17,031 sf 85.00% Impervious Runoff Depth=1.99"
Flow Length=1,300' Tc=10.0 min CN=89 Runoff=0.78 cfs 0.065 af

Subcatchment OS-2: OS-2 Runoff Area=50,885 sf 85.00% Impervious Runoff Depth=1.99"
Flow Length=1,300' Tc=10.0 min CN=89 Runoff=2.34 cfs 0.194 af

Reach 2R: Weymouth Street Sewer Inflow=2.28 cfs 0.194 af
Outflow=2.28 cfs 0.194 af

Reach 3R: Offsite Forest Street Inflow=0.13 cfs 0.001 af
Outflow=0.13 cfs 0.001 af

Reach 15R: Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Reach 110: Avg. Flow Depth=0.36' Max Vel=3.87 fps Inflow=0.74 cfs 0.061 af
8.0" Round Pipe n=0.012 L=51.0' S=0.0100 '/' Capacity=1.31 cfs Outflow=0.74 cfs 0.061 af

Reach 115: Avg. Flow Depth=0.65' Max Vel=5.11 fps Inflow=3.30 cfs 0.263 af
15.0" Round Pipe n=0.012 L=67.0' S=0.0078 '/' Capacity=6.17 cfs Outflow=3.27 cfs 0.263 af

Reach 118: Avg. Flow Depth=0.49' Max Vel=9.65 fps Inflow=4.83 cfs 0.391 af
18.0" Round Pipe n=0.012 L=90.0' S=0.0340 '/' Capacity=20.98 cfs Outflow=4.80 cfs 0.391 af

Reach 125: Avg. Flow Depth=0.38' Max Vel=5.80 fps Inflow=1.57 cfs 0.128 af
12.0" Round Pipe n=0.012 L=79.0' S=0.0182 '/' Capacity=5.21 cfs Outflow=1.56 cfs 0.128 af

Reach 128: Avg. Flow Depth=0.55' Max Vel=3.53 fps Inflow=1.56 cfs 0.128 af
12.0" Round Pipe n=0.012 L=71.0' S=0.0048 '/' Capacity=2.67 cfs Outflow=1.54 cfs 0.128 af

Reach 135: Avg. Flow Depth=0.29' Max Vel=9.56 fps Inflow=1.37 cfs 0.137 af
8.0" Round Pipe n=0.012 L=225.0' S=0.0747 '/' Capacity=3.58 cfs Outflow=1.36 cfs 0.137 af

Reach 181: Avg. Flow Depth=0.59' Max Vel=3.70 fps Inflow=1.78 cfs 0.145 af
12.0" Round Pipe n=0.012 L=60.0' S=0.0050 '/' Capacity=2.73 cfs Outflow=1.76 cfs 0.145 af

Reach 210: Avg. Flow Depth=0.38' Max Vel=6.13 fps Inflow=1.70 cfs 0.138 af
12.0" Round Pipe n=0.012 L=66.0' S=0.0200 '/' Capacity=5.46 cfs Outflow=1.69 cfs 0.138 af

Reach 215: Avg. Flow Depth=0.37' Max Vel=3.29 fps Inflow=0.88 cfs 0.064 af
12.0" Round Pipe n=0.013 L=52.0' S=0.0069 '/' Capacity=2.96 cfs Outflow=0.87 cfs 0.064 af

Reach 216R: Avg. Flow Depth=0.25' Max Vel=15.09 fps Inflow=2.33 cfs 0.197 af
12.0" Round Pipe n=0.013 L=12.0' S=0.2267 '/' Capacity=16.96 cfs Outflow=2.33 cfs 0.197 af

Reach 220: Avg. Flow Depth=0.52' Max Vel=8.72 fps Inflow=4.80 cfs 0.391 af
18.0" Round Pipe n=0.012 L=218.0' S=0.0259 '/' Capacity=18.30 cfs Outflow=4.70 cfs 0.391 af

Reach 230: Avg. Flow Depth=0.33' Max Vel=18.24 fps Inflow=5.32 cfs 0.437 af
18.0" Round Pipe n=0.012 L=87.0' S=0.1884 '/' Capacity=49.39 cfs Outflow=5.30 cfs 0.437 af

Reach 231: Inflow=0.50 cfs 0.037 af
Outflow=0.50 cfs 0.037 af

Reach 240: Avg. Flow Depth=0.50' Max Vel=21.28 fps Inflow=11.02 cfs 0.855 af
18.0" Round Pipe n=0.012 L=100.0' S=0.1612 '/' Capacity=45.69 cfs Outflow=10.98 cfs 0.855 af

Reach 260: Avg. Flow Depth=0.60' Max Vel=13.77 fps Inflow=10.98 cfs 0.855 af
24.0" Round Pipe n=0.012 L=48.0' S=0.0515 '/' Capacity=55.59 cfs Outflow=10.95 cfs 0.855 af

Reach 410: Avg. Flow Depth=0.54' Max Vel=3.63 fps Inflow=1.57 cfs 0.128 af
12.0" Round Pipe n=0.012 L=35.0' S=0.0051 '/' Capacity=2.77 cfs Outflow=1.56 cfs 0.128 af

Reach 510: Avg. Flow Depth=0.35' Max Vel=18.27 fps Inflow=5.77 cfs 0.418 af
18.0" Round Pipe n=0.012 L=62.0' S=0.1768 '/' Capacity=47.85 cfs Outflow=5.76 cfs 0.418 af

Reach 810: Avg. Flow Depth=0.19' Max Vel=13.33 fps Inflow=1.33 cfs 0.099 af
12.0" Round Pipe n=0.012 L=210.0' S=0.2129 '/' Capacity=17.81 cfs Outflow=1.32 cfs 0.099 af

Reach 820: Avg. Flow Depth=0.22' Max Vel=10.22 fps Inflow=1.32 cfs 0.099 af
12.0" Round Pipe n=0.012 L=164.0' S=0.1020 '/' Capacity=12.32 cfs Outflow=1.30 cfs 0.099 af

Pond 1P+G: R-Tank System w/Garage Peak Elev=53.01' Storage=9,113 cf Inflow=5.45 cfs 0.438 af
Outflow=2.18 cfs 0.355 af

Pond 2P: Peak Elev=107.31' Storage=4 cf Inflow=0.53 cfs 0.039 af
18.0" Round Culvert n=0.011 L=50.0' S=0.0100 '/' Outflow=0.53 cfs 0.039 af

Pond 3P: Inflow=0.64 cfs 0.047 af
Primary=0.64 cfs 0.047 af

Pond 5P: Inflow=5.77 cfs 0.418 af
Primary=5.77 cfs 0.418 af

Pond 6P: Inflow=0.51 cfs 0.037 af
Primary=0.51 cfs 0.037 af

Pond 7P: Inflow=1.03 cfs 0.098 af
Primary=1.03 cfs 0.098 af

Pond 8P: Inflow=1.33 cfs 0.099 af
Primary=1.33 cfs 0.099 af

Pond 10P: Inflow=1.60 cfs 0.147 af
Primary=1.60 cfs 0.147 af

Pond 11P: Inflow=0.74 cfs 0.061 af
Primary=0.74 cfs 0.061 af

Pond 12P: Inflow=1.57 cfs 0.128 af
Primary=1.57 cfs 0.128 af

Pond 13.5P: CB 13796 Peak Elev=42.94' Inflow=1.83 cfs 0.099 af
Primary=1.83 cfs 0.099 af Secondary=0.00 cfs 0.000 af Outflow=1.83 cfs 0.099 af

Pond 13P: CB 13 Peak Elev=66.33' Inflow=1.94 cfs 0.143 af
Primary=1.37 cfs 0.137 af Secondary=0.56 cfs 0.006 af Outflow=1.94 cfs 0.143 af

Pond 14P: CB 13581 Peak Elev=42.66' Inflow=0.42 cfs 0.033 af
Primary=0.42 cfs 0.033 af Secondary=0.00 cfs 0.000 af Outflow=0.42 cfs 0.033 af

Pond CB-63: Peak Elev=60.68' Storage=11 cf Inflow=2.33 cfs 0.197 af
12.0" Round Culvert n=0.012 L=10.0' S=0.1340 '/' Outflow=2.33 cfs 0.197 af

Pond DMH 20: DMH 13592 Peak Elev=38.44' Inflow=2.25 cfs 0.132 af
12.0" Round Culvert n=0.010 L=20.0' S=0.1295 '/' Outflow=2.25 cfs 0.132 af

Pond DMH-7: Inflow=1.76 cfs 0.145 af
Primary=1.76 cfs 0.145 af

Pond DMH1: New DMH-1 Congress Street Peak Elev=46.57' Inflow=2.18 cfs 0.355 af
15.0" Round Culvert n=0.013 L=4.0' S=0.0050 '/' Outflow=2.18 cfs 0.355 af

Pond hil-01: Inflow=1.78 cfs 0.145 af
Primary=1.78 cfs 0.145 af

Pond hil-02: Inflow=10.98 cfs 0.855 af
Primary=10.98 cfs 0.855 af

Pond OS-1.: CB Peak Elev=55.22' Inflow=0.78 cfs 0.065 af
Primary=0.65 cfs 0.064 af Secondary=0.13 cfs 0.001 af Outflow=0.78 cfs 0.065 af

Pond OS-2.: CB 16258 Peak Elev=83.51' Inflow=2.34 cfs 0.194 af
Primary=2.28 cfs 0.194 af Secondary=0.06 cfs 0.000 af Outflow=2.34 cfs 0.194 af

Pond SMH-1: esmh-13952 Peak Elev=45.45' Inflow=3.17 cfs 0.493 af
18.0" Round Culvert n=0.012 L=41.0' S=0.0724 '/' Outflow=3.17 cfs 0.493 af

Pond SMH-13932: esmh-13932 Peak Elev=41.57' Inflow=3.78 cfs 0.556 af
18.0" Round Culvert n=0.025 L=45.0' S=0.0587 '/' Outflow=3.78 cfs 0.556 af

Link SP-C1: Inflow=1.28 cfs 0.093 af
Primary=1.28 cfs 0.093 af

Link SP-C2: Inflow=3.78 cfs 0.556 af
Primary=3.78 cfs 0.556 af

Link SP-C3: Inflow=2.25 cfs 0.132 af
Primary=2.25 cfs 0.132 af

Link SP-C4: Inflow=13.78 cfs 1.089 af
Primary=13.78 cfs 1.089 af

Link SP-C5: Inflow=1.60 cfs 0.147 af
Primary=1.60 cfs 0.147 af

Total Runoff Area = 15.783 ac Runoff Volume = 2.296 af Average Runoff Depth = 1.75"
26.10% Pervious = 4.119 ac 73.90% Impervious = 11.664 ac

Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Runoff Area=19,446 sf 73.39% Impervious Runoff Depth=2.72"
Flow Length=229' Tc=6.0 min CN=82 Runoff=1.40 cfs 0.101 af

Subcatchment2A: Runoff Area=25,217 sf 100.00% Impervious Runoff Depth=4.36"
Flow Length=142' Slope=0.0050 '/' Tc=6.0 min CN=98 Runoff=2.54 cfs 0.211 af

Subcatchment2B: Runoff Area=13,868 sf 73.07% Impervious Runoff Depth=2.72"
Flow Length=284' Tc=6.0 min CN=82 Runoff=1.00 cfs 0.072 af

Subcatchment2S: Runoff Area=16,157 sf 86.26% Impervious Runoff Depth=3.49"
Flow Length=244' Tc=6.0 min CN=90 Runoff=1.44 cfs 0.108 af

Subcatchment3.1: Runoff Area=10,051 sf 83.47% Impervious Runoff Depth=3.29"
Flow Length=250' Tc=6.0 min CN=88 Runoff=0.85 cfs 0.063 af

Subcatchment3.2: Runoff Area=4,089 sf 68.18% Impervious Runoff Depth=2.46"
Flow Length=66' Slope=0.0250 '/' Tc=6.0 min CN=79 Runoff=0.27 cfs 0.019 af

Subcatchment4S: Runoff Area=23,249 sf 100.00% Impervious Runoff Depth=4.36"
Flow Length=160' Slope=0.0050 '/' Tc=6.0 min CN=98 Runoff=2.34 cfs 0.194 af

Subcatchment5S: Runoff Area=125,028 sf 78.87% Impervious Runoff Depth=3.10"
Flow Length=510' Tc=6.0 min CN=86 Runoff=10.09 cfs 0.740 af

Subcatchment6S: Runoff Area=11,085 sf 79.41% Impervious Runoff Depth=3.10"
Flow Length=121' Tc=6.0 min CN=86 Runoff=0.89 cfs 0.066 af

Subcatchment7S: Runoff Area=92,296 sf 39.10% Impervious Runoff Depth=1.39"
Flow Length=634' Tc=6.0 min CN=65 Runoff=3.18 cfs 0.246 af

Subcatchment8S: Runoff Area=45,533 sf 63.76% Impervious Runoff Depth=2.29"
Flow Length=399' Tc=6.0 min CN=77 Runoff=2.75 cfs 0.200 af

Subcatchment10S: Runoff Area=37,247 sf 30.36% Impervious Runoff Depth=0.90"
Flow Length=326' Tc=6.0 min CN=57 Runoff=0.71 cfs 0.064 af

Subcatchment11S: Runoff Area=11,050 sf 100.00% Impervious Runoff Depth=4.36"
Flow Length=90' Slope=0.0050 '/' Tc=6.0 min CN=98 Runoff=1.11 cfs 0.092 af

Subcatchment12S: Runoff Area=23,268 sf 100.00% Impervious Runoff Depth=4.36"
Flow Length=200' Tc=6.0 min CN=98 Runoff=2.34 cfs 0.194 af

Subcatchment13S: Runoff Area=36,014 sf 85.62% Impervious Runoff Depth=3.49"
Flow Length=196' Tc=6.2 min CN=90 Runoff=3.19 cfs 0.241 af

Subcatchment14.1S: Runoff Area=22,477 sf 88.74% Impervious Runoff Depth=3.59"
Flow Length=325' Tc=6.0 min CN=91 Runoff=2.05 cfs 0.155 af

Subcatchment 15.1S: Runoff Area=18,644 sf 56.89% Impervious Runoff Depth=1.97"
Flow Length=383' Tc=6.0 min CN=73 Runoff=0.96 cfs 0.070 af

Subcatchment 17.1A: NEW Building Roof Runoff Area=43,616 sf 100.00% Impervious Runoff Depth=4.36"
Tc=6.0 min CN=98 Runoff=4.40 cfs 0.364 af

Subcatchment 17.1B: Green Roof Runoff Area=14,879 sf 19.06% Impervious Runoff Depth=3.29"
Flow Length=188' Tc=6.0 min CN=88 Runoff=1.26 cfs 0.094 af

Subcatchment 18S: Visitor Garage Runoff Area=26,386 sf 100.00% Impervious Runoff Depth=4.36"
Flow Length=264' Tc=6.0 min CN=98 Runoff=2.66 cfs 0.220 af

Subcatchment OS-1: OS-1 Runoff Area=17,031 sf 85.00% Impervious Runoff Depth=3.39"
Flow Length=1,300' Tc=10.0 min CN=89 Runoff=1.31 cfs 0.110 af

Subcatchment OS-2: OS-2 Runoff Area=50,885 sf 85.00% Impervious Runoff Depth=3.39"
Flow Length=1,300' Tc=10.0 min CN=89 Runoff=3.92 cfs 0.330 af

Reach 2R: Weymouth Street Sewer Inflow=2.95 cfs 0.318 af
Outflow=2.95 cfs 0.318 af

Reach 3R: Offsite Forest Street Inflow=0.46 cfs 0.008 af
Outflow=0.46 cfs 0.008 af

Reach 15R: Inflow=1.22 cfs 0.011 af
Outflow=1.22 cfs 0.011 af

Reach 110: Avg. Flow Depth=0.47' Max Vel=4.21 fps Inflow=1.11 cfs 0.092 af
8.0" Round Pipe n=0.012 L=51.0' S=0.0100 '/' Capacity=1.31 cfs Outflow=1.11 cfs 0.092 af

Reach 115: Avg. Flow Depth=0.86' Max Vel=5.61 fps Inflow=5.06 cfs 0.411 af
15.0" Round Pipe n=0.012 L=67.0' S=0.0078 '/' Capacity=6.17 cfs Outflow=5.03 cfs 0.411 af

Reach 118: Avg. Flow Depth=0.61' Max Vel=10.83 fps Inflow=7.35 cfs 0.605 af
18.0" Round Pipe n=0.012 L=90.0' S=0.0340 '/' Capacity=20.98 cfs Outflow=7.31 cfs 0.605 af

Reach 125: Avg. Flow Depth=0.47' Max Vel=6.45 fps Inflow=2.34 cfs 0.194 af
12.0" Round Pipe n=0.012 L=79.0' S=0.0182 '/' Capacity=5.21 cfs Outflow=2.33 cfs 0.194 af

Reach 128: Avg. Flow Depth=0.72' Max Vel=3.83 fps Inflow=2.33 cfs 0.194 af
12.0" Round Pipe n=0.012 L=71.0' S=0.0048 '/' Capacity=2.67 cfs Outflow=2.30 cfs 0.194 af

Reach 135: Avg. Flow Depth=0.33' Max Vel=10.15 fps Inflow=1.73 cfs 0.219 af
8.0" Round Pipe n=0.012 L=225.0' S=0.0747 '/' Capacity=3.58 cfs Outflow=1.72 cfs 0.219 af

Reach 181: Avg. Flow Depth=0.80' Max Vel=3.96 fps Inflow=2.66 cfs 0.220 af
12.0" Round Pipe n=0.012 L=60.0' S=0.0050 '/' Capacity=2.73 cfs Outflow=2.64 cfs 0.220 af

Reach 210: Avg. Flow Depth=0.48' Max Vel=6.82 fps Inflow=2.54 cfs 0.211 af
12.0" Round Pipe n=0.012 L=66.0' S=0.0200 '/' Capacity=5.46 cfs Outflow=2.53 cfs 0.211 af

Reach 215: Avg. Flow Depth=0.49' Max Vel=3.75 fps Inflow=1.44 cfs 0.108 af
12.0" Round Pipe n=0.013 L=52.0' S=0.0069 '/' Capacity=2.96 cfs Outflow=1.43 cfs 0.108 af

Reach 216R: Avg. Flow Depth=0.41' Max Vel=19.62 fps Inflow=5.88 cfs 0.446 af
12.0" Round Pipe n=0.013 L=12.0' S=0.2267 '/' Capacity=16.96 cfs Outflow=5.87 cfs 0.446 af

Reach 220: Avg. Flow Depth=0.66' Max Vel=9.78 fps Inflow=7.31 cfs 0.605 af
18.0" Round Pipe n=0.012 L=218.0' S=0.0259 '/' Capacity=18.30 cfs Outflow=7.19 cfs 0.605 af

Reach 230: Avg. Flow Depth=0.42' Max Vel=20.75 fps Inflow=8.29 cfs 0.687 af
18.0" Round Pipe n=0.012 L=87.0' S=0.1884 '/' Capacity=49.39 cfs Outflow=8.26 cfs 0.687 af

Reach 231: Inflow=0.85 cfs 0.063 af
Outflow=0.85 cfs 0.063 af

Reach 240: Avg. Flow Depth=0.66' Max Vel=24.42 fps Inflow=18.27 cfs 1.428 af
18.0" Round Pipe n=0.012 L=100.0' S=0.1612 '/' Capacity=45.69 cfs Outflow=18.22 cfs 1.428 af

Reach 260: Avg. Flow Depth=0.79' Max Vel=15.85 fps Inflow=18.22 cfs 1.428 af
24.0" Round Pipe n=0.012 L=48.0' S=0.0515 '/' Capacity=55.59 cfs Outflow=18.19 cfs 1.428 af

Reach 410: Avg. Flow Depth=0.71' Max Vel=3.95 fps Inflow=2.34 cfs 0.194 af
12.0" Round Pipe n=0.012 L=35.0' S=0.0051 '/' Capacity=2.77 cfs Outflow=2.33 cfs 0.194 af

Reach 510: Avg. Flow Depth=0.47' Max Vel=21.44 fps Inflow=10.09 cfs 0.740 af
18.0" Round Pipe n=0.012 L=62.0' S=0.1768 '/' Capacity=47.85 cfs Outflow=10.08 cfs 0.740 af

Reach 810: Avg. Flow Depth=0.27' Max Vel=16.46 fps Inflow=2.75 cfs 0.200 af
12.0" Round Pipe n=0.012 L=210.0' S=0.2129 '/' Capacity=17.81 cfs Outflow=2.73 cfs 0.200 af

Reach 820: Avg. Flow Depth=0.32' Max Vel=12.61 fps Inflow=2.73 cfs 0.200 af
12.0" Round Pipe n=0.012 L=164.0' S=0.1020 '/' Capacity=12.32 cfs Outflow=2.70 cfs 0.200 af

Pond 1P+G: R-Tank System w/Garage Peak Elev=53.95' Storage=11,275 cf Inflow=8.29 cfs 0.678 af
Outflow=4.58 cfs 0.595 af

Pond 2P: Peak Elev=107.44' Storage=6 cf Inflow=1.00 cfs 0.072 af
18.0" Round Culvert n=0.011 L=50.0' S=0.0100 '/' Outflow=1.00 cfs 0.072 af

Pond 3P: Inflow=1.12 cfs 0.083 af
Primary=1.12 cfs 0.083 af

Pond 5P: Inflow=10.09 cfs 0.740 af
Primary=10.09 cfs 0.740 af

Pond 6P: Inflow=0.89 cfs 0.066 af
Primary=0.89 cfs 0.066 af

Pond 7P: Inflow=3.18 cfs 0.246 af
Primary=3.18 cfs 0.246 af

Pond 8P: Inflow=2.75 cfs 0.200 af
Primary=2.75 cfs 0.200 af

Pond 10P: Inflow=3.01 cfs 0.258 af
Primary=3.01 cfs 0.258 af

Pond 11P: Inflow=1.11 cfs 0.092 af
Primary=1.11 cfs 0.092 af

Pond 12P: Inflow=2.34 cfs 0.194 af
Primary=2.34 cfs 0.194 af

Pond 13.5P: CB 13796 Peak Elev=43.13' Inflow=4.31 cfs 0.189 af
Primary=3.09 cfs 0.178 af Secondary=1.22 cfs 0.011 af Outflow=4.31 cfs 0.189 af

Pond 13P: CB 13 Peak Elev=66.52' Inflow=4.01 cfs 0.253 af
Primary=1.73 cfs 0.219 af Secondary=2.29 cfs 0.034 af Outflow=4.01 cfs 0.253 af

Pond 14P: CB 13581 Peak Elev=42.78' Inflow=0.96 cfs 0.070 af
Primary=0.96 cfs 0.070 af Secondary=0.00 cfs 0.000 af Outflow=0.96 cfs 0.070 af

Pond CB-63: Peak Elev=62.71' Storage=38 cf Inflow=5.88 cfs 0.446 af
12.0" Round Culvert n=0.012 L=10.0' S=0.1340 '/' Outflow=5.88 cfs 0.446 af

Pond DMH 20: DMH 13592 Peak Elev=39.23' Inflow=4.05 cfs 0.249 af
12.0" Round Culvert n=0.010 L=20.0' S=0.1295 '/' Outflow=4.05 cfs 0.249 af

Pond DMH-7: Inflow=2.64 cfs 0.220 af
Primary=2.64 cfs 0.220 af

Pond DMH1: New DMH-1 Congress Street Peak Elev=47.13' Inflow=4.58 cfs 0.595 af
15.0" Round Culvert n=0.013 L=4.0' S=0.0050 '/' Outflow=4.58 cfs 0.595 af

Pond hil-01: Inflow=2.66 cfs 0.220 af
Primary=2.66 cfs 0.220 af

Pond hil-02: Inflow=18.22 cfs 1.428 af
Primary=18.22 cfs 1.428 af

Pond OS-1.: CB Peak Elev=55.26' Inflow=1.31 cfs 0.110 af
Primary=0.85 cfs 0.102 af Secondary=0.46 cfs 0.008 af Outflow=1.31 cfs 0.110 af

Pond OS-2.: CB 16258 Peak Elev=83.61' Inflow=3.92 cfs 0.330 af
Primary=2.95 cfs 0.318 af Secondary=0.97 cfs 0.013 af Outflow=3.92 cfs 0.330 af

Pond SMH-1: esmh-13952 Peak Elev=45.88' Inflow=6.09 cfs 0.813 af
18.0" Round Culvert n=0.012 L=41.0' S=0.0724 '/' Outflow=6.09 cfs 0.813 af

Pond SMH-13932: esmh-13932 Peak Elev=42.04' Inflow=6.88 cfs 0.916 af
18.0" Round Culvert n=0.025 L=45.0' S=0.0587 '/' Outflow=6.88 cfs 0.916 af

Link SP-C1: Inflow=2.39 cfs 0.174 af
Primary=2.39 cfs 0.174 af

Link SP-C2: Inflow=6.88 cfs 0.916 af
Primary=6.88 cfs 0.916 af

Link SP-C3: Inflow=4.05 cfs 0.249 af
Primary=4.05 cfs 0.249 af

Link SP-C4: Inflow=24.94 cfs 1.939 af
Primary=24.94 cfs 1.939 af

Link SP-C5: Inflow=3.01 cfs 0.258 af
Primary=3.01 cfs 0.258 af

Total Runoff Area = 15.783 ac Runoff Volume = 3.955 af Average Runoff Depth = 3.01"
26.10% Pervious = 4.119 ac 73.90% Impervious = 11.664 ac

Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Runoff Area=19,446 sf 73.39% Impervious Runoff Depth=3.80"
Flow Length=229' Tc=6.0 min CN=82 Runoff=1.93 cfs 0.141 af

Subcatchment2A: Runoff Area=25,217 sf 100.00% Impervious Runoff Depth=5.56"
Flow Length=142' Slope=0.0050 '/' Tc=6.0 min CN=98 Runoff=3.21 cfs 0.268 af

Subcatchment2B: Runoff Area=13,868 sf 73.07% Impervious Runoff Depth=3.80"
Flow Length=284' Tc=6.0 min CN=82 Runoff=1.38 cfs 0.101 af

Subcatchment2S: Runoff Area=16,157 sf 86.26% Impervious Runoff Depth=4.65"
Flow Length=244' Tc=6.0 min CN=90 Runoff=1.89 cfs 0.144 af

Subcatchment3.1: Runoff Area=10,051 sf 83.47% Impervious Runoff Depth=4.43"
Flow Length=250' Tc=6.0 min CN=88 Runoff=1.14 cfs 0.085 af

Subcatchment3.2: Runoff Area=4,089 sf 68.18% Impervious Runoff Depth=3.50"
Flow Length=66' Slope=0.0250 '/' Tc=6.0 min CN=79 Runoff=0.38 cfs 0.027 af

Subcatchment4S: Runoff Area=23,249 sf 100.00% Impervious Runoff Depth=5.56"
Flow Length=160' Slope=0.0050 '/' Tc=6.0 min CN=98 Runoff=2.96 cfs 0.247 af

Subcatchment5S: Runoff Area=125,028 sf 78.87% Impervious Runoff Depth=4.22"
Flow Length=510' Tc=6.0 min CN=86 Runoff=13.59 cfs 1.009 af

Subcatchment6S: Runoff Area=11,085 sf 79.41% Impervious Runoff Depth=4.22"
Flow Length=121' Tc=6.0 min CN=86 Runoff=1.20 cfs 0.089 af

Subcatchment7S: Runoff Area=92,296 sf 39.10% Impervious Runoff Depth=2.21"
Flow Length=634' Tc=6.0 min CN=65 Runoff=5.25 cfs 0.390 af

Subcatchment8S: Runoff Area=45,533 sf 63.76% Impervious Runoff Depth=3.31"
Flow Length=399' Tc=6.0 min CN=77 Runoff=3.97 cfs 0.288 af

Subcatchment10S: Runoff Area=37,247 sf 30.36% Impervious Runoff Depth=1.56"
Flow Length=326' Tc=6.0 min CN=57 Runoff=1.39 cfs 0.111 af

Subcatchment11S: Runoff Area=11,050 sf 100.00% Impervious Runoff Depth=5.56"
Flow Length=90' Slope=0.0050 '/' Tc=6.0 min CN=98 Runoff=1.41 cfs 0.118 af

Subcatchment12S: Runoff Area=23,268 sf 100.00% Impervious Runoff Depth=5.56"
Flow Length=200' Tc=6.0 min CN=98 Runoff=2.96 cfs 0.248 af

Subcatchment13S: Runoff Area=36,014 sf 85.62% Impervious Runoff Depth=4.65"
Flow Length=196' Tc=6.2 min CN=90 Runoff=4.19 cfs 0.320 af

Subcatchment14.1S: Runoff Area=22,477 sf 88.74% Impervious Runoff Depth=4.76"
Flow Length=325' Tc=6.0 min CN=91 Runoff=2.67 cfs 0.205 af

Subcatchment 15.1S: Runoff Area=18,644 sf 56.89% Impervious Runoff Depth=2.92"
Flow Length=383' Tc=6.0 min CN=73 Runoff=1.44 cfs 0.104 af

Subcatchment 17.1A: NEW Building Roof Runoff Area=43,616 sf 100.00% Impervious Runoff Depth=5.56"
Tc=6.0 min CN=98 Runoff=5.56 cfs 0.464 af

Subcatchment 17.1B: Green Roof Runoff Area=14,879 sf 19.06% Impervious Runoff Depth=4.43"
Flow Length=188' Tc=6.0 min CN=88 Runoff=1.68 cfs 0.126 af

Subcatchment 18S: Visitor Garage Runoff Area=26,386 sf 100.00% Impervious Runoff Depth=5.56"
Flow Length=264' Tc=6.0 min CN=98 Runoff=3.36 cfs 0.281 af

Subcatchment OS-1: OS-1 Runoff Area=17,031 sf 85.00% Impervious Runoff Depth=4.54"
Flow Length=1,300' Tc=10.0 min CN=89 Runoff=1.73 cfs 0.148 af

Subcatchment OS-2: OS-2 Runoff Area=50,885 sf 85.00% Impervious Runoff Depth=4.54"
Flow Length=1,300' Tc=10.0 min CN=89 Runoff=5.17 cfs 0.442 af

Reach 2R: Weymouth Street Sewer Inflow=3.31 cfs 0.412 af
Outflow=3.31 cfs 0.412 af

Reach 3R: Offsite Forest Street Inflow=0.73 cfs 0.016 af
Outflow=0.73 cfs 0.016 af

Reach 15R: Inflow=2.76 cfs 0.033 af
Outflow=2.76 cfs 0.033 af

Reach 110: Avg. Flow Depth=0.61' Max Vel=4.27 fps Inflow=1.41 cfs 0.118 af
8.0" Round Pipe n=0.012 L=51.0' S=0.0100 '/' Capacity=1.31 cfs Outflow=1.39 cfs 0.118 af

Reach 115: Avg. Flow Depth=1.09' Max Vel=5.70 fps Inflow=6.47 cfs 0.530 af
15.0" Round Pipe n=0.012 L=67.0' S=0.0078 '/' Capacity=6.17 cfs Outflow=6.41 cfs 0.530 af

Reach 118: Avg. Flow Depth=0.70' Max Vel=11.53 fps Inflow=9.35 cfs 0.777 af
18.0" Round Pipe n=0.012 L=90.0' S=0.0340 '/' Capacity=20.98 cfs Outflow=9.30 cfs 0.777 af

Reach 125: Avg. Flow Depth=0.54' Max Vel=6.84 fps Inflow=2.96 cfs 0.248 af
12.0" Round Pipe n=0.012 L=79.0' S=0.0182 '/' Capacity=5.21 cfs Outflow=2.95 cfs 0.248 af

Reach 128: Avg. Flow Depth=1.00' Max Vel=3.87 fps Inflow=2.95 cfs 0.248 af
12.0" Round Pipe n=0.012 L=71.0' S=0.0048 '/' Capacity=2.67 cfs Outflow=2.79 cfs 0.248 af

Reach 135: Avg. Flow Depth=0.35' Max Vel=10.44 fps Inflow=1.94 cfs 0.280 af
8.0" Round Pipe n=0.012 L=225.0' S=0.0747 '/' Capacity=3.58 cfs Outflow=1.93 cfs 0.280 af

Reach 181: Avg. Flow Depth=1.00' Max Vel=3.94 fps Inflow=3.36 cfs 0.281 af
12.0" Round Pipe n=0.012 L=60.0' S=0.0050 '/' Capacity=2.73 cfs Outflow=2.94 cfs 0.281 af

Reach 210: Avg. Flow Depth=0.55' Max Vel=7.22 fps Inflow=3.21 cfs 0.268 af
12.0" Round Pipe n=0.012 L=66.0' S=0.0200 '/' Capacity=5.46 cfs Outflow=3.20 cfs 0.268 af

Reach 215: Avg. Flow Depth=0.58' Max Vel=4.00 fps Inflow=1.89 cfs 0.144 af
12.0" Round Pipe n=0.013 L=52.0' S=0.0069 '/' Capacity=2.96 cfs Outflow=1.88 cfs 0.144 af

Reach 216R: Avg. Flow Depth=0.52' Max Vel=22.00 fps Inflow=9.15 cfs 0.678 af
12.0" Round Pipe n=0.013 L=12.0' S=0.2267 '/' Capacity=16.96 cfs Outflow=9.15 cfs 0.678 af

Reach 220: Avg. Flow Depth=0.76' Max Vel=10.40 fps Inflow=9.30 cfs 0.777 af
18.0" Round Pipe n=0.012 L=218.0' S=0.0259 '/' Capacity=18.30 cfs Outflow=9.15 cfs 0.777 af

Reach 230: Avg. Flow Depth=0.47' Max Vel=22.28 fps Inflow=10.64 cfs 0.890 af
18.0" Round Pipe n=0.012 L=87.0' S=0.1884 '/' Capacity=49.39 cfs Outflow=10.61 cfs 0.890 af

Reach 231: Inflow=1.14 cfs 0.085 af
Outflow=1.14 cfs 0.085 af

Reach 240: Avg. Flow Depth=0.77' Max Vel=26.20 fps Inflow=24.09 cfs 1.899 af
18.0" Round Pipe n=0.012 L=100.0' S=0.1612 '/' Capacity=45.69 cfs Outflow=24.04 cfs 1.899 af

Reach 260: Avg. Flow Depth=0.92' Max Vel=17.05 fps Inflow=24.04 cfs 1.899 af
24.0" Round Pipe n=0.012 L=48.0' S=0.0515 '/' Capacity=55.59 cfs Outflow=23.99 cfs 1.899 af

Reach 410: Avg. Flow Depth=0.90' Max Vel=4.02 fps Inflow=2.96 cfs 0.247 af
12.0" Round Pipe n=0.012 L=35.0' S=0.0051 '/' Capacity=2.77 cfs Outflow=2.94 cfs 0.247 af

Reach 510: Avg. Flow Depth=0.55' Max Vel=23.28 fps Inflow=13.59 cfs 1.009 af
18.0" Round Pipe n=0.012 L=62.0' S=0.1768 '/' Capacity=47.85 cfs Outflow=13.57 cfs 1.009 af

Reach 810: Avg. Flow Depth=0.32' Max Vel=18.26 fps Inflow=3.97 cfs 0.288 af
12.0" Round Pipe n=0.012 L=210.0' S=0.2129 '/' Capacity=17.81 cfs Outflow=3.94 cfs 0.288 af

Reach 820: Avg. Flow Depth=0.39' Max Vel=13.96 fps Inflow=3.94 cfs 0.288 af
12.0" Round Pipe n=0.012 L=164.0' S=0.1020 '/' Capacity=12.32 cfs Outflow=3.91 cfs 0.288 af

Pond 1P+G: R-Tank System w/Garage Peak Elev=54.27' Storage=11,982 cf Inflow=9.96 cfs 0.871 af
Outflow=8.32 cfs 0.788 af

Pond 2P: Peak Elev=107.53' Storage=7 cf Inflow=1.38 cfs 0.101 af
18.0" Round Culvert n=0.011 L=50.0' S=0.0100 '/' Outflow=1.38 cfs 0.101 af

Pond 3P: Inflow=1.51 cfs 0.113 af
Primary=1.51 cfs 0.113 af

Pond 5P: Inflow=13.59 cfs 1.009 af
Primary=13.59 cfs 1.009 af

Pond 6P: Inflow=1.20 cfs 0.089 af
Primary=1.20 cfs 0.089 af

Pond 7P: Inflow=5.25 cfs 0.390 af
Primary=5.25 cfs 0.390 af

Pond 8P: Inflow=3.97 cfs 0.288 af
Primary=3.97 cfs 0.288 af

Pond 10P: Inflow=4.07 cfs 0.358 af
Primary=4.07 cfs 0.358 af

Pond 11P: Inflow=1.41 cfs 0.118 af
Primary=1.41 cfs 0.118 af

Pond 12P: Inflow=2.96 cfs 0.248 af
Primary=2.96 cfs 0.248 af

Pond 13.5P: CB 13796 Peak Elev=43.23' Inflow=6.54 cfs 0.276 af
Primary=3.78 cfs 0.243 af Secondary=2.76 cfs 0.033 af Outflow=6.54 cfs 0.276 af

Pond 13P: CB 13 Peak Elev=66.65' Inflow=5.84 cfs 0.351 af
Primary=1.94 cfs 0.280 af Secondary=3.91 cfs 0.071 af Outflow=5.84 cfs 0.351 af

Pond 14P: CB 13581 Peak Elev=42.87' Inflow=1.44 cfs 0.104 af
Primary=1.44 cfs 0.104 af Secondary=0.00 cfs 0.000 af Outflow=1.44 cfs 0.104 af

Pond CB-63: Peak Elev=66.15' Storage=81 cf Inflow=9.16 cfs 0.678 af
12.0" Round Culvert n=0.012 L=10.0' S=0.1340 '/' Outflow=9.15 cfs 0.678 af

Pond DMH 20: DMH 13592 Peak Elev=39.99' Inflow=5.21 cfs 0.347 af
12.0" Round Culvert n=0.010 L=20.0' S=0.1295 '/' Outflow=5.21 cfs 0.347 af

Pond DMH-7: Inflow=2.94 cfs 0.281 af
Primary=2.94 cfs 0.281 af

Pond DMH1: New DMH-1 Congress Street Peak Elev=48.22' Inflow=8.32 cfs 0.788 af
15.0" Round Culvert n=0.013 L=4.0' S=0.0050 '/' Outflow=8.32 cfs 0.788 af

Pond hil-01: Inflow=3.36 cfs 0.281 af
Primary=3.36 cfs 0.281 af

Pond hil-02: Inflow=24.04 cfs 1.899 af
Primary=24.04 cfs 1.899 af

Pond OS-1.: CB Peak Elev=55.29' Inflow=1.73 cfs 0.148 af
Primary=1.00 cfs 0.132 af Secondary=0.73 cfs 0.016 af Outflow=1.73 cfs 0.148 af

Pond OS-2.: CB 16258 Peak Elev=83.68' Inflow=5.17 cfs 0.442 af
Primary=3.31 cfs 0.412 af Secondary=1.86 cfs 0.030 af Outflow=5.17 cfs 0.442 af

Pond SMH-1: esmh-13952 Peak Elev=46.78' Inflow=10.17 cfs 1.067 af
18.0" Round Culvert n=0.012 L=41.0' S=0.0724 '/' Outflow=10.17 cfs 1.067 af

Pond SMH-13932: esmh-13932 Peak Elev=43.10' Inflow=11.15 cfs 1.200 af
18.0" Round Culvert n=0.025 L=45.0' S=0.0587 '/' Outflow=11.15 cfs 1.200 af

Link SP-C1: Inflow=3.31 cfs 0.242 af
Primary=3.31 cfs 0.242 af

Link SP-C2: Inflow=11.15 cfs 1.200 af
Primary=11.15 cfs 1.200 af

Link SP-C3: Inflow=5.21 cfs 0.347 af
Primary=5.21 cfs 0.347 af

Link SP-C4: Inflow=34.33 cfs 2.666 af
Primary=34.33 cfs 2.666 af

Link SP-C5: Inflow=4.07 cfs 0.358 af
Primary=4.07 cfs 0.358 af

Total Runoff Area = 15.783 ac Runoff Volume = 5.358 af Average Runoff Depth = 4.07"
26.10% Pervious = 4.119 ac 73.90% Impervious = 11.664 ac

Appendix C

INSPECTION, MAINTENANCE, AND HOUSEKEEPING

INSPECTION, MAINTENANCE, AND HOUSEKEEPING PLAN

Maine Medical Center
Portland, ME

Introduction

The owner of the development is Maine Medical Center. The owner's address is 22 Bramhall Street, Portland, Maine 04102. The owner of the proposed project will be responsible for the maintenance of all stormwater management structures, the establishment of any contract services required to implement the program, and the keeping of records and maintenance logbook. The owner will assure that the following maintenance program will be adhered.

Records of all inspections and maintenance work accomplished must be kept on file and retained for a minimum 5-year time span. The maintenance logbook will be made available to the Maine Department of Environmental Protection (MDEP) and the City of Portland upon request. At a minimum, the appropriate and relevant activities for each of the stormwater management systems will be performed on the prescribed schedule.

The following plan outlines the anticipated inspection, maintenance, and housekeeping procedures for the erosion and sedimentation controls as well as stormwater management devices for the project site. Also, this plan outlines several housekeeping requirements that shall be followed during and after construction. These procedures should be followed in order to ensure the intended function of the designed measures and to prevent unreasonable adverse impacts to the surrounding environment.

The procedures outlined in the Inspection, Maintenance, and Housekeeping Plan are provided as an overview of the anticipated practices to be used on this site. In some instances, additional measures may be required due to unexpected conditions. For additional details on any of the erosion and sedimentation control measures or stormwater management devices to be utilized on this project, refer to the most recently revised edition of the "Maine Erosion and Sedimentation Control BMP" manual and/or the "Stormwater Management for Maine: Best Management Practices" manual as published by the MDEP.

During Construction

1. **Inspection:** During the construction process, it is the Contractor's responsibility to comply with the inspection and maintenance procedures outlined in this section. These responsibilities include inspecting disturbed and impervious areas, erosion control measures, materials storage areas that are exposed to precipitation, and locations where vehicles enter or exit the site. These areas shall be inspected at least once a week as well as before and after a storm event, and prior to completing permanent stabilization measures. A person with knowledge of erosion and stormwater control, including the standards and conditions in any applicable permits, shall conduct the inspections.

2. **Maintenance:** All measures shall be maintained in an effective operating condition until areas are permanently stabilized. If Best Management Practices (BMPs) need to be maintained or modified, additional BMPs are necessary, or other corrective action is needed, implementation must be completed within seven (7) calendar days and prior to any storm event (rainfall).

3. **Documentation:** A log summarizing the inspections and any corrective action taken must be maintained on-site. The log must include the name(s) and qualifications of the person making the inspections, the date(s) of the inspections, and major observations about the operation and maintenance of erosion and sedimentation controls, material storage areas, and vehicle access points to the site. Major observations must include BMPs that need maintenance, BMPs that failed to operate as designed or proved inadequate for a particular location, and locations where additional BMPs are needed. For each BMP requiring maintenance, BMP needing replacement, and location needing additional BMPs, note in the log the corrective action taken and when it was taken.

   The log must be made accessible to the appropriate regulatory agency upon request. The permittee shall retain a copy of the log for a period of at least three (3) years from the completion of permanent stabilization.

4. **Specific Inspection and Maintenance Tasks:** The following is a list of erosion control and stormwater management measures and the specific inspection and maintenance tasks to be performed during construction.

   A. <u>Sediment Barriers:</u>

   - Hay bale barriers, silt fences, and filter berms shall be inspected immediately after each rainfall and at least daily during prolonged rainfall.
   - If the fabric on a silt fence or filter barrier should decompose or become ineffective prior to the end of the expected usable life and the barrier is still necessary, it shall be replaced.
   - Sediment deposits should be removed after each storm event. They must be removed before deposits reach approximately one-half the height of the barrier.
   - Filter berms shall 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.

   B. <u>Riprap Materials:</u>

   - Once a riprap installation has been completed, it should require very little maintenance. It shall, however, be inspected periodically to determine if high flows have caused scour beneath the riprap or dislodged any of the stone.

C. Erosion Control Blankets:

- Inspect these reinforced areas semi-annually and after significant rainfall events for slumping, sliding, seepage, and scour. Pay close attention to unreinforced areas adjacent to the erosion control blankets, which may experience accelerated erosion.
- Review all applicable inspection and maintenance procedures recommended by the specific blanket manufacturer. These tasks shall be included in addition to this plan.

D. Temporary Storm Drain Inlet Protection:

- The inlet protection structure shall be inspected before each rain event and repaired as necessary.
- Sediment shall be removed and the storm drain sediment barrier restored to its original dimensions when the sediment has accumulated to half of the design depth of the trap.
- Structures shall be removed upon permanent stabilization of the tributary area.
- Upon removal of the structure, all accumulated sediments downstream of the structure shall be cleaned from the storm drain system.

E. Stabilized Construction Entrances/Exits:

- 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. The entrance should then be reconstructed.
- Areas that have received mud-tracking or sediment deposits shall be swept or washed. Washing shall be done on an area stabilized with aggregate, which drains into an approved sediment-trapping device (not into storm drains, ditches, or waterways).

F. Temporary Seed and Mulch:

- Mulched areas should be inspected after rain events to check for rill erosion.
- If less than 90% of the soil surface is covered by mulch, additional mulch shall be applied in bare areas.
- In applications where seeding and mulch have been applied in conjunction with erosion control blankets, the blankets must be inspected after rain events for dislocation or undercutting.
- Mulch shall continue to be reapplied until 95% of the soil surface has established temporary vegetative cover.

5. **Housekeeping:** The following general performance standards apply to the proposed project.

   A. Spill Prevention: Controls must be used to prevent pollutants from being discharged from materials on-site, including storage practices to minimize exposure of the materials to stormwater, and appropriate spill prevention, containment, and response planning and implementation.

   B. Groundwater Protection: During construction, liquid petroleum products and other hazardous materials with the potential to contaminate groundwater may not be stored or handled in areas of the site draining to an infiltration area. An "infiltration area" is any area of the site that by design or as a result of soils, topography and other relevant factors, accumulates runoff that infiltrates into the soil. Dikes, berms, sumps, and other forms of secondary containment that prevent discharge to groundwater may be used to isolate portions of the site for the purposes of storage and handling of these materials.

   C. Fugitive Sediment and Dust: Actions must be taken to insure that activities do not result in noticeable erosion of soils or fugitive dust emissions during or after construction. Oil may not be used for dust control.

   D. Debris and Other Materials: Litter, construction debris, and chemicals exposed to stormwater must be prevented from becoming a pollutant source.

   E. Trench or Foundation Dewatering: Trench dewatering is the removal of water from trenches, foundations, cofferdams, ponds, and other areas within the construction area that retain water after excavation. In most cases, the collected water is heavily silted and hinders correct and safe construction practices. The collected water must be removed from the ponded area, either through gravity or pumping, and must be spread through natural wooded buffers or removed to areas that are specifically designed to collect the maximum amount of sediment possible, like a cofferdam sedimentation basin. Avoid allowing the water to flow over disturbed areas of the site. Equivalent measures may be taken if approved.

After Construction

1. **Inspection:** After construction, the owner or operator shall hire a qualified post-construction stormwater inspector to at least annually, inspect the BMPs, in accordance with all municipal and state inspection, cleaning and maintenance requirements of the approved post-construction stormwater management plan.

2. **Maintenance, and repair:** If a BMP requires maintenance, repair or replacement to function as intended by the approved post-construction stormwater management plan, the owner or operator shall take corrective actions 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 actions to the Department of Public Works (DPW). The following is a list of permanent erosion control and stormwater management measures and the inspection, maintenance, and housekeeping tasks to be performed after construction.

A. Vegetated Areas:

- Inspect vegetated areas, particularly slopes and embankments, early in the growing season or after heavy rains to identify active or potential erosion problems.
- Replant bare areas or areas with sparse growth. Where rill erosion is evident, armor the area with an appropriate lining or divert the erosive flows to on-site areas able to withstand the concentrated flows.

B. Winter Sanding:

- Clear accumulations of winter sand in parking lots and along roadways at least once a year, preferably in the spring.
- Accumulations on pavement may be removed by pavement sweeping.
- Accumulations of sand along road shoulders may be removed by grading excess sand to the pavement edge and removing it manually or by a front-end loader or other acceptable method.

C. Catch Basins:

- Inspect and, if required, clean-out catch basins at least once a year, preferably in early spring.
- Clean out must include the removal and legal disposal of accumulated sediments and debris at the bottom of the basin, at any inlet grates, at any inflow channels to the basin, and at any pipes between basins.

D. ACF R-Tank System:

- Refer to R-Tank – Operation, Inspection & Maintenance manual for guidance on required maintenance and inspection.

E. Cultec Stormwater Chamber System:

- Refer to Cultec – Operation & Maintenance Guidelines for guidance on required maintenance and inspection.

3. **Annual Report:** The owner or operator 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 that the person has inspected the BMPs 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 actions taken.

4. **Duration of Maintenance:** Perform maintenance as described and required for any associated permits unless and until the system is formally accepted by a municipality or quasi-municipal district, or is placed under the jurisdiction of a legally created association that will be responsible for the maintenance of the system. If a municipality or quasi-municipal district chooses to accept a stormwater management system, or a component of a stormwater system, it must provide a letter to the MDEP stating that it assumes responsibility for the system. The letter must specify the components of the system for which the municipality or district will assume responsibility, and that the municipality or district agrees to maintain those components of the system in compliance with MDEP standards. Upon such assumption of responsibility, and approval by the MDEP, the municipality, quasi-municipal district, or association becomes a co-permittee for this purpose only and must comply with all terms and conditions of the permit.

Attachments

Attachment 1 – Sample Stormwater Inspection and Maintenance Form

Attachment 1 - Sample Stormwater Inspection and Maintenance Form

Maine Medical Center
Portland, ME

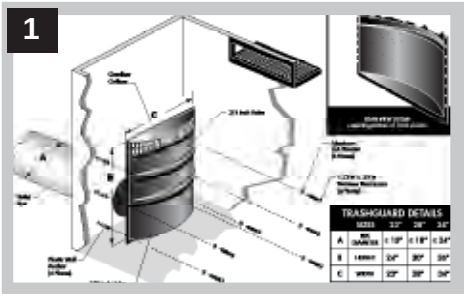
This log is intended to accompany the stormwater Inspection, Maintenance and Housekeeping Plan for Maine Medical Center. The following items shall be checked, cleaned and maintained on a regular basis as specified in the Maintenance Plan and as described in the table below. This log shall be kept on file for a minimum of five (5) years and shall be available for review. Qualified personnel familiar with drainage systems and soils shall perform all inspections. Attached is a copy of the construction and post-construction maintenance logs.

Item	Maintenance Required & Frequency	Date Completed	Maintenance Personnel	Comments
Ditches and Swales	Inspect after major rainfall event producing greater than 3" of rain in 2 hours.			
	Repair erosion or damage immediately.			
Catch Basins	Remove accumulated sediment and debris			
	Sump depth			
Vegetated Areas	Inspect Slopes			
	Replant Bare Areas			
	Check after Major Storms			
Winter Sanding	Clean annually (Spring)			
	Remove sand and sediment from roadway shoulders			
ACF R-Tanks	Inspect quarterly through first year of use, with yearly inspections thereafter			
Cultec Stormwater Chambers	Inspect monthly in first year, with yearly inspections thereafter and every third year following			

R-TANK MAINTENANCE

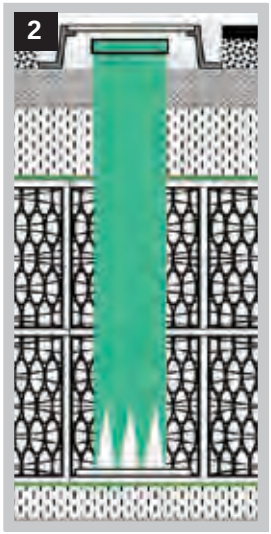
With adequate pre-treatment of stormwater before it enters the ACF R-Tank, heavy sediments, trash, and other debris will not enter the system. Systems like the TrashGuard (see image 1) are simple and inexpensive, but also highly effective. Therefore, most maintenance efforts should be directed at the pre-treatment structures to ensure they are functioning properly.

To monitor the accumulation of fine sediments that may enter the detention/ retention area, ACF R-Tank systems should include maintanance ports.



Maintenance

Running from the bottom of the ACF R-Tank up to ground level, Maintenance Ports are made from solid PVC Pipe with notches cut into the bottom. As water is pumped into the port the notches will direct water throughout the bottom of the system to create turbulence, thereby re-suspending accumulated sediments.



After pumping water into the tanks, flushing is completed by vacuuming sediment laden water out of the system either through the outlet structure or through the flush port.

The diameter of the flush port is determined by a number of factors including the rate at which water will be pumped into the system, the number of flush ports incorporated, and the possible requirement of vacuuming through the port. Experience has shown that a 12” port is more than adequate for virtually any required use, with 6” ports more common when vacuuming will be performed at the outlet structure.



Installing the Maintenance System

To install the PCV Pipe, remove the center small plate and cut the top large plate between the remaining interior small plates. Before inserting the port into the Tank, install an anti-scour plate in the bottom of the Tank to prevent disturbance of the base materials.

Maintenance ports should be capped at the surface. In landscaped areas, this may be accomplished with a simple pipe cap or plastic valve box (see image 4 lower inset). In paved areas, metal lids are more appropriate (see image 4).



R-TANK MAINTENANCE

Maintenance Intervals

Maintenance Schedules for the ACF R-Tank System are a function of the contributing area and the type of pre-treatment specified. A standard maintenance schedule may include quarterly inspections through the first year of use, with yearly inspections thereafter. Flushing should be performed if sediment should the lesser of 6" or 15% of the system height.



Availability

All system components, including caps, lids, anti-scour plates, frames and covers are available from ACF. In fact, we've created Maintenance Port Kids (see image 5) that include everything needed except for the pipe itself. Contact your local sales representative or our Sales Office at 800-448-3636 for assistance.

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R-TANK OPERATION, INSPECTION & MAINTENANCE

Operation

Your ACF R-Tank System has been designed to function in conjunction with the engineered drainage system on your site, the existing municipal infrastructure, and/or the existing soils and geography of the receiving watershed. Unless your site included certain unique and rare features, the operation of your R-Tank System will be driven by naturally occurring systems and will function autonomously. However, upholding a proper schedule of Inspection & Maintenance is critical to ensuring continued functionality and optimum performance of the system.

Inspection

Both the R-Tank and all stormwater pre-treatment features incorporated into your site must be inspected regularly. Inspection frequency for your system must be determined based on the contributing drainage area, but should never exceed one year between inspections (six months during the first year of operation).

Inspections may be required more frequently for pre-treatment systems. You should refer to the manufacturer requirements for the proper inspection schedule.

With the right equipment your inspection and measurements can be accomplished from the surface without physically entering any confined spaces. If your inspection does require confined space entry, you MUST follow all local/regional requirements as well as OSHA standards.

R-Tank Systems may incorporate Inspection Ports, Maintenance Ports, and/or adjoining manholes. Each of these features are easily accessed by removing the lid at the surface. With the cover removed, a visual inspection can be performed to identify sediment deposits within the structure. Using a flashlight, ALL access points should be examined to complete a thorough inspection.

Inspection Ports
Usually located centrally in the R-Tank System, these perforated columns are designed to give the user a base-line sediment depth across the system floor.

Maintenance Ports
Usually located near the inlet and outlet connections, you'll likely find deeper deposits of heavier sediments when compared to the Inspection Ports.

Manholes
Most systems will include at least two manholes - one at the inlet and another at the outlet. There may be more than one location where stormwater enters the system, which would result in additional manholes to inspect.

Bear in mind that these manholes often include a sump below the invert of the pipe connecting to the R-Tank. These sumps are designed to capture sediment before it reaches the R-Tank, and they should be kept clean to ensure they function properly. However, existence of sediment in the sump does NOT necessarily mean sediment has accumulated in the R-Tank.

After inspecting the bottom of the structure, use a mirror on a pole (or some other device) to check for sediment or debris in the pipe connecting to the R-Tank.

R-TANK OPERATION INSPECTION & MAINTENANCE

If sediment or debris is observed in any of these structures, you should determine the depth of the material. This is typically accomplished with a stadia rod, but you should determine the best way to obtain the measurement.

All observations and measurements should be recorded on an Inspection Log kept on file. We've included a form you can use at the end of this guideline.

Maintenance

The R-Tank System should be back-flushed once sediment accumulation has reached 6" or 15% of the total system height. Use the chart below as a guideline to determine the point at which maintenance is required on your system.

R-Tank Unit	Height	Max Sediment Dept
Mini	9.5"	1.5"
Single	17"	3"
Double	34"	5"
Triple	50"	6"
Quad	67"	6"
Pent	84"	6"

Before any maintenance is performed on your system, be sure to plug the outlet pipe to prevent contamination of the adjacent systems.

To back-flush the R-Tank, water is pumped into the system through the Maintenance Ports as rapidly as possible. Water should be pumped into ALL Maintenance Ports. The turbulent action of the water moving through the R-Tank will suspend sediments which may then be pumped out.

If your system includes an Outlet Structure, this will be the ideal location to pump contaminated water out of the system. However, removal of back-flush water may be accomplished through the Maintenance Ports, as well.

For systems with large footprints that would require extensive volumes of water to properly flush the system, you should consider performing your maintenance within 24 hours of a rain event. Stormwater entering the system will aid in the suspension of sediments and reduce the volume of water required to properly flush the system.

Once removed, sediment-laden water may be captured for disposal or pumped through a Dirtbag™ (if permitted by the locality).

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Richmond, Virginia, 23234
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FAX 804.743.7779
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Step-By-Step Inspection & Maintenance Routine

1) **Inspection**
    a. Inspection Port
        i. Remove Cap
        ii. Use flashlight to detect sediment deposits
        iii. If present, measure sediment depth with stadia rod
        iv. Record results on Maintenance Log
        v. Replace Cap
    b. Maintenance Port/s
        i. Remove Cap
        ii. Use flashlight to detect sediment deposits
        iii. If present, measure sediment depth with stadia rod
        iv. Record results on Maintenance Log
        v. Replace Cap
        vi. Repeat for ALL Maintenance Ports
    c. Adjacent Manholes
        i. Remove Cover
        ii. Use flashlight to detect sediment deposits
        iii. If present, measure sediment depth with stadia rod, accounting for depth of sump (if present)
        iv. Inspect pipes connecting to R-Tank
        v. Record results on Maintenance Log
        vi. Replace Cover
        vii. Repeat for ALL Manholes that connect to the R-Tank

2) **Maintenance**
    a. Plug system outlet to prevent discharge of back-flush water
    b. Determine best location to pump out back-flush water
    c. Remove Cap from Maintenance Port
    d. Pump water as rapidly as possible (without over-topping port) into system until at least 1”
    of water covers system bottom
    e. Replace Cap
    f. Repeat at ALL Maintenance Ports
    g. Pump out back-flush water to complete back-flushing
    h. Vacuum all adjacent structures and any other structures or stormwater pre-treatment systems that require attention
    i. Sediment-laden water may be captured for disposal or pumped through a Dirtbag™.
    j. Replace any remaining Caps or Covers
    k. Record the back-flushing event in your Maintenance Log with any relevant specifics

R-Tank Maintenance Log

Site Name:_____

Location:_____

System Owner:_____

Company Responsible for Maintenance:_____

Contact:_____

Phone Numer:_____

Date	Location	Depth to Bottom	Depth to Sediment	Sediment Depth	Observations/Notes	Initials

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Doc ID: CULG008 05-17
May 2017

These instructions are for single-layer traffic applications only. For multi-layer applications, contact CULTEC.
All illustrations and photos shown herein are examples of typical situations. Be sure to follow the engineer's drawings.
Actual designs may vary.

This manual contains guidelines recommended by CULTEC, Inc. and may be used in conjunction with, but not to supersede, local regulations or regulatory authorities. OSHA Guidelines must be followed when inspecting or cleaning any structure.

Introduction

The CULTEC Subsurface Stormwater Management System is a high-density polyethylene (HDPE) chamber system arranged in parallel rows surrounded by washed stone. The CULTEC chambers create arch-shaped voids within the washed stone to provide stormwater detention, retention, infiltration, and reclamation. Filter fabric is placed between the native soil and stone interface to prevent the intrusion of fines into the system. In order to minimize the amount of sediment which may enter the CULTEC system, a sediment collection device (stormwater pretreatment device) is recommended upstream from the CULTEC chamber system. Examples of pretreatment devices include, but are not limited to, an appropriately sized catch basin with sump, pretreatment catchment device, oil grit separator, or baffled distribution box. Manufactured pretreatment devices may also be used in accordance with CULTEC chambers. Installation, operation, and maintenance of these devices shall be in accordance with manufacturer's recommendations. Almost all of the sediment entering the stormwater management system will be collected within the pretreatment device.

Best Management Practices allow for the maintenance of the preliminary collection systems prior to feeding the CULTEC chambers. The pretreatment structures shall be inspected for any debris that will restrict inlet flow rates. Outfall structures, if any, such as outlet control must also be inspected for any obstructions that would restrict outlet flow rates. OSHA Guidelines must be followed when inspecting or cleaning any structure.

Operation and Maintenance Requirements

I. Operation

CULTEC stormwater management systems shall be operated to receive only stormwater run-off in accordance with applicable local regulations. CULTEC subsurface stormwater management chambers operate at peak performance when installed in series with pretreatment. Pretreatment of suspended solids is superior to treatment of solids once they have been introduced into the system. The use of pretreatment is adequate as long as the structure is maintained and the site remains stable with finished impervious surfaces such as parking lots, walkways, and pervious areas are properly maintained. If there is to be an unstable condition, such as improvements to buildings or parking areas, all proper silt control measures shall be implemented according to local regulations.

II. Inspection and Maintenance Options

A. The CULTEC system may be equipped with an inspection port located on the inlet row. The inspection port is a circular cast box placed in a rectangular concrete collar. When the lid is removed, a 6-inch (150 mm) pipe with a screw-in plug will be exposed. Remove the plug. This will provide access to the CULTEC Chamber row below. From the surface, through this access, the sediment may be measured at this location. A stadia rod may be used to measure the depth of sediment if any in this row. If the depth of sediment is in excess of 3 inches (76 mm), then this row should be cleaned with high pressure water through a culvert cleaning nozzle. This would be carried out through an upstream manhole or through the CULTEC StormFilter Unit (or other pretreatment device). CCTV inspection of this row can be deployed through this access port to deter mine if any sediment has accumulated in the inlet row.

B. If the CULTEC bed is not equipped with an inspection port, then access to the inlet row will be through an upstream manhole or the CULTEC StormFilter.

1. Manhole Access

This inspection should only be carried out by persons trained in confined space entry and sewer inspection services. After the manhole cover has been removed a gas detector must be lowered into the manhole to ensure that there are not high concentrations of toxic gases present. The inspector should be lowered into the manhole with the proper safety equipment as per OSHA requirements. The inspector may be able to observe sediment from this location. If this is not possible, the inspector will need to deploy a CCTV robot to permit viewing of the sediment.

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2. **StormFilter Access**
Remove the manhole cover to allow access to the unit. Typically a 30-inch (750 mm) pipe is used as a riser from the StormFilter to the surface. As in the case with manhole access, this access point requires a technician trained in confined space entry with proper gas detection equipment. This individual must be equipped with the proper safety equipment for entry into the StormFilter. The technician will be lowered onto the StormFilter unit. The hatch on the unit must be removed. Inside the unit are two filters which may be removed according to StormFilter maintenance guidelines. Once these filters are removed the inspector can enter the StormFilter unit to launch the CCTV camera robot.

C. The inlet row of the CULTEC system is placed on a polyethylene liner to prevent scouring of the washed stone beneath this row. This also facilitates the flushing of this row with high pressure water through a culvert cleaning nozzle. The nozzle is deployed through a manhole or the StormFilter and extended to the end of the row. The water is turned on and the inlet row is back-flushed into the manhole or StormFilter. This water is to be removed from the manhole or StormFilter using a vacuum truck.

III. Maintenance Guidelines

The following guidelines shall be adhered to for the operation and maintenance of the CULTEC stormwater management system:

A. The owner shall keep a maintenance log which shall include details of any events which would have an effect on the system's operational capacity.

B. The operation and maintenance procedure shall be reviewed periodically and changed to meet site conditions.

C. Maintenance of the stormwater management system shall be performed by qualified workers and shall follow applicable occupational health and safety requirements.

D. Debris removed from the stormwater management system shall be disposed of in accordance with applicable laws and regulations.

IV. Suggested Maintenance Schedules

A. Minor Maintenance
The following suggested schedule shall be followed for routine maintenance during the regular operation of the stormwater system:

Frequency	Action
Monthly in first year	Check inlets and outlets for clogging and remove any debris, as required.
Spring and Fall	Check inlets and outlets for clogging and remove any debris, as required.
One year after commissioning and every third year following	Check inlets and outlets for clogging and remove any debris, as required.

B. Major Maintenance
The following suggested maintenance schedule shall be followed to maintain the performance of the CULTEC stormwater management chambers. Additional work may be necessary due to insufficient performance and other issues that might be found during the inspection of the stormwater management chambers. (See table on next page)

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	Frequency	Action
Inlets and Outlets	Every 3 years	• Obtain documentation that the inlets, outlets and vents have been cleaned and will function as intended.
	Spring and Fall	• Check inlet and outlets for clogging and remove any debris as required.
CULTEC Stormwater Chambers	2 years after commissioning	• Inspect the interior of the stormwater management chambers through inspection port for deficiencies using CCTV or comparable technique. • Obtain documentation that the stormwater management chambers and feed connectors will function as anticipated.
	9 years after commissioning every 9 years following	• Clean stormwater management chambers and feed connectors of any debris. • Inspect the interior of the stormwater management structures for deficiencies using CCTV or comparable technique. • Obtain documentation that the stormwater management chambers and feed connectors have been cleaned and will function as intended.
	45 years after commissioning	• Clean stormwater management chambers and feed connectors of any debris. • Determine the remaining life expectancy of the stormwater management chambers and recommended schedule and actions to rehabilitate the stormwater management chambers as required. • Inspect the interior of the stormwater management chambers for deficiencies using CCTV or comparable technique. • Replace or restore the stormwater management chambers in accordance with the schedule determined at the 45-year inspection. • Attain the appropriate approvals as required. • Establish a new operation and maintenance schedule.
Surrounding Site	Monthly in 1st year	• Check for depressions in areas over and surrounding the stormwater management system.
	Spring and Fall	• Check for depressions in areas over and surrounding the stormwater management system.
	Yearly	• Confirm that no unauthorized modifications have been performed to the site.

For additional information concerning the maintenance of CULTEC Subsurface Stormwater Management Chambers, please contact CULTEC, Inc. at 1-800-428-5832.

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WQMP
Operation & Maintenance (O&M) Plan

Project Name:_____

Prepared for:

Project Name: _____

Address:_____

City, State Zip:_____

Prepared on:

Date:_____

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This O&M Plan describes the designated responsible party for implementation of this WQMP, including: operation and maintenance of all the structural BMP(s), conducting the training/educational program and duties, and any other necessary activities. The O&M Plan includes detailed inspection and maintenance requirements for all structural BMPs, including copies of any maintenance contract agreements, manufacturer's maintenance requirements, permits, etc.

8.1.1 Project Information

Project name	
Address	
City, State Zip	
Site size	
List of structural BMPs, number of each	
Other notes	

8.1.2 Responsible Party

The responsible party for implementation of this WQMP is:

Name of Person or HOA Property Manager	
Address	
City, State Zip	
Phone number	
24-Hour Emergency Contact number	
Email	

8.1.3 Record Keeping

Parties responsible for the O&M plan shall retain records for at least 5 years.

All training and educational activities and BMP operation and maintenance shall be documented to verify compliance with this O&M Plan. A sample Training Log and Inspection and Maintenance Log are included in this document.

8.1.4 Electronic Data Submittal

This document along with the Site Plan and Attachments shall be provided in PDF format. AutoCAD files and/or GIS coordinates of BMPs shall also be submitted to the City.

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Appendix ___

BMP SITE PLAN

Site plan is preferred on minimum 11” by 17” colored sheets, as long as legible.

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BMP OPERATION & MAINTENANCE LOG

Project Name: _____

Today's Date:_____

Name of Person Performing Activity (Printed):_____

Signature: _____

BMP Name (As Shown in O&M Plan)	Brief Description of Implementation, Maintenance, and Inspection Activity Performed

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Minor Maintenance

Frequency		Action
Monthly in first year		Check inlets and outlets for clogging and remove any debris, as required.
		Notes
□ Month 1	Date:	
□ Month 2	Date:	
□ Month 3	Date:	
□ Month 4	Date	
□ Month 5	Date:	
□ Month 6	Date:	
□ Month 7	Date:	
□ Month 8	Date:	
□ Month 9	Date:	
□ Month 10	Date:	
□ Month 11	Date:	
□ Month 12	Date:	
Spring and Fall		Check inlets and outlets for clogging and remove any debris, as required.
		Notes
□ Spring	Date:	
□ Fall	Date:	
□ Spring	Date:	
□ Fall	Date:	
□ Spring	Date:	
□ Fall	Date:	
□ Spring	Date:	
□ Fall	Date:	
□ Spring	Date:	
□ Fall	Date:	
□ Spring	Date:	
□ Fall	Date:	
One year after commissioning and every third year following		Check inlets and outlets for clogging and remove any debris, as required.
		Notes
□ Year 1	Date:	
□ Year 4	Date:	
□ Year 7	Date:	
□ Year 10	Date:	
□ Year 13	Date:	
□ Year 16	Date:	
□ Year 19	Date:	
□ Year 22	Date:	

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Major Maintenance

	Frequency		Action
Inlets and Outlets	**Every 3 years**		Obtain documentation that the inlets, outlets and vents have been cleaned and will function as intended.
			Notes
	□ Year 1	Date:	
	□ Year 4	Date:	
	□ Year 7	Date:	
	□ Year 10	Date:	
	□ Year 13	Date:	
	□ Year 16	Date:	
	□ Year 19	Date:	
	□ Year 22	Date:	
	Spring and Fall		Check inlet and outlets for clogging and remove any debris, as required.
			Notes
	□ Spring	Date:	
	□ Fall	Date:	
	□ Spring	Date:	
	□ Fall	Date:	
	□ Spring	Date:	
	□ Fall	Date:	
	□ Spring	Date:	
	□ Fall	Date:	
	□ Spring	Date:	
	□ Fall	Date:	
	□ Spring	Date:	
	□ Fall	Date:	
	□ Spring	Date:	
	□ Fall	Date:	
CULTEC Stormwater Chambers	**2 years after commissioning**		□ Inspect the interior of the stormwater management chambers through inspection port for deficiencies using CCTV or comparable technique. □ Obtain documentation that the stormwater management chambers and feed connectors will function as anticipated.
			Notes
	□ Year 2	Date:	

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Major Maintenance

	Frequency		Action
CULTEC Stormwater Chambers	**9 years after commissioning every 9 years following**		□ Clean stormwater management chambers and feed connectors of any debris. □ Inspect the interior of the stormwater management structures for deficiencies using CCTV or comparable technique. □ Obtain documentation that the stormwater management chambers and feed connectors have been cleaned and will function as intended.
			Notes
	□ Year 9	Date:	
	□ Year 18	Date:	
	□ Year 27	Date:	
	□ Year 36	Date:	
	45 years after commissioning		□ Clean stormwater management chambers and feed connectors of any debris. □ Determine the remaining life expectancy of the stormwater management chambers and recommended schedule and actions to rehabilitate the stormwater management chambers as required. □ Inspect the interior of the stormwater management chambers for deficiencies using CCTV or comparable technique. □ Replace or restore the stormwater management chambers in accordance with the schedule determined at the 45-year inspection. □ Attain the appropriate approvals as required. □ Establish a new operation and maintenance schedule.
			Notes
	□ Year 45	Date:	

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Major Maintenance

	Frequency		Action
Surrounding Site	**Monthly in 1st year**		□ Check for depressions in areas over and surrounding the stormwater management system.
			Notes
	□ Month 1	Date:	
	□ Month 2	Date:	
	□ Month 3	Date:	
	□ Month 4	Date:	
	□ Month 5	Date:	
	□ Month 6	Date:	
	□ Month 7	Date:	
	□ Month 8	Date:	
	□ Month 9	Date:	
	□ Month 10	Date:	
	□ Month 11	Date:	
	□ Month 12	Date:	
	Spring and Fall		□ Check for depressions in areas over and surrounding the stormwater management system.
			Notes
	□ Spring	Date:	
	□ Fall	Date:	
	□ Spring	Date:	
	□ Fall	Date:	
	□ Spring	Date:	
	□ Fall	Date:	
	□ Spring	Date:	
	□ Fall	Date:	
	□ Spring	Date:	
	□ Fall	Date:	
	□ Spring	Date:	
	□ Fall	Date:	
	Yearly		□ Confirm that no unauthorized modifications have been performed to the site.
			Notes
	□ Year 1	Date:	
	□ Year 2	Date:	
	□ Year 3	Date:	
	□ Year 4	Date:	
	□ Year 5	Date:	
	□ Year 6	Date:	
	□ Year 7	Date:	

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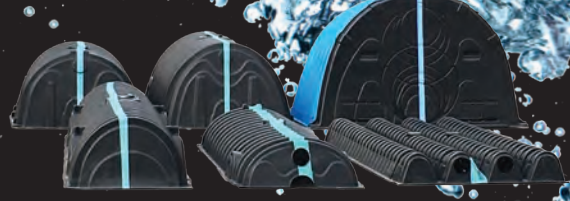


WRITTEN SUBMISSION 24 – CONSISTENCY WITH CITY MASTER PLANS
BRAMHALL ST. – 22; MMC CONGRESS STREET BUILDING
LEVEL III SITE PLAN APPLICATION

PAGES 24 – 27 OF MMC'S INSTITUTIONAL DEVELOPMENT PLAN DESCRIBES HOW MMC'S PLAN IS CONSISTENT WITH THE CITY OF PORTLAND'S COMPREHENSIVE PLAN. THOSE PAGES ARE ATTACHED TO THIS DOCUMENT.

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).

<u>Economic Growth</u>

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.

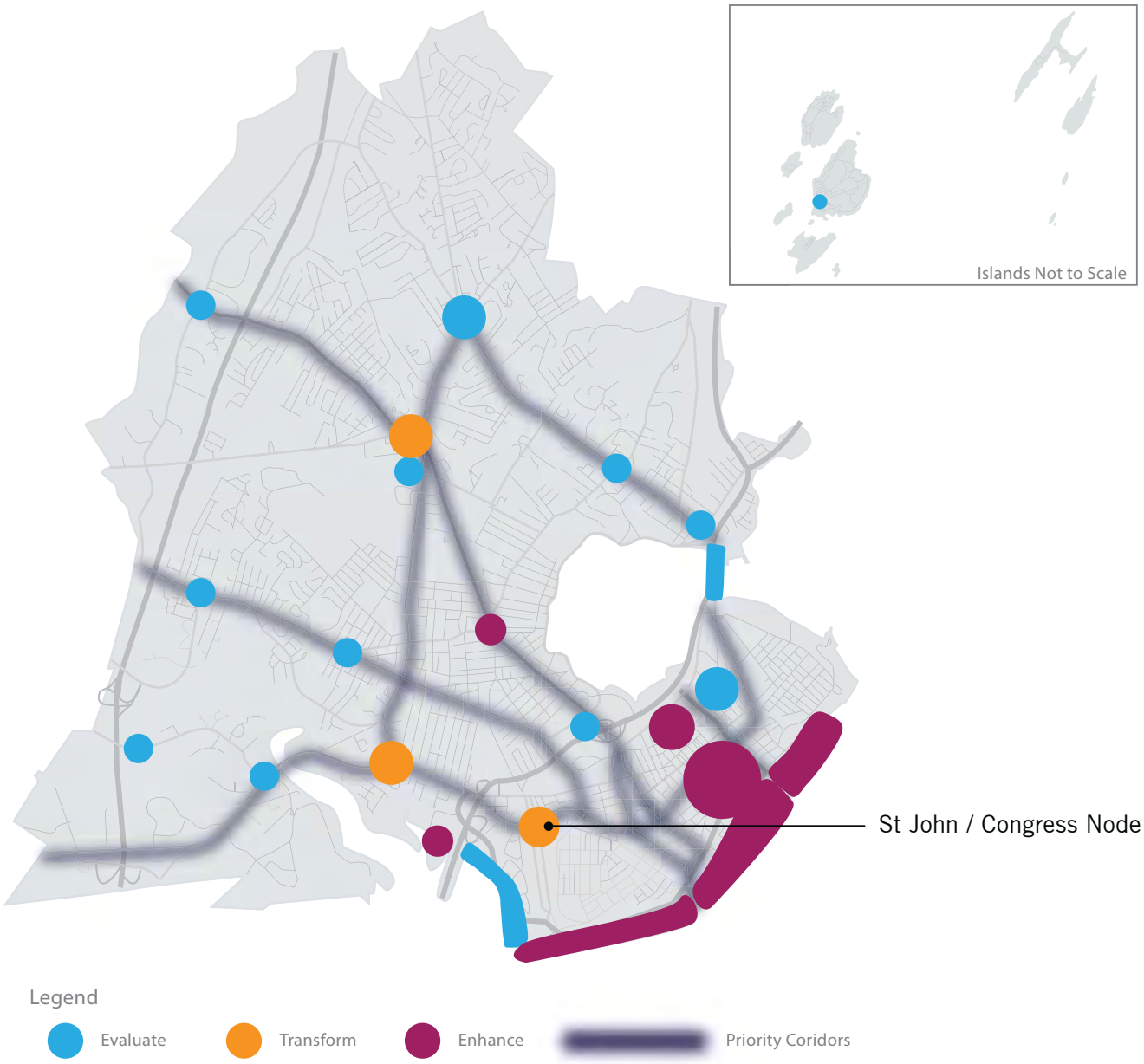
MMC's IOZ Regulatory Framework provides the mechanism for thoughtful, future development to transform the priority corridor identified by the City into an area of "additional mixed uses, higher density growth to take advantage of the transit benefits and services that well-designed, diverse corridors 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)



Maine Medical Center
Congress Street
New Construction Code Report
February 14, 2018



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INTRODUCTION

Perkins + Will has retained AKF Group LLC to prepare this narrative code report for the proposed Congress Street building on the Maine Medical Center (MMC) campus in Portland, ME. The seven-story high-rise building will have operating rooms, patient sleeping/recovery rooms, storage areas, offices, and staff facilities including locker rooms and lounges. The building will be constructed directly adjacent to the Visitor Garage and the Bean Building. A fire wall will be constructed between the Congress Street building and the Visitor Garage. A fire wall will not be constructed between the Congress Street building and the Bean Building since these buildings will be considered part of the same building. This report summarizes the code requirements for the Congress Street building.

QUICK FACTS

- Aggregate Area: Approximately 234,300 SF
- Height: 7 stories above grade; basement below grade
- Sprinkler Status: To be fully sprinklered
- Standpipe System: Class I standpipe system to be installed
- Occupancy: Use Groups A-3, B, I-2 (Condition 2), S-1, & S-2
- Construction Type: Modified Type IA (i.e. Type IB)

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 MUBEC became effective on January 23, 2018. The following codes and standards are applicable to the project.

- International Building Code (IBC), 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 62.1, 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 involves the new construction of a seven story clinical building on Congress Street in Portland, Maine. The building will have operating rooms, patient sleeping/recovery rooms, storage areas, offices, and staff facilities including locker rooms and lounges.

The building will include the following use groups and occupancies:

Group A-3/ assembly:	Conference rooms, lounges, and multi-purpose spaces exceeding 750 SF and 50 people.
Group B/ business:	Office areas, staff lockers, conference/meeting space less than 750 SF or 50 people
Group I-2 (Condition 2)/ healthcare:	Inpatient hospital care
Group S-1/ ordinary hazard storage:	Linen storage
Group S-2/ low hazard storage:	Storage/utility spaces

As indicated in the list above, the building contains Use Groups A-3, B, I-2, S-1, and S-2. These occupancies are permitted as mixed, nonseparated occupancies per the height and area analysis located in Section 4 of this report.

3. HIGH-RISE BUILDING FEATURES

The building is considered a high-rise structure since it contains an occupied floor that is 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.

3.1 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).

3.2 Fire Protection Systems

The following fire protection systems are required within the building as noted. Refer to Section 8 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). The seismic design category should be confirmed with the geotechnical or structural engineer of record.

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).

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 fire command center will be located on Level CG adjacent to Stair 1. The FCC must comply with the following requirements and contain the following features.

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 50-foot intervals (maximum) 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.

3.3 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 fire command center
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.

3.4 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. The proposed stairs comply with the remoteness criteria.

Stairwell Re-entry & Communication System

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 Section 7.2.1.5.8 (NFPA 101 Section 18.2.2.2.9). Per this section, all stair enclosure doors must meet one of the following conditions:

1) Re-entry from the stair enclosure to the interior of the building must be provided.
2) An automatic release that is actuated with the initiation of the building fire alarm system must be provided to unlock all stair enclosure door assemblies to allow re-entry.
3) Selected re-entry must be provided and must satisfy all of the following criteria:
    a. There shall be not less than two levels where it is possible to leave the stair enclosure to access another exit.
    b. There shall be not more than four stories intervening between stories where it is possible to leave the stair enclosure to access another exit.
    c. Re-entry shall be possible on the top story or next-to-top story served by the stair enclosure, and such story shall allow access to another exit.
    d. Door assemblies allowing re-entry shall be identified as such on the stair side of the door leaf.
    e. Door assemblies not allowing re-entry shall be provided with a sign on the stair side indicating the location of the nearest door opening, in each direction of travel, that allows re-entry or exit.

In addition, stairway doors other than the discharge doors cannot be locked from the stairway side unless they can be unlocked simultaneously from the fire command center (IBC 403.5.3). This requires a stairwell communication system provided on at

least every fifth floor. The communication system must connect to an approved constantly attended station (IBC 403.5.3.1).

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 in accordance with IBC 1058.

3.5 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 February 12, 2018 the highest occupied floor (i.e. Level G) is less than 120 feet above the lowest level of fire department vehicle access. Therefore, fire service access elevators are not required at this time. However, since future growth is expected to include a vertical expansion to the building, the current design includes two fire service access elevators. The fire service access elevator requirements of IBC 3007 include the following:

Every floor must be served by fire service access elevators (IBC 3007.1).

Fire service access elevators must be provided with a lobby complying with IBC 3007.6 (note that multiple fire service access elevators are permitted to be served by the same lobby). Per IBC 3007.6, the fire service access elevator lobbies must meet the following requirements:

- Enclosed with a smoke barrier having a minimum 1-hour fire-resistance rating and ¾-hour fire door assemblies
  - Enclosed fire service access elevator lobbies are not required on the level of exit discharge
- Have access to an interior exit stairway either directly from the lobby or through a protected path travel
  - The protected path of travel must have the same level of fire protection as the elevator lobby

- The protected path of travel must be separated from the enclosed elevator lobby through an opening protected by a smoke and draft control assembly complying with IBC 716.5.3

- Must have a minimum area of 150 SF with a minimum dimension of 8 feet, regardless of how many fire service access elevators are served
- Symbols complying with 780 CMR 3007.6.5 must be installed on each side of the hoistway door frame of each fire service access elevators
- A Class I standpipe hose connection must be provided in the exit stairway adjacent to the lobby. Access to this stairway is also required from each floor without passing through the FSAE lobby. It is our understanding that the design team is seeking a variance for relief from this requirement.
- Fire service access elevators must be provided with an approved method to prevent the infiltration of water into the hoistway enclosure caused by the operation of the automatic sprinkler system outside of the enclosure (IBC 3007.3).

As indicated in Section 3.3 of this report, fire service access elevators are required to be provided with standby power.

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.

Number of Elevator Cars per Hoistway

Where four or more elevator cars serve all or the same portion of a building, the elevators must be located in at least two separate hoistways. A maximum of four elevator cars can be located in a single hoistway (IBC 3002.2).

Two-Way Communication

A two-way communication system must be provided at the landing serving each elevator or bank of elevators on each accessible floor that is one or more stories above or below the level of exit discharge. The two-way communication system must provide communication between the required location and the fire command center or a central control point location approved by the fire department. The system must include both audible and visible signals. Directions for the use of the system and written identification of the location must be posted adjacent to the system (IBC 1009.8).

4. HEIGHT & AREA

The building must comply with the building height and area limitations of IBC 504 and 506 based on the most restrictive occupancy classification of the building. The height and area limitations have been evaluated based on non-separated mixed uses including Use Groups A-3, B, I-2, S-1, and S-2. Since the building exceeds 5 stories in height, Type IA

construction (i.e. noncombustible, 3-hour rated) is required (IBC 503.3 and 504.4). Type IA construction is not limited in building height, number of stories, or floor area.

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 deices on each floor (IBC 403.2.1.1). Since the building is less than 420 feet in height, the fire-resistance ratings required for Type IB construction (with the exception of columns) may be used while granting unlimited height and area allowances per Type IA construction (IBC 403.2.1). Although NFPA 101 does not contain a similar allowance, NFPA 101 Table 18.1.6.1 permits sprinklered healthcare buildings of Type IB (222) construction to be an unlimited in number of stories. Therefore, the building can be constructed using the required ratings for Type IB construction (except that columns must be 3-hour rated), while still utilizing the height and area limits applicable to Type IA construction.

Note that any future vertical expansion projects cannot extend the height of the building to above 420 feet since the reduction permitted by IBC 403.2.1 does not apply to buildings over 420 feet in height.

5. 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.

IBC Table 601 & NFPA 101 Table A.8.2.1.2
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 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)	Required Fire Resistance Rating
$X < 5$	1-hr
$5 \leq X < 10$	1-hr
$10 \leq X < 20$	1-hr
$X \geq 20$	0

Since the Congress Street building and Bean building are considered part of the same building, exterior wall protection is not required for the walls facing the Bean building. In addition, the entire north and west walls of the Congress Street building have a FSD of more than 20 feet, thus allowing unrated exterior walls in these areas. A 3-hour fire wall will be provided between the Congress Street and Visitor Garage buildings. Any exterior walls facing the Visitor Garage (other than the fire wall) must have a 1-hour rating due to the distance between the Visitor Garage and the Congress Street building.

6. FIRE AND SMOKE PROTECTED FEATURES

6.1 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
$X < 3$	Unprotected, Sprinklered	Not Permitted
$3 \leq X < 5$	Unprotected, Sprinklered	15%
$5 \leq X < 10$	Unprotected, Sprinklered	25%
$10 \leq X < 15$	Unprotected, Sprinklered	45%
$15 \leq X < 20$	Unprotected, Sprinklered	75%
$20 \leq X$	Unprotected, Sprinklered	No Limit

Since the north and west walls of the Congress Street building have a FSD of more than 20 feet, these walls are permitted to have unlimited unprotected openings. Due to the separation distance between the Congress Street and Visitor Garage buildings, no openings are permitted in the exterior walls facing Visitor Garage.

6.2 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).

Where the exterior wall of an exit enclosure is exposed to adjacent exterior walls by an angle less than 180 degrees, the adjacent exterior wall, or the exit enclosure wall must be rated. Whichever wall is rated must have a rating of at least 1-hour with ¾-hour opening protectives. The rating must extend at least 10 feet horizontally from the nonrated wall. The protection must extend from the ground to a level 10 feet above the highest landing of the stair, or the roofline, whichever is lower (IBC 1023.7).

6.3 Atrium

A 7-story atrium is proposed within the building. Atriums must comply the IBC 404 and NFPA 101 Section 8.6.7. In general, atriums must be enclosed with 1-hour fire barriers, with exceptions permitted for sprinkler-protected glass and glass-block walls. AKF is conducting perform a fire modeling analysis for the design of the atrium smoke control system to be reviewed with the local AHJ and State Fire Marshal's office.

Note that the atrium is not required to be included in the smoke compartment area since it is separated by sprinkler-protected glass in accordance with IBC 404.6(1.1) and NFPA 101 8.6.7 (NFPA 101 Section 18.3.7.1(3)).

6.4 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 (i.e. smoke partitions);
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 (i.e. smoke partitions) per IBC 407.2.2.

6.5 Smoke Compartments

Smoke barriers must be used to subdivide every story having an occupant load of 50 or more persons or used by persons receiving care, treatment or sleeping into at least two smoke compartments, each with a maximum area of 22,500 SF (as limited by NFPA 101 Section 18.3.7.1). Smoke compartments are not required on Level CB, B, or G since these spaces do not contain a healthcare occupancy and are located above or below the healthcare occupancy (NFPA 101 Section 18.3.7.2). Similarly, a smoke compartment and corresponding refuge area are not required for the lobby area of Level CG since the area does not contain a healthcare occupancy and the space is separated from the healthcare occupancy by a 2-hour horizontal exit (NFPA 101 Section 18.3.7.2 (2)). The following requirements apply to the smoke compartments.

Fire-Resistance

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).

The smoke barrier walls will serve as horizontal exits on Level CG through C4 in order to provide additional capacity and/or reduce travel distances. Horizontal exit walls must have a 2-hour fire-resistance rating and must be constructed as fire barriers. The requirements for horizontal exits are found in Section 1.1 of this report.

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)). Refer to associated Life Safety Plans for measurements of travel distances to the smoke barriers.

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. Where the refuge area serves ambulatory occupants, the area must be sized using a factor of 6 SF per occupant. 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). Refer to the associated Life Safety Plans for illustrations of refuge areas.

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).

Smoke Dampers
Smoke dampers are required for duct penetrations through a smoke barrier wall; however there is an exception for Group I-2, Condition 2 occupancies. If the HVAC system is fully ducted and the building is equipped throughout with quick-response sprinklers in accordance with IBC 903.3.2, smoke dampers are not required (IBC 717.5.5(2).

6.6 Care Suites

Care suites are provided on Level CG and C1. Care suites are permitted in lieu of providing patient sleeping rooms with direct access to a corridor (IBC 407.4.1 and NFPA 101 Section 18.2.5.6.4). The following requirements apply to the proposed care suites. Since the post-op patients may require up to 23-hour stays in these suites, the suites are considered "patient care sleeping suites" as defined by NFPA 101 Section 3.3.272.4).

Exit Access
Spaces not classified as care suites are not permitted to exit through a care suite. In care suites required to have more than one means of egress, on exit access path is permitted to pass through an adjacent care suite (IBC 407.4.4.1 and NFPA 101 Section 18.2.5.7.2.2(C)). One means of egress from the suite must be directly to a corridor (NFPA 101 Section 18.2.5.7.2.2(B)).

Separation
Care suites must be separated from other portions of the building by smoke partitions (IBC 407.4.4.2 and NFPA 101 Section 18.2.5.7.1.2).

Protection
Patient sleeping rooms must be provided with at least one of the following (IBC 407.4.4.5 and NFPA 101 Section 18.2.5.7.2.1(D)):

- Direct visual supervision from a normally attended location within the suite (glass walls and cubicle curtains are permitted) and any sleeping rooms not provided with direct visual supervision are provided with automatic smoke detection; or
- The entire suite is provided with automatic smoke detection.

Access to Corridor

Movement from habitable rooms within the care suite to a corridor door must not require passage through more than three doors and 100 feet of travel distance (IBC 407.4.4.3 and NFPA 101 Section 18.2.5.7.2.4(A)).

Number of Means of Egress

Care suites containing sleeping rooms must have two remote exit access doors from the suite where the suite is more than 1,000 SF (IBC 407.4.4.5.2 and NFPA 101 Section 18.2.5.7.2.2(A)).

Maximum Size

Care suites containing sleeping rooms must not exceed 7,500 SF. However, the maximum area of such care suites is permitted to be increased to 10,000 SF where both direct visual supervision and smoke detection are provided throughout the suite (IBC 407.4.4.5.1 and NFPA 101 Section 18.2.5.7.2.3).

All care suites included in the current design comply with the above requirements.

6.7 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
In Group I-2 occupancies, waste and linen collection rooms with containers that have an aggregate volume of 64 gallons (8.6 ft^3) or more	1 hour	NFPA 101 Table 18.3.2.1
In Group I-2 occupancies, storage rooms greater than 100 SF	1 hour	IBC Table 509
In Group I-2 occupancies, 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

Room or Area	Separation and/or Protection	Code Section
Fire Command Center	1 hour	IBC 403.4.6 & NFPA 101 Section 11.8.6
Fire Service Access Elevator Lobby	1-hour smoke barrier	IBC 3007.4.2
Other Elevator Lobbies	Smoke partition	IBC 3006.2(5)
Emergency Electrical Rooms	2-hours or sprinkler protection	NEC 700.10(D)(2)
Emergency Feeder Circuit Wiring	2-hours or sprinkler protection	NEC 700.10(D)(1)

Note that the 2-hour floor assembly between Level CB and Level CG will serve as the separation between the storage rooms located on Level CB and the Group I-2 occupancy located on Level CG. This arrangement is consistent with the approach for separated occupancies in both IBC 508.4 and NFPA 101 Section 6.1.14.4.

6.8 Fire Walls

The Congress Street building will be connected to two other buildings on the MMC site: the Bean Building and the Visitor Garage. A fire wall will be provided between the Congress Street Building and the Visitor Garage due to the difference in construction type between these two buildings. It is our understanding that the Congress Street building and Bean Building are considered part of the same building. Therefore, both the Congress Street and Bean buildings must be consistent with Type I construction. The requirements and implications for fire walls are identified in this section.

Fire-Resistance Rating

A 3-hour fire-resistance rating is required for fire walls in Group I occupancies (IBC 706.4).

Openings

The aggregate width of openings through a fire wall at any floor level cannot exceed 25% of the length of the wall (IBC 706.8). Doors or fire shutters in the fire wall must also have a 3-hour rating (IBC Table 716.5). Doors within the fire walls must be self- or automatic-closing (IBC 716.5.9). If doors are automatic-closing, they must be automatic-closing by the actuation of smoke detectors or by loss of power to the smoke detector or hold-open device. The doors must begin to close within 10 seconds of smoke detector activation or power failure (IBC 716.5.9.3).

Horizontal Continuity

Per IBC 706.5, 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. However there are exceptions as follows:

1. The fire wall may terminate at combustible exterior sheathing or siding if the exterior walls within 4 feet of the fire wall on each side are 1-hour rated with ¾-hour opening protectives.
2. The fire wall may terminate at noncombustible exterior sheathing, siding, or other finish if such noncombustible finishes are extended a distance of at least 4 feet on each side of the fire wall.

Per IBC 706.5.2, 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. Note however there are some exceptions to this requirement. The applicability of the exceptions depends on whether the projections contain concealed openings. If the projections do not contain concealed spaces, the fire wall is not required to extend to the edge of the projection if the exterior wall behind and below the projection is 1-hour fire-resistance rated for a distance at least equal to the depth of the projection. Exterior openings within this rated wall must be protected with ¾-hour opening protectives (IBC 706.5.2(1)).

Vertical Continuity

Per IBC 706.6, 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 unless one of the exceptions to Section 706.6 is met, as follows.

1. The buildings comply with the requirements for stepped buildings in IBC 706.6.1.
2. Two-hour fire-resistance rated fire walls may terminate at the underside of the roof sheathing, deck, or slab if the following provisions are met:
    a. The lower roof assembly within 4 feet of the fire wall is at least 1-hour fire-resistance rated and the entire length of the span of supporting elements for the rated roof assembly are1-hour rated as well.
    b. There are no openings in the roof within 4 feet of the fire wall.
    c. Each building has at least a Class B roof covering.
3. Where both buildings have at least a Class B roof covering, fire walls may terminate at the underside of noncombustible roof sheathing, deck or slabs. Openings in the roof within 4 feet of the fire wall are prohibited.
4. The buildings have sloped roofs complying with IBC 706.6.2.

Exterior Wall Exposure

Where the fire wall intersects the exterior walls and exterior walls form an angle of less than 180 degrees, protection must be provided by one of the following methods (IBC 706.5.1).

1. The exterior walls on both sides of the fire wall must have a 1-hour fire-resistance rating and ¾-hour opening protectives for a distance of 4 feet from the intersection with the fire wall.
2. An imaginary lot line must extend beyond the fire wall and the required fire-resistance rating and opening protection for the exterior walls on either side of the fire wall must be based on the FSD to this imaginary lot line.

7. 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/cm^2
	DOC FF-1	Pass

Notes:
FSI = flame spread index
SDI = smoke-developed index

Interior Wall and Ceiling Finish Requirements by Occupancy (Fully Sprinklered Building)

Use Group	Walls & Ceilings			Floors	
	Exit enclosures and exit passageways	Corridors	Rooms and enclosed spaces	Exits and corridors	Other spaces
A-3	B	B	C	DOC FF-1	DOC FF-1
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. Note that where corridors are shared by both occupancies, the most restrictive finish must be used (i.e. Class B). All floors throughout the building must pass the DOC FF-1 "pill test".

8. FIRE PROTECTION SYSTEMS

In addition to the systems discussed in Section 3 of this report, the following fire protection requirements also apply.

8.1 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).

8.2 Fire Alarm and Detection System

In addition to the manual fire alarm system, an automatic smoke detection system must be provided in the inpatient corridors and in any areas open to the corridors (i.e. not separated by smoke partitions). Based on the plans provided to AKF on February 12, 2018, the proposed waiting areas are not open to the inpatient corridors.

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).

8.3 Standpipe System

A standpipe system is required throughout the building since the floor level of the highest story is located more than 30 feet above the lowest level of fire department vehicle access. Class I standpipes must be provided in sprinklered high-rise buildings per IBC 905.3.1 and NFPA 101 Section 11.8.3.2.

Class I standpipes must be installed in the following locations in accordance with IBC 905.4:

- In every required interior exit stairway. Class I standpipe hose connections must be provided for each story above and below grade and must be located at an intermediate landing between stories, unless otherwise approved by the authority having jurisdiction (AHJ).

- At each horizontal exit. Class I standpipe hose connections must be provided on each side of the wall adjacent to the exit opening, unless the floor areas adjacent to the horizontal exit are reachable from an interior exit stairway hose connection by a 30-foot hose stream from a nozzle attached to 100 feet of hose.

- In every exit passageway. Class I standpipe hose connections must be provided at the entrance from the exit passageway to other areas of the building, unless the floor areas adjacent to the exit passageway are reachable from an interior exit stairway hose connection by a 30-foot hose stream from a nozzle attached to 100 feet of hose.

- In remote portions of the floor. Where the most remote portion of a sprinklered floor is more than 200 feet from a hose connection, the fire code official is authorized to require that additional hose connections be provided in approved locations.

8.4 Portable Fire Extinguishers

Portable fire extinguishers must be provided in accordance with NFPA 10 (IBC 906 and NFPA 101 Section 18.3.5.12).

8.5 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).

9. MEANS OF EGRESS

The applicable means of egress requirements for the building are described below.

9.1 Egress Summary

See the associated Life Safety Plans for the calculated occupant loads throughout the building. The occupant loads of the building were calculated based on the occupant load factors 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.

9.2 Exit Access Travel Distance

The exits are required to be arranged such that the maximum exit access travel distance is as follows (IBC 1017.2 and NFPA 101 Sections 12.2.6.2(1), 18.2.6.2.1, 38.2.6.3, & 42.2.6).

Occupancy	With Sprinkler System (feet)
A-3	250
B	300
I-2	200
S-1	250
S-2	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).

Refer to the associated Life Safety Plans to note travel distance compliance.

9.3 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.

Where corridors are required to be 96 inches, the following projections are permitted by NFPA 101 Section 18.2.3.4:

- Projections into the required width are permitted for wheeled equipment, provided all of the following conditions are met:
  - The wheeled equipment does not reduce the required clear unobstructed corridor width to less than 60 inches
  - The health care occupancy fire safety plan and training program address the relocation of the wheeled equipment during a fire or similar emergency
  - The wheeled equipment is limited to the following: equipment in use and carts in use, medical emergency equipment not in use, and patient lift and transport equipment

- Projections into the required width are permitted for fixed furniture, provided all of the following conditions are met:
  - The fixed furniture is securely attached to the floor or to the wall
  - The fixed furniture does not reduce the clear unobstructed corridor width to less than 6 feet
  - The fixed furniture is located only on one side of the corridor
  - The fixed furniture is grouped such that each grouping does not exceed an area of 50 sf
  - The fixed furniture groupings are separated from each other by a distance of at least 10 ft
  - The fixed furniture is located so as to not obstruct access to building service and fire protection equipment
  - Corridors throughout the smoke compartment are protected by an electrically supervised automatic smoke detection system, or the fixed furniture spaces are arranged and located to allow direct supervision by the facility staff from a nurses' station or similar space.

Since the IBC does not address corridor projections for I-2 Condition 2 occupancies, we recommend reviewing any proposed projections with the building official for approval.

The exit access must be arranged such that dead ends do not exceed 20 feet in corridors serving Group I-2 and A-3 occupancies and do not exceed 50 feet in corridors serving other occupancies (IBC 1020.4 and NFPA 101 Sections 38.2.5.2.1 & 42.2.5).

9.4 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 Sections 12.2.5.1.2, 38.2.5.3.1 & 42.2.5.

Spaces with One Means of Egress

Use Group	Maximum Occupant Load	Maximum Common Path of Travel Distance (ft)
A-3	49	75[A]
B	49	100
I-2	10	75
S-1, S-2	29	100

[A] The common path of travel in assembly occupancies is permitted to be 75 feet where the path serves not more than 50 occupants. Where the path serves more than 50 occupants, the common path of travel is limited to 20 feet; however, an occupant load exceeding 50 will require a second means of egress.

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 3.4 of this report for the required separation between the closest points of the stairway enclosures.

Where more than one means of egress is required, at least two accessible means of egress must be provided. Where one means of egress is permitted, at least one means of egress must be accessible (IBC 1009.1 and NFPA 101 Section 7.5.4).

9.5 Exterior Stairs

An exterior stair is proposed for Level CG, C1, and C2 and the stair will be at or very near grade. The stair provides access from the building to Gilman Street. The use of the exterior stair as a means of egress from Level CG, C1, and the green roof on C2 will likely require a compliance alternative or variance.

There are two types of exterior stairs: exterior exit stairs and exterior exit discharge stairs. Exterior exit discharge stairs are generally considered stairs that provide occupants access to grade, but only require travel on the stair for less than a story.

Exterior exit stairs are those outside stairs that require occupants to travel a story or more to reach grade. The proposed stair falls into a gray area of the code because while occupants would travel more than a story to reach street level, the stair itself would be at grade or very near grade due to the sloped site.

Since exterior exit stairs require travel for a story or more, greater protection measures are required for such stairs. Typically these stairs are not permitted in Group I-2 occupancies and/or in buildings more than six stories in height or high-rise buildings (IBC 1027.2). That being said, the height limitation is to prevent occupants from experiencing vertigo or from being afraid to use the stair. Since the stair only connects the first through third story and will be at or near grade, it complies with the intent of the code and aligns with the intent of an exit discharge stair. In addition, NFPA 101 permits the use of exterior exit stairs in hospitals (Section 18.2.2.3). Therefore, in our opinion this is a reasonable compliance alternative approach to be reviewed with the building official.

Exterior stairs must comply with the following requirements. While the stair could be considered an exit discharge stair, we recommend complying with the following as part of the compliance alternative or variance approach.

- Exterior exit stairs must be open on at least one side, except as required for structural columns, beams, handrails, and guards (IBC 1027.3 and NFPA 101 Section 7.2.2.6.6).
    - Open sides must be at least 50% open and have an aggregate open area of at least 35 SF adjacent to each floor level and the level of each intermediate landing.
    - The required open area must be located at least 42 inches above the adjacent floor or landing level.
    - The stair must be arranged to avoid impediments to its use by persons having fear of high places. Stairs more than 36 feet above the finished ground level must be provided with an opaque visual obstruction not less than 48 inches in height (NFPA 101 Section 7.2.2.6.2).
- The open areas adjoining the stair must be either yards, courts, or public ways. The remaining sides may be enclosed by the exterior walls of the building (IBC 1027.4).
- The stair must have a minimum FSD of 10 feet measured at right angles from the exterior edge of the stair to adjacent lot lines, other portions of the building, and other buildings (IBC 1027.5).
- The exterior stairway must be separated from the interior of the building as required for interior stairs. Since the proposed stair connects less than 4 stories, a 1-hour separation is required (IBC 1027.6 & 1023.2 and NFPA 101 Section 7.2.2.6.3.1).
    - The 1-hour separation must extend horizontally for at least 10 feet beyond the stair and vertically from finished ground level to a point 10 feet above the topmost landing of the stair, or to the roofline (whichever is less) (NFPA 101 Section 7.2.2.6.3.2).
    - Roof construction must provide protection beneath the stairs and must extend horizontally at least 10 feet to each side of the stair (NFPA 101 Section 7.2.2.6.3.3).

- Where a vertical plane projecting from the edge of the stair and stair landing is exposed by other parts of the building by an angle less than 180 degrees, the exterior wall must be rated in accordance with IBC 1023.7. See section 6.2 of this report.
- All openings below the stair must have a ¾-hour rating where the stair is located as follows (NFPA 101 Section 7.2.2.6.4):
    - In an enclosed court with a smallest dimension that does not exceed ⅓ its height; or
    - In an alcove having a width that does not exceed ⅓ its height and a depth that does not exceed ¼ its height.
- The stair must be designed to minimize water accumulation on the walking surface (IBC 1011.7.2 and NFPA 101 Section 7.2.2.6.5).

9.6 Horizontal Exits

Horizontal exits will be provided on various levels of the building. In addition to the inpatient floors, horizontal exits will also be provided at the connection to the Bean Building for Levels B and G. Requirements for horizontal exits are as follows.

Separation

The separation between buildings or portions thereof connected by a horizontal exit must be provided by a fire wall or fire barrier (IBC 1026.1). The minimum fire-resistance rating of the separation is 2 hours, but the separation cannot be less than required by other sections of the code. The fire wall between the Congress Street building and the Visitor Garage must have a minimum 3-hour fire-resistance rating per IBC 706.4.

Horizontal exits constructed as fire barriers must be continuous from exterior wall to exterior wall so as to divide completely the floor served by the horizontal exit. In addition, where the fire barrier serving as a horizontal exit intersects exterior walls at an angle of less than 180 degrees, the exterior walls must have a 1-hour fire-resistance rating with ¾-hour rated opening protectives for a distance of at least 10 feet on both sides of the horizontal exit (IBC 1026.2 and NFPA 101 Section 7.2.4.3.). The smoke barrier/horizontal exit wall on Level C2 through C4 intersects exterior walls that are at an angle of less than 180 degrees. Therefore, exterior wall protection is required. Refer to the associated life safety plans for further details.

Opening Protectives

Fire doors in horizontal exits must be self-closing or automatic-closing when activated by a smoke detector. Doors, where located in a cross-corridor condition, must be automatic closing by smoke detector activation (IBC 2026.3 and NFPA 101 Sections 7.2.4.3.10 & 7.2.4.3.11). Doors in horizontal exits must provide a minimum 1½-hour fire-resistance rating. However, doors in 3-hour fire walls must provide a minimum 3-hour rating (IBC Table 716.5 and NFPA Table 101 8.3.4.2)

Refuge Areas & Capacity

The refuge area of a horizontal exit must be a space occupied by the same tenant or a public area. Each refuge area must be adequate to accommodate the original occupant load of the refuge area plus the occupant load anticipated from the

adjoining compartment. The anticipated occupant load from the adjoining compartment must be based on the capacity of the horizontal exit doors entering the refuge area (IBC 1026.4).

The capacity of the refuge area should be computed based on a net floor area allowance of 3 SF per occupant. The capacity of refuge areas serving Group I-2 occupants must be calculated at 15 SF per occupant for ambulatory occupancies and 30 SF per occupant for nonambulatory occupancies (IBC 1026.4.1 and NFPA 101 Section 7.2.4.2.4).

Not less than one means of egress from the area of refuge must lead directly to the exterior or to an interior exit stairway or ramp (IBC 1026.4.2).

9.7 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). Since the proposed exterior stair will be serving as an exit stair, it is our opinion that the doors serving this stair are also only required to provide a minimum of 32 inches in clear width. Doors not serving bed-traffic 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).

9.8 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)).

9.9 Aisles and Aisle Accessways

In assembly areas such as the Interprofessional Lounges on Level C2 and C3, aisles and aisle accessways must provide a minimum clear width between seating as summarized below.

Aisles

Aisles serving table seating on one side must have a clear width of at least 55 inches. Where seating is provided on both sides of the aisle, the aisle must have a clear width of 74 inches when serving less than 50 seats, and 80 inches when serving 50 or more

seats. The clear aisle width must be measured from the edge of the tables (IBC 1029.9.6 & 1029.12.1).

Aisle Accessways

Aisle accessways serving seating on one side must have a minimum clear width of 31 inches. Aisle accessways serving seating on both sides must have a minimum clear width of 50 inches. The clear width must be increased ½-inch for each additional foot, or fraction thereof, beyond 12 feet of aisle accessway length. No minimum width for aisle accessways having a length not exceeding 6 feet and used by a maximum of four people. The clear aisle accessway width must be measured from the edge of the tables (IBC 1029.12.1).

10. ACCESSIBILITY

Accessibility requirements for medical facilities are provided in the American's with Disabilities Act Standards (ADA). All of the patient sleeping rooms must comply with ADA 805 (ADA 223.2.2).

11. MECHANICAL

The building must be provided with mechanical ventilation in accordance with ASHRAE 62.1, 2013 edition.

12. ENERGY CONSERVATION

The building is subject to with the requirements of IECC 502, 503, and C504 or ASHRAE 90.1 – 2013 (IECC 501.2).

13. PLUMBING FIXTURES

The following table summarizes the plumbing fixtures provided in the Congress Street building. The subsequent sections discuss the analysis for each of the floors. The plumbing fixture analysis is based on the requirements of the 2015 IAPMO UPC as adopted and amended by Maine.

Floor Level[A]	Occupancy	Toilets Provided		Urinals	Lavatories Provided		Max Occupant Load Supported			Maximum Expected Occupant Load
		Male	Female		Male	Female	Male	Female	Total	
CB	Group B	1	1	0	1	1	50	15	30	11
CG	Group A-3	2	3	0	2	3	200	100	200	181
	Group I-2 - Employee	1	2	0	1	2	15	15	30	25
	Group I-2 - Patient	4 Unisex					32 patients			41[B]
C1	Group I-2 - Employee	2	3	0	2	3	35	35	70	4
C2	Group I-2 - Employee	1	2	0	1	2	15	15	30	16
	Group I-2 - Public	1	1	0	1	1	1 waiting room			1 waiting room
	Group I-2 - Patient	1 per room					32 patient rooms			32 patient rooms
C3	Group I-2 - Employee	1	2	0	1	2	15	15	30	16
	Group I-2 - Public	1	1	0	1	1	1 waiting room			1 waiting room
	Group I-2 - Patient	1 per room					32 patient rooms			32 patient rooms
B	Group I-2 - Employee	3	5	2	3	3	135	95	190	190
G	Group B	2	3	1	3	3	200	50	100	49

[A] Level C4 is not included in the table since the space is shell space and will be fit-out at a future date. Bathroom fixtures will be provided once the space is fit-out for occupancy.

[B] While the post-op suite includes 41 beds, full occupancy is not expected at one time. The toilet fixtures provided for patients have a capacity of 32 patients, which is approximately 78% of the number of beds.

13.1 LEVEL CB

On Level CB, bathrooms are provided for the IT offices located on this level as well as potential transient staff. The IT office has 11 work stations. Although the floor plans show two toilets and lavatories for each sex, it is our understanding that the number of fixtures may be reduced to one toilet per sex. Therefore, the table above only includes one toilet and lavatory per sex. These fixtures support a total staff population of 30 people. This proves sufficient to support the IT staff as well as additional capacity for transient workers. It is also our understanding that additional staff bathrooms may be provided at or near the employee entrance on Gilman Street. Since staff members are accommodated with bathrooms on other floors, these additional staff toilet rooms are not required but provided for convenience purposes for staff arriving/leaving through the staff entrance at this location. The number of plumbing fixtures provided here is subject to the design team's consideration.

13.2 LEVEL CG

A combination of staff, public, and patient restrooms are provided on this floor. The following sections discuss each population.

Staff
A total of 3 unisex staff bathrooms are provided on Level CG. These fixtures can support a maximum of 30 staff members. Approximately 25 staff workstations are shown on the plans. Therefore, the proposed fixtures provide sufficient capacity.

Public
A total of 3 unisex bathrooms and one set of individual bathrooms for each sex are provided for public use. These fixtures can support a maximum of 200 people. Approximately 181 seats are shown in the CG waiting area. Therefore, the fixtures provide sufficient capacity for the expected occupant load.

Patients
A total of 4 unisex patient bathrooms are provided on Level CG. These fixtures can support a maximum of 32 patients.

While the post op suites contains 41 patient beds, we do not expect all beds to be occupied at one time and therefore the 4 patient toilet rooms are considered sufficient since they provide for 78% of the beds to be occupied. If all beds could be occupied at one time, two additional patient bathrooms are required. We recommend reviewing the proposed layout with MMC the local plumbing inspector for approval.

13.3 LEVEL C1

Level C1 is provided with 5 unisex staff toilets that are intended to serve staff in the PACU suite. The 5 staff toilets can support a maximum of 70 employees. A total of 4 staff workstations are shown in the PACU suite. Therefore, the proposed fixtures provide sufficient capacity.

Due to the de-gowning process for operating room (OR) staff, the OR employees are expected to use the bathrooms in the locker rooms located on Level B. No patient bathrooms are provided on this floor since patients in the PACU suite and ORs will be unconscious and unable to use the restroom. Once patients become conscious, they are moved to a different floor (i.e. Stage 2) where they will have access to restrooms. Stage 2 will be either Level CG post op suite to await discharge or relocation to an inpatient room.

13.4 LEVEL C2 & C3

A combination of staff, public, and patient restrooms are provided on Level C2 and C3. The following sections discuss each population.

Staff
A total of 3 unisex staff toilet rooms are provided on each floor. These toilet rooms can support a maximum of 30 employees. Levels C2 and C3 will contain a staff to patient ratio of 1:2. Since there are 32 beds on each floor, approximately 16 employees are expected on each floor. Therefore, the proposed staff fixtures can accommodate the expected staff population as well as additional transient staff who may be on the floors temporarily such as doctors, nutritionists, etc.

Public
A total of 2 unisex toilet fixtures are provided for the waiting rooms on each floor. These fixtures provide sufficient capacity in accordance with UPC Table 422.1.

Patient
Each patient room is provided with an individual toilet room in accordance with UPC Table 422.1.

13.5 Level C4

Level C4 is not included in the plumbing fixture analysis since the space is being constructed as shell space for future fit-out. Plumbing fixtures will be provided on Level C4 at a later date as needed for the future program.

13.6 LEVEL B

Locker rooms are provided on Level B for use by OR staff. There are 19 ORs provided on Level C1 with a maximum of 6-10 employees expected in each OR. This staff count totals a maximum of 190 people. With the ORs operating at 80% capacity, the typical OR staff population is approximately 152 people. As shown in the attached summary table, proposed locker room fixtures can support both the typical (i.e. 152) and maximum (i.e. 190) expected occupant loads for the OR staff.

13.7 LEVEL G

Level G contains a staff lounge as well as serves as a public entrance to the building from the Visitor Garage. Therefore, public restrooms have been provided at this level. As shown in the table on page 26, sufficient restrooms have been provided on other floors for both the public and staff populations. Therefore, the fixtures provided on Level G are for convenience only.

The staff lounge on Level G has a calculated occupant load of 49 people and therefore qualifies as a Group B occupancy. Using the factors applicable to Group B occupancies, the proposed fixtures can support 100 people (UPC Table 422.1). This capacity is sufficient for the population of the staff lounge and provides excess capacity for transient staff and/or members of the public.

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

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Tel: 207-200-2100
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Lewiston, ME 04240
Tel: 207-783-9858

PROJECT NO.	FIELD BOOK	DESIGN	CHKD	DRAWN
01046	791B	WTC	CDM	MWE

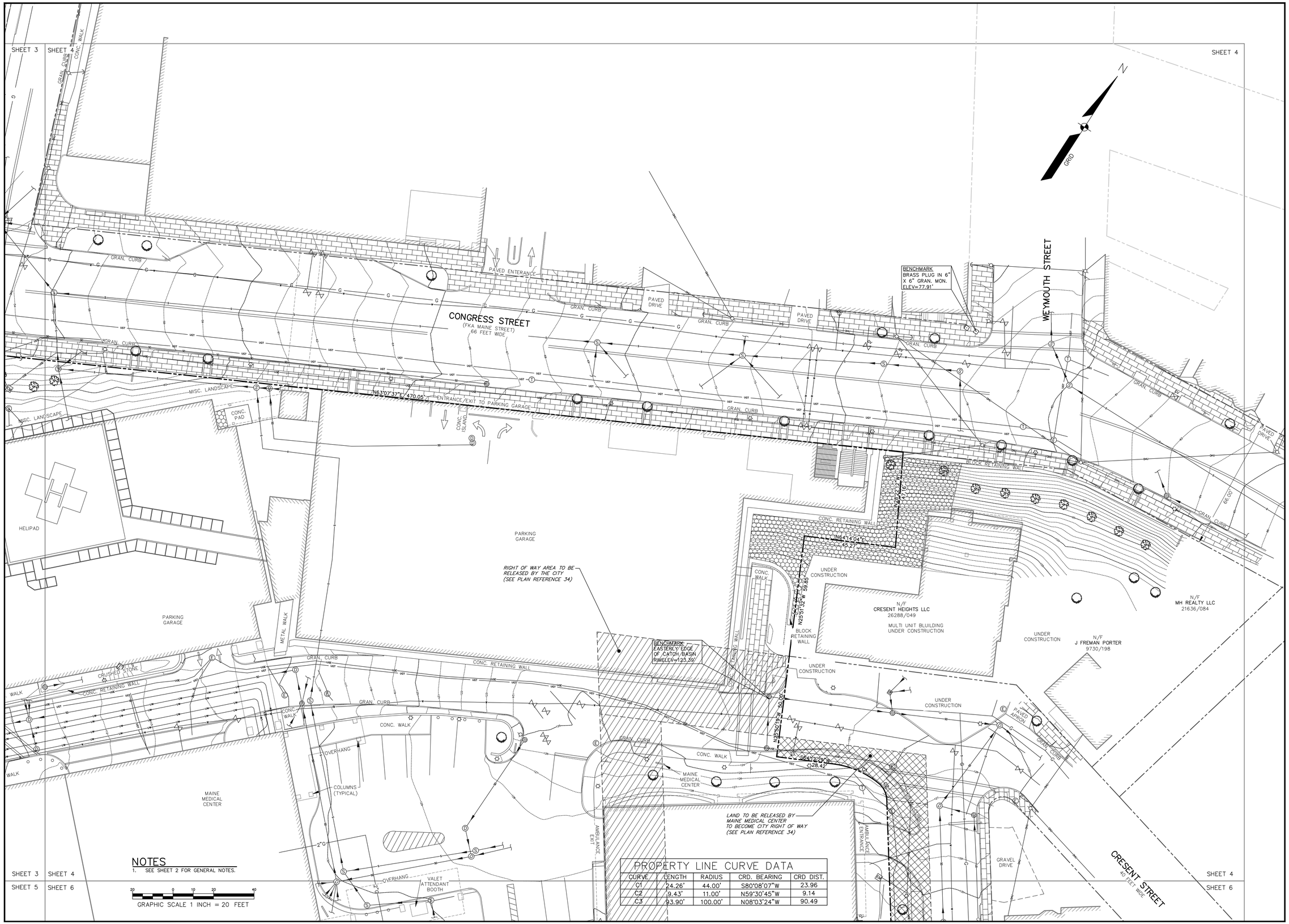
EXISTING CONDITIONS SURVEY
OF:
MAINE MEDICAL CENTER CAMPUS
GILMAN ST, CONGRESS ST, BRAMHALL ST, ET AL
PORTLAND, MAINE
FOR:
MAINE MEDICAL CENTER
22 BRAMHALL ST
PORTLAND, MAINE 04101

RECORD OWNER:
SEE NOTE 1, SHEET 2

DATE	SCALE
10/23/09	1"=20'

SHEET 3 OF 8

01046-EC-2017.dwg, TAB:ECO3



NOTES

1. SEE SHEET 2 FOR GENERAL NOTES.

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:
B	MWE	12/14/17	SUBMITTED FOR CITY REVIEW
A	MWE	12/23/09	SUBMITTED FOR CLIENT REVIEW

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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

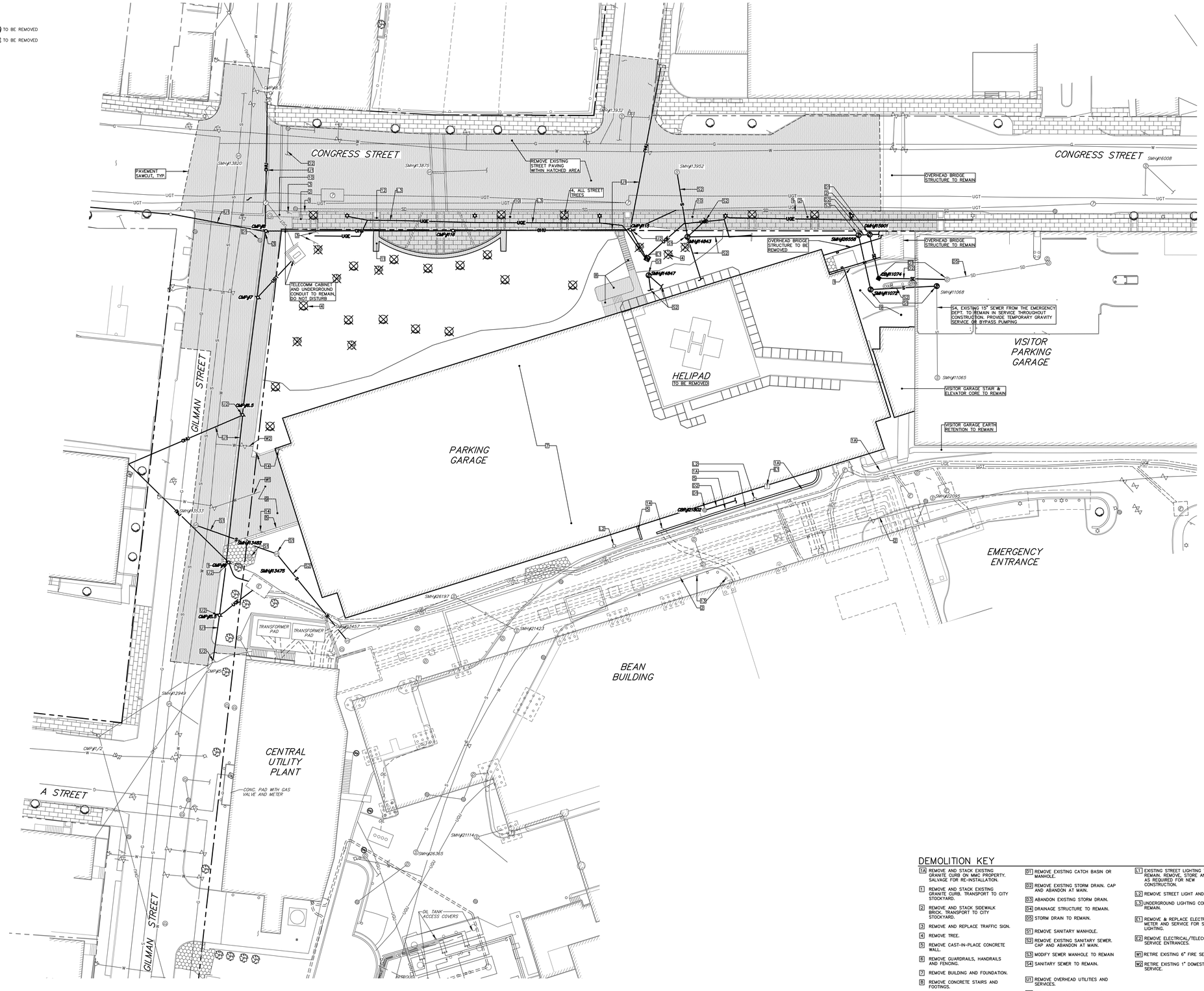
DATE	SCALE
10/23/09	1"=20'

SHEET 4 OF 8

01046-EC-2017.dwg, TAB:EC04

LEGEND

EXISTING	DESCRIPTION	PROPOSED
	PROPERTY LINE/R.O.W.	
	ABUTTER LINE/R.O.W.	
	BUILDING	
	EDGE PAVEMENT	
	PAVEMENT SAWCUT	
	EDGE CONCRETE	
	CURB LINE	
--420-- --118--	CONTOURS	
×120.00	SPOT GRADE	
	RETAINING WALL	
	DECIDUOUS TREE	TO BE REMOVED
	CONIFEROUS TREE	TO BE REMOVED
	SIGN	
G	GAS	
	GAS GATE VALVE	
	GAS METER	
	GAS MANHOLE	
W	WATER	
	WATER GATE VALVE	
	WATER SHUT OFF	
	HYDRANT	
	WATER MANHOLE	
S	SANITARY SEWER	
	SANITARY MANHOLE	
SD	STORM DRAIN	
UD	UNDER DRAIN	
	DRAINAGE MANHOLE	
	CATCH BASIN	
OHU	OVERHEAD UTILITY	
UGU	UNDERGROUND UTILITY	
	TRANSFORMER PAD	
	ELECTRICAL MANHOLE	
	TELEPHONE MANHOLE	
	LIGHT POLE	
	UTILITY POLE	
	GUY WIRE	
	RIPRAP	
	INLET PROTECTION	



GRAPHIC SCALE
20 0 20 40
(IN FEET)
1 INCH = 20 FT.

DEMOLITION KEY

- 1A REMOVE AND STACK EXISTING GRANITE CURB ON MMC PROPERTY. SALVAGE FOR RE-INSTALLATION.
- 1 REMOVE AND STACK EXISTING GRANITE CURB. TRANSPORT TO CITY STOCKYARD.
- 2 REMOVE AND STACK SIDEWALK BRICK. TRANSPORT TO CITY STOCKYARD.
- 3 REMOVE AND REPLACE TRAFFIC SIGN.
- 4 REMOVE TREE.
- 5 REMOVE CAST-IN-PLACE CONCRETE WALL.
- 6 REMOVE GUARDRAILS, HANDRAILS AND FENCING.
- 7 REMOVE BUILDING AND FOUNDATION.
- 8 REMOVE CONCRETE STAIRS AND FOOTINGS.
- 9 REMOVE PAVEMENT AND CURBING.
- 10 REMOVE CONCRETE SIDEWALK.
- 11 REMOVE AND STACK GRANITE SEAT WALL BLOCKS.
- 12 REMOVE AND STACK GRANITE PAVERS AT TREE WELLS AND SIDEWALK.
- 13 REMOVE BOLLARDS.
- D1 REMOVE EXISTING CATCH BASIN OR MANHOLE.
- D2 REMOVE EXISTING STORM DRAIN. CAP AND ABANDON AT MAIN.
- D3 ABANDON EXISTING STORM DRAIN.
- D4 DRAINAGE STRUCTURE TO REMAIN.
- D5 STORM DRAIN TO REMAIN.
- S1 REMOVE SANITARY MANHOLE.
- S2 REMOVE EXISTING SANITARY SEWER. CAP AND ABANDON AT MAIN.
- S3 MODIFY SEWER MANHOLE TO REMAIN
- S4 SANITARY SEWER TO REMAIN.
- U1 REMOVE OVERHEAD UTILITIES AND SERVICES.
- U2 REMOVE UTILITY POLE AND GUY.
- U3 REPLACE UTILITY POLE AND GUY.
- U4 REMOVE TRANSFORMER AND PAD.
- U5 REMOVE A/C UNIT.
- LT EXISTING STREET LIGHTING TO REMAIN. REMOVE, STORE AND RESET AS REQUIRED FOR NEW CONSTRUCTION.
- L2 REMOVE STREET LIGHT AND BASE.
- L3 UNDERGROUND LIGHTING CONDUIT TO REMAIN.
- E1 REMOVE & REPLACE ELECTRICAL METER AND SERVICE FOR STREET LIGHTING.
- E2 REMOVE ELECTRICAL/TELECOMM SERVICE ENTRANCES.
- W1 RETIRE EXISTING 6" FIRE SERVICE.
- W2 RETIRE EXISTING 1" DOMESTIC SERVICE.

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MaineHealth

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22 Bramhall Street
Portland, ME 04102

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Waltham, MA 02453

MEPFP ENGINEER/CODE/LOW VOLTAGE
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COST ESTIMATOR
D.G. Jones International
3 Baldwin Green Common,Suite 202, Woburn, MA 01801

MEDICAL EQUIPMENT PLANNING
Mitchell Planning
630 Dundee Road, Suite 340, Northbrook IL 60062

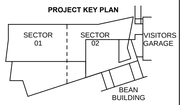
PROJECT TITLE

Congress Street Building
22 Bramhall Street
Portland ME 04102

STATE OF MAINE
DANIEL L RILES
No. 9647
PROFESSIONAL ENGINEER
9/25/18

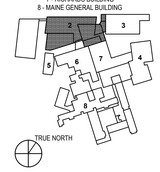
KEY PLANS

PROJECT KEY PLAN



OVERALL KEY PLAN

1 - NOT USED
2 - CONGRESS STREET
3 - VISITOR GARAGE
4 - EAST TOWER
5 - CENTRAL UTILITY PLANT
6 - BEAN BUILDING
7 - RICHARDS BUILDING
8 - MAINE GENERAL BUILDING



CITY SUBMISSION
SEPTEMBER 25, 2018

NO	ISSUE	DATE
1	CITY SUBMISSION	9/25/2018

Job Number	152189.000
Drawn	MAL/MAM
Checked	DLR
Approved	DLR

TITLE

DEMOLITION PLAN CONGRESS STREET EXPANSION

SHEET NUMBER

C04-01

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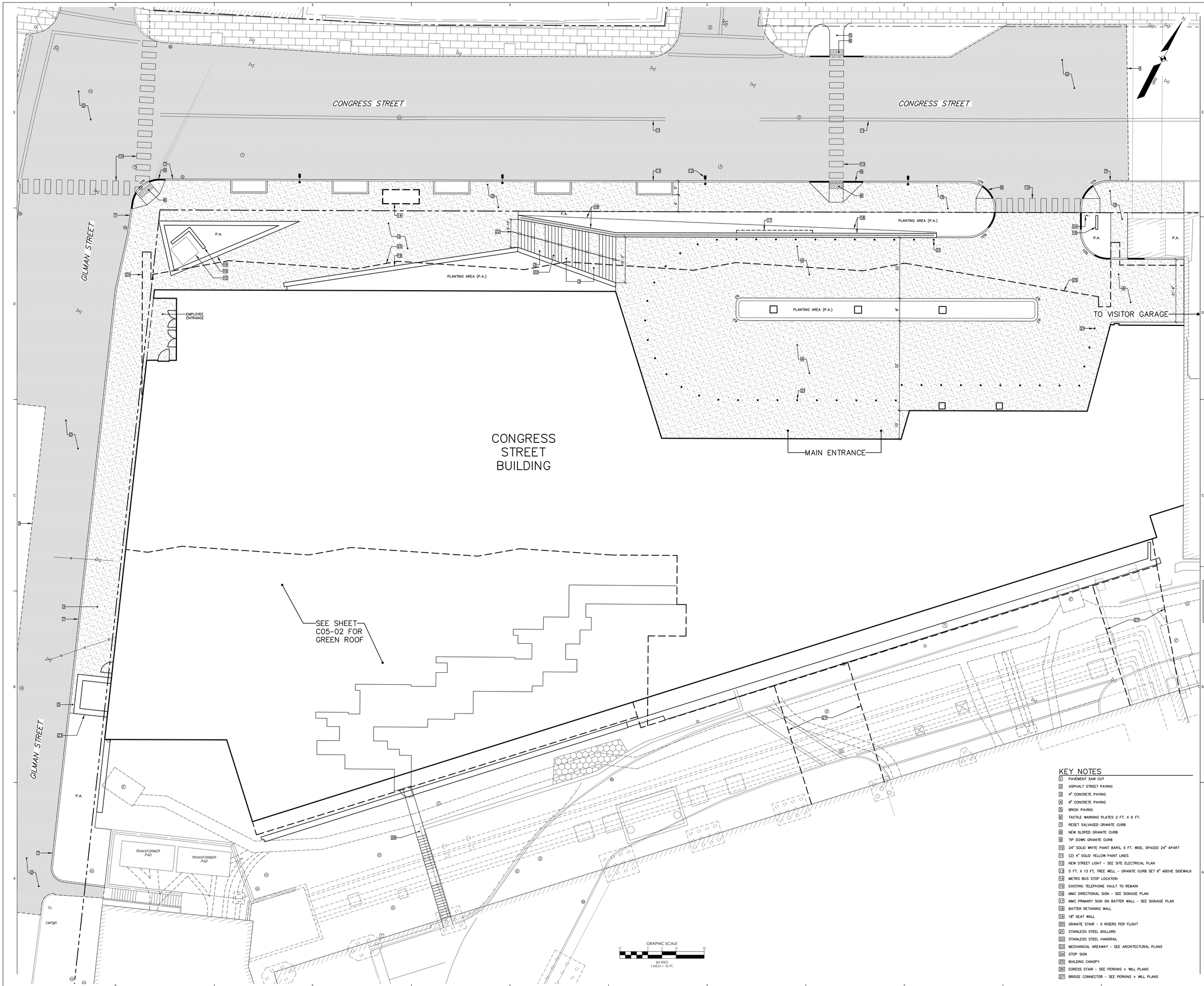
154665(MO).dwg, TAB: CONGRESS



KEY NOTES

1. PAVEMENT SAW CUT
2. ASPHALT STREET PAVING
3. 4" CONCRETE PAVING
4. 8" CONCRETE PAVING
5. BRICK PAVING
6. TACTILE WARNING PLATES 2 FT. X 6 FT.
7. RESET SALVAGED GRANITE CURB
8. NEW SLOPED GRANITE CURB
9. TIP DOWN GRANITE CURB
10. 24" SOLID WHITE PAINT BARS, 5 FT. WIDE, SPACED 24" APART
11. (2) 4" SOLID YELLOW PAINT LINES
12. NEW STREET LIGHT - SEE SITE ELECTRICAL PLAN
13. 5 FT. X 13 FT. TREE WELL - GRANITE CURB SET 6" ABOVE SIDEWALK
14. METRO BUS STOP LOCATION
15. EXISTING TELEPHONE VAULT TO REMAIN
16. MMC DIRECTIONAL SIGN - SEE SIGNAGE PLAN
17. MMC PRIMARY SIGN ON BATTER WALL - SEE SIGNAGE PLAN
18. BATTER RETAINING WALL
19. 18" SEAT WALL
20. GRANITE STAIR - 5 RISERS PER FLIGHT
21. STAINLESS STEEL BOLLARD
22. STAINLESS STEEL HANDRAIL
23. MECHANICAL AREAWAY - SEE ARCHITECTURAL PLANS
24. STOP SIGN
25. BUILDING CANOPY
26. EGRESS STAIR - SEE PERKINS + WILL PLANS
27. BRIDGE CONNECTOR - SEE PERKINS + WILL PLANS

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D.G. Jones International
3 Baldwin Green Common,Suite 202, Woburn, MA 01801

MEDICAL EQUIPMENT PLANNING
Mitchell Planning
630 Dundee Road, Suite 340, Northbrook IL 60062

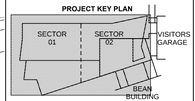
PROJECT TITLE

Congress Street Building
22 Bramhall Street
Portland ME 04102

REGISTERED LANDSCAPE ARCHITECT
WILLIAM T. CONWAY
#308
STATE OF MAINE
9/25/18

KEY PLANS

PROJECT KEY PLAN



OVERALL KEY PLAN

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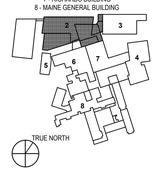

CITY SUBMISSION
SEPTEMBER 25, 2018

NO	ISSUE	DATE
1	CITY SUBMISSION	9/25/2018

Job Number	152189.000
Drawn	MAL
Checked	WTC
Approved	DLR

TITLE

SITE PLAN
MAIN ENTRANCE
CONGRESS STREET EXPANSION

SHEET NUMBER

C05-01

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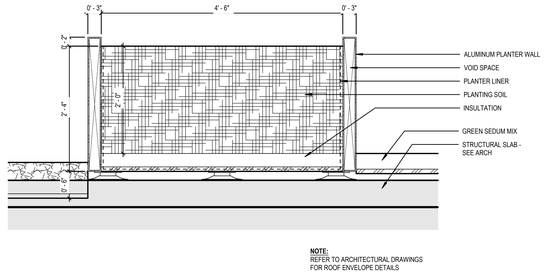
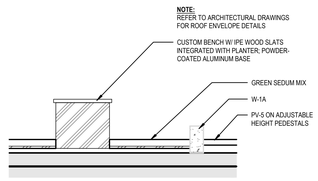
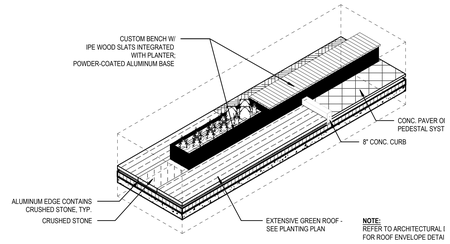


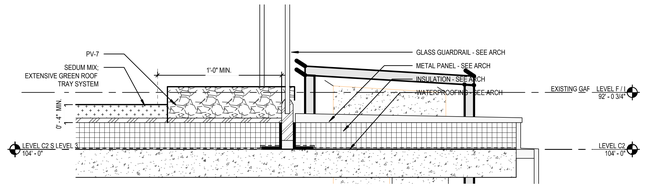
7 GREEN ROOF C2 PLANTER
1" = 1'-0"



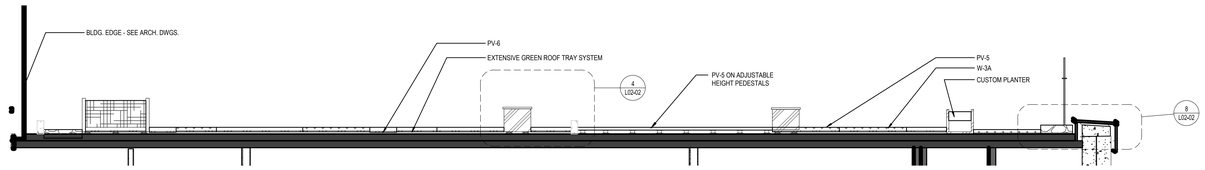
4 GREEN ROOF @ BENCH PLANTER, TYP.
1/2" = 1'-0"



6 GREEN ROOF AXON DETAIL



8 GUARDRAIL DETAIL @ ROOF C2
1" = 1'-0"



2 GREEN ROOF C2 N/S SECTION
1/4" = 1'-0"

PLANTING KEY (ROOFS)

GROUNDCOVER

DE FL	Deschamphia flexuousa	Wavy Hairgrass
LI SP	Liatris spicata	Blazing Star
PA VI	Panicum virgatum 'Northwind'	Northwind Switch grass
RU FU	Rudbeckia fulgida 'Goldstrum'	Black eyed Susan
VA AN	Vaccinium angustifolium	Lowbush Blueberry

GREEN SEDUM MIX	Sedum acre 'Golden Carpet' Sedum album 'France' Sedum floriferum 'Weihenstephaner's Gold' Sedum kamtschaticum Sedum sexangulare Sedum spurium 'Summer Glory' Sedum spurium 'John Creech' Sedum takesimensis
RED SEDUM MIX	Sedum acre 'Octoberfest' Sedum album 'Coral Carpet' Sedum floriferum 'Weihenstephaner's Gold' Sedum spurium 'Dragon's Blood' Sedum spurium 'Fuldaglut' Sedum spurium 'Voodoo'

PAVING TYPES

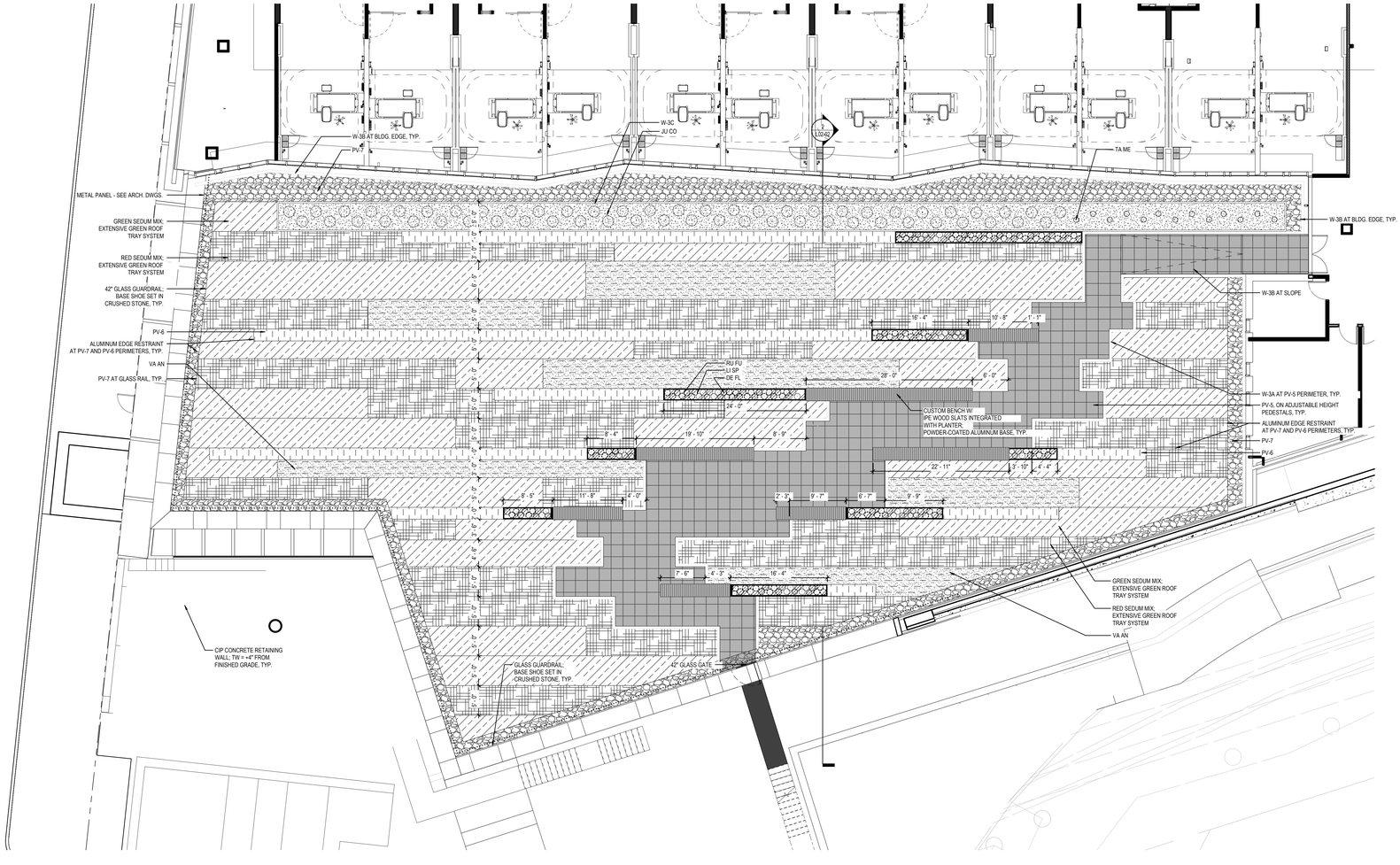
PV-1A	CONCRETE PAVEMENT - PED
PV-1B	CONCRETE PAVEMENT - VEH
PV-2	CONCRETE PAVEMENT BANDING
PV-3A	VEH STONE PAVER TYPE 1
PV-3B	VEH STONE PAVER TYPE 2
PV-4A	PED STONE PAVER TYPE 1
PV-4B	PED STONE PAVER TYPE 2
PV-5	ROOF PAVER ASSEMBLY
PV-6	CRUSHED STONE - MINI SLATE
PV-7	CRUSHED STONE - PEA STONE
PV-8	CRUSHED STONE - JUMBO SLATE

WALL TYPES

W-1	6" WIDTH GRANITE CURB
W-1R	6" WIDTH RADIAL GRANITE CURB
W-2	STONE VENEER RETAINING WALL
W-3A	PRECAST CONCRETE CURB TYPE A
W-3B	PRECAST CONCRETE CURB TYPE B
W-3C	PRECAST CONCRETE CURB TYPE C
W-4	CONCRETE EDGE RESTRAINT

*SEE GENERAL SHEET FOR MATERIAL DESCRIPTION

* MATERIAL PATTERNS IN THE DRAWINGS DO NOT REFLECT ACTUAL PAVEMENT PATTERNS.



1 ENLARGED PLAN - C2 GREEN ROOF
1/8" = 1'-0"

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630 Dundee Road, Suite 340, Northbrook IL 60062

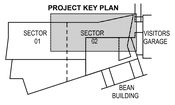
PROJECT TITLE

Congress Street Building
22 Bramhall Street
Portland ME 04102

REGISTERED LANDSCAPE ARCHITECT
WILLIAM T. CONNAUGHTON
LA 1208
STATE OF MAINE
9/25/18

KEY PLANS

PROJECT KEY PLAN



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CITY SUBMISSION
SEPTEMBER 25, 2018

NO	ISSUE	DATE
1	CITY SUBMISSION	9/25/2018

Job Number	152189.000
Drawn	MAL
Checked	WTC
Approved	WTC

TITLE
SITE PLAN
GREEN ROOF
CONGRESS STREET EXPANSION

SHEET NUMBER

C05-02

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LEGEND

EXISTING	DESCRIPTION	PROPOSED
	PROPERTY LINE/R.O.W.	
	ABUTTER LINE/R.O.W.	
	BUILDING	
	EDGE PAVEMENT	
	PAVEMENT SAWCUT	
	EDGE CONCRETE	
	CURB LINE	
120 118	CONTOURS	120
X120.00	SPOT GRADE	+120.00
	RETAINING WALL	
	DECIDUOUS TREE	
	CONIFEROUS TREE	
	SIGN	
G	GAS	G
	GAS GATE VALVE	
	GAS METER	
G	GAS MANHOLE	
W	WATER	W
	WATER GATE VALVE	
	WATER SHUT OFF	
	HYDRANT	
W	WATER MANHOLE	
S	SANITARY SEWER	S
S	SANITARY MANHOLE	
SD	STORM DRAIN	SD
UD	UNDER DRAIN	UD
D	DRAINAGE MANHOLE	
	CATCH BASIN	
OHU	OVERHEAD UTILITY	OHU
UGU	UNDERGROUND UTILITY	UGU
T	TRANSFORMER PAD	T
E	ELECTRICAL MANHOLE	
T	TELEPHONE MANHOLE	
	LIGHT POLE	
	UTILITY POLE	
	GUY WIRE	
	RIPRAP	
	INLET PROTECTION	
	PAVEMENT RECONSTRUCTION	

DUCT BANK LEGEND

A DUCT BANK "A"
(3) 5" CONDUIT (CMP)
(2) 2" CONDUIT (CMP, CITY OF PORTLAND) STREET LIGHT GUY FEED
(4) 4" CONDUIT (MMC)
(3) 4" CONDUIT (SPECTRUM CATV)
(2) 4" CONDUIT (FAIRPOINT)

B DUCT BANK "B"
(3) 4" CONDUIT (SPECTRUM CATV)

C DUCT BANK "C"
(2) 2" CONDUIT (CMP) FOR STREET LIGHTING
(4) 4" CONDUIT (MMC)
(2) 4" CONDUIT (FAIRPOINT)

D DUCT BANK "D"
(4) 4" CONDUIT (FAIRPOINT)

E DUCT BANK "E"
(2) 4" CONDUIT (FAIRPOINT)
(2) 2" CONDUIT (CMP, CITY OF PORTLAND)
(4) 4" CONDUIT (MMC)

F DUCT BANK "F"
(2) 4" CONDUIT (FAIRPOINT)
(4) 4" CONDUIT (MMC)

G DUCT BANK "G"
(3) 4" CONDUIT (SPECTRUM CATV)
(3) 5" CONDUIT (CMP)

H DUCT BANK "H"
(2) 4" EXISTING CONDUIT (FAIRPOINT) TO POLE 7 EXTEND TO POLE 5 IN DUCT BANK I-K-M

I DUCT BANK "I"
(3) 4" CONDUIT (SPECTRUM CATV)
(3) 5" CONDUIT (CMP)
(2) 4" CONDUIT (FAIRPOINT)

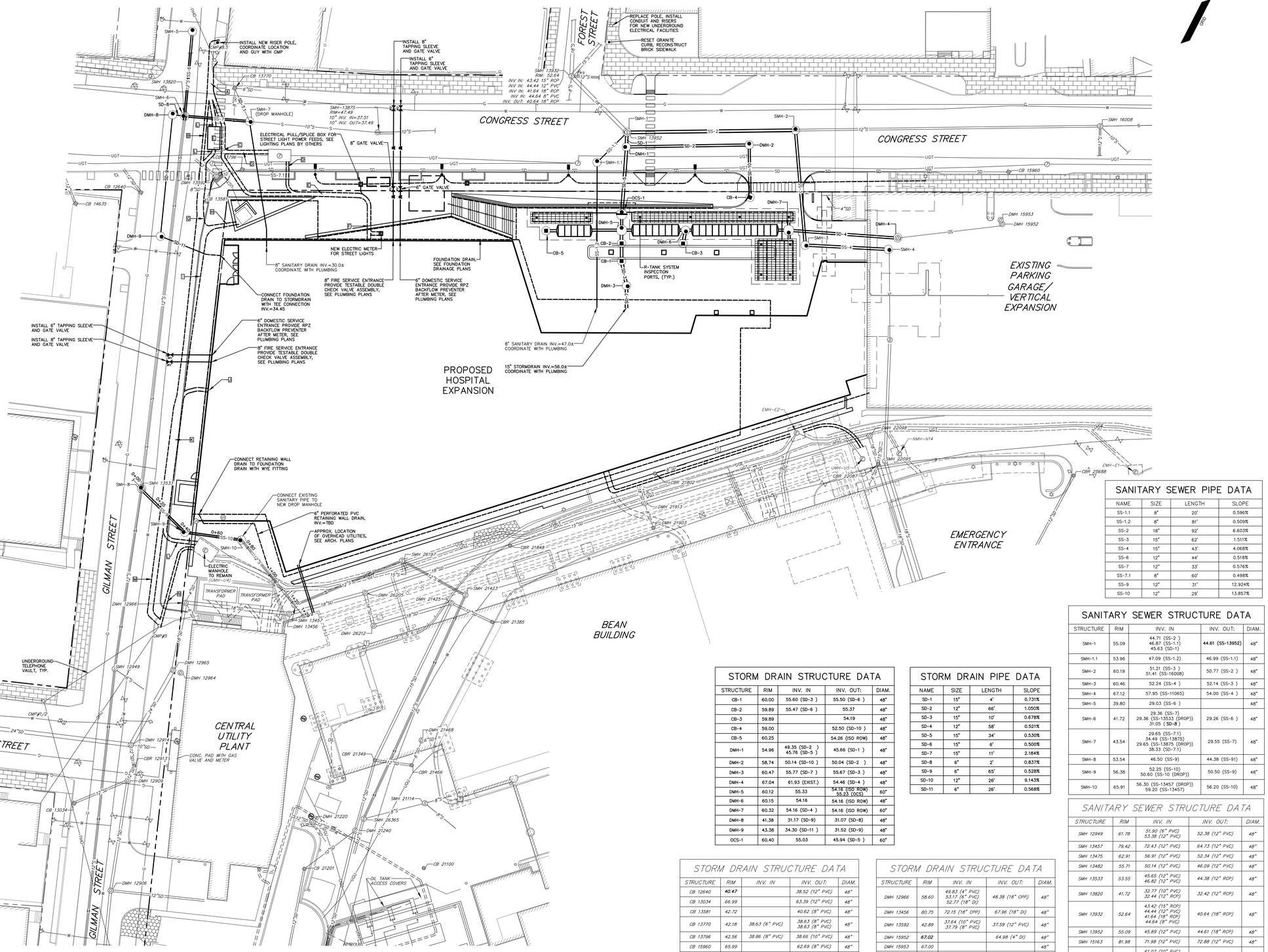
J DUCT BANK "J"
(4) 4" CONDUIT (MMC)
(2) 4" CONDUIT (FAIRPOINT) FROM POLE 5.5

K DUCT BANK "K"
(3) 4" CONDUIT (SPECTRUM CATV)
(3) 5" CONDUIT (CMP)
(2) 4" CONDUIT (FAIRPOINT) FROM CABINET TO POLE 5
(2) 4" CONDUIT (FAIRPOINT) FROM POLE 5 TO BUILDING
(4) 4" CONDUIT (MMC)

L DUCT BANK "L"
(3) 5" CONDUIT (CMP)

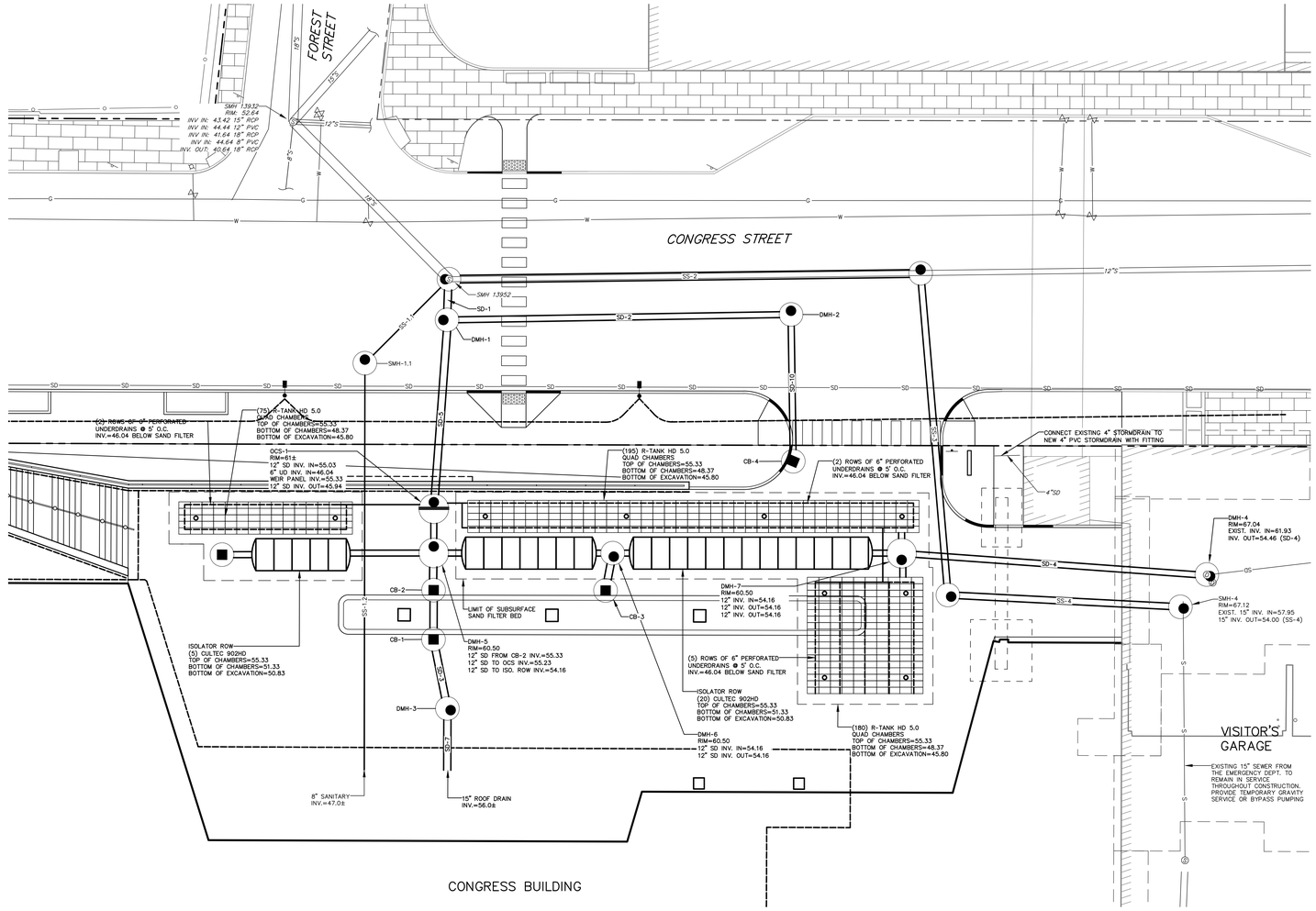
M DUCT BANK "M"
(3) 4" CONDUIT (SPECTRUM CATV)
(4) 4" CONDUIT (MMC)
(2) 4" CONDUIT (FAIRPOINT) FROM CABINET TO POLE 5
(2) 4" CONDUIT (FAIRPOINT) FROM POLE 5 TO BUILDING

N DUCT BANK "N"
(3) 5" CONDUIT (CMP)


CONGRESS STREET
FOREST STREET
GILMAN STREET
A STREET
INSTALL NEW RISER POLE, COORDINATE LOCATION AND GUY WITH CMP
INSTALL 8" TAPPING SLEEVE AND GATE VALVE
INSTALL 6" TAPPING SLEEVE AND GATE VALVE
REPLACE POLE, INSTALL CONDUIT AND RISERS FOR NEW UNDERGROUND ELECTRICAL FACILITIES
RESET GRANITE CURB, RECONSTRUCT BRICK SIDEWALK
ELECTRICAL PULL/SPLICE BOX FOR STREET LIGHT POWER FEEDS, SEE LIGHTING PLANS BY OTHERS
8" GATE VALVE
6" GATE VALVE
NEW ELECTRIC METER FOR STREET LIGHTS
8" SANITARY DRAIN INV.=30.0± COORDINATE WITH PLUMBING
8" FIRE SERVICE ENTRANCE PROVIDE TESTABLE DOUBLE CHECK VALVE ASSEMBLY, SEE PLUMBING PLANS
6" DOMESTIC SERVICE ENTRANCE PROVIDE RPZ BACKFLOW PREVENTER AFTER METER, SEE PLUMBING PLANS
FOUNDATION DRAIN, SEE FOUNDATION DRAINAGE PLANS
R-TANK SYSTEM INSPECTION PORTS, (TYP.)
CONNECT FOUNDATION DRAIN TO STORMDRAIN WITH TEE CONNECTION INV.=34.45
INSTALL 6" TAPPING SLEEVE AND GATE VALVE
INSTALL 8" TAPPING SLEEVE AND GATE VALVE
8" SANITARY DRAIN INV.=47.0± COORDINATE WITH PLUMBING
15" STORMDRAIN INV.=56.0± COORDINATE WITH PLUMBING
PROPOSED HOSPITAL EXPANSION
EXISTING PARKING GARAGE/ VERTICAL EXPANSION
EMERGENCY ENTRANCE
BEAN BUILDING
CENTRAL UTILITY PLANT
CONNECT RETAINING WALL DRAIN TO FOUNDATION DRAIN WITH WYE FITTING
CONNECT EXISTING SANITARY PIPE TO NEW DROP MANHOLE
6" PERFORATED PVC RETAINING WALL DRAIN, INV.=TBD
APPROX. LOCATION OF OVERHEAD UTILITIES, SEE ARCH. PLANS
ELECTRIC MANHOLE TO REMAIN (UMH-U4)
TRANSFORMER PAD
UNDERGROUND TELEPHONE VAULT, TYP.
CONC. PAD WITH GAS VALVE AND METER
OIL TANK ACCESS COVERS
SMH 13932 RIM: 52.64 INV IN: 43.42 15" RCP INV IN: 44.44 12" PVC INV IN: 41.64 18" RCP INV IN: 44.64 8" PVC INV. OUT: 40.64 18" RCP
SMH-1375875 RIM=47.49 10" INV. IN=37.51 10" INV. OUT=37.49
SMH 13552 RIM: 54.96 INV IN: 45.66 (SD-1) 15" INV IN: 46.96 (SD-2) 8" INV IN: 49.35 (SD-2) 8" INV OUT: 49.35 (SD-1.1)
SMH 13552 RIM: 60.46 INV IN: 52.24 (SS-4) 8" INV OUT: 52.14 (SS-3) 8"
SMH 13552 RIM: 60.06 INV IN: 50.77 (SS-2) 12" INV IN: 50.77 (SS-3) 8" INV OUT: 50.67 (SS-4) 8"
SMH 16008 RIM: 60.19 INV IN: 46.99 (SS-1.2) 8" INV IN: 51.21 (SS-3) 8" INV OUT: 46.89 (SS-1.1) 8"
SMH 13820 RIM: 60.19 INV IN: 46.99 (SS-1.2) 8" INV IN: 51.41 (SS-16008) 8" INV OUT: 46.89 (SS-1.1) 8"
SMH 13532 RIM: 54.96 INV IN: 45.66 (SD-1) 15" INV IN: 46.96 (SD-2) 8" INV IN: 49.35 (SD-2) 8" INV OUT: 49.35 (SD-1.1)
SMH 13532 RIM: 60.46 INV IN: 52.24 (SS-4) 8" INV OUT: 52.14 (SS-3) 8"
SMH 13532

LEGEND

EXISTING	DESCRIPTION	PROPOSED
	PROPERTY LINE/R.O.W.	
	ABUTTER LINE/R.O.W.	
	BUILDING	
	EDGE PAVEMENT	
	PAVEMENT SAWCUT	
	EDGE CONCRETE	
	CURB LINE	
--120-- --118--	CONTOURS	120
x120.00	SPOT GRADE	+120.00
	RETAINING WALL	
	DECIDUOUS TREE	
	CONIFEROUS TREE	
	SIGN	
G	GAS	G
	GAS GATE VALVE	
GM	GAS METER	
	GAS MANHOLE	
W	WATER	W
	WATER GATE VALVE	
	WATER SHUT OFF	
	HYDRANT	
W	WATER MANHOLE	
S	SANITARY SEWER	S
S	SANITARY MANHOLE	
SD	STORM DRAIN	SD
UD	UNDER DRAIN	UD
D	DRAINAGE MANHOLE	
	CATCH BASIN	
OHU	OVERHEAD UTILITY	OHU
UGU	UNDERGROUND UTILITY	UGU
T	TRANSFORMER PAD	T
E	ELECTRICAL MANHOLE	
T	TELEPHONE MANHOLE	
	LIGHT POLE	
	UTILITY POLE	
	GUY WIRE	
	RIPRAP	
	INLET PROTECTION	



GRAPHIC SCALE
10 0 5 10 20
(IN FEET)
1 INCH = 10 FT.

STORM DRAIN PIPE DATA

NAME	SIZE	LENGTH	SLOPE
SD-1	15"	4'	0.731%
SD-2	12"	66'	1.050%
SD-3	15"	10'	0.678%
SD-4	12"	58'	0.521%
SD-5	15"	34'	0.530%
SD-6	15"	6'	0.500%
SD-7	15"	11'	2.184%
SD-8	6"	2'	0.837%
SD-9	6"	65'	0.528%
SD-10	12"	26'	9.143%
SD-11	6"	26'	0.568%

SANITARY SEWER PIPE DATA

NAME	SIZE	LENGTH	SLOPE
SS-1.1	8"	20'	0.596%
SS-1.2	8"	81'	0.509%
SS-2	18"	92'	6.603%
SS-3	15"	62'	1.511%
SS-4	15"	43'	4.068%

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99 Bedford Street, 2nd Floor, Boston, MA 02111

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101 Summer Street, 4th Floor, Boston, MA 02110

COST ESTIMATOR
D.G. Jones International
3 Baldwin Green Common,Suite 202, Woburn, MA 01801

MEDICAL EQUIPMENT PLANNING
Mitchell Planning
630 Dundee Road, Suite 340, Northbrook IL 60062

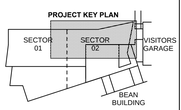
PROJECT TITLE

Congress Street Building
22 Bramhall Street
Portland ME 04102

STATE OF MAINE — DANIEL L. RILEY No. 10111 — REGISTERED PROFESSIONAL ENGINEER — 9/25/18

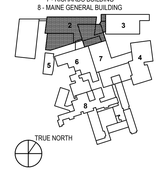
KEY PLANS

PROJECT KEY PLAN



OVERALL KEY PLAN

1 - NOT USED
2 - CONGRESS STREET
3 - VISITOR GARAGE
4 - EAST TOWER
5 - CENTRAL UTILITY PLANT
6 - BEAN BUILDING
7 - RICHARDS BUILDING
8 - MAINE GENERAL BUILDING



CITY SUBMISSION
SEPTEMBER 25, 2018

NO	ISSUE	DATE
1	CITY SUBMISSION	9/25/2018

Job Number	152189.000
Drawn	MAL/MAM
Checked	DLR
Approved	DLR

TITLE

UTILITY PLAN MAIN ENTRANCE CONGRESS STREET EXPANSION

SHEET NUMBER

C30-01

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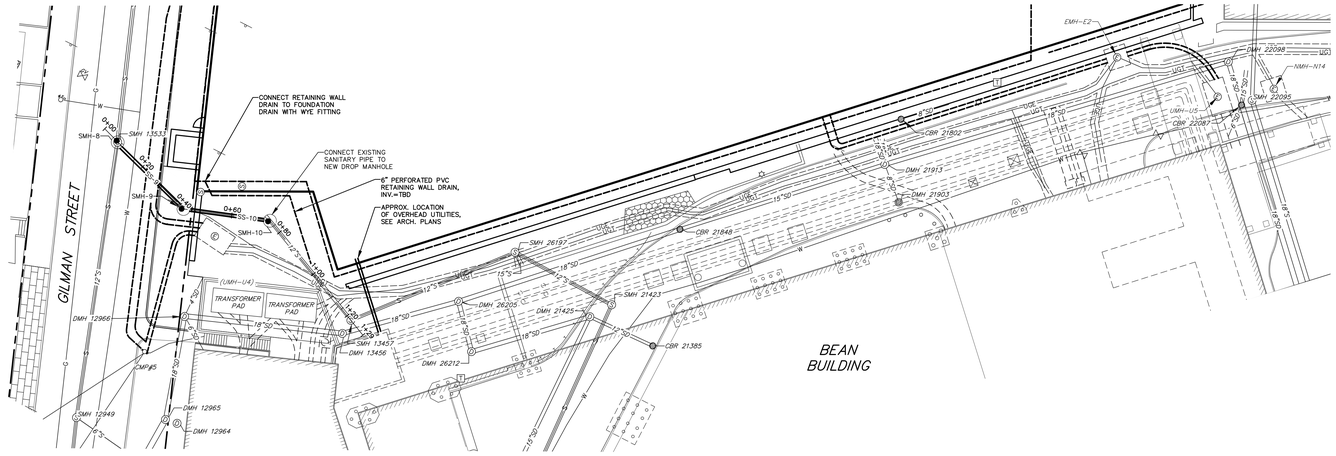
1546602.4wp, TAB:U-CONGRESS-10

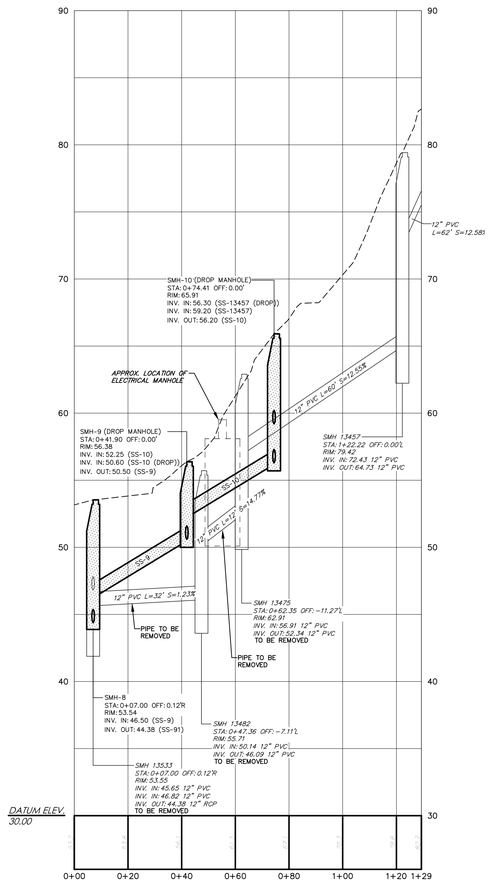




PLAN: UTILITY CORRIDOR
STA. 0+00 TO STA. 2+68
SCALE: 1"=20'

SANITARY SEWER PIPE DATA

NAME	SIZE	LENGTH	SLOPE
SS-9	12"	31'	12.924%
SS-10	12"	29'	13.857%



PROFILE: UTILITY CORRIDOR
STA. 0+00 TO STA. 2+68
SCALE: 1"=20' HORIZ.
1"=4' VERT.

LEGEND

EXISTING	DESCRIPTION	PROPOSED
	PROPERTY LINE/R.O.W.	
	ABUTTER LINE/R.O.W.	
	BUILDING	
	EDGE PAVEMENT	
	PAVEMENT SAWCUT	
	EDGE CONCRETE	
	CURB LINE	
120 118	CONTOURS	120
×120.00	SPOT GRADE	+120.00
	RETAINING WALL	
	DECIDUOUS TREE	
	CONIFEROUS TREE	
	SIGN	
G	GAS	G
	GAS GATE VALVE	
	GAS METER	
G	GAS MANHOLE	
W	WATER	W
	WATER GATE VALVE	
	WATER SHUT OFF	
	HYDRANT	
W	WATER MANHOLE	
S	SANITARY SEWER	S
S	SANITARY MANHOLE	
SD	STORM DRAIN	SD
UD	UNDER DRAIN	UD
D	DRAINAGE MANHOLE	
	CATCH BASIN	
OHU	OVERHEAD UTILITY	OHU
UGU	UNDERGROUND UTILITY	UGU
T	TRANSFORMER PAD	T
E	ELECTRICAL MANHOLE	
T	TELEPHONE MANHOLE	
	LIGHT POLE	
	UTILITY POLE	
	GUY WIRE	
	RIPRAP	
	INLET PROTECTION	
	PAVEMENT RECONSTRUCTION	

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COST ESTIMATOR
D.G. Jones International
3 Baldwin Green Common,Suite 202, Woburn, MA 01801

MEDICAL EQUIPMENT PLANNING
Mitchell Planning
630 Dundee Road, Suite 340, Northbrook IL 60062

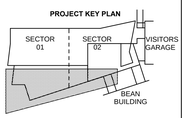
PROJECT TITLE

Congress Street Building
22 Bramhall Street
Portland ME 04102

STATE OF MAINE — DANIEL L RILEY No. 10464 — REGISTERED PROFESSIONAL ENGINEER — 9/25/18

KEY PLANS

PROJECT KEY PLAN



OVERALL KEY PLAN

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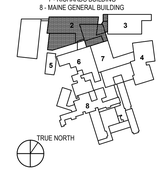
4 - EAST TOWER
5 - CENTRAL UTILITY PLANT
6 - BEAN BUILDING
7 - RICHARDS BUILDING
8 - MAINE GENERAL BUILDING



CITY SUBMISSION
SEPTEMBER 25, 2018

NO	ISSUE	DATE
1	CITY SUBMISSION	9/25/2018

Job Number	152189.000
Drawn	MAL/MAM
Checked	DLR
Approved	DLR

TITLE

PLAN & PROFILE - UTILITY CORRIDOR CONGRESS STREET EXPANSION

SHEET NUMBER

C30-02

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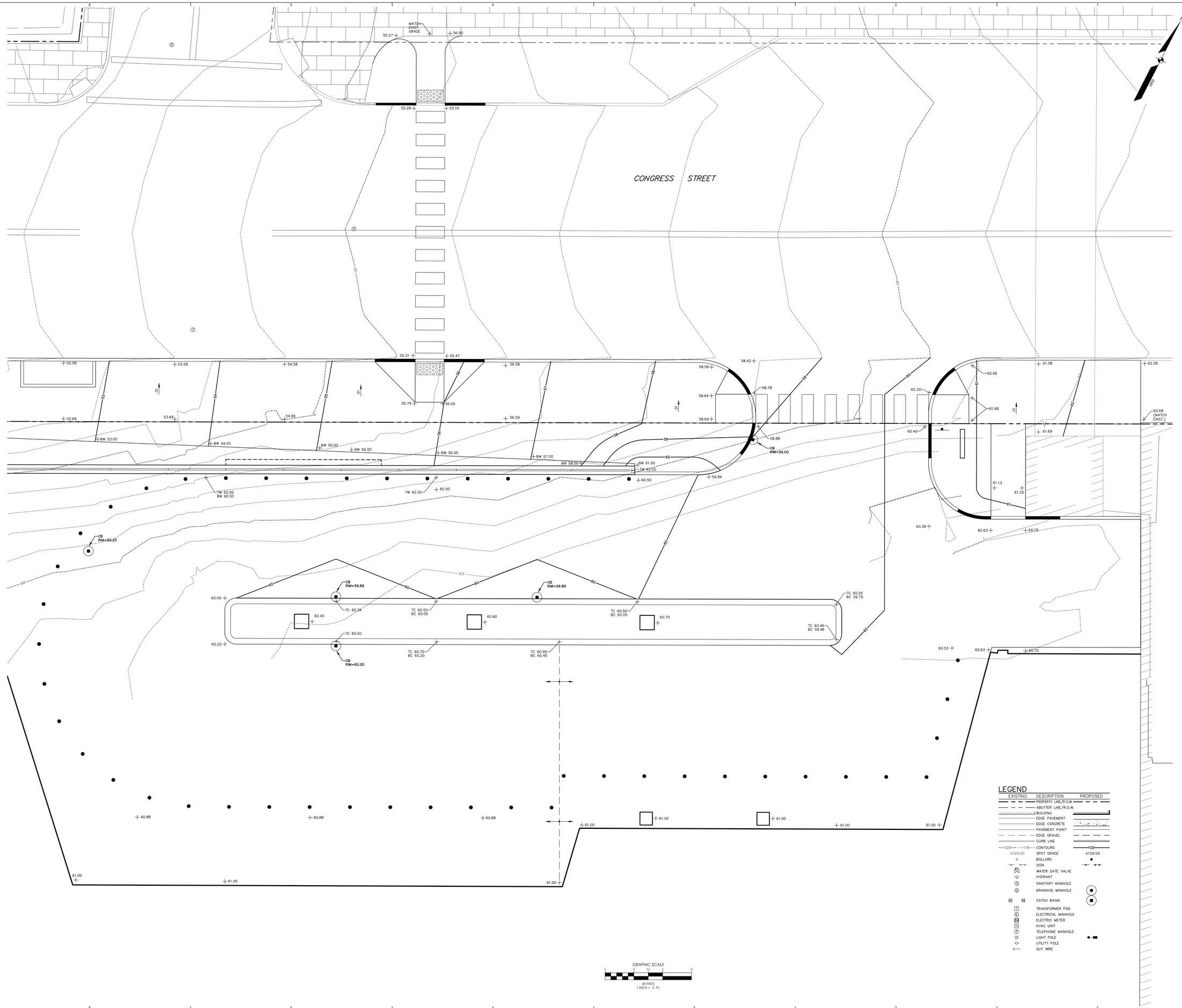
152189.02.dwg, TAB:P-CONGRESS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56.00
55.28
55.55
CONGRESS STREET
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55.47
55.79
56.00
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54.58
56.58
52.69
53.69
54.69
56.59
BW 53.00
BW 54.00
BW 55.00
BW 56.00
BW 56.00
BW 57.00
BW 58.00
BW 61.00
BW 62.00
TW 62.00
BW 60.50
TW 62.00
60.50
59.84
58.42
58.58
58.64
58.69
58.78
58.88
CB
RIM=59.00
60.30
60.98
60.98
61.58
62.58
62.68
(MATCH EXIST.)
60.40
61.69
61.13
61.25
60.36
60.63
60.75
60.53
60.63
60.75
CB
RIM=60.25
CB
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60.45
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CB
RIM=60.00
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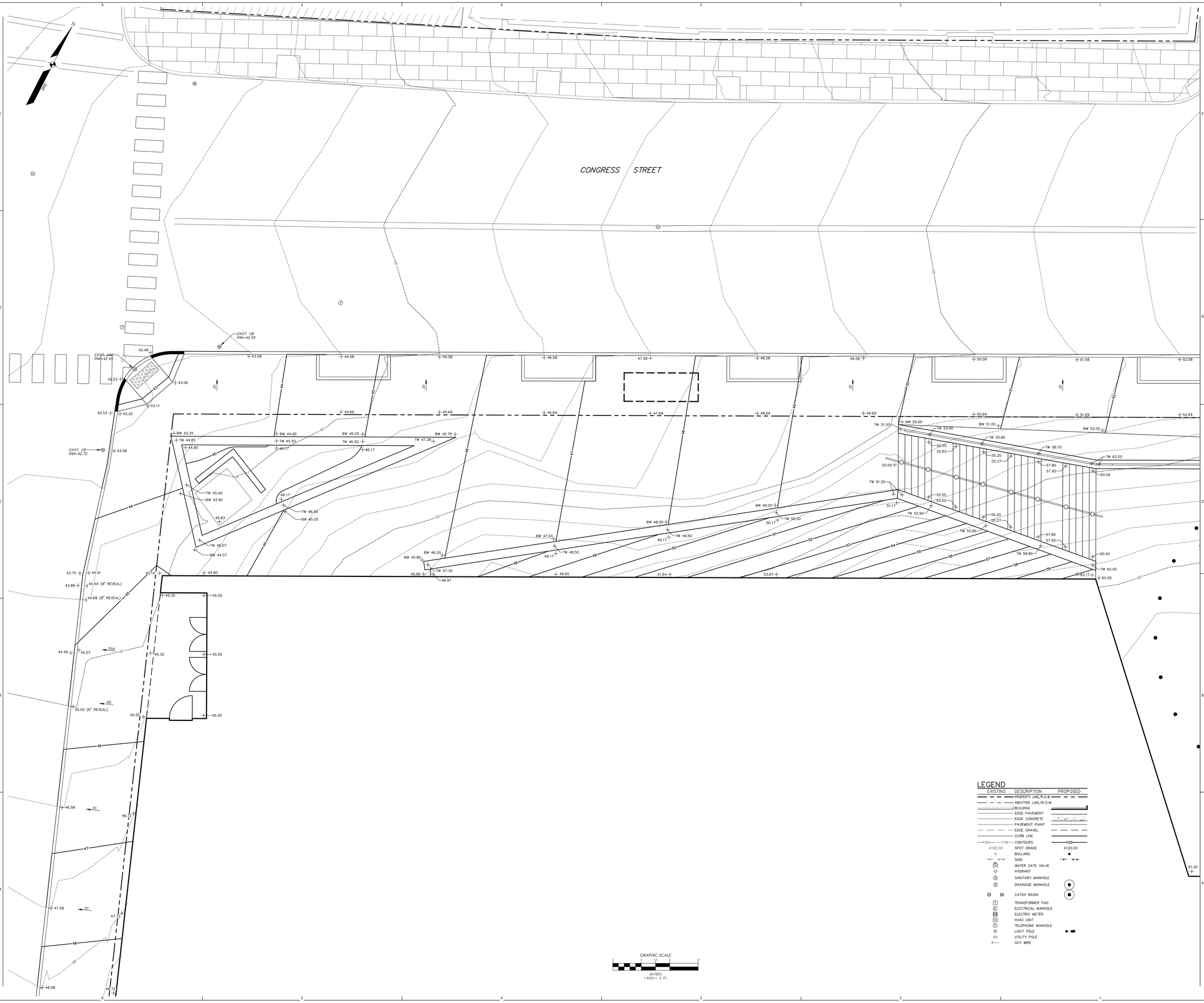

LEGEND

EXISTING	DESCRIPTION	PROPOSED
	PROPERTY LINE/R.O.W.	
	ABUTTER LINE/R.O.W.	
	BUILDING	
	EDGE PAVEMENT	
	EDGE CONCRETE	
	PAVEMENT PAINT	
	EDGE GRAVEL	
	CURB LINE	
120 118	CONTOURS	120
×120.00	SPOT GRADE	+120.00
	BOLLARD	
	SIGN	
	WATER GATE VALVE	
	HYDRANT	
	SANITARY MANHOLE	
	DRAINAGE MANHOLE	
	CATCH BASIN	
	TRANSFORMER PAD	
	ELECTRICAL MANHOLE	
	ELECTRIC METER	
	HVAC UNIT	
	TELEPHONE MANHOLE	
	LIGHT POLE	
	UTILITY POLE	
	GUY WIRE	

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99 Bedford Street, 2nd Floor, Boston, MA 02111

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COST ESTIMATOR
D.G. Jones International
3 Baldwin Green Common,Suite 202, Woburn, MA 01801

MEDICAL EQUIPMENT PLANNING
Mitchell Planning
630 Dundee Road, Suite 340, Northbrook IL 60062

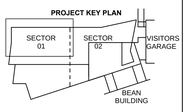
PROJECT TITLE

Congress Street Building
22 Bramhall Street
Portland ME 04102

STATE OF MAINE
DANIEL L. RILEY
No. 14647
LICENSED
PROFESSIONAL ENGINEER
9/25/18

KEY PLANS

PROJECT KEY PLAN



OVERALL KEY PLAN

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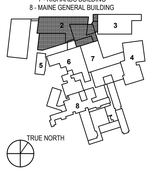

CITY SUBMISSION
SEPTEMBER 25, 2018

NO	ISSUE	DATE
1	CITY SUBMISSION	9/25/2018

Job Number	152189.000
Drawn	MAL
Checked	WTC
Approved	DLR

TITLE

GRADING PLAN LOWER CONGRESS STREET EXPANSION

SHEET NUMBER

C40-02

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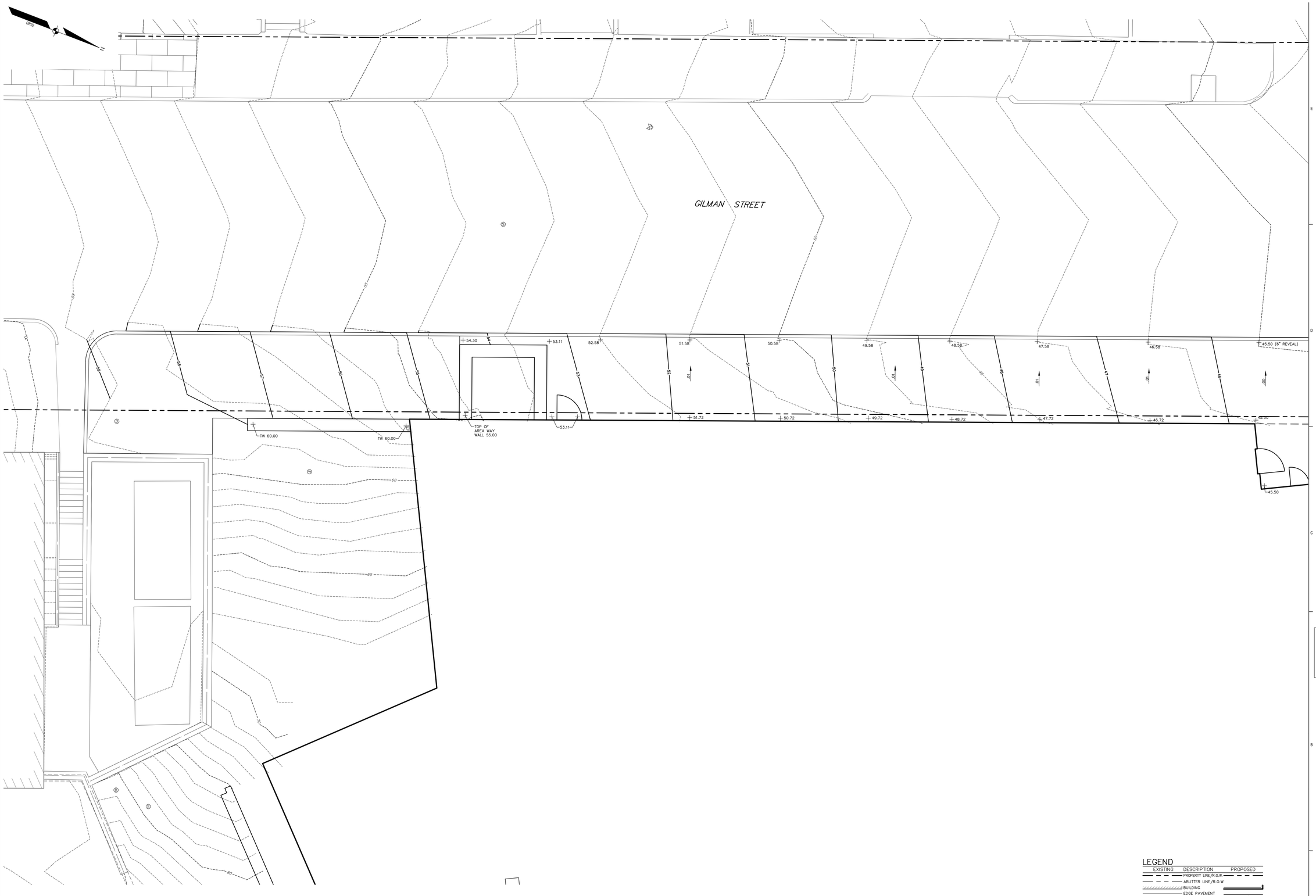
1546602.dwg, TAB:02



LEGEND

EXISTING	DESCRIPTION	PROPOSED
	PROPERTY LINE/R.O.W.	
	ABUTTER LINE/R.O.W.	
	BUILDING	
	EDGE PAVEMENT	
	EDGE CONCRETE	
	PAVEMENT PAINT	
	EDGE GRAVEL	
	CURB LINE	
120 118	CONTOURS	120
×120.00	SPOT GRADE	+120.00
	BOLLARD	
	SIGN	
	WATER GATE VALVE	
	HYDRANT	
	SANITARY MANHOLE	
	DRAINAGE MANHOLE	
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	ELECTRIC METER	
	HVAC UNIT	
	TELEPHONE MANHOLE	
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	UTILITY POLE	
	GUY WIRE	

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MEDICAL EQUIPMENT PLANNING
Mitchell Planning
630 Dundee Road, Suite 340, Northbrook IL 60062

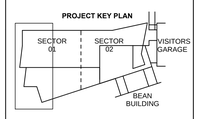
PROJECT TITLE

Congress Street Building
22 Bramhall Street
Portland ME 04102

STATE OF MAINE
DANIEL L. RILEY
No. 14007
LICENSED
PROFESSIONAL ENGINEER
9/25/18

KEY PLANS

PROJECT KEY PLAN



OVERALL KEY PLAN

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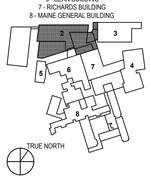

CITY SUBMISSION
SEPTEMBER 25, 2018

NO	ISSUE	DATE
1	CITY SUBMISSION	9/25/2018

Job Number	152189.000
Drawn	MAL
Checked	WTC
Approved	DLR

TITLE

GRADING PLAN GILMAN AREA, CONGRESS STREET EXPANSION

SHEET NUMBER

C40-03

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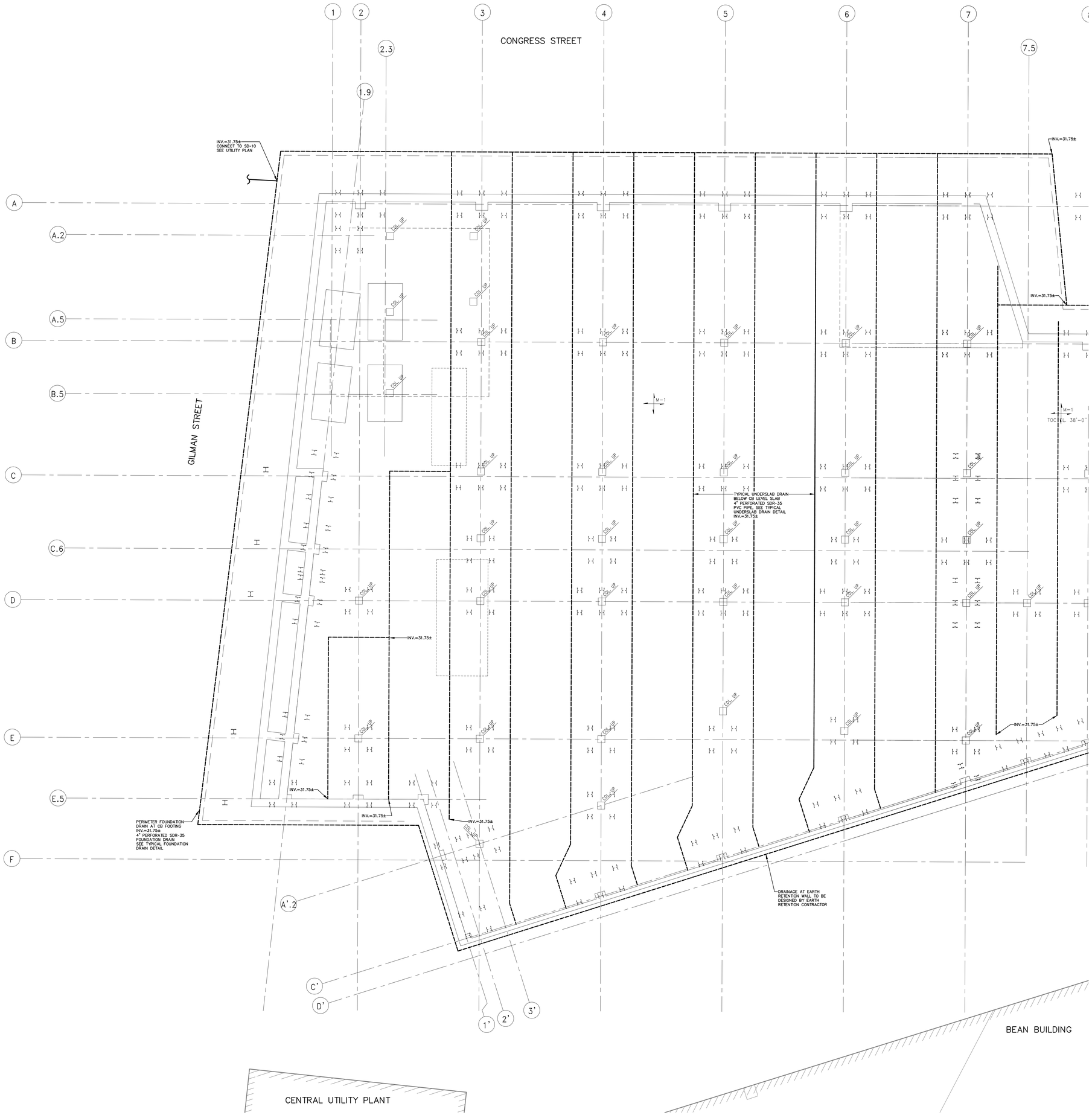

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MEDICAL EQUIPMENT PLANNING
Mitchell Planning
630 Dundee Road, Suite 340, Northbrook IL 60062

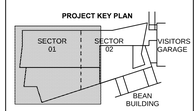
PROJECT TITLE

Congress Street Building
22 Bramhall Street
Portland ME 04102

STATE OF MAINE
DANIEL L. RILEY
No. 14667
LICENSED
PROFESSIONAL ENGINEER
9/25/18

KEY PLANS

PROJECT KEY PLAN



OVERALL KEY PLAN

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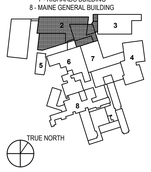

CITY SUBMISSION
SEPTEMBER 25, 2018

NO	ISSUE	DATE
1	CITY SUBMISSION	9/25/2018

Job Number	152189.000
Drawn	MAL/MAM
Checked	DLR
Approved	DLR

TITLE

LEVEL B FOUNDATION DRAINAGE PLAN, SECTOR 1 CONGRESS STREET EXPANSION

SHEET NUMBER

C10-11

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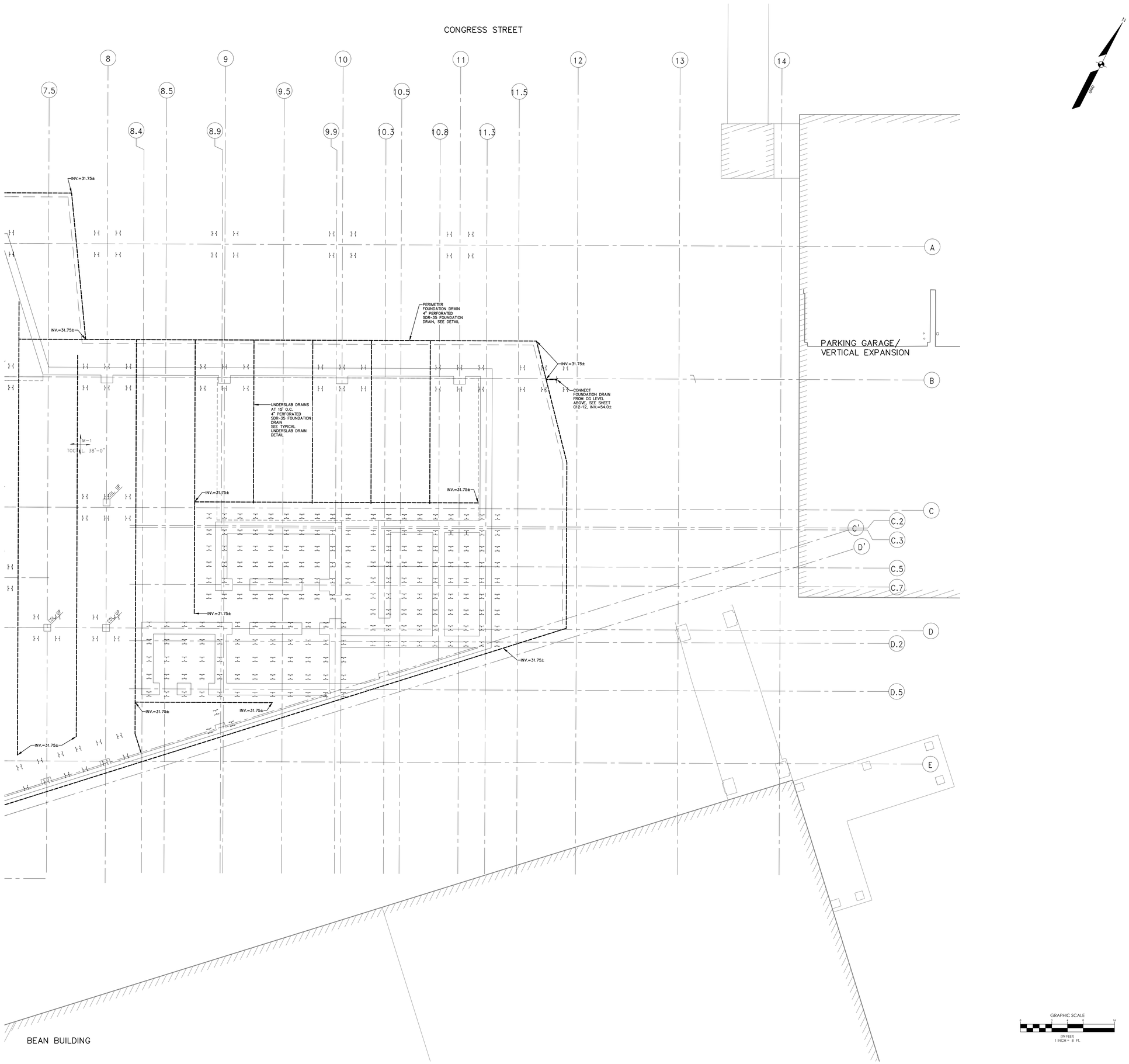

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22 Bramhall Street
Portland, ME 04102

CONSULTANTS

CIVIL/ LANDSCAPE ARCHITECT
Sebago Technics Inc.
75 John Roberts Road, Suite 1A,
South Portland, ME 04106

STRUCTURAL ENG/ BUILDING ENVELOPE CONSULTANT
Simpson Gumpertz & Heger Inc.
41 Seyon Street, Building 1, Suite 500,
Waltham, MA 02453

MEPFP ENGINEER/CODE/LOW VOLTAGE
AKF Group LLC
99 Bedford Street, 2nd Floor, Boston, MA 02111

CONSTRUCTION MANAGER
TURNER CONSTRUCTION
2 Seaport Lane, Suite 200, Boston, MA 02210

ELEVATOR CONSULTANT
VDA (Van Deusen & Associates)
101 Summer Street, 4th Floor, Boston, MA 02110

COST ESTIMATOR
D.G. Jones International
3 Baldwin Green Common,Suite 202, Woburn, MA 01801

MEDICAL EQUIPMENT PLANNING
Mitchell Planning
630 Dundee Road, Suite 340, Northbrook IL 60062

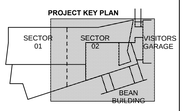
PROJECT TITLE

Congress Street Building
22 Bramhall Street
Portland ME 04102

STATE OF MAINE
DANIEL L. RILEY
No. 14697
LICENSED
PROFESSIONAL ENGINEER
9/25/18

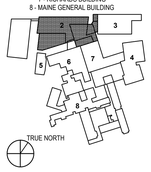
KEY PLANS

PROJECT KEY PLAN



OVERALL KEY PLAN

1 - NOT USED
2 - CONGRESS STREET
3 - VISITOR GARAGE
4 - EAST TOWER
5 - CENTRAL UTILITY PLANT
6 - BEAN BUILDING
7 - RICHARDS BUILDING
8 - MAINE GENERAL BUILDING



CITY SUBMISSION
SEPTEMBER 25, 2018

NO	ISSUE	DATE
1	CITY SUBMISSION	9/25/2018

Job Number	152189.000
Drawn	MAL/MAM
Checked	DLR
Approved	DLR

TITLE
LEVEL B FOUNDATION DRAINAGE PLAN, SECTOR 2 CONGRESS STREET EXPANSION

SHEET NUMBER

C10-12

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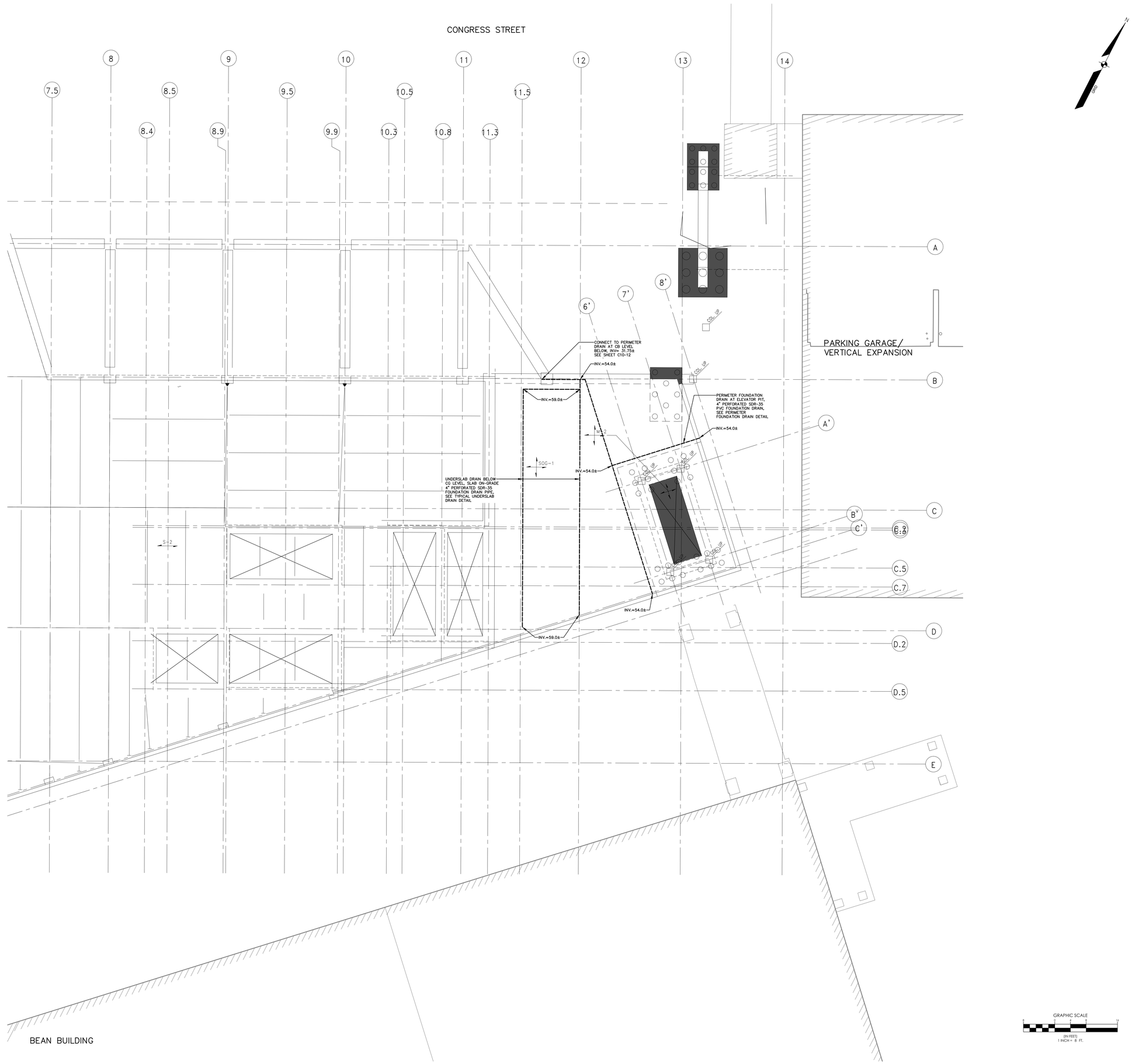

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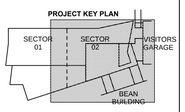

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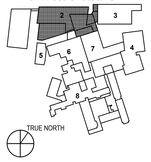

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SEPTEMBER 25, 2018

NO	ISSUE	DATE
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Job Number	152189.000
Drawn	MAL/MAM
Checked	DLR
Approved	DLR

TITLE
LEVEL 1 FOUNDATION DRAINAGE PLAN, SECTOR 2 CONGRESS STREET EXPANSION

SHEET NUMBER

C12-12

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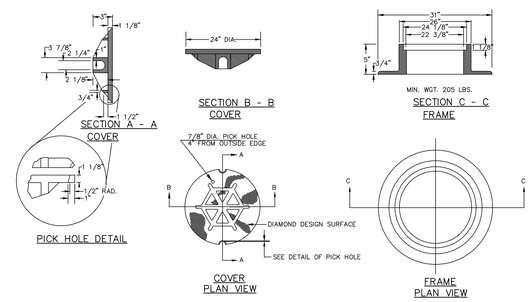
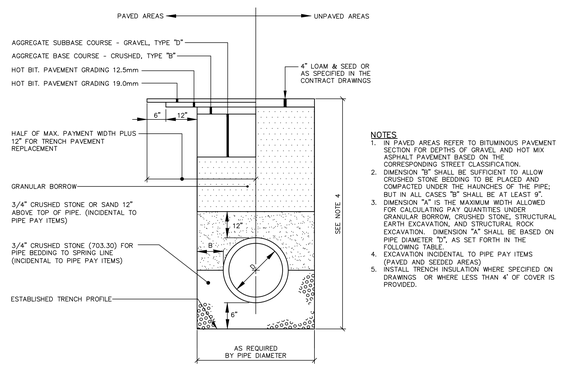
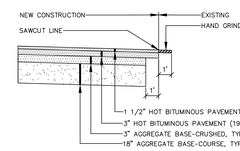


TYPICAL "A" CAST IRON MANHOLE COVER AND FRAME
NOT TO SCALE

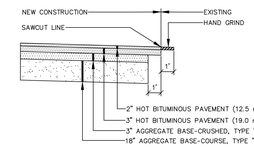


NOTES
1. IN PAVED AREAS REFER TO BITUMINOUS PAVEMENT SECTION FOR DEPTHS OF GRAVEL AND HOT MIX ASPHALT PAVEMENT BASED ON THE CORRESPONDING STREET CLASSIFICATION.
2. DIMENSION "B" SHALL BE SUFFICIENT TO ALLOW CRUSHED STONE BEDDING TO BE PLACED AND COMPACTED UNDER THE HAUNCHES OF THE PIPE; BUT IN ALL CASES "B" SHALL BE AT LEAST 9".
3. 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 FOLLOWING TABLE.
4. EXCAVATION INCIDENTAL TO PIPE PAY ITEMS (PAVED AND SEEDED AREAS)
5. INSTALL TRENCH INSULATION WHERE SPECIFIED ON DRAWINGS OR WHERE LESS THAN 4' OF COVER IS PROVIDED.

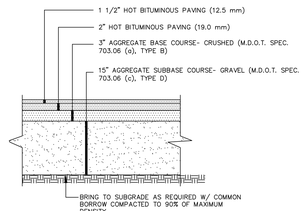
TYPICAL PIPE INSTALLATION DETAIL
NOT TO SCALE



PAVEMENT BUTT JOINT (LOCAL STREET)
NOT TO SCALE

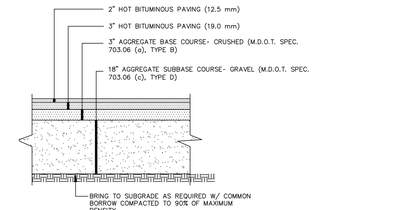


PAVEMENT BUTT JOINT (CONGRESS STREET)
NOT TO SCALE



NOTES:
1. COMPACT GRAVEL SUBBASE, BASE COURSE TO 95% OF MAXIMUM DENSITY USING HEAVY ROLLER COMPACTION.
2. CONTRACTOR SHALL SET GRADE STAKES MARKING SUBBASE AND FINISH GRADE ELEVATIONS FOR CONSTRUCTION REFERENCE.

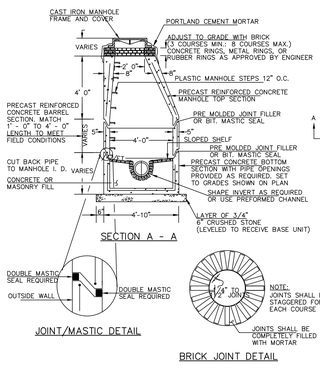
TYPICAL ROADWAY SECTION (LOCAL STREET)
NOT TO SCALE



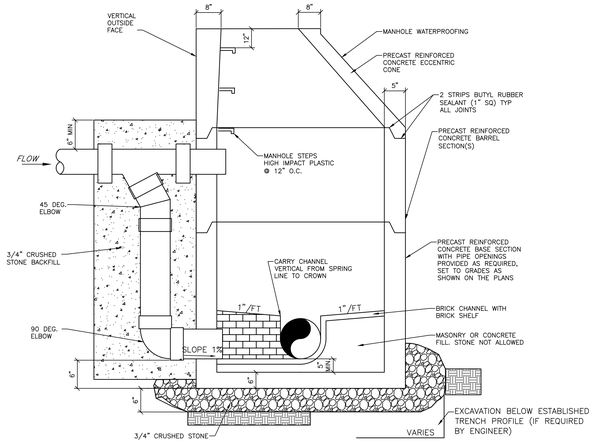
NOTES:
1. COMPACT GRAVEL SUBBASE, BASE COURSE TO 95% OF MAXIMUM DENSITY USING HEAVY ROLLER COMPACTION.
2. CONTRACTOR SHALL SET GRADE STAKES MARKING SUBBASE AND FINISH GRADE ELEVATIONS FOR CONSTRUCTION REFERENCE.

TYPICAL ROADWAY SECTION - CONGRESS STREET
NOT TO SCALE

NOTE:
MANHOLE CHANNELS REQUIRING CHANGE OF ALIGNMENT, TO BE BUILT ON SMOOTH RADIUS. CHANNEL TO BE SHAPED TO ACCEPT ADDITIONAL INLET PIPES.



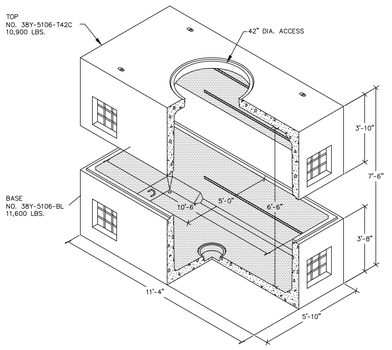
PRECAST CONCRETE MANHOLE TYPE "A"
NOT TO SCALE

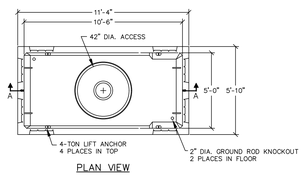


NOTES:

1. MANHOLE CHANNELS REQUIRING CHANGE IN ALIGNMENT ARE TO BE BUILT ON A SMOOTH RADIUS. IF SIDE PIPES ENTER CHANNEL, SHAPE TO RECEIVE ADDED SIDE FLOW.
2. USE FLAT SLAB TOP MANHOLE WHEN THE DIFFERENCE BETWEEN INVERT AND RIM IS LESS THAN 6'-0" AND WHEN MANHOLE DIAMETER IS GREATER THAN 4'-0".
3. ALL BACKFILL WITHIN 3 FEET OF STRUCTURE SHALL BE SELECT FILL PLACED IN 8" MAXIMUM LIFTS.

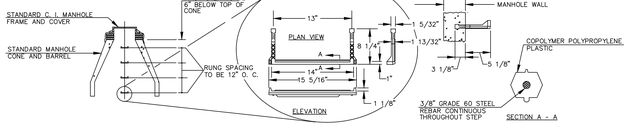
OUTSIDE DROP SANITARY MANHOLE DETAIL
NOT TO SCALE



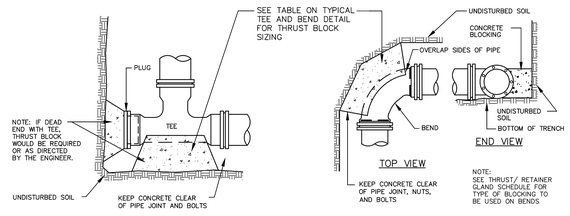


PLAN VIEW

CONCRETE THRUST BLOCK SIZE REQUIREMENTS				
		SQ. FT. OF BEARING ON UNDISTURBED SOIL		
FITTINGS		90° BENDS	45° BENDS	TEES AND PLUGS
PIPE SIZE	6"	4.0	2.0	3.0
	8"	8.0	4.0	6.0
	12"	15	10	10

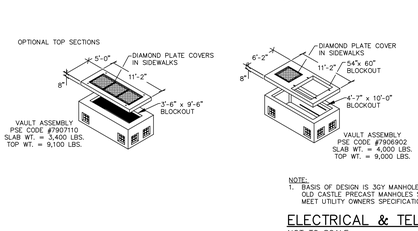


PLASTIC MANHOLE STEPS
NOT TO SCALE



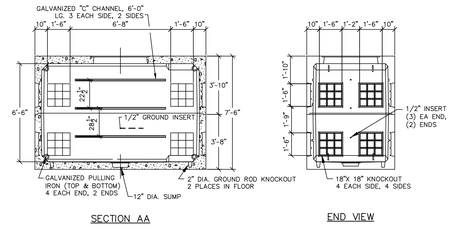
NOTE:
SEE THRUST/ RETAINER GLAND SCHEDULE FOR TYPE OF BLOCKING TO BE USED ON BENDS

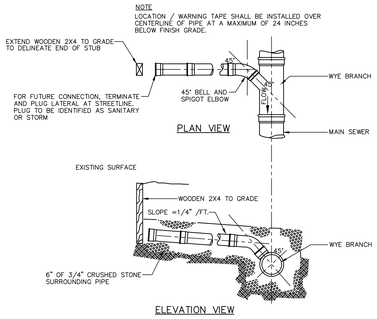
TEE & BEND BLOCKING
NOT TO SCALE



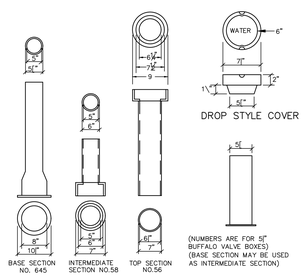
NOTE:
1. BASIS OF DESIGN IS 3GY MANHOLE BY OLD CASTLE PRECAST MANHOLES SHALL MEET UTILITY OWNERS SPECIFICATIONS.

ELECTRICAL & TELECOMMUNICATIONS MANHOLE
NOT TO SCALE

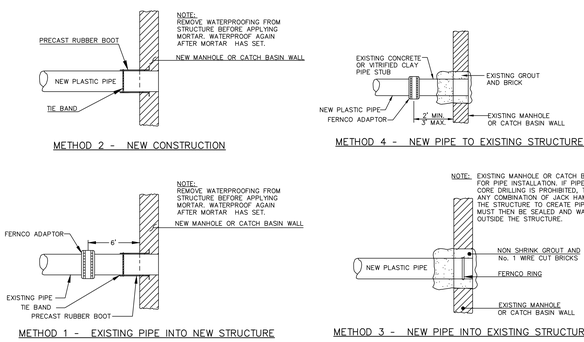




TYPICAL SEWER LATERAL WYE CONNECTION
NOT TO SCALE



VALVE BOX & COVER
NOT TO SCALE



PLASTIC PIPE CONNECTION
NOT TO SCALE

TABLE OF DIMENSIONS
PVC, TRUSS, OMP, & POLYETHYLENE PIPE

D	A	B	C	VOL. BASE /100' UNSHEETED O. D. SOCKET
8"	3'- 0"	1'- 1 1/2"	0'- 1/2"	7.358 10 3/8"
10"	3'- 0"	1'- 0 3/8"	0'- 0 5/8"	7.658 12 1/2"
12"	3'- 0"	0'- 11 3/8"	0'- 0 5/8"	7.933 14 1/2"
14"	3'- 0"	0'- 10 3/8"	0'- 0 5/8"	8.178 16 3/4"
16"	3'- 0"	0'- 9 1/4"	0'- 0 3/4"	8.447 19"
18"	3'- 0"	0'- 8 1/4"	0'- 0 3/4"	8.663 21 1/8"
20"	3'- 0"	0'- 7 3/8"	0'- 0 3/4"	8.815 23 3/8"
24"	3'- 1 3/4"	0'- 6"	0'- 0 7/8"	9.633 27 3/4"
27"	3'- 5 1/4"	0'- 6"	0'- 1 1/8"	10.959 31 1/8"
30"	3'- 8 1/4"	0'- 6"	0'- 1 1/8"	12.156 34 1/2"
33"	3'- 11 1/4"	0'- 6"	0'- 1 1/8"	13.151 38 1/8"
36"	4'- 2 3/4"	0'- 6"	0'- 1 3/8"	14.910
A = WIDTH OF UNSHEETED TRENCH				

TABLE OF DIMENSIONS
REINFORCED CONCRETE PIPE

D	A	B	C	VOL. BASE /100' UNSHEETED O. D. BELL
12"	3'- 0"	0'- 10"	0'-2"	8.319 20 1/4"
15"	3'- 0"	0'- 8 1/4"	0'- 2 1/4"	8.626 24 1/8"
18"	3'- 0"	0'- 6 1/2"	0'- 2 1/2"	8.925 28"
21"	3'- 0 1/2"	0'- 6"	0'-2 3/4"	9.266 31 7/8"
24"	3'- 8"	0'- 6"	0'- 3"	11.235 35 3/4"
27"	3'- 9 1/2"	0'- 6"	0'- 3 1/4"	12.655
30"	4'- 3"	0'- 6"	0'- 3 1/2"	14.120
33"	4'- 4 1/2"	0'- 6"	0'- 3 3/4"	15.722
36"	4'- 8"	0'- 6"	0'- 4"	17.338
42"	5'- 3"	0'- 6"	0'- 4 1/2"	20.726
48"	5'- 10"	0'- 6"	0'- 5"	24.483
54"	6'- 5"	0'- 6"	0'- 5 1/2"	28.404
60"	7'- 0"	0'- 6"	0'- 6"	32.607
66"	7'- 7"	0'- 6"	0'- 6 1/2"	37.074
72"	8'- 2"	0'- 6"	0'- 7"	41.886
78"	8'- 9"	0'- 6"	0'- 7 1/2"	46.881
84"	9'- 4"	0'- 6"	0'- 8"	52.149
90"	9'- 11"	0'- 6"	0'- 8 1/2"	57.769
96"	10'-6"	0'- 6"	0'- 9"	63.552
27" in. THROUGH 96 in. INCLUSIVE - TONGUE & GROOVE JOINTS				

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STATE OF MAINE — DANIEL L RILEY — No. 9999 — REGISTERED PROFESSIONAL ENGINEER — 9/25/18

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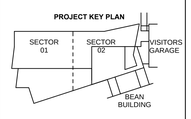

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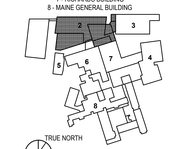

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SHEET NUMBER
C30-03

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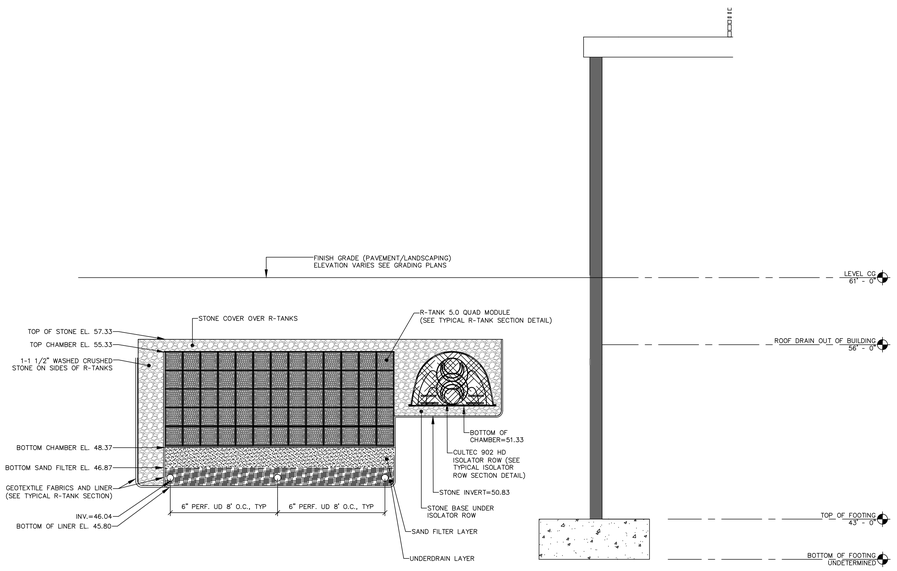
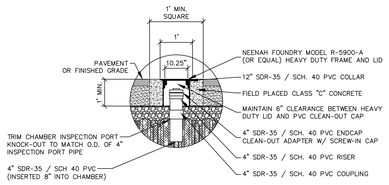
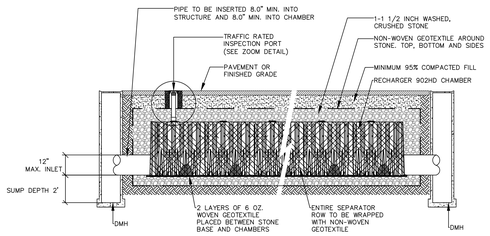


SUBSURFACE SAND FILTER SECTION
NOT TO SCALE



ISOLATOR ROW INSPECTION PORT
NOT TO SCALE



TYPICAL ISOLATOR ROW CROSS SECTION
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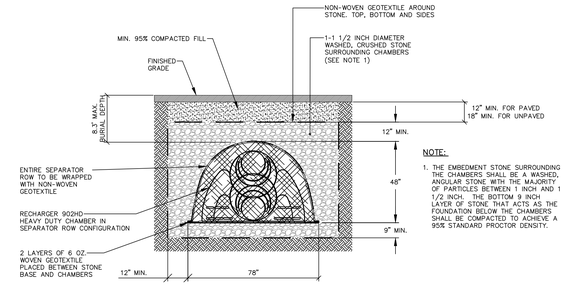
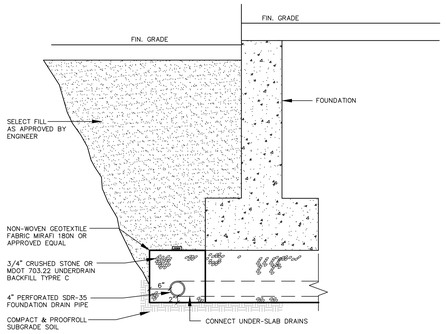


TYPICAL ISOLATOR ROW SECTION
NOT TO SCALE

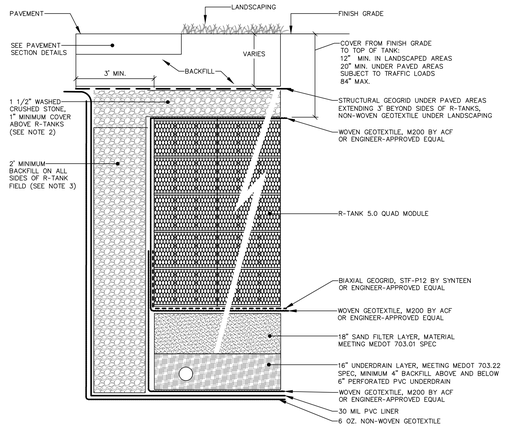


TYPICAL PERIMETER FOUNDATION DRAIN
NOT TO SCALE

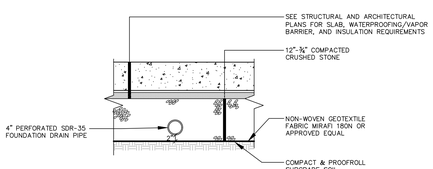
NOTES:
1. 4'-0" I.D. TYPICAL. SOME STRUCTURES MAY REQUIRE LARGER I.D. PROVIDE SHOP DRAWINGS.
2. DRAINAGE STRUCTURES TO BE DESIGNED FOR H-20 LOADING.
3. PIPE SIZES AND INVERTS AS NOTED ON PLANS.
4. CATCH BASIN FRAME AND GRATE TO BE NEENAH FOUNDRY R-2554, OR APPROVED EQUAL.

TYPICAL CATCH BASIN
NOT TO SCALE

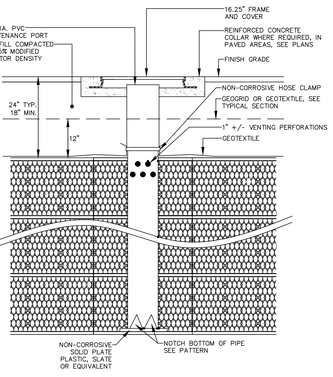
NOTES:
1. THE SAND FILTER MATERIAL SHALL BE A UNIFORM MIX, FREE OF STONES LARGER THAN 2 INCHES, STUMPS, ROOTS, OR OTHER SIMILAR OBJECTS. THE MATERIAL SHALL MEET THE SPECIFICATIONS FOR MDOT AGGREGATE SAND (MDOT #703.01). THIS AGGREGATE SAND SHALL BE MIXED WITH LOAM TO ACHIEVE A MATERIAL WITH BETWEEN 8% AND 10% PASSING THE #200 SIEVE. THE LOAM USED IN THIS MIXTURE SHALL HAVE LESS THAN 2% CLAY CONTENT. THIS 18 INCH LAYER OF SAND FILTRATION MEDIA SHALL BE PLACED TO ACHIEVE A LEVEL OF COMPACTION BETWEEN 92% AND 95% STANDARD PROCTOR DENSITY.
2. FIRST 12" COVER MUST BE FREE DRAINING BACKFILL: 1-1 1/2" WASHED CRUSHED STONE. ADDITIONAL FILL MAY BE STRUCTURAL FILL: STONE OR SOIL (USCS CLASS SM, SP, SW, GM, GP OR GW) WITH MAX. CLAY CONTENT<10%, MAX 25% PASSING NO. 200 SIEVE, AND MAX PLASTICITY INDEX OF 4. A MIN. 12" COVER MUST BE MAINTAINED BETWEEN BACKFILL EQUIPMENT AND THE TOP OF THE R-TANK™ SYSTEM AT ALL TIMES. TOTAL HEIGHT OF TOP BACKFILL SHOULD NOT EXCEED 7'. CONTACT ACF ENVIRONMENTAL IF MORE THAN 7' OR LESS THAN 20" OF TOP BACKFILL IS REQUIRED (FROM TOP OF TANK TO TOP OF PAVEMENT).
3. SIDE BACKFILL: 24" MIN. OF FREE DRAINING BACKFILL: STONE <1.5". MUST BE FREE FROM LUMPS, DEBRIS AND OTHER SHARP OBJECTS. SPREAD EVENLY TO PREVENT R-TANK™ MOVEMENT. COMPACT SIDE BACKFILL WITH POWERED MECHANICAL COMPACTOR IN 12" LIFTS.
4. FOR COMPLETE MODULE DATA, SEE APPROPRIATE R-TANK MODULE SHEET.



TYPICAL R-TANK^{HD} SECTION
NOT TO SCALE

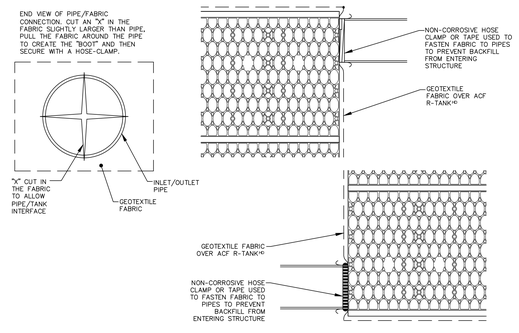


TYPICAL UNDER SLAB DRAIN
NOT TO SCALE

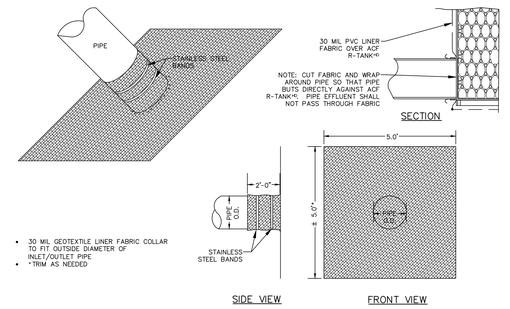


MAINTENANCE PORT
THIS PORT IS USED TO PUMP WATER INTO THE SYSTEM AND RE-SUSPEND ACCUMULATED SEDIMENT SO THAT IT MAY BE PUMPED OUT.

R-TANK^{HD} TYPICAL MAINTENANCE PORT
NOT TO SCALE



R-TANK^{HD} TYPICAL TANK INLET/OUTLET DETAIL
NOT TO SCALE



- 30 MIL GEOTEXTILE LINER FABRIC COLLAR TO FIT OUTSIDE DIAMETER OF INLET/OUTLET PIPE
- ~TRIM AS NEEDED

GEOTEXTILE PIPE BOOT FOR R-TANK^{HD}
NOT TO SCALE

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MEDICAL EQUIPMENT PLANNING
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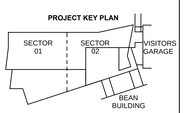
PROJECT TITLE

Congress Street Building
22 Bramhall Street
Portland ME 04102

STATE OF MAINE — DANIEL L. RILEY No. 9025 — PROFESSIONAL ENGINEER — 9/25/18

KEY PLANS

PROJECT KEY PLAN



OVERALL KEY PLAN

1 - NOT USED
2 - CONGRESS STREET
3 - VISITOR GARAGE
4 - EAST TOWER
5 - CENTRAL UTILITY PLANT
6 - BEAN BUILDING
7 - RICHARDS BUILDING
8 - MAINE GENERAL BUILDING



CITY SUBMISSION
SEPTEMBER 25, 2018

NO	ISSUE	DATE
1	CITY SUBMISSION	9/25/2018

Job Number	152189.000
Drawn	MAL/MAM
Checked	DLR
Approved	DLR

TITLE

DETAILS STORMWATER SYSTEM CONGRESS STREET EXPANSION

SHEET NUMBER

C30-04

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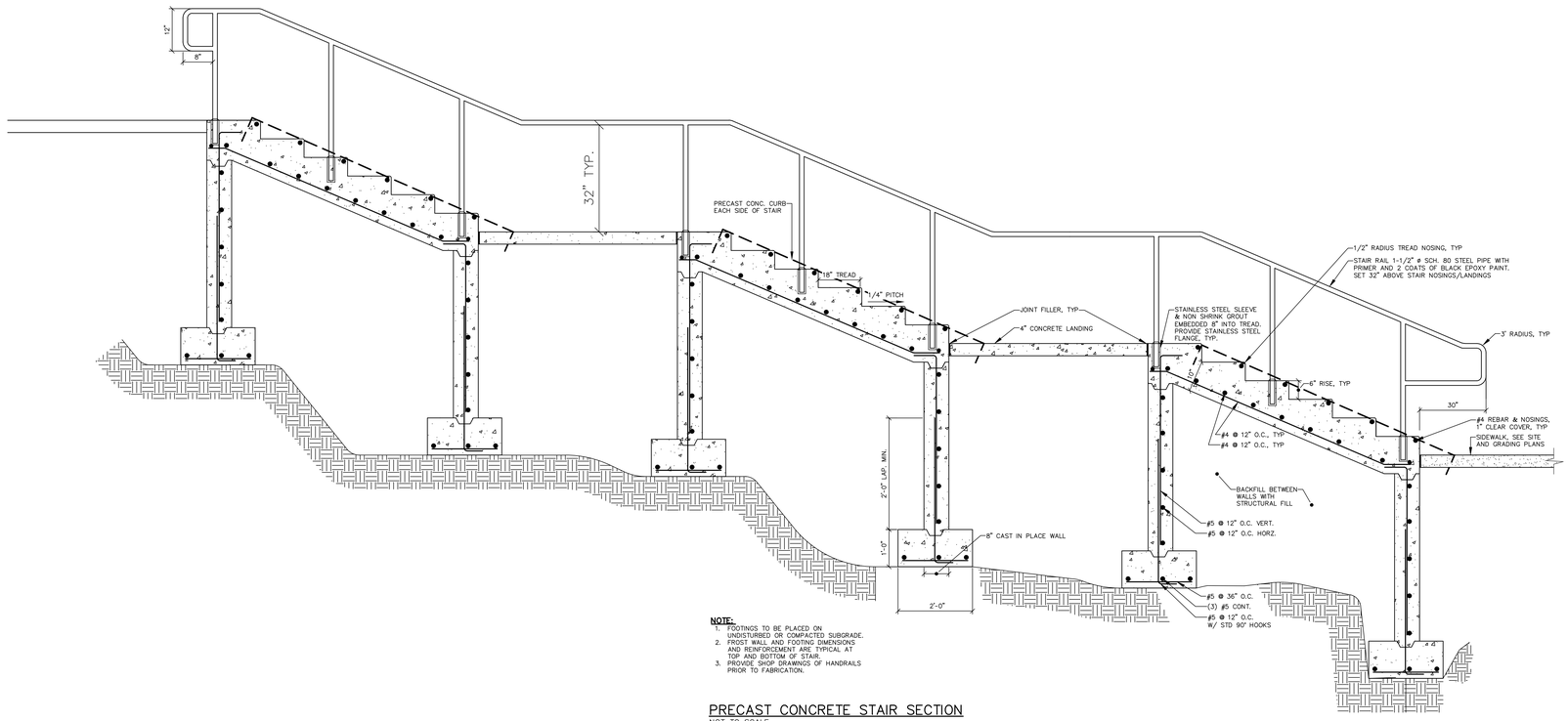

NOTE:
1. FOOTINGS TO BE PLACED ON UNDISTURBED OR COMPACTED SUBGRADE.
2. FROST WALL AND FOOTING DIMENSIONS AND REINFORCEMENT ARE TYPICAL AT TOP AND BOTTOM OF STAIR.
3. PROVIDE SHOP DRAWINGS OF HANDRAILS PRIOR TO FABRICATION.

PRECAST CONCRETE STAIR SECTION
NOT TO SCALE

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630 Dundee Road, Suite 340, Northbrook IL 60062

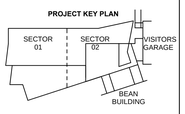
PROJECT TITLE

Congress Street Building
22 Bramhall Street
Portland ME 04102

STATE OF MAINE
DANIEL L. RILEY
No. 14667
LICENSED
PROFESSIONAL ENGINEER
9/25/18

KEY PLANS

PROJECT KEY PLAN



OVERALL KEY PLAN

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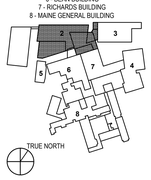

CITY SUBMISSION
SEPTEMBER 25, 2018

NO	ISSUE	DATE
1	CITY SUBMISSION	9/25/2018

Job Number	152189.000
Drawn	MAL/MAM
Checked	DLR
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TITLE
DETAILS
STAIR SECTION
CONGRESS STREET EXPANSION

SHEET NUMBER

C30-05

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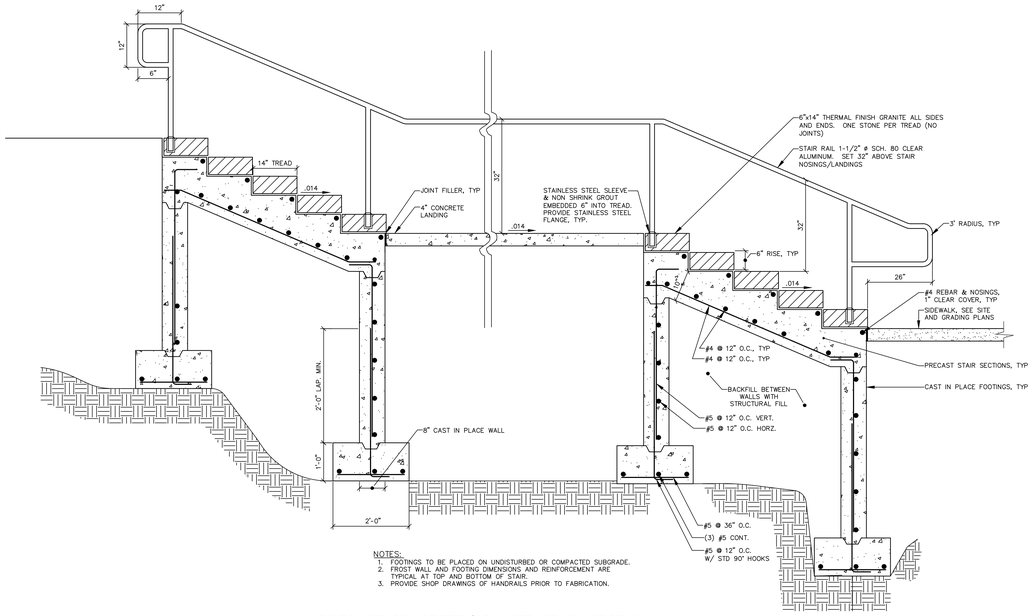
154660-CONGRESS.dwg, TAB: WALLS



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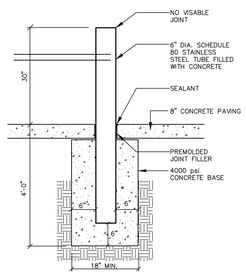
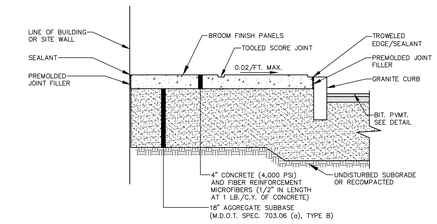
3. PROVIDE SHOP DRAWINGS OF HANDRAILS PRIOR TO FABRICATION.

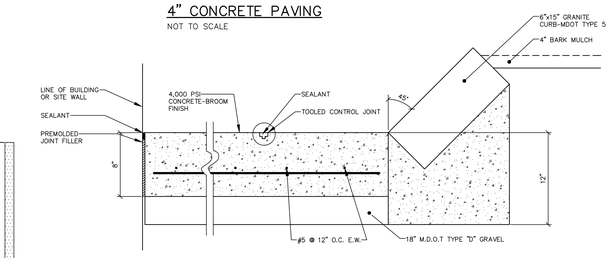
PRECAST CONCRETE/GRANITE STAIR SECTION
NOT TO SCALE



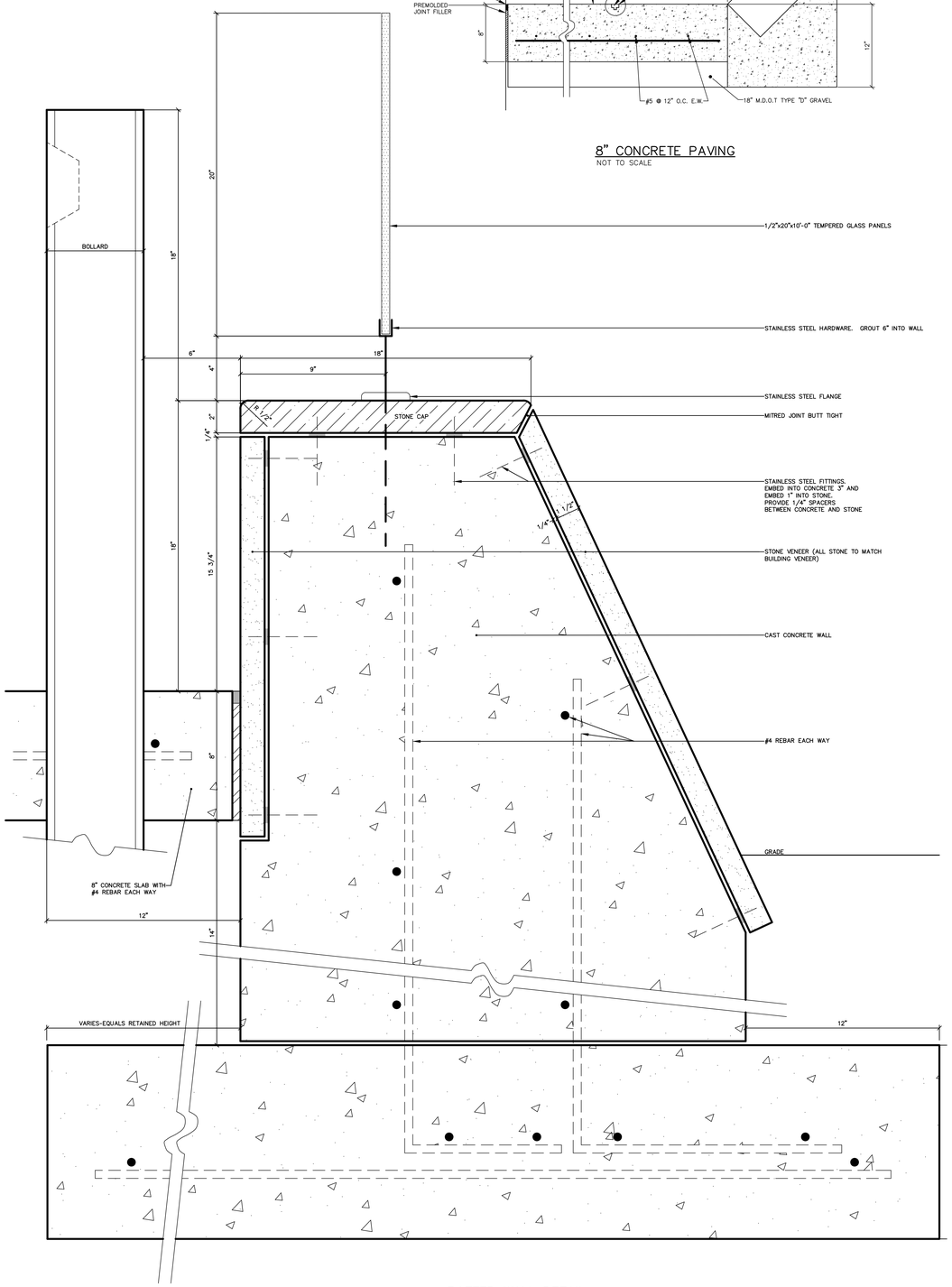
STAINLESS STEEL BOLLARD
NOT TO SCALE

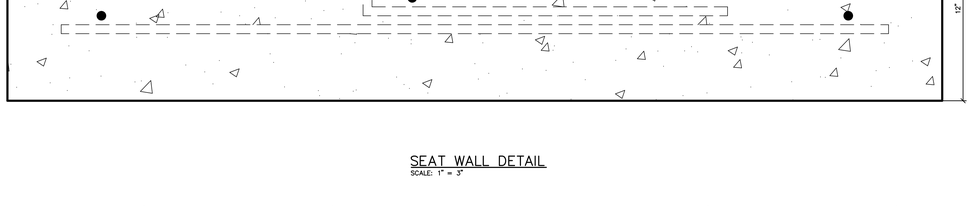


4" CONCRETE PAVING
NOT TO SCALE



8" CONCRETE PAVING
NOT TO SCALE





SEAT WALL DETAIL
SCALE: 1" = 3"

BATTER WALL DETAIL
SCALE: 1" = 3"

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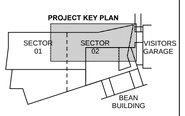
KEY PLANS

PROJECT KEY PLAN



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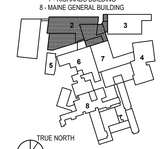

CITY SUBMISSION
SEPTEMBER 25, 2018

NO	ISSUE	DATE
1	CITY SUBMISSION	9/25/2018

Job Number	152189.000
Drawn	JAR
Checked	WTC
Approved	DLR

TITLE

WALL DETAILS UPPER/LOWER PLAZA CONGRESS STREET EXPANSION

SHEET NUMBER

C30-06

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152465\-WALL.dwg, TAB: WALL

EROSION CONTROL MEASURES

PRE-CONSTRUCTION PHASE

PRIOR TO CONSTRUCTION, PROPERLY INSTALL SEDIMENT BARRIERS AT THE DOWNGRADIENT EDGE OF ANY AREA TO BE DISTURBED AND ADJACENT TO ANY DRAINAGE CHANNELS WITHIN THE DISTURBED AREA. SEDIMENT BARRIERS SHOULD BE INSTALLED DOWNGRADIENT OF SOIL OR SEDIMENT STOCKPILES AND STORMWATER PREVENTED FROM RUNNING ONTO THE STOCKPILE. MAINTAIN THE SEDIMENT BARRIERS BY REMOVING ACCUMULATED SEDIMENT, OR REMOVING AND REPLACING THE BARRIER, UNTIL THE DISTURBED AREA IS PERMANENTLY STABILIZED. WHERE A DISCHARGE TO A STORM DRAIN INLET OCCURS, IF THE STORM DRAIN CARRIES WATER DIRECTLY TO A SURFACE WATER AND YOU HAVE AUTHORITY TO ACCESS THE STORM DRAIN INLET, YOU MUST INSTALL AND MAINTAIN PROTECTION MEASURES THAT REMOVE SEDIMENT FROM THE DISCHARGE.

PRIOR TO CONSTRUCTION, PROPERLY INSTALL A STABILIZED CONSTRUCTION ENTRANCE (SCE) AT ALL POINTS OF EGRESS FROM THE SITE. THE SCE IS A STABILIZED PAD OF AGGREGATE, UNDERLAIN BY A GEOTEXTILE FILTER FABRIC, USED TO PREVENT TRAFFIC FROM TRACKING MATERIAL AWAY FROM THE SITE ONTO PUBLIC ROWS. MAINTAIN THE SCE UNTIL ALL DISTURBED AREAS ARE STABILIZED.

PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL PREPARE A DETAILED SCHEDULE AND MARKED UP PLAN INDICATING AREAS AND COMPONENTS OF THE WORK AND KEY DATES SHOWING DATE OF DISTURBANCE AND COMPLETION OF THE WORK. THE CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING WITH THE MUNICIPAL STAFF. THREE COPIES OF THE SCHEDULE AND MARKED UP PLAN SHALL BE PROVIDED TO THE MUNICIPALITY THREE DAYS PRIOR TO THE SCHEDULED PRE-CONSTRUCTION MEETING. SPECIAL ATTENTION SHALL BE GIVEN TO THE 14 DAY LIMIT OF DISTURBANCE IN THE SCHEDULE ADDRESSING TEMPORARY AND PERMANENT VEGETATION MEASURES.

CONSTRUCTION AND POST-CONSTRUCTION PHASE

DURING CONSTRUCTION

1. INSPECTION AND CORRECTIVE ACTION:
   INSPECT DISTURBED AND IMPERVIOUS AREAS, EROSION CONTROL MEASURES, MATERIALS STORAGE AREAS THAT ARE EXPOSED TO PRECIPITATION, AND LOCATIONS WHERE VEHICLES ENTER OR EXIT THE SITE. INSPECT THESE AREAS AT LEAST ONCE A WEEK AS WELL AS BEFORE AND WITHIN 24 HOURS AFTER A STORM EVENT (RAINFALL). AND PRIOR TO COMPLETING PERMANENT STABILIZATION MEASURES. A PERSON WITH KNOWLEDGE OF EROSION AND STORMWATER CONTROL, INCLUDING THE STANDARDS AND CONDITIONS IN THE PERMIT, SHALL CONDUCT THE INSPECTIONS.
2. MAINTENANCE:
   IF BEST MANAGEMENT PRACTICES (BMPS) NEED TO BE REPAIRED, THE REPAIR WORK SHOULD BE INITIATED UPON DISCOVERY OF THE PROBLEM BUT NO LATER THAN THE END OF THE NEXT WORKDAY. IF ADDITIONAL BMPS OR SIGNIFICANT REPAIR OF BMPS ARE NECESSARY, IMPLEMENTATION MUST BE COMPLETED WITHIN 7 CALENDAR DAYS AND PRIOR TO ANY STORM EVENT (RAINFALL). ALL MEASURES MUST BE MAINTAINED IN EFFECTIVE OPERATING CONDITION UNTIL AREAS ARE PERMANENTLY STABILIZED.
3. DOCUMENTATION:
   KEEP A LOG (REPORT) SUMMARIZING THE INSPECTIONS AND ANY CORRECTIVE ACTION TAKEN. THE LOG MUST INCLUDE THE NAME(S) AND QUALIFICATIONS OF THE PERSON MAKING THE INSPECTIONS, THE DATE(S) OF THE INSPECTIONS, AND MAJOR OBSERVATIONS ABOUT THE OPERATION AND MAINTENANCE OF EROSION AND SEDIMENTATION CONTROLS, MATERIALS STORAGE AREAS, AND VEHICLES ACCESS POINTS TO THE PARCEL. MAJOR OBSERVATIONS MUST INCLUDE BMPS THAT NEED MAINTENANCE, BMPS THAT FAILED TO OPERATE AS DESIGNED OR PROVED INADEQUATE FOR A PARTICULAR LOCATION, AND LOCATION(S) WHERE ADDITIONAL BMPS ARE NEEDED. FOR EACH BMP REQUIRING MAINTENANCE, BMP NEEDING REPLACEMENT, AND LOCATION NEEDING ADDITIONAL BMPS, NOTE IN THE LOG THE CORRECTIVE ACTION TAKEN AND WHEN IT WAS TAKEN.

   THE LOG MUST BE MADE ACCESSIBLE TO DEPARTMENT STAFF AND A COPY MUST BE PROVIDED UPON REQUEST. THE PERMITTEE SHALL RETAIN A COPY OF THE LOG FOR A PERIOD OF AT LEAST THREE YEARS FROM THE COMPLETION OF PERMANENT STABILIZATION.

POST-CONSTRUCTION

1. PLAN:
   CARRY OUT AN APPROVED INSPECTION AND MAINTENANCE PLAN THAT IS CONSISTENT WITH THE MINIMUM REQUIREMENTS OF THIS SECTION. THE PLAN MUST ADDRESS INSPECTION AND MAINTENANCE OF THE PROJECTS PERMANENT EROSION CONTROL MEASURES AND STORMWATER MANAGEMENT SYSTEMS. THIS PLAN MAY BE COMBINED WITH THE PLAN LISTED IN SECTION 2(A) OF THIS APPENDIX. SEE SECTION 7(C)(2) FOR SUBMISSION REQUIREMENTS.
2. INSPECTION AND MAINTENANCE:
   ALL MEASURES MUST BE MAINTAINED IN EFFECTIVE OPERATING CONDITION. A PERSON WITH KNOWLEDGE OF EROSION AND STORMWATER CONTROL, INCLUDING THE STANDARDS AND CONDITIONS IN THE PERMIT, SHALL CONDUCT THE INSPECTIONS. THE FOLLOWING AREAS, FACILITIES, AND MEASURES MUST BE INSPECTED AND IDENTIFIED DEFICIENCIES MUST BE CORRECTED: AREAS, FACILITIES, AND MEASURES OTHER THAN THOSE LISTED BELOW MAY ALSO REQUIRE INSPECTION ON A SPECIFIC SITE. INSPECTION OR MAINTENANCE TASKS OTHER THAN THOSE DISCUSSED BELOW MUST BE INCLUDED IN THE MAINTENANCE PLAN DEVELOPED FOR A SPECIFIC SITE.
3. REGULAR MAINTENANCE:
   CLEAR ACCUMULATIONS OF WINTER SAND IN PARKING LOTS AND ALONG ROADWAYS AT LEAST ONCE A YEAR, PREFERABLY IN THE SPRING. ACCUMULATIONS ON PAVEMENT MAY BE REMOVED BY PAVEMENT SWEEPING. ACCUMULATIONS OF SAND ALONG ROAD SHOULDERS MAY BE REMOVED BY GRADING EXCESS SAND TO THE PAVEMENT EDGE AND REMOVING IT MANUALLY OR BY A FRONT-END LOADER. GRADING OF GRAVEL ROADS, OR GRADING OF THE GRAVEL SHOULDERS OF GRAVEL OR PAVED ROADS, MUST BE ROUTINELY PERFORMED TO ENSURE THAT STORMWATER DRAINS IMMEDIATELY OFF THE ROAD SURFACE TO ADJACENT BUFFER AREAS OR STABLE DITCHES, AND IS NOT IMPEDED BY ACCUMULATIONS OF GRADED MATERIAL ON THE ROAD SHOULDER OR BY EXCAVATION OF FALSE DITCHES IN THE SHOULDER. IF WATER BANK OR OPEN-TOP CULVERTS ARE USED TO DIVERT RUNOFF FROM ROAD SURFACES, CLEAN-OUT ANY SEDIMENTS WITHIN OR AT THE OUTLET OF THESE STRUCTURES TO RESTORE THEIR FUNCTION.
4. DOCUMENTATION:
   KEEP A LOG (REPORT) SUMMARIZING INSPECTIONS, MAINTENANCE, AND ANY CORRECTIVE ACTIONS TAKEN. THE LOG MUST INCLUDE THE DATE ON WHICH EACH INSPECTION OR MAINTENANCE TASK WAS PERFORMED, A DESCRIPTION OF THE INSPECTION FINDINGS OR MAINTENANCE COMPLETED, AND THE NAME OF THE INSPECTOR OR MAINTENANCE PERSONNEL PERFORMING THE TASK. IF A MAINTENANCE TASK REQUIRES THE CLEAN-OUT OF ANY SEDIMENTS OR DEBRIS, INDICATE WHERE THE SEDIMENT AND DEBRIS WAS DISPOSED AFTER REMOVAL. THE LOG MUST BE MADE ACCESSIBLE TO THE DEPARTMENT STAFF AND A COPY PROVIDED TO THE DEPARTMENT UPON REQUEST. THE PERMITTEE SHALL RETAIN A COPY OF THE LOG FOR A PERIOD OF AT LEAST FIVE YEARS FROM THE COMPLETION OF PERMANENT STABILIZATION.

EROSION CONTROL APPLICATIONS & MEASURES

THE PLACEMENT OF EROSION CONTROL MEASURES SHALL BE COMPLETED IN ACCORDANCE WITH GUIDELINES ESTABLISHED WITHIN THE CURRENT MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION CHAPTER 500 RULES, THE DEPARTMENTS BEST MANAGEMENT PRACTICES AND IN ACCORDANCE WITH THE EROSION CONTROL PLAN AND DETAILS IN THE PLAN SET. EROSION CONTROL MEASURES MUST BE IN PLACE BEFORE THE ACTIVITY BEGINS. MEASURES SHALL REMAIN IN PLACE AND FUNCTIONAL UNTIL THE SITE IS PERMANENTLY STABILIZED. ADEQUATE AND TIMELY TEMPORARY AND PERMANENT STABILIZATION MEASURES MUST BE TAKEN.

1. POLLUTION PREVENTION:
   WHENEVER PRACTICABLE; NO DISTURBANCE ACTIVITIES SHOULD TAKE PLACE WITHIN 50 FEET OF ANY PROTECTED NATURAL RESOURCE. IF DISTURBANCE ACTIVITIES TAKE PLACE BETWEEN 30 FEET AND 50 FEET OF ANY PROTECTED NATURAL RESOURCE, AND STORMWATER DISCHARGES THROUGH THE PROTECTIVE BUFFER TOWARD THE PROTECTED NATURAL RESOURCE, PERIMETER EROSION CONTROLS MUST BE DOUBLED. IF DISTURBANCE ACTIVITIES TAKE PLACE LESS THAN 30 FEET FROM ANY PROTECTED NATURAL RESOURCE, AND STORMWATER DISCHARGES THROUGH THE PROTECTIVE BUFFER TOWARD THE PROTECTED NATURAL RESOURCE, PERIMETER EROSION CONTROLS MUST BE DOUBLED AND DISTURBED AREAS MUST BE TEMPORARILY OR PERMANENTLY STABILIZED WITHIN 48 HOURS.
2. TEMPORARY MULCHING:
   ALL DISTURBED AREAS SHALL BE MULCHED WITH MATERIALS SPECIFIED BELOW PRIOR TO ANY STORM EVENT. ALL DISTURBED AREAS NOT FINAL GRADED WITHIN 7 DAYS SHALL BE MULCHED. ALSO, MULCH HAVE BEEN TEMPORARILY OR PERMANENTLY SEEDED, SHALL BE MULCHED IMMEDIATELY FOLLOWING SEEDING. EROSION CONTROL BLANKETS ARE RECOMMENDED TO BE USED AT THE BASE OF GRASSED WATERWAYS AND DITCHES GREATER THAN 5% AND MUCH ANCHORING SHOULD BE USED ON SLOPES GREATER THAN 5% AFTER SEPTEMBER 15TH OF THE CONSTRUCTION YEAR (SEE WINTER EROSION CONTROL NOTES).
   TYPES OF MULCH:
   HAY OR STRAW: SHALL BE APPLIED AT A RATE OF 75 LBS/1,000 S.F. (1.5 TONS PER ACRE).
   EROSION CONTROL MIX: SHALL BE PLACED EVENLY AND MUST PROVIDE 100% SOIL COVERAGE. EROSION CONTROL MIX SHALL BE APPLIED SUCH THAT THE THICKNESS ON SLOPES 3:1 OR LESS IS 2 INCHES PLUS 1/2 INCH PER 20 FEET OF SLOPE UP TO 100 FEET. THE THICKNESS ON SLOPES BETWEEN 3:1 AND 2:1 SHALL BE 4 INCHES PLUS 1/2 INCH PER 20 FEET OF SLOPE UP TO 100 FEET. THIS SHALL NOT BE USED ON SLOPES GREATER THAN 2:1.
   EROSION CONTROL BLANKET: SHALL BE INSTALLED SUCH THAT CONTINUOUS CONTACT BETWEEN THE MAT AND THE SOIL IS OBTAINED. INSTALL BLANKETS AND STAPLE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
3. SOIL STOCKPILES:
   STOCKPILES OF SOIL OR SUBSOIL SHALL BE MULCHED WITH HAY OR STRAW AT A RATE OF 75 LBS/1,000 S.F. (1.5 TONS PER ACRE) OR WITH A FOUR-INCH LAYER OF WOOD WASTE EROSION CONTROL MIX. THIS WILL BE DONE WITHIN 24 HOURS OF STOCKING AND RE-ESTABLISHED PRIOR TO ANY RAINFALL. ANY SOIL STOCKPILE WILL NOT BE PLACED (EVEN COVERED WITH HAY OR STRAW) WITHIN 100 FEET FROM ANY NATURAL RESOURCES.
4. NATURAL RESOURCES PROTECTION:
   ANY AREAS WITHIN 100 FEET FROM ANY NATURAL RESOURCES, IF NOT STABILIZED WITH A MINIMUM OF 75% MATURE VEGETATION CATCH, SHALL BE STABILIZED USING TEMPORARY MULCHING (AS DESCRIBED IN PART 1. OF THIS SECTION) OR OTHER NON-ERODIBLE COVER WITHIN 48 HOURS OF EXPOSURE OR PRIOR TO ANY STORM EVENT. SEDIMENT BARRIERS (AS DESCRIBED IN PART 4. OF THIS SECTION) SHALL BE PLACED BETWEEN ANY NATURAL RESOURCE AND THE DISTURBED AREA. PROJECTS CROSSING THE NATURAL RESOURCE SHALL BE PROTECTED A MINIMUM DISTANCE OF 100 FEET ON EITHER SIDE FROM THE RESOURCE. IF DISTURBANCE TAKES PLACE LESS THAN 30 FEET FROM A PROTECTED RESOURCE AND STORMWATER DISCHARGES THROUGH THE DISTURBED AREAS TO THE RESOURCE, PERIMETER EROSION CONTROLS MUST BE DOUBLED.
5. SEDIMENT BARRIERS:
   PRIOR TO THE BEGINNING OF ANY CONSTRUCTION, SEDIMENT BARRIERS SHALL BE STAKED ACROSS THE SLOPE(S), ON THE CONTOUR AT OR JUST BELOW THE LIMITS OF CLEARING OR GRUBBING, AND/OR JUST ABOVE ANY ADJACENT PROPERTY LINE OR WATERCOURSE TO PROTECT AGAINST CONSTRUCTION RELATED EROSION. SEDIMENT BARRIERS SHALL BE MAINTAINED BY THE CONTRACTOR UNTIL ALL EXPOSED SLOPES HAVE AT LEAST 85%-90% VIGOROUS PERENNIAL VEGETATIVE COVER TO PREVENT EROSION.

   SILT FENCE: SHALL BE INSTALLED PER THE DETAIL ON THE PLANS. THE EFFECTIVE HEIGHT OF THE FENCE SHALL NOT EXCEED 36 INCHES. IT IS RECOMMENDED THAT SILT FENCE BE REMOVED BY CUTTING THE FENCE MATERIALS AT GROUND LEVEL SO AS TO AVOID ADDITIONAL SOIL DISTURBANCE.

   HAY BALES: SHALL BE INSTALLED PER THE DETAIL ON THE PLANS. BALES SHALL BE WIRE-BOUND OR STRING-TIED AND THESE BINDINGS MUST REMAIN PARALLEL WITH THE GROUND SURFACE DURING INSTALLATION TO PREVENT DETERIORATION OF THE BINDINGS. BALES SHALL BE INSTALLED WITHIN A MINIMUM 4 INCH DEEP TRENCH LINE WITH ENDS OF ADJACENT BALES TIGHTLY ABUTTING ONE ANOTHER.

   EROSION CONTROL MIX: SHALL BE INSTALLED PER THE DETAIL ON THE PLANS. THE MIX SHALL CONSIST PRIMARILY OF ORGANIC MATERIAL AND CONTAIN A WELL-GRADED MIXTURE OF PARTICLE SIZES AND MAY CONTAIN ROCKS LESS THAN 4 INCHES IN DIAMETER. THE MIX COMPOSITION SHALL MEET THE STANDARDS DESCRIBED WITHIN THE MDEP BEST MANAGEMENT PRACTICES. NO TRENCHING IS REQUIRED FOR INSTALLATION OF THIS BARRIER.

   CONTINUOUS CONTAINED BERM: SHALL BE INSTALLED PER THE DETAIL ON THE PLANS. THIS SEDIMENT BARRIER IS EROSION CONTROL MIX PLACED WITHIN A SYNTHETIC TUBULAR NETTING AND PERFORMS AS A STURDY SEDIMENT BARRIER THAT WORKS WELL ON HARD GROUND SUCH AS FROZEN CONDITIONS, TRAVELED AREAS OR PAVEMENT. NO TRENCHING IS REQUIRED FOR INSTALLATION OF THIS BARRIER.
6. TEMPORARY CHECK DAMS:
   SHALL BE INSTALLED PER THE DETAIL ON THE PLANS. CHECK DAMS ARE TO BE PLACED WITHIN DITCHES/ SWALES AS SPECIFIED ON THE DESIGN PLANS IMMEDIATELY AFTER FINAL GRADING. CHECK DAMS SHALL BE 2 FEET HIGH. TEMPORARY CHECK DAMS MAY BE REMOVED ONLY AFTER THE ROADWAYS ARE PAVED AND THE VEGETATED SWALE ARE ESTABLISHED WITH AT LEAST 85%-90% OF VIGOROUS PERENNIAL GROWTH. THE AREA BENEATH THE CHECK DAM MUST BE SEEDED AND MULCHED IMMEDIATELY AFTER REMOVAL OF THE CHECK DAM.

   STONE CHECK DAMS: SHOULD BE CONSTRUCTED OF 2 TO 3 INCH STONE AND PLACED SUCH THAT COMPLETE COVERAGE OF THE SWALE IS OBTAINED AND THAT THE CENTER OF THE DAM IS 6 INCHES LOWER THAT THE OUTER EDGES.

   HAY BALE CHECK DAMS: WE DO NOT RECOMMEND THE USE OF HAY BALES AS CHECK DAMS.

   MANUFACTURED CHECK DAMS: MANUFACTURED CHECK DAMS, AS SPECIFIED IN THE DETAIL ON THE PLANS, MAY BE USED IF AUTHORIZED BY THE PROPER LOCAL, STATE OR FEDERAL REGULATING AGENCIES. THESE UNITS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURE'S RECOMMENDATIONS.
1. STORMDRAIN INLET PROTECTION:
   INLET PROTECTION SHALL BE PLACED AROUND A STORMDRAIN DROP INLETOR CURB INLET PRIOR TO PERMANENT STABILIZATION OF THE IMMEDIATE AND UPSTREAM DISTURBED AREAS. THEY SHALL BE CONSTRUCTED IN A MANNER THAT WILL FACILITATE CLEAN-OUT AND DISPOSAL OF TRAPPED SEDIMENTS AND MINIMIZE INTERFERENCE WITH CONSTRUCTION ACTIVITIES. ANY RESULTANT PONDING OF WATER FROM THE PROTECTION METHOD MUST NOT CAUSE EXCESSIVE INCONVENIENCE OR DAMAGE TO ADJACENT AREAS OR STRUCTURES.

   HAY BALE DROP INLET PROTECTION: WE DO NOT RECOMMEND THE USE OF HAY BALES AS INLET PROTECTION.

   CONCRETE BLOCK AND STONE INLET SEDIMENT FILTER (DROP OR CURB INLET): SHALL BE INSTALLED PER THE DETAIL ON THE PLANS. THE HEIGHT OF THE CONCRETE BLOCK BARRIER CAN VARY BUT MUST BE BETWEEN 12 AND 24 INCHES TALL. A MINIMUM OF 1 INCH CRUSHED STONE SHALL BE USED.

   MANUFACTURED SEDIMENT BARRIERS AND FILTER (DROP OR CURB INLET): MANUFACTURED FILTERS, AS SPECIFIED IN THE DETAIL ON THE PLANS, MAY BE USED IF INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
2. STABILIZED CONSTRUCTION EXIT:
   PRIOR TO CLEARING AND/OR GRUBBING THE SITE A STABILIZED CONSTRUCTION ENTRANCE/EXIT SHALL BE CONSTRUCTED WHEREVER TRAFFIC WILL EXIT THE CONSTRUCTION SITE ONTO A PAVED ROADWAY IN ORDER TO MINIMIZE THE TRACKING OF SEDIMENT AND DEBRIS FROM THE CONSTRUCTION SITE ONTO PUBLIC ROADWAYS. THE ENTRANCES AND ADJACENT ROADWAY AREAS SHALL BE PERIODICALLY SWEPT OR WASHED TO FURTHER MINIMIZE THE TRACKING OF MUD, DUST OR DEBRIS FROM THE CONSTRUCTION AREA. STABILIZED CONSTRUCTION EXITS SHALL BE CONSTRUCTED IN AREAS SPECIFIED ON THE PLANS AND AS DETAILED ON THE PLANS.
3. DUST CONTROL:
   DUST CONTROL DURING CONSTRUCTION SHALL BE ACHIEVED BY THE USE OF A WATERING TRUCK TO PERIODICALLY SPRINKLE THE EXPOSED ROADWAY AREAS AS NECESSARY TO REDUCE DUST DURING THE DRY MONTHS. APPLYING OTHER DUST CONTROL PRODUCTS SUCH AS CALCIUM CHLORIDE OR OTHER MANUFACTURED PRODUCTS ARE ALLOWED IF AUTHORIZED BY THE PROPER LOCAL, STATE AND/OR FEDERAL REGULATING AGENCIES. HOWEVER, IT IS THE CONTRACTOR'S ULTIMATE RESPONSIBILITY TO MITIGATE DUST AND SOIL LOSS FROM THE SITE.
4. TEMPORARY VEGETATION:
   TEMPORARY VEGETATION SHALL BE APPLIED TO DISTURBED AREAS THAT WILL NOT RECEIVE FINAL GRADING FOR PERIODS UP TO 12 MONTHS. THIS PROCEDURE SHOULD BE USED EXTENSIVELY IN AREAS ADJACENT TO NATURAL RESOURCES. SEEDBED PREPARATION AND APPLICATION OF SEED SHALL BE CONDUCTED AS INDICATED IN THE PERMANENT VEGETATION SECTION OF THIS NARRATIVE. SPECIFIC SEEDS (FAST GROWING AND SHORT LIVING) SHALL BE SELECTED FROM THE MAINE EROSION AND SEDIMENT CONTROL BMP MANUAL DATED 3/2003 OR LATER. ALTERNATIVE EROSION CONTROL MEASURES SHOULD BE USED IF SEEDING CAN NOT BE DONE BEFORE SEPTEMBER 15TH OF THE CONSTRUCTION YEAR.
5. PERMANENT VEGETATION:
   REVEGETATION MEASURES SHALL COMMENCE IMMEDIATELY UPON COMPLETION OF FINAL GRADING OF AREAS TO BE LOAMED AND SEEDED. THE APPLICATION OF SEED SHALL BE CONDUCTED BETWEEN APRIL 1ST AND OCTOBER 1ST OF THE CONSTRUCTION YEAR. PLEASE REFER TO THE WINTER EROSION CONTROL NOTES FOR MORE DETAIL. REVEGETATION MEASURES SHALL CONSIST OF THE FOLLOWING:

   SEEDBED PREPARATION:
   A. FOUR (4) INCHES OF LOAM SHALL BE SPREAD OVER DISTURBED AREAS AND SMOOTHED TO A UNIFORM SURFACE. LOAM SHALL BE FREE OF SUBSOIL, CLAY LUMPS, STONES AND OTHER OBJECTS OVER 2 INCHES OR LARGER IN ANY DIMENSION, AND WITHOUT WEEDS, ROOTS OR OTHER OBJECTIONABLE MATERIAL.
   B. SOILS TESTS SHALL BE TAKEN AT THE TIME OF SOIL STRIPPING TO DETERMINE FERTILIZATION REQUIREMENTS. SOILS TESTS SHALL BE TAKEN PROMPTLY AS TO NOT INTERFERE WITH THE 14-DAY LIMIT ON SOIL EXPOSURE. BASED UPON TEST RESULTS, SOIL AMENDMENTS SHALL BE INCORPORATED INTO THE SOIL PRIOR TO FINAL SEEDING. IN LIEU OF SOIL TESTS, SOIL AMENDMENTS MAY BE APPLIED AS FOLLOWS:

ITEM	APPLICATION RATE
10-20-20 FERTILIZER (N-P2O5-K2O OR EQUAL)	18.4 LBS./1,000 S.F.
GROUND LIMESTONE (50% CALCIUM & MAGNESIUM OXIDE)	138 LBS./1,000 S.F.

   C. WORK LIME AND FERTILIZER INTO THE SOIL AS NEARLY AS PRACTICAL TO A DEPTH OF 4 INCHES WITH PROPER EQUIPMENT. ROLL THE AREA TO FIRM THE SEEDBED EXCEPT ON CLAY OR SILTY SOILS OR COARSE SAND.

   APPLICATION OF SEED:
   A. SEEDING: SHALL BE CONDUCTED BETWEEN APRIL 1ST AND OCTOBER 1ST OF THE CONSTRUCTION YEAR. GENERALLY A SEED MIXTURE MAY BE APPLIED AS FOLLOWS: (MDEP SEED MIX 2 IS DISPLAYED)

SEED TYPE	APPLICATION RATE
CREEPING RED FESCUE	0.46 LBS./1,000 S.F. (20 LBS./ACRE)
REDTOP	0.05 LBS./1,000 S.F. (2 LBS./ACRE)
TALL FESCUE	0.46 LBS./1,000 S.F. (20 LBS./ACRE)
TOTAL:	0.97 LBS./1,000 S.F. (42 LBS./ACRE)

   NOTE: A SPECIFIC SEED MIXTURE SHOULD BE CHOSEN TO MATCH THE SOILS CONDITION OF THE SITE. VARIOUS AGENCIES CAN RECOMMEND SEED MIXTURES. MDEP RECOMMENDED SEED MIXTURES ARE IN THE EROSION AND SEDIMENT CONTROL BMP MANUAL DATED 3/2003 OR LATER.

   B. HYDROSEEDING: SHALL BE CONDUCTED ON PREPARED AREAS WITH SLOPES LESS THAN 2:1. LIME AND FERTILIZER MAY BE APPLIED SIMULTANEOUSLY WITH THE SEED. RECOMMENDED SEEDING RATES MUST BE INCREASED BY 10% WHEN HYDROSEEDING.

   C. MULCHING: SHALL COMMENCE IMMEDIATELY AFTER SEED IS APPLIED. REFER TO THE TEMPORARY MULCHING SECTION OF THIS NARRATIVE FOR DETAILS.

SODDING:

FOLLOWING SEEDBED PREPARATION, SOD CAN BE APPLIED IN LIEU OF SEEDING IN AREAS WHERE IMMEDIATE VEGETATION IS MOST BENEFICIAL SUCH AS DITCHES, AROUND STORMWATER DROP INLETS AND AREAS OF AESTHETIC VALUE. SOD SHOULD BE LAID AT RIGHT ANGLES TO THE DIRECTION OF FLOW, STARTING AT THE LOWEST ELEVATION. SOD SHOULD BE ROLLED OR TAMPED DOWN TO EVEN OUT THE JOINTS ONCE LAID DOWN. WHERE FLOW IS PREVALENT THE SOD MUST BE PROPERLY ANCHORED DOWN. IRRIGATE THE SOD IMMEDIATELY AFTER INSTALLATION. IN MOST CASES, SOD CAN NOT BE INSTALLED AFTER THE BEGINNING OF THE CONSTRUCTION YEAR, HOWEVER, REFER TO THE WINTER EROSION CONTROL NOTES FOR ANY ACTIVITIES AFTER OCTOBER 1ST.

TRENCH DEWATERING AND TEMPORARY STREAM DIVERSION:

WATER FROM CONSTRUCTION TRENCH DEWATERING OR TEMPORARY STREAM DIVERSION WILL PASS FIRST THROUGH A FILTER BAG OR SECONDARY CONTAINMENT STRUCTURE (E.G. HAY BALE LINED POOL) PRIOR TO DISCHARGE. THE DISCHARGE SITE SHALL BE SELECTED TO AVOID FLOODING AND SEDIMENT DISCHARGES TO A PROTECTED RESOURCE. IN NO CASE SHALL THE FILTER BAG OR CONTAINMENT STRUCTURE BE LOCATED WITHIN 100 FEET OF A PROTECTED NATURAL RESOURCE.

STANDARDS FOR TIMELY STABILIZATION:

STANDARD FOR THE TIMELY STABILIZATION OF DISTURBED SLOPES -- THE CONTRACTOR WILL CONSTRUCT AND STABILIZE STONE-COVERED SLOPES BY NOVEMBER 15. THE CONTRACTOR WILL SEED AND MULCH ALL SLOPES TO BE VEGETATED BY SEPTEMBER 15. THE MDEP WILL CONSIDER ANY AREA HAVING A GRADE GREATER THAN 8% (12.5H:1V) TO BE A SLOPE. IF THE CONTRACTOR FAILS TO STABILIZE ANY SLOPE TO BE VEGETATED BY SEPTEMBER 15, THEN THE CONTRACTOR WILL TAKE ONE OF THE FOLLOWING ACTIONS TO STABILIZE THE SLOPE FOR LATE FALL AND WINTER.

A. STABILIZE THE SOIL WITH TEMPORARY VEGETATION AND EROSION CONTROL MATS -- BY OCTOBER 1 THE CONTRACTOR WILL SEED THE DISTURBED SLOPE WITH WINTER RYE AT A SEEDING RATE OF 3 POUNDS PER 1,000 SQUARE FEET AND APPLY EROSION CONTROL MATS OVER THE MULCHED SLOPE. THE CONTRACTOR WILL MONITOR GROWTH OF THE RYE OVER THE NEXT 30 DAYS. IF THE RYE FAILS TO GROW AT LEAST THREE INCHES OR COVER AT LEAST 75% OF THE DISTURBED SLOPE BY NOVEMBER 1, THEN THE APPLICANT WILL COVER THE SLOPE WITH A LAYER OF EROSION CONTROL MIX AS DESCRIBED IN ITEM 2(C.) OF THIS STANDARD OR WITH STONE RIPRAP AS DESCRIBED IN ITEM 2(D.) OF THIS STANDARD.
B. STABILIZE THE SLOPE WITH SOD -- THE CONTRACTOR WILL STABILIZE THE DISTURBED SLOPE WITH PROPERLY INSTALLED SOD BY NOVEMBER 15. PROPER INSTALLATION INCLUDES THE APPLICANT 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 APPLICANT WILL NOT USE LATE-SEASON SOD INSTALLATION TO STABILIZE SLOPES HAVING A GRADE GREATER THAN 33% (3H:1V).
C. STABILIZE THE SLOPE WITH EROSION CONTROL MIX -- THE CONTRACTOR WILL PLACE A SIX-INCH LAYER OF EROSION CONTROL MIX ON THE SLOPE BY NOVEMBER 15. PRIOR TO PLACING THE EROSION CONTROL MIX, THE APPLICANT WILL REMOVE ANY SNOW ACCUMULATION ON THE DISTURBED SLOPE. DO NOT USE EROSION CONTROL MIX TO STABILIZE SLOPES HAVING GRADES GREATER THAN 3H:1V OR HAVING GROUNDWATER SEEPS ON THE SLOPE FACE.
D. STABILIZE THE SLOPE WITH STONE RIPRAP -- THE CONTRACTOR WILL PLACE A LAYER OF STONE RIPRAP ON THE SLOPE BY NOVEMBER 15. THE APPLICANT WILL HIRE A REGISTERED PROFESSIONAL ENGINEER TO DETERMINE THE STONE SIZE NEEDED FOR STABILITY AND TO DESIGN A FILTER LAYER FOR UNDERNEATH THE RIPRAP.

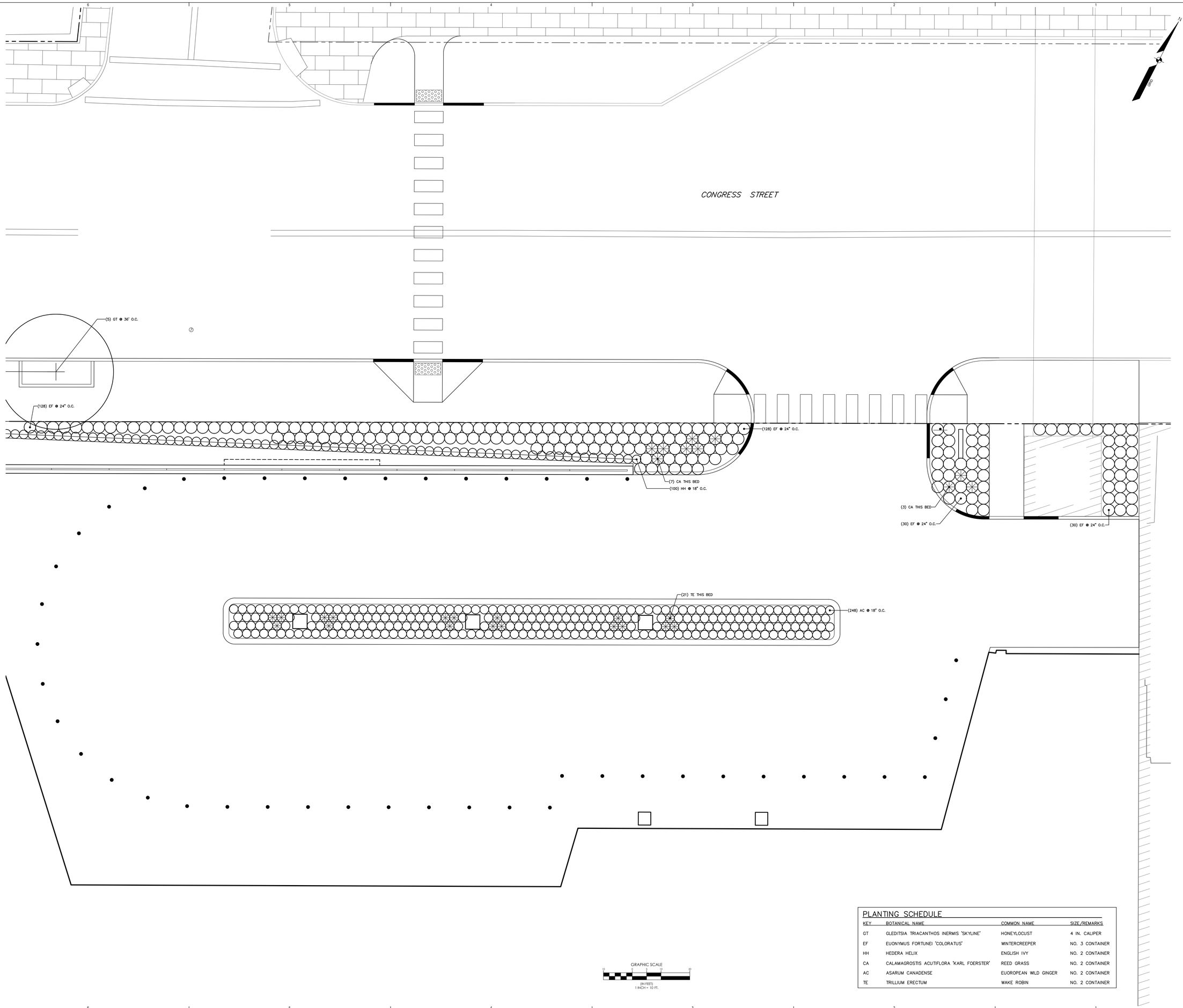
STANDARD FOR THE TIMELY STABILIZATION OF DISTURBED SOILS -- BY SEPTEMBER 15 THE CONTRACTOR WILL SEED AND MULCH ALL DISTURBED SOILS ON AREAS HAVING A SLOPE LESS THAN 8% . IF THE CONTRACTOR FAILS TO STABILIZE THESE SOILS BY THIS DATE, THEN THE CONTRACTOR WILL TAKE ONE OF THE FOLLOWING ACTIONS TO STABILIZE THE SOIL FOR LATE FALL AND WINTER:

A. STABILIZE THE SOIL WITH TEMPORARY VEGETATION -- BY OCTOBER 1 THE CONTRACTOR WILL SEED THE DISTURBED SOIL WITH WINTER RYE AT A SEEDING RATE OF 3 POUNDS PER 1000 SQUARE FEET, AND APPLY EROSION CONTROL MATS OVER THE MULCHED SLOPE. THE CONTRACTOR WILL MONITOR GROWTH OF THE RYE OVER THE NEXT 30 DAYS. IF THE RYE FAILS TO GROW AT LEAST THREE INCHES OR COVER AT LEAST 75% OF THE DISTURBED SLOPE BY NOVEMBER 1, THEN THE APPLICANT WILL COVER THE SLOPE WITH A LAYER OF EROSION CONTROL MIX AS DESCRIBED IN ITEM 2(C.) OF THIS STANDARD OR WITH STONE RIPRAP AS DESCRIBED IN ITEM 2(D.) OF THIS STANDARD.
B. STABILIZE THE SLOPE WITH SOD -- THE CONTRACTOR WILL STABILIZE THE DISTURBED SLOPE WITH PROPERLY INSTALLED SOD BY NOVEMBER 15. PROPER INSTALLATION INCLUDES THE APPLICANT 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. THE APPLICANT WILL NOT USE LATE-SEASON SOD INSTALLATION TO STABILIZE SLOPES HAVING A GRADE GREATER THAN 33% (3H:1V).
C. STABILIZE THE SLOPE WITH EROSION CONTROL MIX -- THE CONTRACTOR WILL PLACE A SIX-INCH LAYER OF EROSION CONTROL MIX ON THE SLOPE BY NOVEMBER 15. PRIOR TO PLACING THE EROSION CONTROL MIX, THE APPLICANT WILL REMOVE ANY SNOW ACCUMULATION ON THE DISTURBED SLOPE.
D. STABILIZE THE SOIL WITH STONE RIPRAP -- THE CONTRACTOR WILL PLACE A MINIMUM TWO-INCH LAYER OF EROSION CONTROL MIX ON THE SOIL BY NOVEMBER 15. PRIOR TO PLACING THE EROSION CONTROL MIX, THE APPLICANT WILL REMOVE ANY SNOW ACCUMULATION ON THE DISTURBED SLOPE.

CONSTRUCTION SCHEDULE

SITE IMPROVEMENTS WILL MOST LIKELY BEGIN IN _____ DEPENDING UPON FINAL PROJECT APPROVAL. THE FOLLOWING SCHEDULE IS ANTICIPATED:

1.	ESTIMATED CONSTRUCTION TIME:	-- MONTHS
2.	EROSION CONTROL MEASURES PLACED	WEEK 1 - WEEK 2
3.	SITE CLEARING AND GRUBBING	WEEK 2 - WEEK 5
4.	CONSTRUCTION OF ROAD SUBBASE FOR ACCESS	WEEK 5 - WEEK 13
5.	STORMWATER MANAGEMENT AREA CONSTRUCTION	WEEK 7 - WEEK 9
6.	UTILITY IMPROVEMENTS AND ROADWAY CONSTRUCTION	WEEK 7 - WEEK 24
7.	MULCH SPREAD FOR EROSION CONTROL	*** - OF CONSTRUCTION YEAR
8.	START FINAL SEEDING



PLANTING SCHEDULE

KEY	BOTANICAL NAME	COMMON NAME	SIZE/REMARKS
GT	GLEDITSIA TRIACANTHOS INERMIS 'SKYLINE'	HONEYLOCUST	4 IN. CALIPER
EF	EUONYMUS FORTUNEI 'COLORATUS'	WINTERCREEPER	NO. 3 CONTAINER
HH	HEDERA HELIX	ENGLISH IVY	NO. 2 CONTAINER
CA	CALAMAGROSTIS ACUTIFLORA 'KARL FOERSTER'	REED GRASS	NO. 2 CONTAINER
AC	ASARUM CANADENSE	EUOROPEAN WLD GINGER	NO. 2 CONTAINER
TE	TRILLIUM ERECTUM	WAKE ROBIN	NO. 2 CONTAINER

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South Portland, ME 04106

STRUCTURAL ENG/ BUILDING ENVELOPE CONSULTANT
Simpson Gumpertz & Heger Inc.
41 Seyon Street, Building 1, Suite 500,
Waltham, MA 02453

MEPFP ENGINEER/CODE/LOW VOLTAGE
AKF Group LLC
99 Bedford Street, 2nd Floor, Boston, MA 02111

CONSTRUCTION MANAGER
TURNER CONSTRUCTION
2 Seaport Lane, Suite 200, Boston, MA 02210

ELEVATOR CONSULTANT
VDA (Van Deusen & Associates)
101 Summer Street, 4th Floor, Boston, MA 02110

COST ESTIMATOR
D.G. Jones International
3 Baldwin Green Common,Suite 202, Woburn, MA 01801

MEDICAL EQUIPMENT PLANNING
Mitchell Planning
630 Dundee Road, Suite 340, Northbrook IL 60062

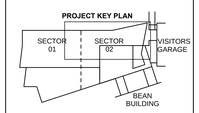
PROJECT TITLE

Congress Street Building
22 Bramhall Street
Portland ME 04102

REGISTERED LANDSCAPE ARCHITECT
WILLIAM T. CONWAY
1995
STATE OF MAINE
9/25/18

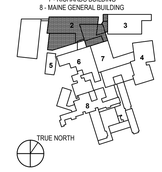
KEY PLANS

PROJECT KEY PLAN



OVERALL KEY PLAN

1 - NOT USED
2 - CONGRESS STREET
3 - VISITOR GARAGE
4 - EAST TOWER
5 - CENTRAL UTILITY PLANT
6 - BEAN BUILDING
7 - RICHARDS BUILDING
8 - MAINE GENERAL BUILDING



CITY SUBMISSION
SEPTEMBER 25, 2018

NO	ISSUE	DATE
1	CITY SUBMISSION	9-25-2018

Job Number	152189.000
Drawn	MAL
Checked	WTC
Approved	DLR

TITLE

LANDSCAPE PLAN UPPER, CONGRESS STREET EXPANSION

SHEET NUMBER

C50-01

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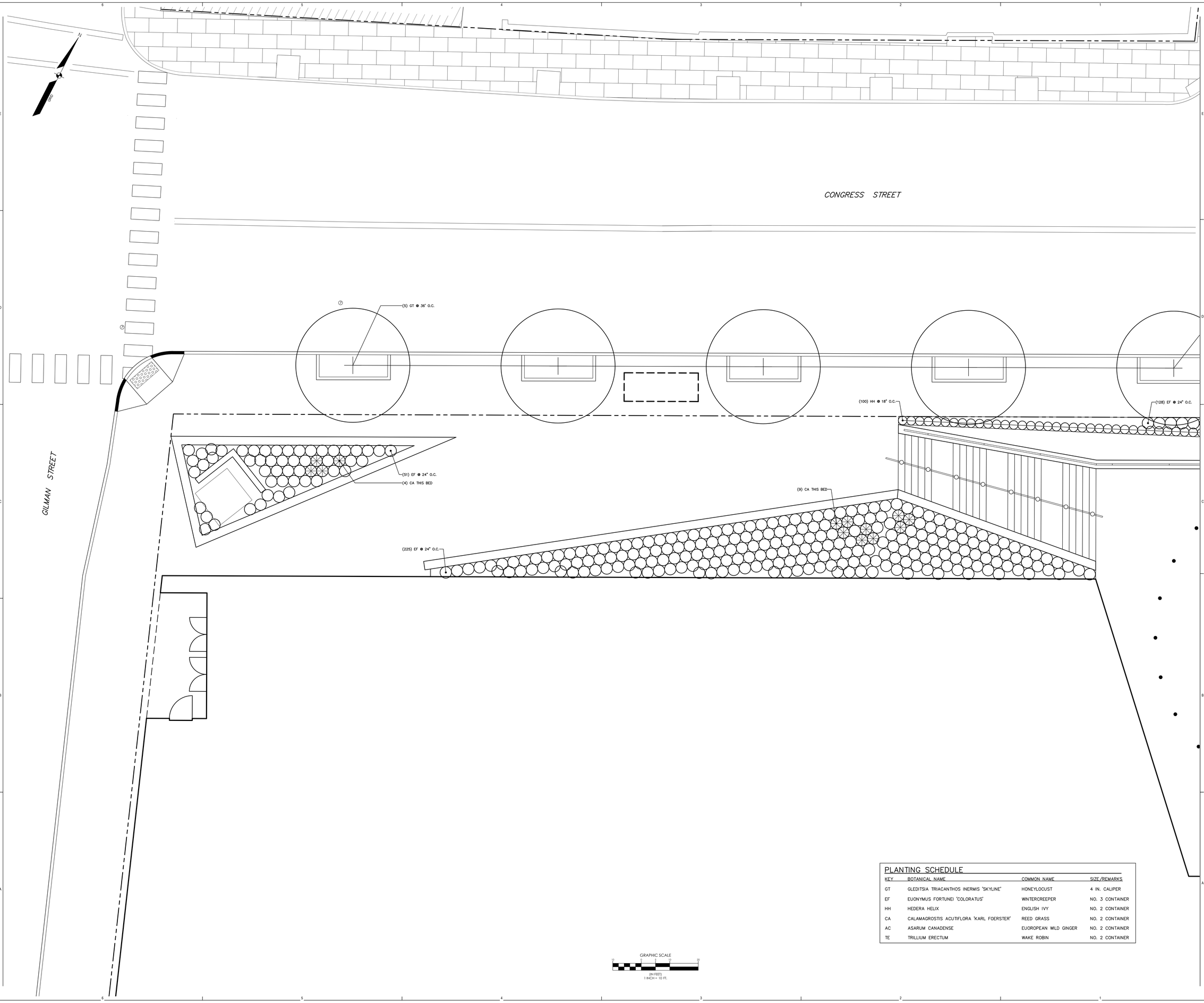

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GRAPHIC SCALE
10 0 5 10 20
(IN FEET)
1 INCH = 10 FT.

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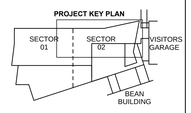

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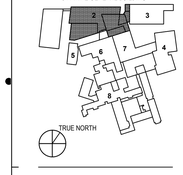

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1	CITY SUBMISSION	9-25-2018

Job Number	152189.000
Drawn	MAL
Checked	WTC
Approved	DLR

TITLE
LANDSCAPE PLAN LOWER CONGRESS STREET EXPANSION

SHEET NUMBER
C50-02

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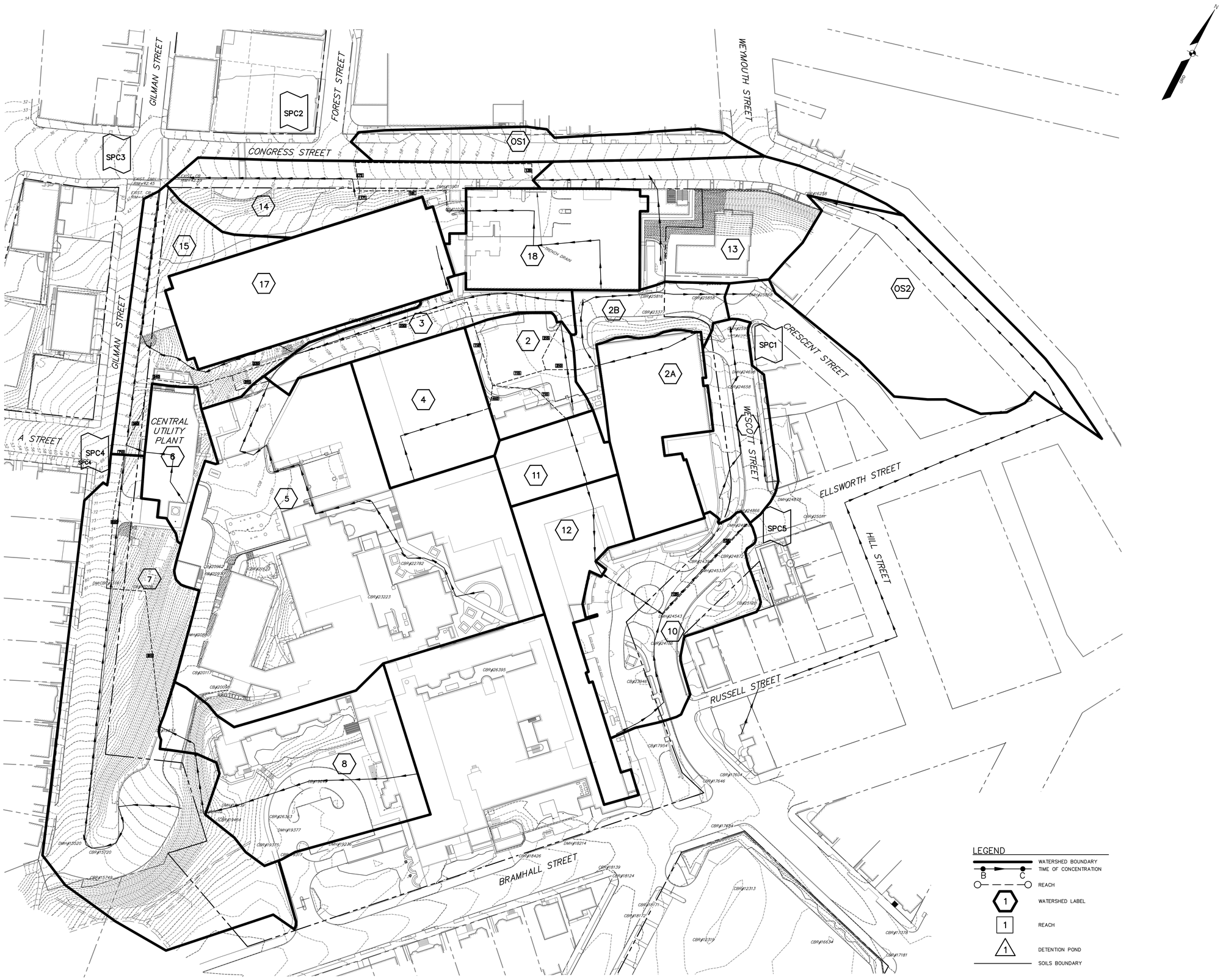

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MEDICAL EQUIPMENT PLANNING
Mitchell Planning
630 Dundee Road, Suite 340, Northbrook IL 60062

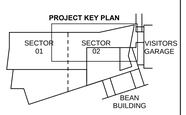
PROJECT TITLE

Congress Street Building
22 Bramhall Street
Portland ME 04102

STATE OF MAINE
DANIEL L. RILEY
No. 14667
LICENSED
PROFESSIONAL ENGINEER
9/25/18

KEY PLANS

PROJECT KEY PLAN



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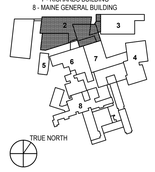

CITY SUBMISSION
SEPTEMBER 25, 2018

NO	ISSUE	DATE
1	CITY SUBMISSION	9/25/2018

Job Number	152189.000
Drawn	MAL
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Approved	DLR

TITLE

PRE DEVELOPMENT CAMPUS WATERSHED PLAN, CONGRESS STREET EXPANSION

SHEET NUMBER

C60-01

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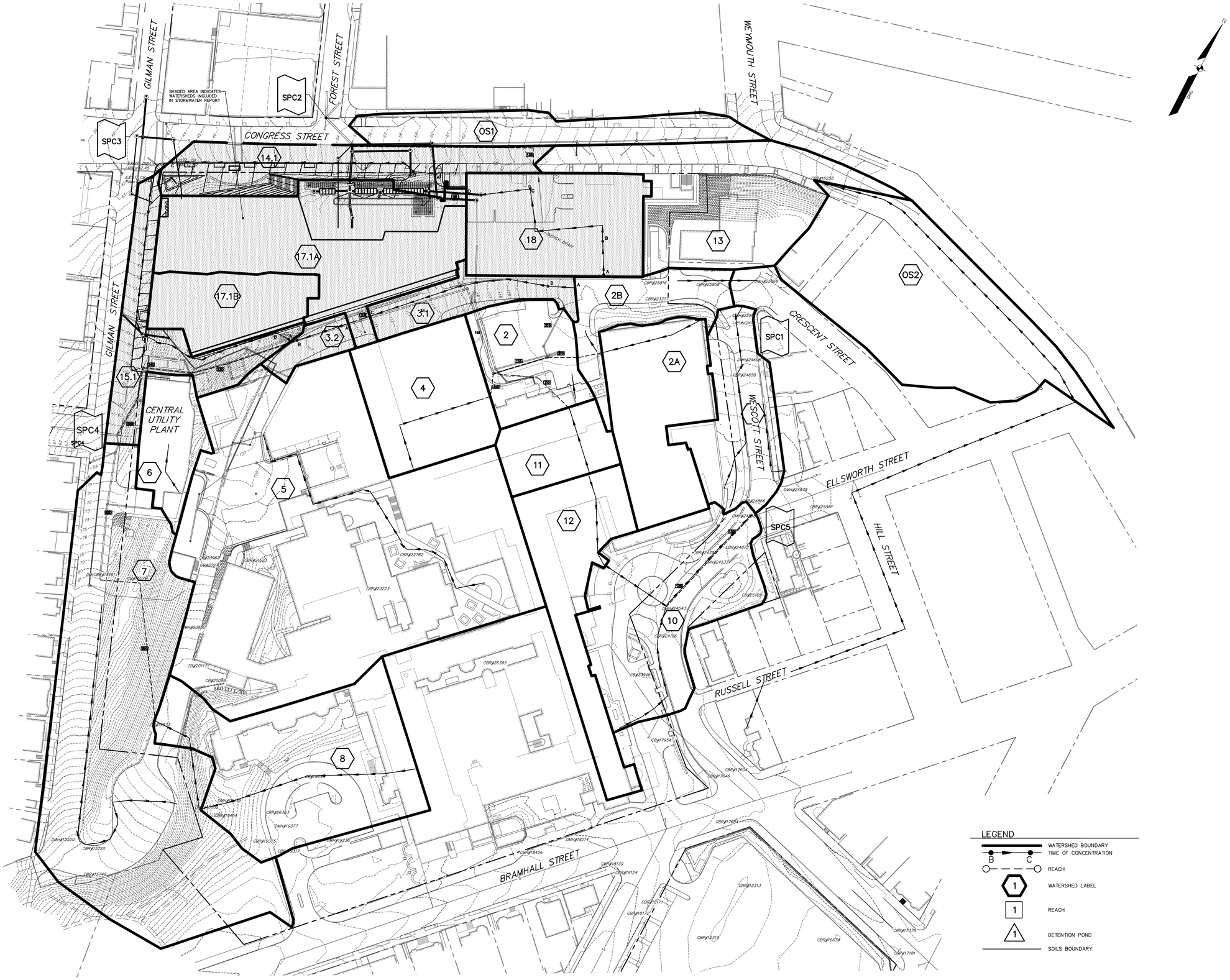

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PROJECT TITLE

Congress Street Building
22 Bramhall Street
Portland ME 04102

STATE OF MAINE
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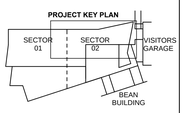
LICENSED PROFESSIONAL ENGINEER
9/25/18

KEY PLANS

PROJECT KEY PLAN



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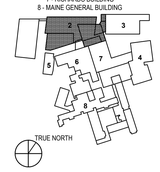

CITY SUBMISSION
SEPTEMBER 25, 2018

NO	ISSUE	DATE
1	CITY SUBMISSION	9/25/2018

Job Number	152189.000
Drawn	DJS
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Approved	DLR

TITLE

POST DEVELOPMENT CAMPUS WATERSHED PLAN, CONGRESS STREET EXPANSION

SHEET NUMBER

C60-02

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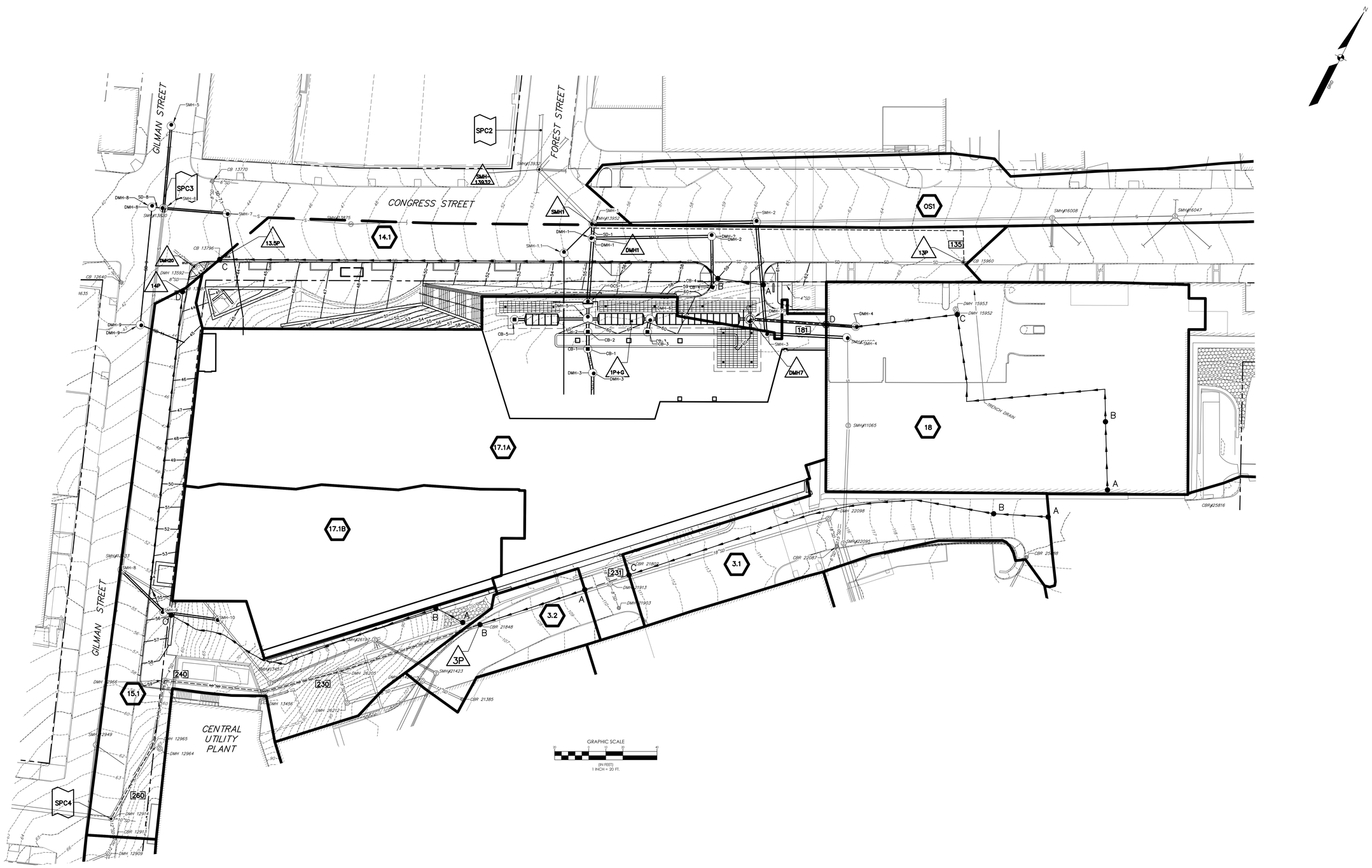

LEGEND

- WATERSHED BOUNDARY
- TIME OF CONCENTRATION
- REACH
- WATERSHED LABEL
- REACH
- DETENTION POND
- SOILS BOUNDARY

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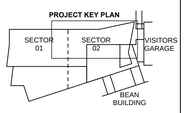

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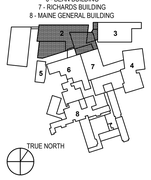

CITY SUBMISSION
SEPTEMBER 25, 2018

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1	CITY SUBMISSION	9/25/2018

Job Number	152189.000
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TITLE

POST DEVELOPMENT WATERSHED PLAN, CONGRESS STREET EXPANSION

SHEET NUMBER

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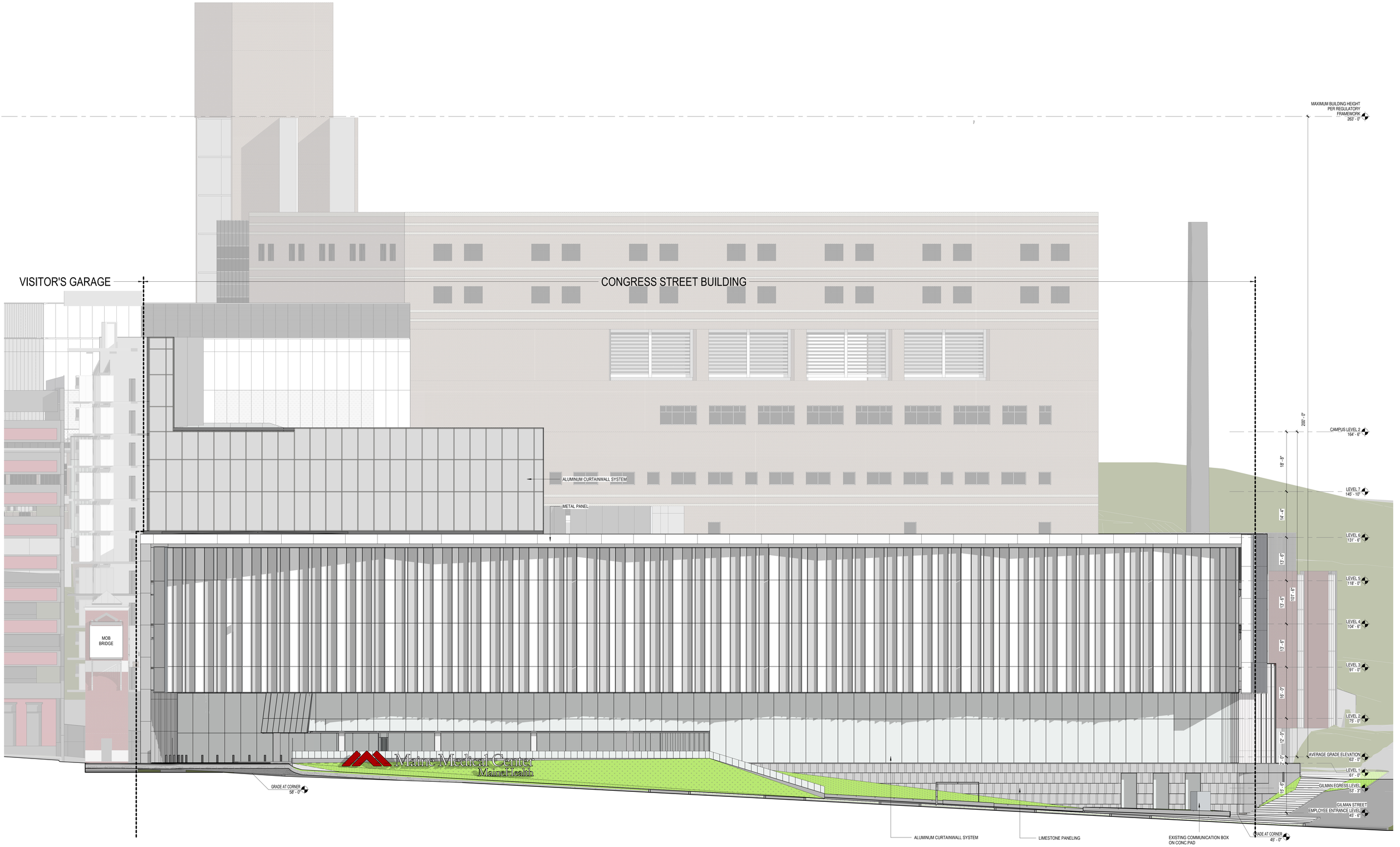

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EXTERIOR ELEVATION - NORTH

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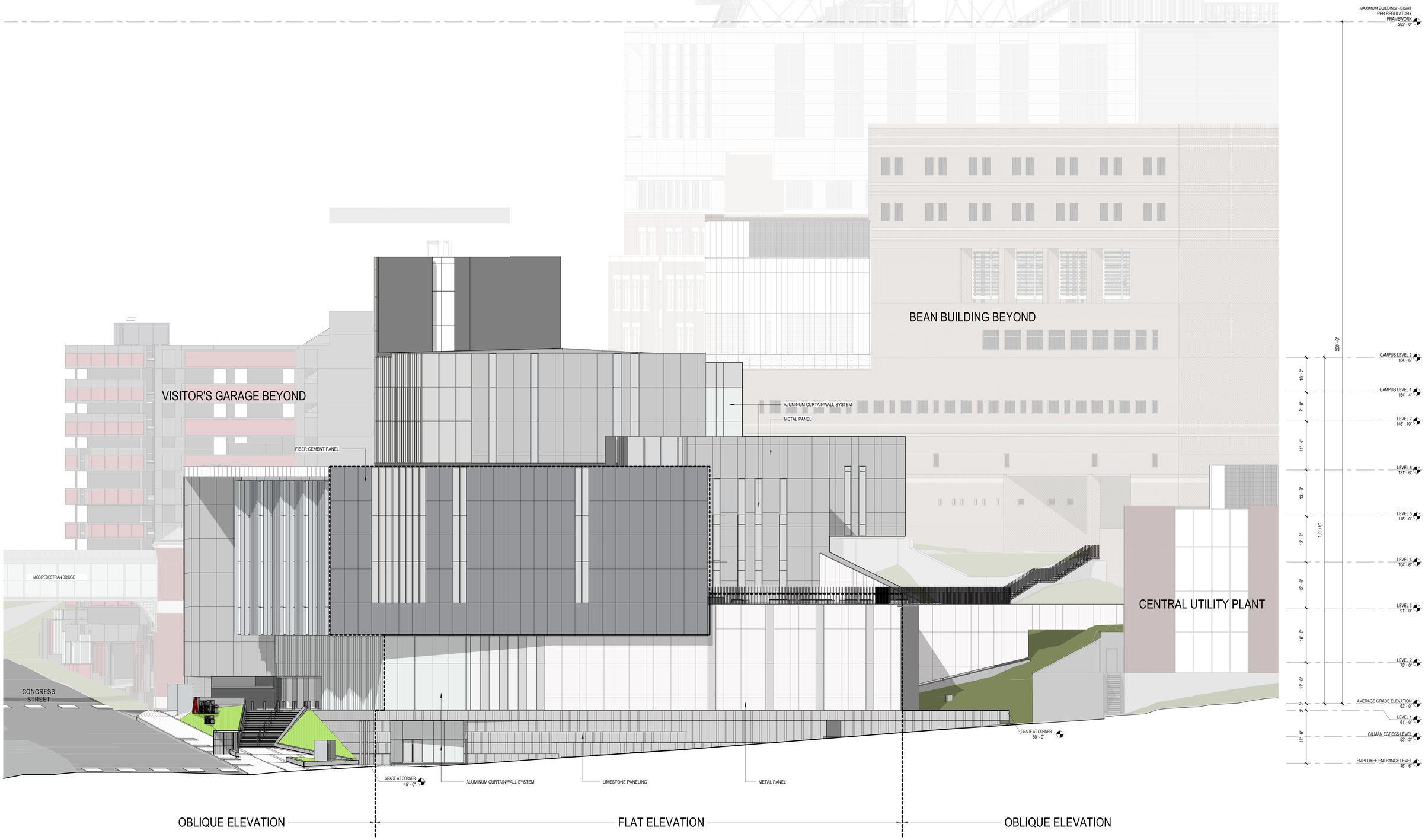
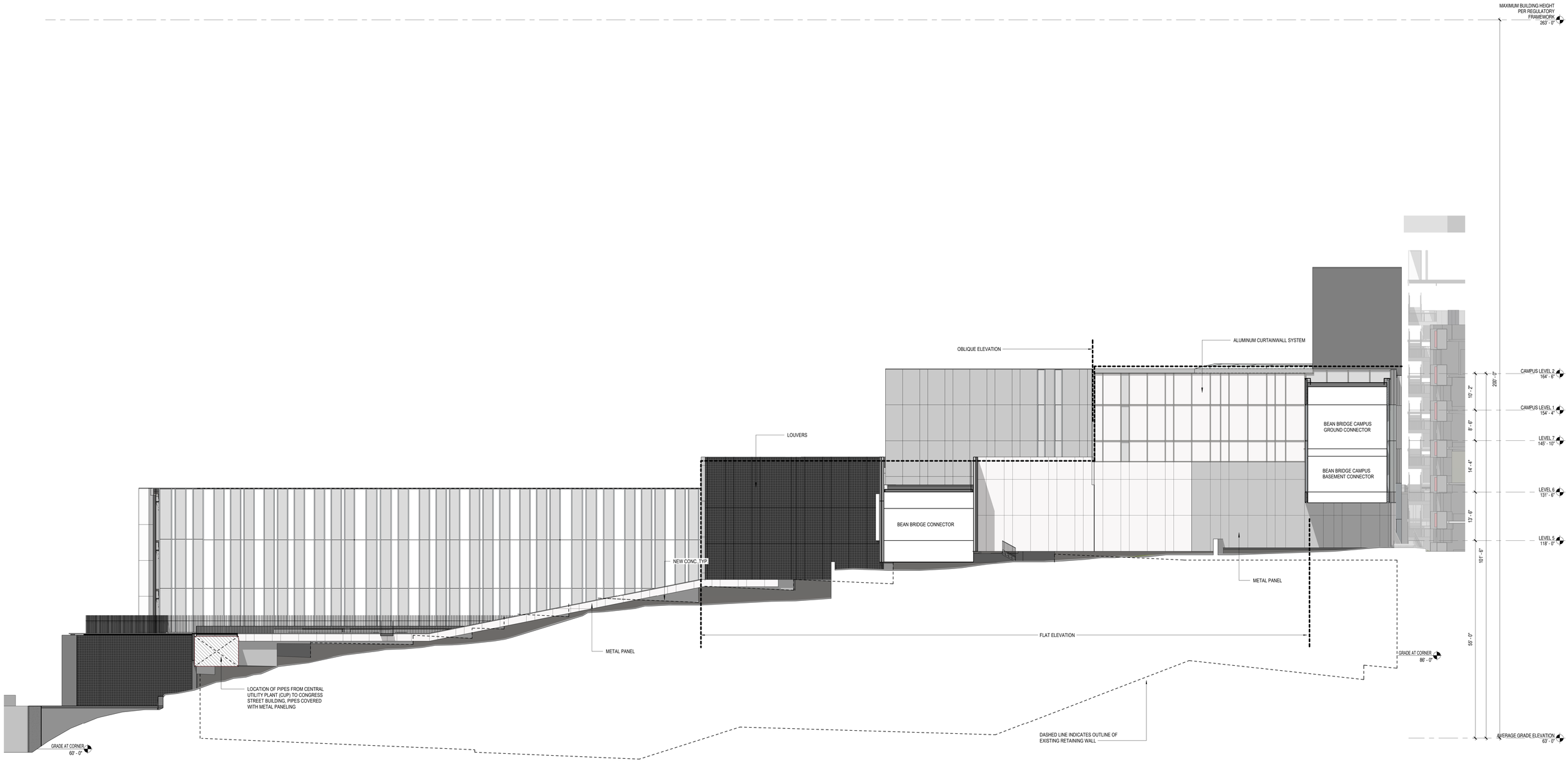

MAXIMUM BUILDING HEIGHT PER REGULATORY FRAMEWORK 263' - 0"
BEAN BUILDING BEYOND
VISITOR'S GARAGE BEYOND
ALUMINUM CURTAINWALL SYSTEM
METAL PANEL
FIBER CEMENT PANEL
MOB PEDESTRIAN BRIDGE
CENTRAL UTILITY PLANT
CONGRESS STREET
GRADE AT CORNER 45' - 0"
ALUMINUM CURTAINWALL SYSTEM
LIMESTONE PANELING
METAL PANEL
GRADE AT CORNER 60' - 0"
OBLIQUE ELEVATION
FLAT ELEVATION
OBLIQUE ELEVATION
200' - 0"
10' - 2"
9' - 8"
14' - 4"
13' - 9"
13' - 9"
13' - 9"
13' - 9"
16' - 0"
12' - 0"
2' - 0"
9' - 1"
CAMPUS LEVEL 2 164' - 6"
CAMPUS LEVEL 1 154' - 4"
LEVEL 7 140' - 10"
LEVEL 6 131' - 6"
LEVEL 5 118' - 0"
LEVEL 4 104' - 6"
LEVEL 3 91' - 0"
LEVEL 2 75' - 0"
AVERAGE GRADE ELEVATION 63' - 0"
LEVEL 1 61' - 0"
GILMAN EGRESS LEVEL 53' - 3"
EMPLOYEE ENTRANCE LEVEL 45' - 6"



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EXTERIOR ELEVATION - SOUTH

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MEMORANDUM
PLANNING AND URBAN DEVELOPMENT DEPARTMENT
PLANNING DIVISION

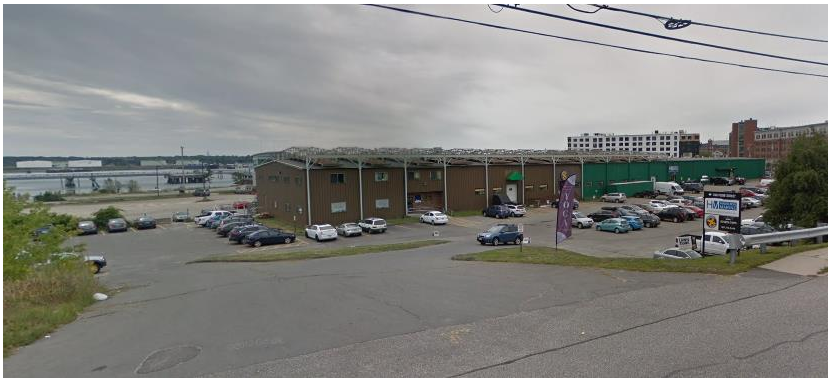
To:	Sean Dundon, Chair, and Members of the Portland Planning Board
From:	Christine Grimando, Senior Planner
Date:	October 19, 2018
Re:	100 Fore Street
Project #:	PL-000358-2018
CBL:	019 A010
Meeting Date:	October 23, 2018

I. INTRODUCTION

100 Fore Street, LLC has applied to the Planning Board with a Level III site plan review of a proposed three-level parking garage with two levels of commercial office space above on a 2.97-acre lot, mixed uses along Fore Street, and renovation of a portion of an existing building for a fitness center. Certain elements of the application are still forthcoming, such as those related to traffic and landscape design, and therefore the comments below do not represent final review of the proposal. The October 23rd workshop provides an opportunity for the Planning Board to provide direction to the applicant on the project on such issues as building design and transportation.

100 Fore Street recently received a zoning map change to the B-6 Height Overlay, reviewed by the Planning Board in July and August 2018, and approved by the City Council in September 2018. The change was, in part, to allow the possibility of structured parking in combination with other uses, as proposed and as envisioned by the Eastern Waterfront Masterplan. The project also beings to provide infrastructure and programmatic elements in the areas of two corridors envisioned in the Eastern Waterfront Masterplan.





Figures 1 & 2. Top Image, 100 Fore Street from Fore looking east. Bottom image, 100 Fore St. from Fore looking south.

Notice of this hearing appeared in the *Portland Press Herald* on October 10 and October 13, 2018. Notices were sent to 172 property owners within 500 feet and to the interested citizens list.

Applicant: 100 Fore Street, LLC
Consultants: Stantec Consulting Services, Archetype PA, Cianbro, ALA Landscape Architecture

II. REQUIRED REVIEWS

Waiver Requests	*Applicable Standards*
Public Transit Access: requesting not to be required to construct transit facilities	Site Plan 14-526(a)3., Public Transit Access
# of Bicycle Parking Spaces: requesting waiver until TDM is brought forward	Site Plan 14-526(a)4.b, Location and Required Number of Bicycle Parking Spaces
Landscape Preservation: negligible existing landscaping to preserve	Site Plan 14-526(b)2, Landscape Preservation

Review	*Applicable Statute*
Site Plan	Section 14-526

III. PROJECT DATA

Existing Zoning	B-6/B-6 Height Overlay
Existing Use	Surface Parking (136 spaces), single story building with multiple tenants (29,675 sf).
Proposed Use	Structured parking, office, retail.
Proposed Development Program	Three-level parking garage (539 spaces total) with two levels of commercial office space and ground floor retail: Ground Level Parking 64,980 (182 Spaces) Level 1 Parking 64,320 (178 Spaces) Level 2 Parking 64,490 (179 Spaces) Level 3 Commercial Office 42,980 Level 4 Commercial Office 39,190 Total 275,960 SF Additional Street Level Retail 3,808 SF
Parcel Size	2.97-acre lot

	Existing	*Proposed*	*Net Change*
Building Footprint	29,675 SF	74,080 (64,980+9,100)SF	44,405 SF
Building Floor Area	29675 SF	288,868 SF	259,193 SF
Impervious Surface Area	9,103 SF	9,103 SF	0 SF
Parking Spaces	140 (including 4 handicap spaces)	539	399
Bicycle Parking Spaces		Waiver request to defer bicycle spaces until TDM.	
Estimated Cost of Project	$23 - $31 million		

IV. CONTEXT

The parcel is in the B-6 zone and is surrounded by residential, waterfront and mixed-use zones. The B-6, though it is not a waterfront zone, grew out of recommendations for the Eastern Waterfront for a mixed-use zone that was compatible with waterfront uses and the nearby Eastern Waterfront Port Zone (EWPZ). The B-6,

encompassing 100 Fore Street, occupies the upland, mixed-use portion of the Eastern Waterfront, and has no marine-dedicated requirements, though it allows for supportive services, such as fuel storage and marine supply stores. 100 Fore Street is also abutted by the R-6 zone and the residential neighborhoods of Munjoy Hill, and the IS-FBC zone, a neighborhood with both residential and commercial uses. The Eastern Waterfront includes the Ocean Gateway Marine Passenger Terminal; 58 Fore Street/Portland Company site, recently approved for a master development plan and the site of a new historic district; a marina; and a sailing school. The area is the locus of significant planning initiatives, public investment, and private development. Examples of public initiatives to support the Eastern Waterfront and surrounding area include: a road and utility extension of Thames Street, new public open space and waterfront access in the location of the Amethyst Lot, and a study to improve transportation and circulation for the Commercial Street corridor. Examples of private development recently completed or underway include the WEX headquarters (1 Hancock), redevelopment of the Shipyard Brewery site (86 Newbury Street), the Ocean Gateway Garage addition (167 Fore Street), and the AC Hotel (158 Fore Street).

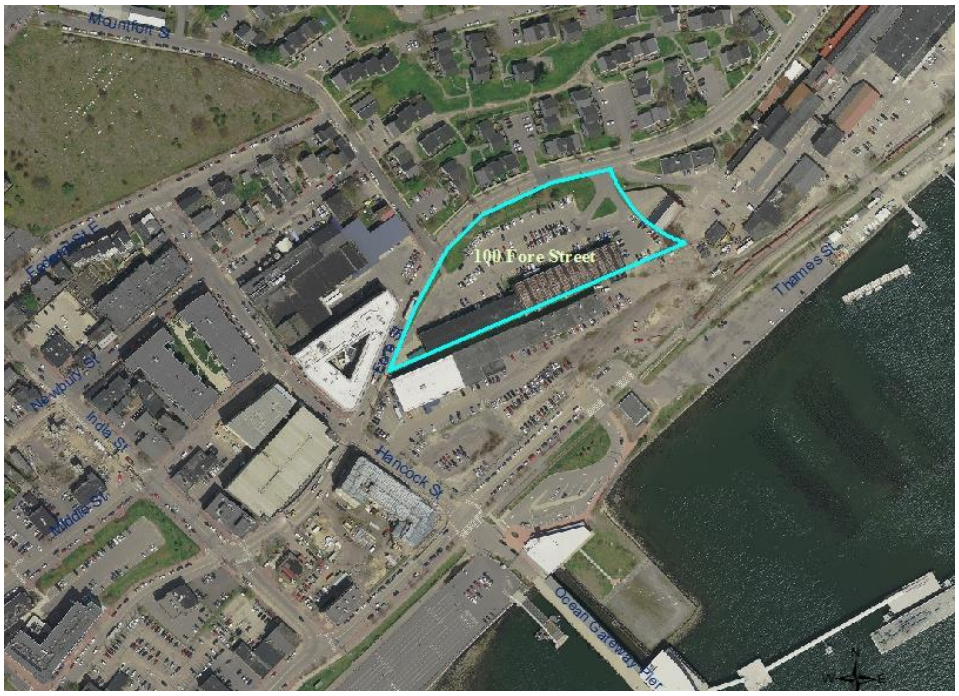


Figure 3. Aerial view, 100 Fore Street and surroundings

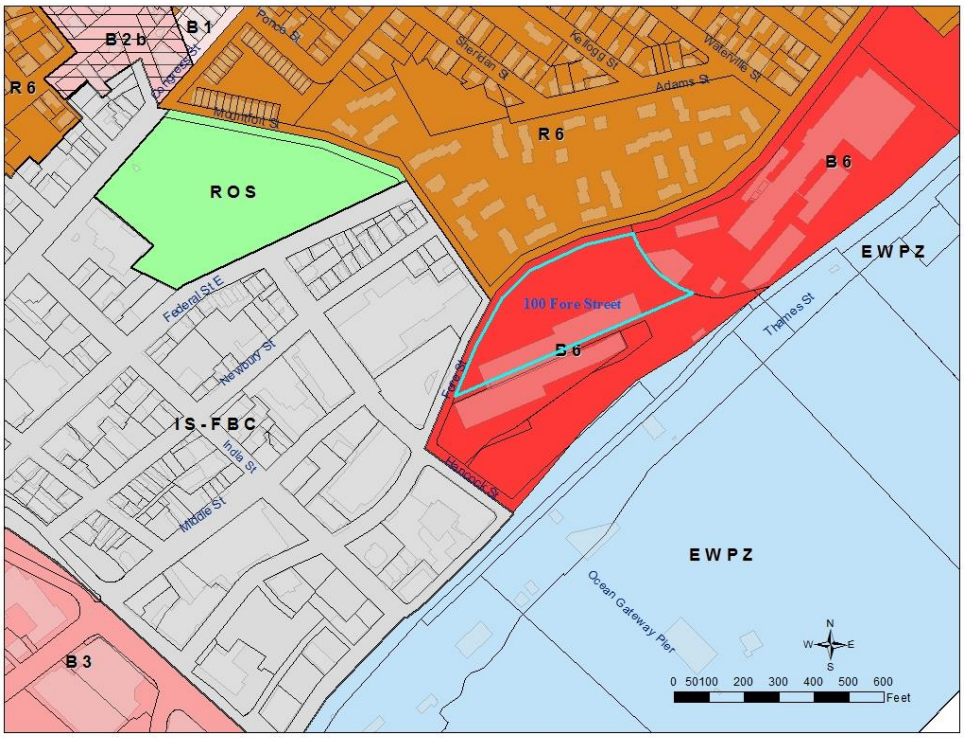


Figure 4, Zoning Context

V. PROPOSED DEVELOPMENT

The proposed development includes a three-level parking garage with two levels of commercial office space above and retail on Fore Street. Currently an active site with office, retail and commercial services, and surface parking, the existing one-story building will be partially demolished. Approximately 9,100 sf of the existing building is proposed to be retained for redevelopment as a fitness center to serve employees at 1 Hancock Street. Also included in the proposal is a design that anticipates a future street connection from the Thames Street extension to Fore Street.

VI. PUBLIC COMMENT

The Planning Division has received no public comments on the 100 Fore Street application as of this writing. A neighborhood meeting is currently being scheduled.

VII. RIGHT, TITLE, & INTEREST

The application includes a quitclaim deed as evidence of right, title, and interest (Attachment E).

VIII. FINANCIAL & TECHNICAL CAPACITY

The estimated cost of the project is $23 - $31 million. The applicant has provided a letter from the Bank of New Hampshire attesting to their financial capacity (Attachment F).

IX. ZONING ANALYSIS

Staff has conducted a zoning analysis with respect to the B-6 zone. Staff request that the applicant confirm that the final design of the proposed building meets maximum height requirements of the B-6 Height Overlay.

X. SITE PLAN SUBMISSION REQUIREMENTS (Section 14-527)

A number of submission items are still needed before final review of the application can occur, including cross sectional drawings for driveways, paved areas and sidewalks; turning templates for delivery vehicles; location of snow storage/disposal areas; site landscaping specifications; a stormwater management and drainage plan; location, dimensions and specifications of HVAC and mechanical equipment and associated screening; existing soil conditions and locations of test pits and borings; a TDM plan.





Figure 5, 100 Fore Street, two views looking east on Fore Street.

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.* The application includes a traffic assessment and narrative in Attachment I, Transportation. Thomas Errico has provided initial comments on the need for a traffic movement permit, traffic assessment methodology, spacing and quantity of driveways, parking, and design of the connector road in Attachment 2.

   b. *Access and Circulation*

   The proposed site plan shows vehicular access to the site from Fore Street, including vehicular access to the building to the west and two building entrances on the east side of the building where the current access to the site is, reconstructed to meet City street standards and designed to be able to connect to the Thames Street ext. Pedestrian access is also shown as provided on the east and the west facades of the building, with no primary pedestrian entrance yet shown along the building's front façade along it's only street frontage. An existing drive to the existing building to the west of the site is proposed to be maintained for loading purposes.

   The design for the connector road from Fore Street to Thames is included on the site plan, with a proposal to construct the portion on the 100 Fore Street property, directly serving this site to City street standards. The remainder of the connection to the Thames Street ext. is not on the applicant's property and not proposed as part of the site plan, but as the design of this segment of the road has

ramifications for the remainder, discussion of the needs of the ultimate design is appropriate in the context of this review.

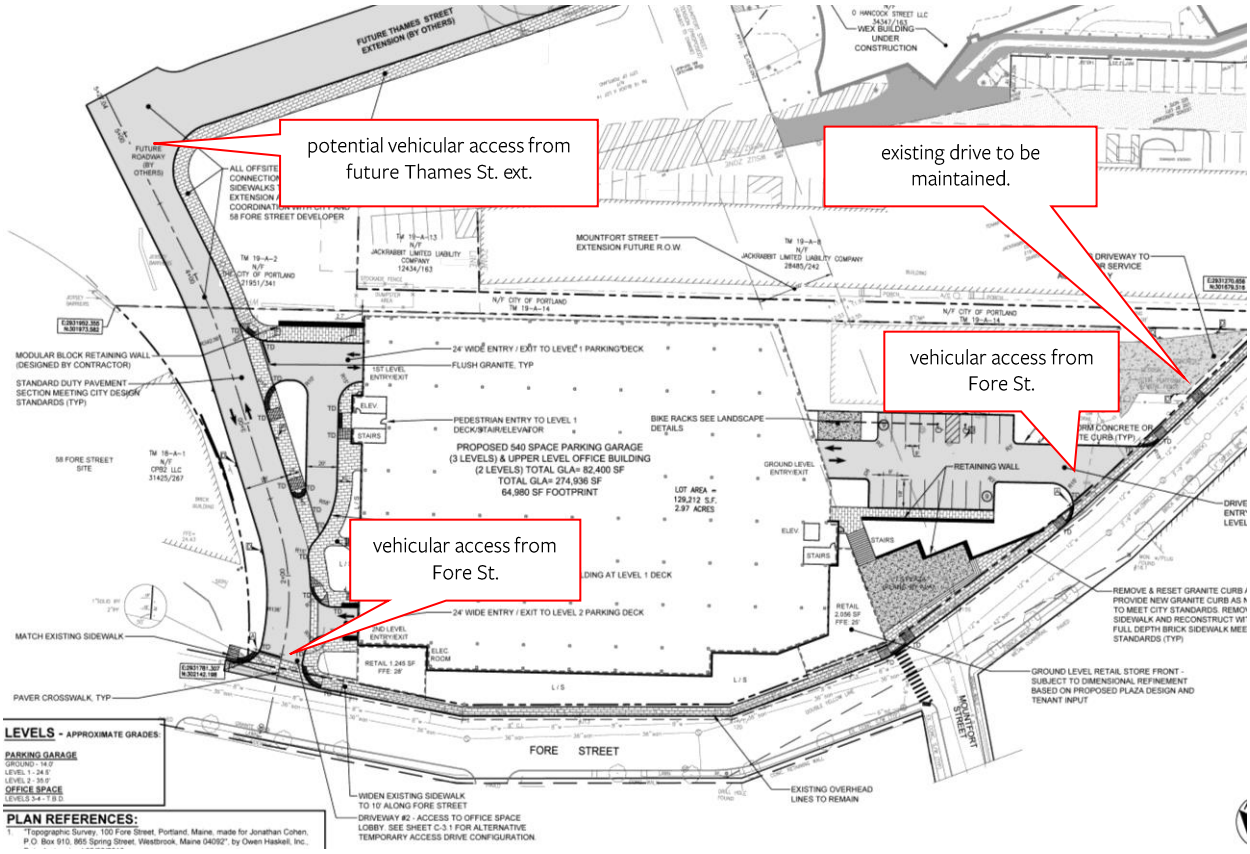


Figure 6, 100 Fore Street Site Plan vehicular access

The existing sidewalks along Fore Street are quite narrow, and the applicant proposes to widen the sidewalk to 10' in some areas and replace the existing concrete sidewalk with brick, an improvement in an area with quite narrow sidewalks. The width of sidewalks shown on the site plan are variable, and the final application should address ADA compliance along Fore Street and along internal sidewalks. In regard to the connector road, sidewalks should be depicted on facing sides of the road in the final site plan layout. In addition, improvements to sidewalks and new crosswalk placement, as part of the Shipyard redevelopment where Mountfort Street intersects Fore Street, should be reflected in future submission materials so that pedestrian circulation to the site can be fully evaluated.

The anticipated connection between Fore Street and the Thames St. ext. and the Mountfort Street extension have been anticipated elements of neighborhood permeability in the Eastern Waterfront since planning efforts in the early 2000s and they continue to be maintained as elements on the B-6 Building Height Overlay (Figure 7). Though a full connection to the Thames Street ext. in the Fore Street connector area is not proposed by this development, a valuable piece of infrastructure is added by this project's easterly access drive.

The notes of the B-6 Height Overlay indicate the site plan review process will determine precise layout

and design of the Mountfort Street ext. The Mountfort Street ext. runs across an area of steep grade changes and through existing building, driveways and parking, and so the potential for vehicular access to Thames Street in this area is limited. However, no new buildings are permitted, and the project proposes some ways Mountfort Street extension area could begin to be used for pedestrian circulation and neighborhood permeability. How design of this space now might be compatible with the rest of the corridor as adjacent properties redevelop is an important topic in the review of this application. Though the full corridor can't be planned for in the scope of this review, this is an opportunity to begin that process.

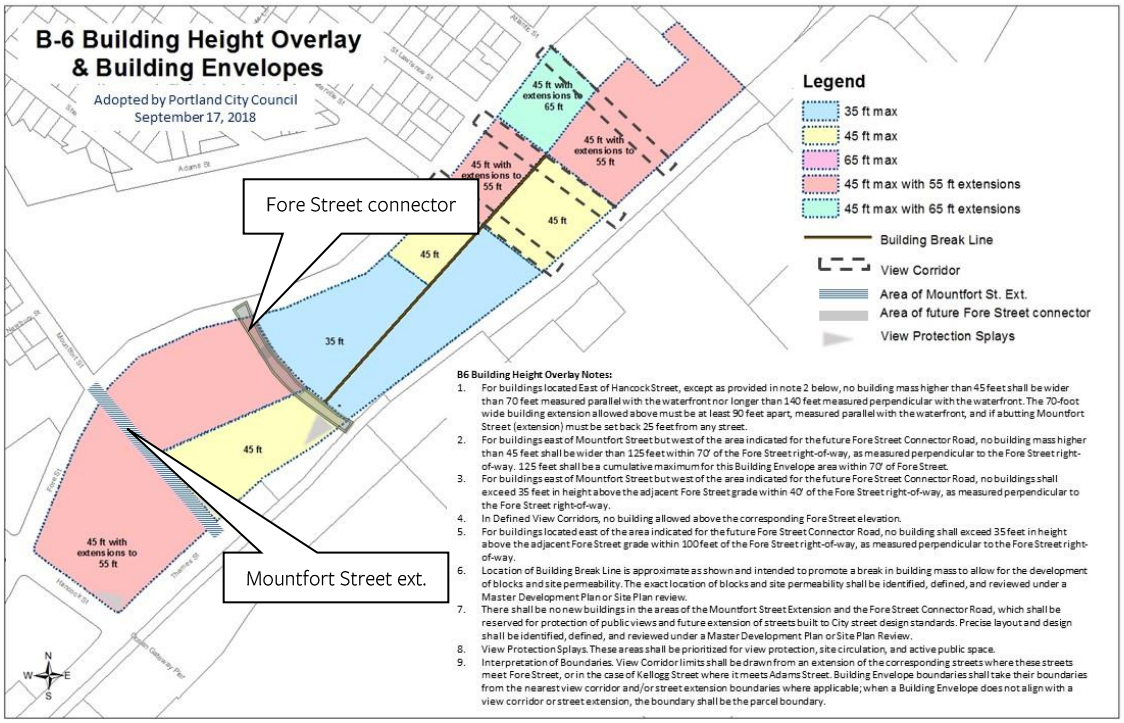


Figure 7

c. *Public Transit Access*

The applicant has requested a waiver from 14-526(a).3, which requires that a commercial development of this size construct a transit facility where the development is proposed along an existing public transit route on a local principal or minor arterial roadway and the nearest existing transit shelter and/or bus pullout on the route is ¼ mile (1,320 feet) or more away from the closest primary building on the site, measured along rights-of-way. Waiver criteria for this requirement: that some or all of the required improvements cannot reasonably be made due to site constraints and/or insufficient right of way width; or that the development is not anticipated to generate public transit usage due to particular characteristics or proposed use of the development. Due to the project being less than 1,000 from the nearest bus stop, a waiver is not required for this item.

d. *Parking*

The plan includes 539 parking spaces to serve the uses on-site, to serve parking needs at 1 Hancock Street (WEX), and to serve other users. Division 20 of the City's Land Use Code establishes the parking requirements for the B-6 zone. For projects 50,000 sf+ the Planning Board sets the parking requirement based on a parking analysis and based on the recommendation of the City transportation engineer. Developments proposing to exceed minimum parking requirements by more than 10% have to

demonstrate through a parking analysis that the amount of parking is appropriate for the proposed use of the site. More information is needed on the parking allocation for 100 Fore uses, WEX and other users before this standard can be evaluated.

e. *Bicycle parking*
The bicycle parking requirement is for 40+ spaces for this site. The application states that bicycle parking will be provided internally and externally, and some locations of racks are proposed. The applicant has requested a waiver for total number, finalized locations and rack specifications until the TDM plan for this site is completed. Finalization of this requirement might also be considered as a condition of approval, since the request is not for a waiver from the standard altogether, but primarily involves timing.

f. *Transportation Demand Management*
A TDM plan is required for all commercial or institutional uses of 50,000 sf or more total floor area. A TDM plan has not yet been submitted, but the application indicates one is being prepared.

2. *Environmental Quality Standards*
   a. *Preservation of Significant Natural Features/Landscape Preservation*
   The site contains no significant natural features to preserve. The applicant has demonstrated there are no qualifying significant natural features to preserve, and has requested a waiver from this standard. Staff recommends this waiver be withdrawn, since the standard doesn't apply to the site.

   b. *Landscaping*
   The applicant has submitted some conceptual plans showing landscaping along the Fore Street façade, entrance drives, and surface parking areas. Concept plans show street trees, a green roof, and vegetative screening of portions of the parking lot. The applicant has not yet submitted a formal landscaping plan, though the applicant indicates they are coordinating with the City Arborist.

   c. *Water Quality/Storm Water Management/Erosion Control*
   Existing conditions on the site are nearly entirely impervious with a limited drainage system. Runoff goes into catch basin inlets and sheet flows off the property. The applicant is proposing a roof drainage system that will connect to the Fore Street sewer, with provisions for future sewer separation. Green roofs and other water quality measures are proposed. Preliminary comments from Lauren Swett note that a stormwater management plan has not yet been required, more grading information is needed and the need for coordination of stormwater improvements with future infrastructure (full comments, Attachment 1:

- *A stormwater management plan has not been provided. The narrative notes that the project will meet the Basic and General Standards, but does not address the Flooding Standards. Please provide additional discussion on the Redevelopment Standard, and how all of the stormwater standards are being met. While the project may not meet the impervious thresholds to require compliance with the flooding standard, the Applicant should verify that downstream utilities have the capacity to manage the anticipated stormwater runoff and drainage from the site.*
- *Significant coordination is required for the access driveway to the east of the site. It is unclear from these plans how stormwater from the project site and the future Thames Street extension to Fore Street will interact with infrastructure that is currently being proposed. The plans as currently submitted show improvements on properties owned by the Applicant and the City, and clarity is necessary on who will be completing the different components of work.*
- *The applicant has noted that grading north of the building along Fore Street is "TBD."*
- *Existing Catch basins in the small parking area at the western garage entrance are noted to be adjusted or replaced as necessary. Additional information on what these basins are for and what they connect to is necessary. Grading in this parking lot is also incomplete (see 15 contour in center of lot).*

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*
The site provides access from Fore Street for emergency vehicles and may eventually from Thames Street, as well. The Fire Department is still reviewing the application.

c. *Availability and Capacity of Public Utilities*
Ability to serve letters from Unitil and Spectrum have been received, and evidence of capacity to serve from PWD and CMP are required before final approval. Discussions to coordinate placement of utility poles underground in this area are underway, but as of now the application proposes utilizing existing poles.

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 site design standard for view corridors references not obstructing public views identified in the *Downtown Vision View Corridor Protection Plan*. This project meets this standard, as it is not in the vicinity of any of the downtown view protection corridors. The project is in the B-6 Height Overlay, which includes provisions for maintaining areas for future connections between Thames Street and Fore Street, which have the effect of protecting views from public ways along these corridors.

e. *Historic Resources*
The site is within 100 feet of a historic landmark, district, or landscape. The application has been forwarded to the Historic Preservation Program for an assessment of general compatibility with the Portland Company Local Historic District.

f. *Exterior Lighting*
An exterior lighting plan has been submitted.

g. *Noise and Vibration*
The application indicates that HVAC venting will be directed through building roof mounted units or on the ground adjacent to the building (Attachment L, Site Design), though it does not yet show the location of HVAC, mechanical equipment, and associated screening.

h. *Signage and Wayfinding*
The application asks that approval of commercial signage for the project be subject to a condition of approval (Attachment L, Site Design).

i. *Zoning-Related Design Standards*
Design Standards for the B-6 state that development in the zones *shall be designed to support the development of dense, mixed-use neighborhoods with attractive, safe and convenient street level pedestrian environments as demonstrated by compliance with all applicable design standards listed in the Design Manual* (14-526(d).9). It goes on to state that monolithic massing should be avoided, site permeability encouraged, and that larger buildings are concerned, attention given to horizontal and vertical massing. The B-6 is reviewed under the design guidelines for the Eastern Waterfront.

Caitlin Cameron, Urban Designer has included a memo with preliminary comments on the design of the project in Attachment 3.

XIII. CONDITIONAL USES

Structured parking garage is a conditional use in the B-6 zone (14-270(a).2.b), subject to conditional use standards. General conditional use standards (14-474.(c).2) include a demonstration that the proposed use will not have substantially greater negative impacts than would normally occur from surrounding uses or other allowable uses in the same zoning district; the volume and type of traffic and hours would not be substantially greater than would occur for a permitted use; the proposed use won't create unsanitary or harmful conditions by reason of noise, glare, dust, sewage disposal, emissions to the air, odor, lighting, or litter; and the design and operation of the proposed use, including but not limited to landscaping, screening, signs, loading, deliveries, trash or waste generation, arrangement of structures, and materials storage will not have a substantially greater effect/impact on surrounding properties than those associated with surrounding uses or other allowable uses in the zone.

Standards specific to this use in the B-6 zone include a requirement for the incorporation of first floor retail space or other active mixed use (other than parking) along all street frontages. This standard may be waived provided that garages display architecture that enhances the pedestrian experience and disguises the parking use to the extent possible; that the grade or character of the street won't support retail or first floor mixed use in the foreseeable future; that the first floor of the garage is set back a minimum of 35 feet and the design doesn't impede conversion to mixed-use in the future and is not used for surface parking; that a minimum of 20 feet of depth and nine feet of finished floor clearance could in

the future be converted. The full length of the building along Fore Street likely cannot support continuous retail development, and partial retail paired with another dynamic treatment of the remainder of the front façade may be a positive alternative for this site. The applicant has not requested a waiver for this section, and one may not be needed depending on the final building design and development program. When an active use and/or treatment of the length of frontage between the two retail corners along Fore Street is identified, there can be a full evaluation of the project for consistency with this section.

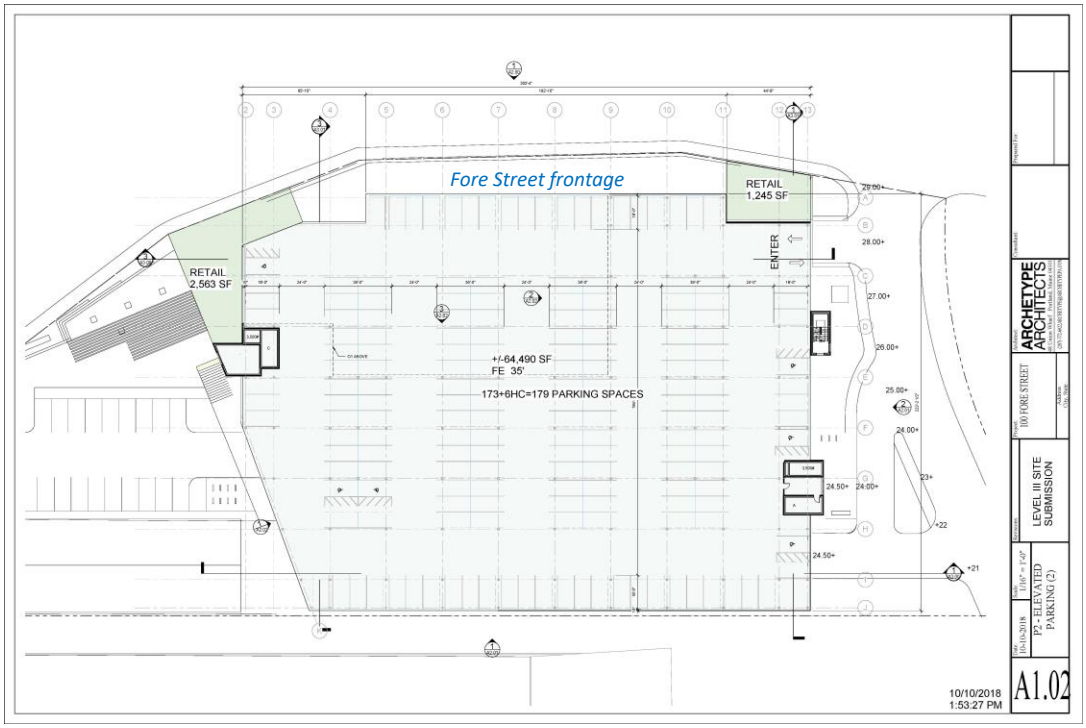


Figure 8, Fore Street frontage, Plan 18

XIV. NEXT STEPS

1. Applicant to address staff comments and additional comments of the Planning Board;
2. Applicant to prepare final plan submission, including site plan submittal requirements for review by the Planning Authority and Planning Board; and
3. Hold a follow-up Planning Board workshop or Public Hearing.

XV. ATTACHMENTS

PLANNING BOARD REPORT ATTACHMENTS

1. Civil Engineer Review (memo from Lauren Swett 10/19/2018)
2. Traffic Engineer review (memo from Thomas Errico 10/19/2018)
3. Urban Design Review (memo from Caitlin Cameron 10/19/2018)

APPLICANT'S SUBMITTALS

A. Level III Site Plan Application
B. Cover Letter
C. Project Description
D. Zoning Assessment
E. Right, Title & Interest
F. Financial Capacity

G. Technical Capability
H. Waiver Requests
I. Transportation
J. Environmental and Stormwater
K. Public Infrastructure & Safety
L. Site Design
M. Environmental & Landscape Features
N. Construction

PLANS

Plan 1 Cover Sheet
Plan 2 General Notes
Plan 3 Topographic Survey
Plan 4 Existing Conditions and Demolition
Plan 5 Site Plan
Plan 6 Grading, Drainage, Erosion Control
Plan 7 Site Cross Section 1
Plan 8 Site Cross Section 2
Plan 9 Site Cross Section 3
Plan 10 Utility Plan
Plan 11 Landscape Site Sidewalk Details
Plan 12 Stormdrain Utility Details
Plan 13 Details
Plan 14 Miscellaneous Utility Details
Plan 15 Miscellaneous Details
Plan 16 Ground Level Parking
Plan 17 Elevated Parking 1
Plan 18 Elevated Parking 2
Plan 19 Office 1
Plan 20 Office 2
Plan 21 Lighting 0
Plan 22 Lighting 1
Plan 23 Lighting 2
Plan 24 Lighting Site
Plan 25 Building Elevations and Renderings (10-17-2018)

Portland Maine | Yes. Google's good here.

Christine Grimando <cdg@portlandmaine.gov>

100 Fore Street

Lauren Swett <lswett@woodardcurran.com> Fri, Oct 19, 2018 at 11:39 AM
To: Christine Grimando <cdg@portlandmaine.gov>

Hi Christine,

I have not had a chance to upload my preliminary comments to Energov, but will this afternoon. My comments at this stage are relatively general:

- The application is preliminary and we will plan to do a complete review of the final submission. There are some big picture coordination questions that exist that may modify the project.
- A stormwater management plan has not been provided. The narrative notes that the project will meet the Basic and General Standards, but does not address the Flooding Standards. Please provide additional discussion on the Redevelopment Standard, and how all of the stormwater standards are being met. While the project may not meet the impervious thresholds to require compliance with the flooding standard, the Applicant should verify that downstream utilities have the capacity to manage the anticipated stormwater runoff and drainage from the site.
- Confirmation of utility ability to serve will be required.
- Significant coordination is required for the access driveway to the east of the site. It is unclear from these plans how stormwater from the project site and the future Thames Street extension to Fore Street will interact with infrastructure that is currently being proposed. The plans as currently submitted show improvements on properties owned by the Applicant and the City, and clarity is necessary on who will be completing the different components of work.
- The applicant has noted that grading north of the building along Fore Street is “TBD.”
- Existing Catch basins in the small parking area at the western garage entrance are noted to be adjusted or replaced as necessary. Additional information on what these basins are for and what they connect to is necessary. Grading in this parking lot is also incomplete (see 15 contour in center of lot).

Let me know if you have any questions.

Thanks,

Lauren

Lauren Swett, P.E.*

Technical Manager

Woodard & Curran

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Commitment & Integrity Drive Results

www.woodardcurran.com

M.ASCE

Chair, Leader Training Committee

American Society of Civil Engineers

http://regions.asce.org/leader-training-committee/

Portland Maine Yes. Google's good here.

Christine Grimando <cdg@portlandmaine.gov>

100 Fore Street - Initial Traffic Comments

Christine Grimando <cdg@portlandmaine.gov> Fri, Oct 19, 2018 at 1:33 PM
To: Christine Grimando <cdg@portlandmaine.gov>

From: **Tom Errico** <thomas.errico@tylin.com>
Date: Fri, Oct 19, 2018 at 8:35 AM
Subject: 100 Fore Street - Initial Traffic Comments
To: Christine Grimando <CDG@portlandmaine.gov>, Bruce Hyman <bhyman@portlandmaine.gov>, Jeremiah Bartlett <JBartlett@portlandmaine.gov>

Hi Christine – I have conducted an initial review of application materials and offer the following traffic comments.

- The Applicant has conducted a trip generation analysis and concluded the project does not meet requirements for a Traffic Movement Permit given project details and trip credits for existing land uses. However, I continue to review the review methods used, which will ultimately determine whether the project will meet Traffic Movement Permit thresholds. Items needing further review include:
    - Specific reductions for existing traffic generation from the site is being reviewed. The reduction of Hamilton Marine is based on an earlier peak hour (3:30-4:30PM) and this may be inflated as compared to the typical commuter peak hour. Specific time-of-day peak hour generation from Hamilton Marine will be further reviewed. A similar review will be conducted for IBec Creative/Jade Integrated Health where 9.6 trips per 1,000SF was recorded (this is a very high trip rate per 1,000SF).
    - Use of a Shared Use Trip Reduction Factor (15%) needs further review given future area characteristics and anticipated tenant details.
    - Use of a Mode Share Reduction Factor of (12.8%) needs further review given project TDM details and gaining a better understanding of ITE trip generating assumptions and what level of alternative modes activity was in place at the site surveyed (ITE is not likely to provide this information).
    - An understanding of the number of employees may help to confirm expected trip generation. It is my understanding the office building will have 350 employees.
- The following summarizes some initial site plan comments.
    - The number of driveways to the site seems excessive. I am concerned about corner clearance to the level 2 garage entrance; the provision of a very wide driveway to the Gym Building (and spacing to the abutting driveway); and the angle of the driveway to the Ground level garage.
    - Information on how each parking level will be managed shall be provided. Given the lack of interior circulation, the parking garage lacks opportunities for optimal sharing of the parking supply.
    - If the Fore Street connector becomes a City Street, the Applicant should provide information on how the proposed roadway configuration would fit in the future public right-of-way and what would the ultimate full cross-section consist of.
    - The Fore Street connector roadway is proposed to be 28-feet wide. On-Street parking is to be prohibited. Determination on the appropriate right-of-way should be performed.
    - The Applicant should provide details on how will truck deliveries be accommodated.
    - Crosswalks should be provided across Fore Street at the Fore Street connector road intersection.
    - The Applicant shall provide width dimensions for all driveways.
    - The southerly Fore Street curb alignment has sharp angle points. Adjustments may make sense and review with DPW staff is suggested.
    - The Applicant shall provide a detailed parking demand/supply analysis.
    - Accommodation of Fire vehicles in the connector road drop off area further crowds this area. Depending on the outcome of Fire Department feedback, alternatives should be explored.

- Further traffic analysis is needed where the access drives intersect with Fore Street.

If you have any questions, please contact me.

Best regards,

Thomas A. Errico, PE
Senior Associate
Traffic Engineering Director
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Twitter | Facebook | LinkedIn | Google+

"One Vision, One Company"

Planning and Urban Development Department
Planning Division

Subject: B6 Design Review – 100 Fore Street

Written by: Caitlin Cameron, Urban Designer

Date of Review: Tuesday, October 16, 2018

The preliminary review of the proposed garage, office, and retail building at 100 Fore Street was conducted by Caitlin Cameron, Urban Designer, Christine Grimando, Senior Planner, and Shukria Wiar, Planner. The following memo reflects general comments and concerns about the project and frame the areas that would benefit from discussion and feedback during the first Planning Board workshop.

Design Review Criteria:
The Site Plan application is subject to the policies and standards listed below.

- Eastern Waterfront Master Plan - *Design Guidelines for the Eastern Waterfront*
- City of Portland Design Manual – *(g) EWPZ Eastern Waterfront Port Zone and B6 Eastern Waterfront Mixed Use Zone*

More information is needed to evaluate the proposal:

- Diagram showing entrance locations, circulation
- Renderings and images showing the building in context
- Material samples or images

Staff Comment and Topics for Discussion:
Eastern Waterfront design standards: All major and minor development reviewed under the provisions of the eastern waterfront zones shall be designed to support the development of this urban neighborhood as a dense, mixed-use, pedestrian friendly neighborhood.

Staff identified areas of focus for the design review discussion and request Planning Board feedback:

- **Contextual Design**
  The site is below the Munjoy South development and the residential Munjoy Hill neighborhood defined by single family, two-family, and triple decker residential buildings, a small, pedestrian-scale street grid, and a "cinque terre" approach (meaning the development pattern follows the topography with Congress Street as the high point "spine" and Fore Street as the low point). The site is adjacent to the eastern waterfront and Portland Company site which currently includes a mix of transportation, industrial, and tourism uses and building typologies but is yet to be fully developed. And to the west is the India Street neighborhood with a mix of historic and contemporary mixed-use, hotel, and residential buildings of varying heights and scales. Most immediately across the street will be the recently approved office building at the Shipyard site with seven stories and a glass curtain wall and brick façade.

Recent projects have been strongly oriented towards the water and create a design character using high levels of fenestration and curtain wall. Successful design in this area will provide respectful transitions between and recognition of the patterns found within these varying contexts. However, there is latitude to define a new and contemporary pattern of development and possibly a waterfront facing approach. The 100 Fore design proposes to continue that emerging trend for contemporary development on the waterfront.

- Defining Context: What should be considered the context? The eastern waterfront area is being defined by new mid-rise buildings of 4-7 stories, often with large footprints, and contemporary styles. The site is downhill from the Munjoy South development which is not considered to be appropriate urban residential design and is likely to be redeveloped. The building is commercial mixed-use and should reflect that use in its character and scale (rather than drawing from residential character nearby). Staff view this as a transitional site but Fore Street context does include long, mid-rise buildings with active frontage. Staff suggest that the relationship to Fore Street is the most critical and that context should be the most examined. The building should continue to build up the urban street wall and pattern of development established by previous developments and what is proposed at the Portland Company adjacent.
- Contextual Characteristics: Though the scale, use, and style of the surrounding buildings varies, the traditional context is defined by buildings with clear orientation, simple material palettes, strong street walls, and simple forms. The lack of a consistent, distinct context provides freedom for the new development but the current iteration of this proposal lacks cohesiveness, or a clear orientation and design concept. Staff recommend revisions that simplify the design in these ways.
- Relationship to the Street: The relationship to the street is another way in which buildings relate to context. The site complexities and zoning dimensional standards are causing the massing/height of this building to be pushed away from the street. The result is a one-story building on Fore Street. As an urban, mixed-use building, the street façade calls for more height, articulation, activity, and direct orientation. Given the site and zoning constraints, staff agree with the design decision to focus the entrances in a node at the west corner of the building. The curve of Fore Street creates a strong sight line towards this corner of the building – this should be more strongly acknowledge in the design massing, orientation, and concept.
- Orientation: Is it appropriate for a mid-block building to have such a strong waterfront orientation? The building feels schizophrenic in its orientation, trying to both face the water but meet the requirements of enhancing the streetscape. The street wall suffers with this approach (as described above). The design standards emphasize density, mixed-uses, and pedestrian friendliness. Though the character of streetscape on Fore is still being developed, staff believe new designs should create a Fore Street context that does convey an urban, mixed-use, pedestrian-friendly street and likely provides more street orientation.

- **Building Composition (placement, orientation, massing, articulation, and materials)**

The building includes a two-story parking plinth, office uses on the upper floors with circulation towers as anchoring elements, and retail spaces at the ground level at Fore Street. The building smartly uses the grade change to bury the parking. The design approach to Fore Street establishes a new street wall with a one-story garage and liner building. The building includes an entrance plaza at the western corner with concentration of retail, office entry, landscape and

plaza space. The material palette varies from garage and retail level – more solid treatment with storefronts at the retail spaces – compared with the highly transparent office trays that varying in massing. The circulation towers are expressed in solid materials attempting to anchor the floating glass box of the office spaces.

- Hierarchy and Massing: The project places the tallest masses away from the street, interior to the site. There is a significant amount of massing variation between the garage mass, the office plates which move in and out, and the circulation towers. The one-story height at the street does not feel urban especially given the 4-6 story new developments nearby. Staff are concerned that the overall massing, building organization, and material placement do not convey a clear concept or hierarchy and confuse the legibility of the building. Simplification and a clear organizing and design concept should be pursued.

- Orientation: There is not a clear orientation and the massing is placed downhill away from the street. The street edge is an important component of the site and should not be ignored. The two end retail spaces appropriately hold the corners of the building and help define the urban space. The entry plaza at the western corner seems a logical node around which to orient the building forms and massing. Staff agree that creating a street wall is appropriate for this urban site, but the form, uses, height as proposed are all in question at this street interface. That being said, the building face should not strictly follow the curve of Fore Street.

- Materials: Many of the new buildings in this immediate context propose high levels of fenestration and curtain walls. Staff are not opposed to the use of curtain wall here but there are too many materials and the placement is not helping the building to have a clear hierarchy, orientation, or relationship to the context or street. Consider, also, the material relationship of the garage with the street.

- **Pedestrian Environment**

  Fore Street: The interface with Fore Street comes with a set of challenges. Fore Street is not a major pedestrian street and does not currently include high levels of retail or mixed-uses and activity. Fore Street is also a challenging building/pedestrian environment interface given its curves and grade changes; convex street walls are not conducive to friendly pedestrian environments. This long building façade is also north-facing. Staff would like to discuss viable options for this interface that will result in comfortable, appropriately scaled and active space that provides a viable amenity or use given the context and zoning requirements.

  The convex curve in the road and the design of the parking structure result in left over space that is not suitable for retail. Staff support the current plan which shows retail spaces at the two corners of the building – these appear to be viable spaces and are the most visible locations. It is appropriate to square off the wall to the street and create a space between the garage and the sidewalk. Some incidental uses could be housed here – bike storage, for example. Another strategy may be a structure that defines space without full interior enclosure (similar to the pergola suggested at the entrance plaza node). An outdoor plaza and landscaped area is another option – would this space get used as a north-facing space? In any scenario, staff agree that the garage wall must be reconsidered to have more visual interest, articulation, and possibly height.

  Entrance Plaza: Staff support the design direction that places an entrance plaza on the western edge of the site. The curve of the road, the grades, and the building program (retail and office

entrance) make this location a logical node. This point is prominent and visible as one approaches on Fore Street. This design approach further helps mediate the grade changes and to bury and screen the lower level of surface parking. The plaza space should be comfortable and functional and the building design should clearly convey that this is the primary entrances. Staff suggest that future iterations of the design continue in the direction of emphasizing this active node in the landscape design as well as the building architecture.

General design comments for PB workshop!

More height at street

Simplify massing, orientation, hierarchy, materials



10/16/18 Design Review
ccameron, cgrimando
swiar

activation strategies on Fore St.

emphasize this corner/ entrance plaza
↳ massing, ↳ materials
↳ height ↳ plaza design

Portland, Maine Yes. Life's good here.

Planning & Urban Development Department

LEVEL II and LEVEL III APPLICATION SUBMISSION CHECKLIST

Please submit each document as a separate PDF file.

Please confirm by electronically checking the boxes to the left

General Application Documents

Checklist	Items to be Provided
Yes NA Plan ✔	PROJECT DESCRIPTION • Cover Letter with detailed project description
Yes NA Plan ✔	COMPLETED CHECKLIST – LEVEL III APPLICATION
Yes NA Plan ✔	RIGHT, TITLE AND INTEREST • Deeds, leases, or purchase and sales agreements
Yes NA Plan ✔	EVIDENCE OF STATE OR FEDERAL APPROVALS, if applicable • Permits or letters of non-jurisdiction, if applicable
Yes NA Plan ✔	ZONING ASSESSMENT • Table listing required and proposed uses and dimensional standards Zoning Assessment Table
Yes NA Plan ✔ ✔	EXISTING &/OR PROPOSED EASEMENTS OR COVENANTS, if applicable • Evidence of existing easements and any proposed easements
Yes NA Plan ✔	WAIVER REQUESTS • Written request for waiver describing request and reason. Waiver Table
Yes NA Plan ✔	FINANCIAL CAPABILITY • Letter or evidence from a financial institution or third party verifying financial capacity to undertake project
Yes NA Plan ✔	TECHNICAL CAPABILITY • Evidence of technical capability of applicant and consultants – resumes and/or examples of past projects

LEVEL II AND LEVEL III SITE PLAN STANDARDS AND SUBMISSION CHECKLIST

Provide assessment of compliance with standards and include supplemental documentation, as applicable.

Please submit each document as a separate PDF file.

TRANSPORTATION

Check list	Assess/Provide/Document:
Yes NA Plan ✔	**Transportation Analysis- Traffic Impact (14-526 (a) 1)** • Provisions for pedestrian, bicycle, vehicle, and loading circulation and incremental volume of traffic impacts • Traffic Impact Study (Technical Manual, Section 1) if applicable
Yes NA Plan ✔ ✔	**Access and Circulation (14-526 (a) 2 a)** • Access and internal circulation, addressing ADA access • Access and egress impacts on traffic flows • Description and use of drive-up features, if applicable
Yes NA Plan ✔ ✔	**Loading and Servicing (14-526 (a) 2 b)** • Loading and servicing needs, route and travel way geometrics for deliveries • Turning templates for delivery vehicles, if applicable
Yes NA Plan ✔ ✔	**Sidewalks (14-526 (a) 2 c)** • Sidewalks and condition along street frontages and internal walkways • Engineered details for ADA ramps and public sidewalk details meeting sidewalk materials policy and ADA ramp construction details as applicable (Technical Manual, Section 1)
Yes NA Plan ✔	**Public Transit (14-526 (a) 3), if applicable** • Existing available transit services • Proposed site plan design details, such as easement, pad base, and shelter
Yes NA Plan ✔ ✔	**Off-Street Parking: Vehicle & Motorcycle/Scooter) (14-526 (a) 4 a and c)** • Expected parking demand, proposed parking supply, ADA parking, and applicable Zoning Requirements • Address Technical Manual standards (Section 1) for curb cut separation and parking lot layout and locate on site plan
Yes NA Plan ✔ ✔	**Bicycle Parking (14-526 (a) 4 b)** • Address bicycle parking requirements and identify locations on-site • Construction details for bike racks (Technical Manual, Section 1)
Yes NA Plan ✔ ✔	**Snow Storage (14-526 (a) 4 d)** • Management plan for snow removal and locate snow storage areas on plan
Yes NA Plan ✔	**Traffic Demand Management (TDM) (14-526 (a) 5), if applicable** • Develop TDM with Trip Reduction Targets and Strategies

ENVIRONMENTAL AND LANDSCAPE FEATURES	
Check list	Assess/Provide/Document:
Yes NA Plan ✔ ☐ ✔	**Preservation of Significant Natural Features (14-526 (b) 1), if applicable** • Trees, plants, habitats listed on State or Federal list of endangered or threatened • High and moderate value waterfowl and wading habitat • Aquifers on Casco Bay Islands • Waterbodies (including wetlands, watercourses, significant vernal pools and floodplains) • Proposed preservation areas and protection measures • Documentation from environmental consultants, determinations from applicable state agencies
Yes NA Plan ✔ ☐ ✔	**Landscaping and Landscape Preservation (14-526 (b) 2 a)** • Preservation of trees and preservation within required zoning setbacks (Technical Manual, Section 4) • Protection measures of existing vegetation during construction • Protection measures within Shoreland Zone, if applicable
Yes NA Plan ✔ ☐ ✔	**Site Landscaping (14-526 (b) 2 b)** • Screening and buffering of service areas and between non-residential and residential uses • Planting plans with plant schedule and sizes (Technical Manual, Section 4)
Yes NA Plan ☐ ✔ ☐	**Parking Lot Landscaping (14-526 (b) 2 b ii), if applicable** • Landscaped islands within parking areas (Technical Manual, Section 4)
Yes NA Plan ✔ ☐ ✔	**Street Trees (14-526 (b) 2 b iii)** • Existing Heritage or Feature Trees on site and measures to preserve • Identify street trees on the plan meeting the site plan and Technical Manual standards (Section 4) or identify alternative measures, if applicable

ENVIRONMENTAL AND STORMWATER	
Check list	Assess/Provide/Document:
Yes NA Plan ✔ ☐ ✔	**Water Quality, Stormwater Management and Erosion Control (14-526 (b) 3 a)** • Stormwater report in compliance with Section 5 of Technical Manual and DEP Chapter 500 stormwater for basic, general and flooding standards, as applicable • Erosion control plan and measures • Evidence of compliance with Urban Impaired Stream Standards pursuant to DEP Chapter 500 stormwater, as applicable • Subsurface sanitary sewage disposal and groundwater protection

PUBLIC INFRASTRUCTURE AND SAFETY	
Check list	Assess/Provide/Document:
Yes NA Plan ✔	**Consistency with City Master Plans (14-526 (c) 1)** • Identify consistency with master plans • Proposed easements, rights and improvements to connect or continue off-premises public infrastructure, as applicable
Yes NA Plan ✔ ✔	**Public Safety and Fire Prevention (14-526 (c))** • Address Crime Prevention through Environmental Design (CPTED) (Technical Manual, Section 3) • Emergency vehicle access • Address consistency with public safety standards (Technical Manual, Section 3) • Submit a code summary referring NFPA 1 and all Fire Department standards (Technical Manual, Section 3) – Fire Checklist
Yes NA Plan ✔ ✔	**Availability and Adequacy of Public Utilities (14-526 (c) 3) (Technical Manual, Sections 2 & 9)** • Electrical services, including providing underground services • Identify existing and proposed connections for public utilities and required public utility upgrades • Sewer line connections are required, if there is a main within 200 feet • Proposed solid waste management facilities on-site and management for the site • Written evidence of the ability to serve from utility companies, as applicable

SITE DESIGN	
Check list	Assess/Provide/Document:
Yes NA Plan ✔	**Massing, Ventilations and Wind Impact (14-526 (d) 1)** • Wind and ventilation impacts on adjoining structures and/or adjacent public spaces. Wind study, if applicable • Bulk, location or height impacts on adjoining structures • Identify and locate HVAC equipment and venting away from public spaces and residential properties • Identify screening and manufacturing specifications for noise, if applicable
Yes NA Plan ✔	**Shadows (14-526 (d) 2), if applicable** • Shadow analysis of impacts on publicly accessible open space (Technical Manual, Section 11)
Yes NA Plan ✔	**Snow and Ice Loading (14-526 (d) 3)** • Building design to prevent snow and ice from loading or falling onto adjacent properties or public ways
Yes NA Plan ✔	**View Corridors (14-526 (d) 4), if applicable** • Protection of designated view corridors (Portland Design Manual, Appendix 1)

Yes NA Plan ☐ ✔ ☐	**Historic Resources (14-526 (d) 5), if applicable** • Identify developments within Historic Districts or affecting Designated Landmarks • Certificate of Appropriateness or other evidence • Identify Developments within 100 feet of Historic Districts or affecting Designated Landmarks. Advisory HP review may be required • Address preservation and documentation of Archaeological Resources
Yes NA Plan ✔ ☐ ☐	**Exterior Lighting (14-526 (d) 6)** • Cut sheets of on-site light fixtures and any architectural or specialty lights (Technical Manual, Section 12) • Engineered details for any lights proposed in street right-of-way (Technical Manual, Section 10)
Yes NA Plan ✔ ☐ ☐	**Noise and Vibration (14-526 (d) 7)** • Evidence of noise levels for equipment, such as equipment specifications, to demonstrate consistency with zoning requirements
Yes NA Plan ✔ ☐ ☐	**Signage and Wayfinding (14-526 (d) 8), if applicable** • Signage plan showing the location, dimensions, height and setback of all existing and proposed signs. Signs in Historic Districts are reviewed by Historic Preservation staff • Proposed commercial and directional signage on site
Yes NA Plan ✔ ☐ ☐	**Zone Related Design Standards (14-526 (d) 5)** • Address Historic Preservation Design Review, if applicable • Address any applicable design review standards by zone • Address submission requirements from Design Manual, page 1, addressing neighborhood context • Description of exterior materials, color, finish, and samples
Construction Management Plan	
Check list	
Yes NA Plan ✔ ☐ ☐	**Construction Management Plan** • Construction Management Document and Plan

Level II and Level III Site Plan Checklist

Please upload the following drawings with the listed details into e-Plan as separate pdfs.

☑ **RECENT BOUNDARY SURVEY** (stamped by Maine Licensed Surveyor)

Must be in compliance with Technical Manual, Section 13

SITE PLAN(s) (stamped by Maine Licensed Engineer) including:

☑ **Existing Conditions**

- Approximate location of structures on abutting property
- Topography
- Locate water courses
- Delineate wetlands
- Zone lines

☑ **Proposed Site Plan**

- Ground floor area, and grade elevations for all buildings

☑ **Access, Circulation, and Parking**

- Streets and intersections adjacent to site , any proposed geometric modifications
- Location, dimensions and materials of all existing and proposed driveways, vehicle, bicycle, & pedestrian access ways with corresponding curb lines
- Engineered specifications/ cross-sections for proposed driveways, sidewalks & paved areas
- Location and dimensions of proposed loading areas
- Existing and proposed transit infrastructure with dimensions/ engineering specifications
- Location of vehicle and bicycle parking with dimensions and engineering specifications

☑ **Site Considerations**

- Identify snow storage areas
- Location of fire hydrants
- Location of solid waste management facilities

☑ **UTILITY PLAN** including:

- Existing utilities on site and within public streets
- Location, sizing, and directional flows of all existing and proposed utilities
- Location and dimensions of off-premises public or publicly accessible infrastructure adjacent to site
- Electric utility infrastructure

☑ **GRADING and DRAINAGE PLAN** including:

- Existing grades and drainage
- Proposed grades
- Proposed stormwater management meeting Technical Manual (Section 5) standards
- Location and proposed alteration of a water course
- Preservation or alteration of wetlands

☑ **EROSION CONTROL**

- Must be in compliance with Technical Manual, Section 5

☑ **LANDSCAPE PLAN** including:

- Existing vegetation to be preserved and preservation measures
- Proposed landscaping and buffers
- Planting schedule

☐ **RECORDING PLAT**, if applicable

- IF SUBDIVISION: Must be in compliance with requirements of Section 14-496 (b)

☑ **ARCHITECTURAL PLANS & RENDERINGS** including:

- Exterior building elevations, color renderings, illustrations of all sides
- Location and dimensions of all existing & proposed HVAC & mechanical equipment, all proposed screening
- Provide context drawings, if applicable (Design Manual, page 1)
- Floor plans

Stantec Consulting Services Inc.
482 Payne Road Scarborough Court, Scarborough ME 04074-8929

October 9, 2018

Ms. Christine Grimando
Planning and Development Department
City of Portland, Maine
389 Congress Street
Portland, Maine 04101-3509

Subject: Application for Level III Site Plan Application
100 Fore Street
Tax Map 019/Block A/10

Dear Christine:

On behalf of **100 Fore Street, LLC** (Applicant), our office is pleased to provide the uploaded submission materials for a Level III Site Plan Application. This submission package is intended to meet the City's Level III Site Plan Submission requirements as outlined in the Level III Site Plan Checklist as well as Section 14-526 of the Code of Ordinances. This submission was contemplated during the recent Eastern Waterfront Overlay zoning language changes approved by the City Council which were based upon the recommendation of the Portland Planning Board. These changes relate to the measurement of building height, specifically associated with the property at 100 Fore Street. The proposed project was further contemplated when the City of Portland transferred property to 0 Hancock LLC for the development of the WEX Corporate headquarters building (now under construction and expected completion December 2018). At that time, the Applicant discussed and committed to the development of a parking garage/office complex at the 100 Fore Street site. The Applicant has assembled a team consisting of Archetype PA, Cianbro, ALA Landscape Architecture and Stantec to assist with plan development and permitting.

PROJECT OVERVIEW

100 Fore Street LLC is proposing a three-level parking garage with two levels of commercial office space above on a 2.97-acre lot located at 100 Fore Street. The site is identified as Lot 10 on Tax Map 19, Block A. The site is currently in the B6 Commercial Business Zone and Eastern Waterfront Overlay District. The site contains a single approximately 29,675 SF single story building that has contained multiple tenants, including the Hamilton Marine retail store and Xpress Copy. The existing site also contains 136 parking spaces and various utilities including water, sewer, gas and power services from Fore Street. The existing site has two driveways off Fore Street. The majority of the existing building will be demolished to make way for the proposed five story building. Approximately 9,100 SF of the existing building, located at its west end, will be retained and refurbished to provide a private fitness center for staff of the office building and those of the new building at 1 Hancock Street (WEX Headquarters).

The new building development will include a three-level parking garage with two upper levels for office space for a total of five floors. The overall building footprint will be approximately 64,980± SF. Each of the floors will have the following sizes:

Description	Size (SF) (parking count)
Ground Level Parking	64,980 (182 Spaces)
Level 1 Parking	64,320 (178 Spaces)
Level 2 Parking	64,490 (179 Spaces)
Level 3 Commercial Office	42,980
Level 4 Commercial Office	39,190
Total	**275,960 SF (539 Spaces)**
Additional Street Level Retail	3,808 SF

The new 539-space three (3) level parking garage will require three access locations, as each parking deck will require independent access as there will be no interior access ramps. The ground level lot will be accessed from a new driveway located just west and opposite the Mountfort Street intersection along Fore Street. The first and second level decks will be accessed from the site's proposed easterly driveway. The 28' wide easterly driveway will be constructed to satisfy City street standards as it may ultimately be extended to cross City land to the south and connect to the proposed Thames Street Extension, tentatively scheduled for construction by the City of Portland in 2019 or thereabouts. It is expected that Unified Parking Partners or a similar operator will actively manage the garage operations including directional signage, security, ticketing and related issues. The building will contain three (3) stairwells and two full building elevators located on each end of the building. The proposed office tenants are expected to lease spaces in the garage and spaces will also be open for public parking. There will also be 19 regular surface parking spaces on the site to provide a total of 559 parking spaces on the property. Per section 14-332, the parking requirements for the 82,400 SF office will be 206 spaces, thus leaving approximately 352 spaces for other lease tenants (including street level retail) and public parking in the nearby vicinity.

The site improvements include the following:

- Removal and resetting of granite curb and new Brick sidewalk to replace the existing concrete sidewalk along the Fore Street Right of Way.
- Construction of an easterly entrance off Fore Street, nearly in the same location as an existing driveway. The new driveway will be designed to allow for its continuation southerly to the City owned parking lot and to the end of the proposed Thames Street Extension. The Easterly driveway will also provide access into the Level 1 and Level 2 parking decks as well as pedestrian access to an interior lobby containing the elevator and stairwell. It is likely that the upper two floors of the parking garage will be dedicated to the office tenants and potentially offsite office tenants.

- Construction of a new driveway off Fore Street, located just west of the Mountfort/ Fore Street intersection. This new driveway will provide access to the ground level surface parking and also the ground level garage parking area. The ground level parking may be dedicated to not only on and offsite office tenants, but for general public parking (subject to fees). A third, existing driveway at the far west end of the property, will remain in use to provide access to the end of the existing building to remain, since there is a loading door on the building that will remain available for use.
- New utilities for water supply, sewer, natural gas, power, and communications will be extended into the new building. There are existing utilities that serve the building space to remain and these will be evaluated for continued use for the fitness center. If necessary, these existing utilities may be upgraded. There are existing overhead utilities for power and communications along Fore Street that are adequate to serve the new facility. A new underground power service will be extended from the street to a pad mount transformer and secondary service into the building. Swaney lighting has prepared a site lighting package that is included in the submission materials.
- The Fore Street Sidewalk along the site frontage currently consists of granite curbing and concrete. The concrete sidewalk will be removed and new brick sidewalk will be installed along the length of the street frontage. The sidewalk will also be widened from an existing width of about 5' to 8'-10'. ALA Landscape Architecture is working on advancing the streetscape and possible plaza elements with an emphasis on the pedestrian connectivity within the area characterized as a future corridor connecting an extension of Mountfort street towards the waterfront. The easterly side of the site is also an area of advanced landscape treatment given the location of various building entrances and the potential for a future vehicular and pedestrian connectivity to Thames Street Extension.
- The ability to provide street level retail space along the Fore Street frontage remains subject to continued consideration and design refinement. Additional information pertaining to the small retail component of the design will be provided in upcoming uploads associated with this application.

CLOSURE

As outlined in the Level III Site Plan submission requirements and checklist, we will upload the following materials:

- General Application Documents
  - Project Description
  - Level III Application Checklist
  - Right, Title and Interest
  - Zoning Assessment
  - Existing and/or Proposed Easements
  - Waiver Request and Waiver Table

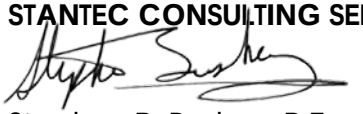
  - Financial Capacity
  - Technical Capability
- Transportation
  - Transportation Narrative
  - Traffic Assessment by Traffic Solutions
- Environmental and Landscape Features
  - Narrative to Address Standards
- Environmental and Stormwater
  - Narrative to Address Standards
- Public Infrastructure and Safety
  - Narrative to Address Standards
- Site Design
  - Narrative to Address Standards
- Construction Management Plan
- Site Plans

On behalf of the 100 Fore Street, LLC, we look forward to your continued assistance on the project and we look forward to the next available workshop meeting with the Planning Board. As is required, once we complete the Planning Board workshop, the applicant will be conducting a Neighborhood Meeting. We anticipate this meeting will be conducted prior to the Public Hearing.

If you have any questions regarding the materials being submitted, please contact this office.

Sincerely,

STANTEC CONSULTING SERVICES INC.



Stephen R. Bushey, P.E.
Associate
Tel: 207-887-3478
Stephen.bushey@stantec.com

Attachments

c: Jonathan Cohen, 100 Fore Street LLC
Bill Hopkins, Archetype
Jonathan Dicentes, Cianbro

GENERAL APPLICATON DOCUMENT

PROJECT DESCRIPTION

PROJECT OVERVIEW

100 Fore Street proposes to construct a mixed used building consisting of a three level 540 space parking garage with approximately 82,400 SF of office space with the two additional levels atop the garage. Additional street level retail is currently being considered in accordance with 14-270(a)(2).b of the code, although the applicant may ultimately seek a waiver of these requirements. The property is located along the south side of Fore Street generally between Hancock Street to the west and the former Portland Company site at 58 Fore Street to the east. The prospective development site currently contains an existing single level 29,675 ± SF commercial building that includes office and retail space. There are also 136 paved parking spaces on the property that benefit onsite lease tenants and several offsite lease tenants. The project is guided by the Eastern Waterfront Master Plan and is designed to allow permeability and accessibility across the site. This is evidenced by the site design that contemplates the extension of the easterly driveway to connect with a future Thames Street Extension, between the site and the Fore River frontage. The site design also includes prohibition of building space within a designated area characterized as an extension of the Mountfort Street right of way, that would extend from Fore Street to the southerly boundary line. Recent zoning language amendments to the Eastern Waterfront Overlay district, allow for the project height proposal.

Within a portion of the office space WEX has agreed on a long-term commitment to lease space in the building. Additional office tenant(s) are yet to be named.

PROJECT PURPOSE AND NEED

The property is a prime location for a mixed-use development to include structured parking and additional upper floor office space. The site can take advantage of proximity to the heavy foot and car traffic from the Old Port as well as expansive views of the harbor and accessibility to the City's adjacent east end parks and waterfront walking paths.

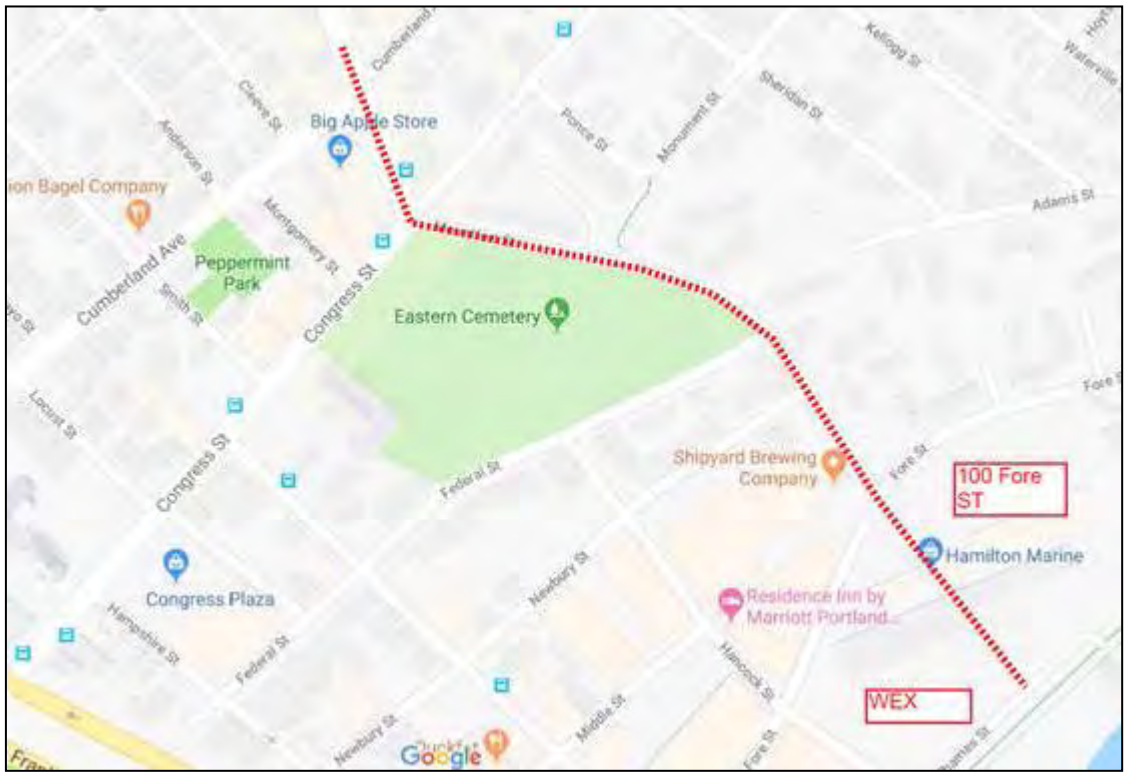
The advantages of the Property are highlighted in the Eastern Waterfront Master Plan (the "EWMP") and the site is best suited to be densely developed with office and parking space surrounded by pedestrian pathways and public plazas and amenities. A great benefit to the site is the natural slope of the East End of Portland, north of the property which allows for the creation of a denser urban fabric through height within the property without creating a wall in front of the residential housing units, higher up on the hill.

The proposed project is for a 275,960 SF, 5-story mixed-use building with a 64,980± SF footprint. The bottom three floors will contain the parking areas and the upper two floors will contain the office space. As shown in the building architectural plans, the office spaces each step back from the Fore Street frontage in a manner that satisfies

the recently enacted Eastern Waterfront Overlay district setback requirements. The office uses will bring hundreds of jobs to the City of Portland and will provide meaningful benefits to the City's economy and tax base. The parking garage will provide needed parking capacity for onsite and offsite office uses, and various lease tenants in the area.

The 100 Fore Street site and the Ocean Gateway Garage can accommodate, at a minimum, replacement parking for 53 City parking spaces and 117 public parking spaces lost as a result of the sale of the WEX Property at 1 Hancock Street.

Pedestrian and Public Outdoor Space: The project creates the opportunity for higher density and more pedestrian and public outdoor space, including sidewalk extensions as outlined in the EWMP. Most importantly the opportunity for pedestrian linkage between the City owned land off the end of Thames Street and Fore Street will be provided through sidewalks along the easterly driveway as well as from the Fore Street frontage opposite Mountfort Street through a dedicated view corridor to the south property boundary. This view corridor ultimately contemplates a future connection to Thames Street and the waterfront, that at a minimum, might provide pedestrian access and corridor linkage from Washington Avenue, Mountfort Street to Thames Street.



Public green spaces to the east side and off the northwest corner of the building are contemplated that will create new walkable areas through the site and landscaping which additionally helps buffer users from traffic and also enhance the site vernacular and aesthetic appearance. A public square could create a strong entrance to any retail portion of the property which would be along the Fore Street frontage. The plaza would be a prime space to include plantings, street furniture, public art or a monument. The plaza will transition down via stairs, ramps or combination to match the grade crossing of the ground level parking garage and ultimately extend through to the south

boundary. The design will leave opportunity for that future connectivity through to Thames Street.

Transportation: The EWMP conveys a strong interest in development promoting multiple types of transportation. As one tenant for the property, WEX would bring with it hundreds of employees who would be able to take full advantage of the proximity of systems already in place, including the nearby ferry terminal, the walking and biking trail along the eastern waterfront and the bus routes in the vicinity which include the METRO Route 1 at the east end of Fore Street[1] and Route 8 on India Street. As part of this application process, the Development Team including the Applicant and WEX representatives are working with Cushman Transportation Consulting, LLC to prepare a Transportation Demand Management Plan similar to the plan for the 1 Hancock Street site that will help WEX and other office tenants make best use of the site and the transportation systems available in the greater Portland area.

In addition to the systems already in place, bicycle storage will be added to the property, with exterior storage and racks in the plazas and entry locations, along with interior storage in the Garage and possibly the fitness center.

The Community benefits provided by the project include the following:

- The Project will contribute to the redevelopment and revitalization of the area;
- The Project will provide a quality office use destination to complement other mixed-use activities in the nearby vicinity; and
- The Project will provide additional parking capacity in the area. The applicant's parking facilities will amount to a total of 1,278 parking spaces between the Gateway Garage (720 spaces) and onsite (558 spaces).
- The Project will incorporate exterior site enhancements for outside Plaza space, landscaping, and related site amenities.

EXISTING CONDITIONS

The total site area is 129,212 SF (2.97 acres) and the property contains an existing single story metal clad building. The site is bounded to the north by Fore Street, to the east by the former Portland Company site, and to the south by a narrow strip (16' wide) of undeveloped grassed land owned by the City. Further to the south side is the existing office building owned by Jackrabbitt LLC and the now under construction WEX corporate headquarters. Additional City land and surface parking will remain southeast of the site. The site's historic use includes the Grand Truck Railroad yard that consisted of multiple tracks and portions of various structures. The site also contains paved surface parking for approximately 136 vehicles.

Existing utilities currently service the existing building and these, except for the power are expected to remain in service. Generally, public utilities for water, sewer, gas, power, and communications are located within Fore Street and will be extended into the new building. The existing overhead lines located along the site frontage will be raised once CMP sets new taller poles on the street.

[1] There is a bus stop at the corner of Atlantic and Fore Street approximately 1000 feet east of the site.

General site preparation is anticipated to be straightforward to include site grading, new utilities, drainage, building construction and site surface improvements for sidewalk restoration and landscaping. Early foundation preparation may involve the installation of piles to support traditional concrete foundations. It is anticipated that old abandoned foundations and related pipes may be encountered during the course of construction and appropriate actions will be taken to address these conditions.

Existing topography is relatively flat in the parking areas with elevations ranging from approximately 13.0 to over 28.0 based on NGVD 1929 vertical Datum. Fore Street rises from west to east along the site frontage and the westerly elevation is about 18.0 and the easterly elevation is about 30.0'. The existing building finish floor elevation is about 17.0'. The lot is internally draining, meaning the lowest portion of the site is towards the east end of the site and the higher grades are around the perimeter. It is believed the several onsite catch basins likely tie into the combined sewer in Fore Street, although the structures are in poor condition and can't be readily inspected. The site improvements will involve ground disturbance over the entire site. Summit GeoEngineering has been engaged to assist with a geotechnical investigation. Their initial findings include identifying soft marine clay soils underlying the site. The preliminary recommendations include the use stone filled piers or piles to aid with addressing long term settlement potential.

The site is not within the Shoreland Zone of the Fore River. This portion of the Fore River is tidally influenced and has a mean annual high tide elevation of 7.4 (NGVD 1929) and a 100-year FEMA flood elevation of 10.0 (NGVD1929). Tidal information as determined by Owen Haskell, land surveyor is defined as follows:

- Mean High Water is Elevation 4.95
- Mean Low Water is Elevation is -4.95

The building finish floor elevation within the ground level parking area will be 14.00' (NGVD29) thus placing it greater than 2' above the 100-year flood level.

Photographs of the existing site conditions are contained at the end of this narrative.

ACCESS CONDITIONS

The new 539-space three (3) level parking garage will require three access locations, as each parking deck will require independent access as there will be no interior access ramps. The ground level lot will be accessed from a new driveway located just west and opposite the Mountfort Street intersection along Fore Street. The first and second level decks will be accessed from the site's proposed easterly driveway. The easterly driveway will be constructed to satisfy City street standards as it may ultimately be extended to cross City land to the south and connect to the proposed Thames Street Extension, tentatively scheduled for construction by the City of Portland in 2019 or thereabouts. It is expected that Unified Parking Partners or similar operator will actively manage the garage operations including directional signage and related issues. The proposed office tenant is expected to lease spaces in the garage and spaces will also be open for public parking. Per section 14-332, the parking requirements for the 82,400

SF office will be 206 spaces, thus leaving approximately 352 spaces for other lease tenants and public parking in the nearby vicinity.

UTILITIES

The development site will require utility service extensions from within Fore Street. According to the City and utility provider's records, the following is available:

- Public water supply is available in Fore Street. A 6" fire service and a 4" domestic water service are proposed off an existing 8" water main in Fore Street. Existing fire hydrants are available within 500 feet of the site. The PWD may install a new water main in the easterly driveway to extend to Thames Street Extension and if completed, the site's water services will extend off this new main.
- A sanitary sewer service will tie into the existing 36" combined gravity sewer within Fore Street. A grease tank will also be installed for the benefit of oil-water separation from the garage spaces. A wastewater capacity request has been sent to the City's Public Works Division as part of this application.
- Three phase power is available from Fore Street directly along the site frontage. A new transformer pad will be installed adjacent the new building and within the sidewalk on the east side of the site and underground secondary power will be extended into the building.

TOPOGRAPHY AND DRAINAGE

Owen Haskell, Inc. has completed a Boundary and Topographic Survey of the property. The site is relatively flat with the highest points along the Fore Street frontage. The site grades range from Elevation 13' (NGVD 29) on the east end of the site to elevation 29' along the Fore Street frontage.

The proposed building will have finish floor elevations established at elevation 14.00' which places it greater than 2 feet above the nearby Fore River 100-year flood elevation.

SOILS/GEOTECHNICAL REVIEW

A Geotechnical Investigation has been prepared by Summit GeoEngineering. It is anticipated the subsurface soils will consist of urban fill, marine clay, and sand. The current structural design planning is considering ground improvements to help reinforce ground conditions whereby traditional concrete spread wall and column footings can be utilized, and any pile supported foundations can be minimized.









GENERAL APPLICATION DOCUMENT

ZONING ASSESSMENT

See attached Zoning Assessment Table and additional information provided in cover letter.

ZONING ANALYSIS Relevant Zone(s) B-6 Urban Commercial Business Zone and Eastern Waterfront Mixed Zone

All Projects:

	Required	Proposed
Lot Size	None	2.97 ac.
Area Per Dwelling Unit	N/A	N/A
Minimum Street Frontage	N/A	737.67'
Front Yard Minimum	N/A	6"
Front Yard Maximum	10'	10'
Rear Yard	N/A	10'
Yard Right	N/A	N/A
Yard Left	N/A	N/A
Side Street Setback	N/A	71'
Step Back	N/A	N/A
Maximum Lot Coverage	100%	80.0%
Minimum Lot Coverage	N/A	N/A
Maximum Height	See Note 1	See Note 1
Open Space	N/A	N/A
Maximum Impervious Area	N/A	N/A
Pavement Setback	N/A	N/A
Floor Area Ratio	N/A	N/A
Off Street Parking Spaces	206	559
Loading Bays	N/A	
Other 1		
Other 2		
Other 3		

Note 1 - See City Council Order 68-18/19 dated September 17, 2018. Building plans by Archetype PA adhere to City Council action on building height.

Planned Residential Unit Developments (PRUD) Requirements NOT APPLICABLE

	Required	Proposed
Minimum Lot Size		
Minimum Lot Area per Dwelling		
Maximum # Units per Building		
Maximum Building Length		
Maximum Accessory Building Length		
Minimum Setbacks		
Minimum Building Separation		
Minimum Open Space		

Affordable Housing Density Bonuses (if applicable) NOT APPLICABLE

	Bonus Increase or Decrease	Maximum Allowable With Bonus	Proposed
Density			
Height			
Setback Reduction			
Recreation Space			
Maximum Accessory Building Length			
Minimum Setbacks			
Minimum Building Separation			
Minimum Open Space			
Explanatory Text 1 (optional):			
Explanatory Text 2 (optional):			
Explanatory Text 3 (optional):			

GENERAL APPLICATION DOCUMENTS

RIGHT, TITLE & INTEREST

A Quitclaim Deed from Hope 1, LLC to 100 Fore Street, LLC was executed on January 6, 2017 for the subject property. The Deed attached to this document was recorded in the Cumberland County Registry of Deeds as Book 33748; page 1.

Recorded in the Cumberland County
Registry of Deeds on 1/6/17 in Book 33748, Page 1

SHORT FORM QUITCLAIM DEED WITH COVENANT

HOPE 1, LLC, a Maine limited liability company with a place of business in Portland, Maine ("Grantor") FOR CONSIDERATION PAID, grants to **100 FORE STREET, LLC**, a Maine limited liability company with a mailing address of P.O. Box 910, Westbrook, Maine 04098-0910 ("Grantee") with QUITCLAIM COVENANT, certain real property, with any improvements thereon and all rights and easements appurtenant thereto, located at or near 100 Fore Street, Portland, Cumberland County, Maine, and more particularly described on **Exhibit A** attached hereto and made a part hereof.

The conveyance herein is made subject to all easements, covenants, restrictions and agreements of record, to the extent in effect and applicable, to leases and licenses disclosed to Grantee, and to real estate taxes not yet due and payable.

Being the same premises conveyed to the Grantor by Quitclaim Deed with Covenant from Avidity Partners, LLC, Trustee of the FOL Liquidation Trust, dated January 19, 2005, and recorded in the Cumberland County Registry of Deeds in Book 22261, Page 50.

IN WITNESS WHEREOF, Grantor has caused this instrument to be executed and delivered by its duly-authorized Chief Operating Officer below this 6th day of January, 2017.

WITNESS:

Tom S. Hanson

Hope 1, LLC

By: _____
George Cacoulidis
Duly authorized Chief Operating Officer

State of Maine
County of Cumberland

January 6, 2017

PERSONALLY APPEARED before me the above-named George Cacoulidis, Chief Operating Officer of Hope 1, 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 company.

Before me,

TS Hanson

Name: Tom S. Hanson
~~Notary Public~~/Attorney at Law
Commission Expires N/A

EXHIBIT A

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

> Beginning on the Southerly side line of Fore Street at the Northwest corner of the premises conveyed to Frank J. Gaziano et al. by Canadian National Railway Company by deed dated November 1, 1973 and recorded in the Cumberland County Registry of Deeds in Book 3502, Page 247;

Thence N 79°-46' E along said premises conveyed to Frank J. Gaziano, et al. and along land now or formerly of Canadian National Railway 742.42 feet to an iron pipe on the Westerly boundary of land now or formerly of The Portland Company;

Thence Northwesterly along land of The Portland Company, on a curve to the right whose radius is 274.33 feet, 248.66 feet to an iron pipe on the Southerly side line of Fore Street, said iron pipe being distant 240.23 feet to a bearing of N 32°-18' W from the iron pipe at the terminus of the last described line;

Thence by the following courses and distances along the Southerly side line of Fore Street;

S 89°-32'-30" W	143.31 feet to an iron pipe;
S 78°-29'-30" W	172.03 feet to an iron pipe;
S 58°-36'-30" W	109.63 feet to an iron pipe;
S 42°-27' W	157.24 feet to an iron pipe;
S 35°-40' W	155.46 feet to the point of beginning.

GENERAL APPLICATON DOCUMENT

FINANCIAL CAPACITY

The Applicant has adequate financial resources to undertake this project as identified in the letter from Bank of New Hampshire which accompanies this submission.

CONSTRUCTION COST ESTIMATE

A breakdown of the preliminary project cost estimates includes the following:

- Construction Cost: $22 to 30 million
- Soft Costs: $200,000 to $400,000
- **Total Costs: $23 to $31 million**

Bank of New Hampshire

September 28, 2018

City of Portland, Maine
389 Congress Street
Portland, Maine 04101

RE: Financial Capacity – 100 Fore Street project

To Whom It May Concern:

Jonathan Cohen is a client in good standing with Bank of New Hampshire. Mr. Cohen demonstrates both the financial capacity as well as the industry experience necessary to purchase, develop, construct, own and operate commercial real estate projects such as the contemplated parking garage and office building planned for the 100 Fore Street site in Portland.

If there are any questions regarding this matter, please do not hesitate to contact me at deering@banknh.com or (603) 527-3349.

Sincerely,

Jeremiah C. Deering
Senior Vice President
Commercial Banking Team Leader

GENERAL APPLICATION DOCUMENT

TECHNICAL CAPABILITY

The applicant has retained a highly-qualified team of professionals to undertake planning, permitting and design tasks on this project. Services will be provided by the following companies and their respective team leaders:

Civil Engineer	Stephen Bushey, P.E. Stantec 482 Payne Road Scarborough, ME 04074 (207) 887-3478 – Work (207) 883-3355 – Fax stephen.bushey@stantec.com
Architect	Bill Hopkins Archetype, PA 48 Wharf Street Portland, ME 04101 (207) 772-6022 – Work (207) 772-4056 – Fax hopkins@archetypepa.com
Surveyor	John Swan Owen Haskell, Inc. 390 US Route 1, Unit 10 Falmouth, ME 04105 (207) 774-0424 – Work (207) 774-0511 – Fax jswan@ownehaskell.com
Landscape Architect	Nick Aceto, PLA ASLA ALA Landscape Architecture (207) 221-3390 – Work na@acetola.com
Traffic Engineer	Bill Bray Traffic Solutions 235 Bancroft Street Portland, ME 04102 207.774.3603 trafficsolutions@maine.rr.com
Geotechnical Consultant	William Peterlein, P.E. Summit Geoengineering Services 145 Lisbon Street, Suite 601 Lewiston, ME 04240 (207) 576-3313 – Work bpeterlein@summitgeoeng.com
Electrical Engineer	ES Boulos 45 Bradley Drive Westbrook, Maine 04092 207.464.3706 Attn: Bob Goulet Bgoulet@Esboulos.Com

The team of consultants retained has expertise and experience in the design of similar commercial projects. Resumes of key personnel for development team can be provided upon request.

GENERAL APPLICATION DOCUMENT

WAIVER REQUESTS

The Accompanying Waiver Table provides a description of the applicable waiver requests and supporting evidence for these requests.

Standard to be Waived: Cite Ordinance or Technical Manual Standard	**Cite Standard Language:** Cite specific language of applicable Ordinance or Technical Manual Standard	**Waiver Being Sought:** Describe waiver being sought. Ex. – We are requesting a two-way parking lot drive aisle width of 20' feet.	**Justification for Waiver:** Address specific waiver criteria, if applicable, and document reasons for the waiver request.
14-526 Site Plan Standards *(a) Transportation Standards* *3. Public Transit Access:*	*d. Waiver: All or some of this standard may be waived if the Reviewing Authority determines one or more of the following:* *(i) That some or all of the required improvements cannot reasonably be made due to site constraints and/or insufficient right of way width; or* *(ii) That the development is not anticipated to generate public transit usage due to particular characteristics or proposed use of the development.*	A waiver of any further transit related activities is requested given the proximity of existing transit measures to the development.	There is an existing METRO stop located at Ocean Gateway which is less than 1000 foot distance from the site as well as a stop at the intersection of Congress and Mountfort Street.
14-526 Site Plan Standards *(a) Transportation Standards* *4. Parking:* *b. Location and Required Number of Bicycle Parking Spaces*	*ii. Waiver: The reviewing authority may reduce the required number of bicycle parking spaces if it is determined, based on evidence submitted by the applicant, that the proposed development is expected to generate reduced demand for bicycle parking due to characteristics or uses such as elderly or disabled persons housing or industrial uses located in outlying areas.*	The applicant is requesting a waiver of the number of spaces, until the findings and full TDM Plan are more fully developed.	The project will provide various bike racks and secure storage spaces for bicycles. The location of these racks will be both within the exterior spaces, such as near entrances and also within the new building and the proposed fitness center space.

14-526 Site Plan Standards *(b) Environmental Quality Standards* *2. Landscaping and Landscape Preservation:* *a. Landscape Preservation*	(iv) Waiver: Where the applicant can demonstrate that preservation of existing vegetation would compromise development of the site, the Reviewing Authority may permit the substitution of replacement landscaping in other areas of the site, and/or a financial contribution to the City of Portland Tree Fund for an amount proportionate to the cost of trees removed, as described below: (a) For each tree required to be preserved that is removed and is greater than 16" in caliper DBH, two (2) replacement trees of a species identified on the City of Portland Recommended Tree List shall be planted on the site as detailed in Section 4 of the Technical Manual). (b) For each tree required to be preserved that is removed and is between ten (10) and sixteen (16) inch DBH, one (1) replacement tree of a species identified on the City of Portland Recommended Tree List shall be planted on the site as detailed in Section 4 of the Technical Manual). (c) Where the planting of replacement trees on the site is not feasible, the applicant shall contribute an amount proportionate to the cost of required replacement trees to the City of Portland Tree Fund, as detailed in Section 4 of the Technical Manual.		There are no existing landscape features or elements at the site. A substantial amount of new landscaping will be provided to the site. No specific vegetation protection required on the site.

TRANSPORTATION

The following statements are provided in accordance with the Section 14-526 of the ordinance.

TRANSPORTATION

(a) Transportation Standards

Transportation Analysis – Traffic Impact (14-526 (a) 1)

- *Provisions for pedestrian, bicycle, vehicle, and loading circulation and incremental volume of traffic impacts*
- *Traffic Impact Study (Technical Manual, Section 1) if applicable*

1. *Impact on Surrounding Street Systems:*

   The surrounding street system consists of Fore Street. The proposed use is considered consistent with the zoning and objectives identified in various City reports; therefore, we believe it results in no significant impact to the surrounding street system. There will be two primary driveways into the site from Fore Street and each will have sight distance in each direction exceeding 200 feet. The easterly driveway will also function as a connector street to the future Thames Street Extension thus offering improved secondary access through the site as well as the adjacent City property and the 58 Fore Street property.

2. *Traffic Impact Study*

   A Traffic Assessment has been prepared by Traffic Solutions on September 25, 2018 and this assessment included trip generation and accident information for the site and surrounding area. The assessment concludes that the development is expected to generate a total of 81 new trips in the morning and 72 trips in the evening peak hour, thus a Traffic Movement Permit is not triggered.

   Any further traffic assessment is subject to the City's peer review.

Access and Circulation (14-526 (a) 2 a)

- *Access and internal circulation, addressing ADA access*
- *Access and egress impacts on traffic flows*
- *Description and use of drive-up features, if applicable*

3. *Access and Circulation:*
   a. Site Access and Circulation.

      (i) Vehicular access to the site is provided on the westerly and easterly ends of Fore Street at two locations. A new driveway located just west of the Mountfort/Fore Street intersection will provide access to the ground level parking to a small number of surface parking spaces. The easterly drive is

basically using the existing driveway and reconstructing it to meet City standards and to allow its future extension to the Thames Street Extension, south of the site. The easterly drive will have access to the 1st and 2nd levels of the parking garage and also to the main elevator/stairwell lobby for pedestrian access into the building. A third drive in to the site will consist of an existing curb opening and access to loading area at the west end of the existing building to remain. The owner is seeking to maintain the availability of the loading space to this building.

(ii) We believe the primary points of access will not conflict with any existing turning movements on Fore Street and the existing traffic flow on nearby streets. Ultimately the flow of traffic is expected to improve with the extension of Thames Street and the connection to Fore Street, thus the applicant's cooperation in allowing the through connection to Thames Street should be viewed as substantial contribution to the overall area circulation planning effort.

(iii) Not applicable as there are no drive through features proposed.

Loading and Servicing (14-526 (a) 2 b)

- *Loading and servicing needs, route and travel way geometrics for deliveries*
- *Turning templates for delivery vehicles, if applicable*

2. *Access and Circulation:*
   b. Loading and Servicing:

(i) Adequate provisions are made at the site for periodic loading from panel trucks to service the proposed uses. The site provides a clear area in front of an at grade at various points of the building for servicing and loading vehicles. Larger delivery vehicle access is not required for the new building, although the applicant requests approval to retain the existing curb cut/ driveway to access the loading area at the end of the existing building to remain.

Sidewalks (14-526 (a) 2 c)

- *Sidewalks and condition along street frontages and internal walkways*
- *Engineered details for ADA ramps and public sidewalk details meeting sidewalk materials policy and ADA ramp construction details as applicable (Technical Manual, Section 1)*

2. *Access and Circulation:*
   c. Sidewalks:

(i) The project will provide new brick sidewalks along Fore Street to replace the existing concrete sidewalks. New brick sidewalk will be provided along the easterly drive and this sidewalk is expected to ultimately be extended by the City to connect to the Thames Street Extension.

Public Transit (14-526 (a) 3), if applicable

- *Existing available transit services*
- *Proposed site plan design details, such as easement, pad base, and shelter*

3. Public Transit Access.

a. The project will include two floors of commercial space and three floors of parking. The development is not proposed along an existing public transit route to the best of our understanding although the METRO Route 1 and Route 8 are within 1,000 feet of the site.

b. There is an existing METRO stop located at Ocean Gateway which is less than 1000 foot distance from the site as well as a stop at the intersection of Congress and Mountfort Street.

c. A waiver of any further transit related activities is requested given the proximity of existing transit measures to the development.

Off-Street Parking: Vehicle & Motorcycle/Scooter (14-526 (a) 4 a and c)

- *Expected parking demand, proposed parking supply, ADA parking, and applicable Zoning Requirements*
- *Address Technical Manual standards (Section 1) for curb cut separation and parking lot layout and locate on site plan*

4. Parking.
a. Location and Required Number of Vehicle Parking Spaces.
c. Motorcycles and Scooter Parking.

i. Off-street parking will be provided within the three floors of the building. The Applicant is proposing to provide 539 parking spaces within the garage and this amount exceeds the amount required under City code for the proposed office use. Between this site and the Ocean Gateway Garage, which are under common ownership, there will be 1,278 parking spaces under the control of the applicant. These parking facilities will meet the needs of the uses at 1 Hancock Street (WEX), the office uses at 100 Fore Street (including one level for additional WEX space), and various leases that the owner has in place for other area businesses and private parking needs.

ii. The Applicant and one tenant, WEX, are currently working with Cushman Transportation Consulting on the preparation of a Transportation Demand Management (TDM) plan that will look to implement various strategies for reducing the project's overall parking needs and traffic impacts in general. A complete TDM Plan was made part of the 1 Hancock Street development and the applicant's team will look to supplement that TDM plan to apply to the proposed office use at 100 Fore Street.

iii. Please see above.

iv. Parking aisles and dimensions will meet the applicable standards.

v. All new surface parking shall be paved.

The site plan has been developed to allow safe passage and parking for motorcycles and scooters in the garage or within the surface parking lot.

Bicycle Parking (14-526 (a) 4 b)

- *Address bicycle parking requirements and identify locations on-site*
- *Construction details for bike racks (Technical Manual, Section 1)*

4. Parking.
b. Location and Required Number of Bicycle Parking Spaces.

The project will provide various bike racks and secure storage spaces for bicycles. The location of these racks will be both within the exterior spaces, such as near entrances and also within the new building and the proposed fitness center space. Per Code Section 14-526 a.4.b (i) (b), the required number of bike spaces is 43 spaces, thus the Applicant is seeking a waiver of this required number of spaces, until the findings and full TDM plan are more fully developed.

Snow Storage (14-526 (a) 4 d)

- *Management plan for snow removal and locate snow storage areas on plans*

4. Parking.
d. Snow Storage.

i. Limited snow storage will be provided along the outside perimeter of the site (this will suffice for small storm events and temporary storage only).

ii. Snow removal and off-site disposal may be required for this site. The applicant will contract with a local snow removal company to perform these services.

iii. Snow removal from the top parking deck will involve pushing snow off the deck into a safe zone where removal into dump trucks can take place. This will also be completed under a private snow removal contract.

Traffic Demand Management (TDM) (14-526 (a) 5), if applicable

- *Develop TDM with Trip Reduction Targets and Strategies*

5. Transportation Demand Management (TDM).

a. A Transportation Demand Management (TDM) Plan will be prepared and submitted for Planning review within the upcoming application review period. Cushman Transportation Consulting is currently assisting in this effort.

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Preliminary Traffic Assessment

100 Fore Street Office Development Project

(September 25, 2018)

INTRODUCTION

100 Fore Street, LLC is proposing to construct a 77,000 square foot office building and a multi-level parking garage that includes 2,000 square feet of retail space at 100 Fore Street in the City of Portland. The garage structure will be three-floors with approximately 600 parking spaces. The subject property is identified as Lot 10 on City Tax Map 19, Block A.

Existing uses on the 2.97-acre development site include a 30,000 square foot single level multi-tenant retail/office building and a surface parking lot with a total of 136 spaces. The site currently is accessed from two driveway openings off Fore Street located at each end of the property. The current development plan demolishes the majority of the existing building displacing all of the existing building tenants. Approximately, 9,000sf of the existing building will be re-developed as a private fitness facility for tenants of the proposed office building.

The new 600 space three (3) level parking garage will require three access locations, as each parking deck will require independent access as there will be no interior access ramps. The ground level lot will be accessed from a new driveway located just west and opposite the Mountfort Street intersection along Fore Street. The first and second level decks will be accessed from the site's proposed easterly driveway. The easterly driveway will be constructed to satisfy City street standards as it may ultimately be extended to cross City land to the south and connect to the proposed Thames Street Extension, tentatively scheduled for construction by the City of Portland in 2019 or thereabouts. It is expected that Unified Parking Partners or similar operator will actively manage the garage operations including directional signage and related issues. The proposed office tenant is expected to lease spaces in the garage and spaces will also be open for public parking. Per section 14-332, the parking requirements for the 77,000 sf office will be 193 spaces, thus leaving approximately 407 spaces for other lease tenants and public parking in the nearby vicinity.

TRIP GENERATION

Proposed Development: The proposed multi-tenant office building project will include the following uses:

- Multi-tenant Office Space – 77,000 square feet

- Retail Space – 2,000 square feet
- Private Fitness Facility Space – 8,800 square feet [1]

NOTE: [1] The proposed fitness center space is provided exclusively for the tenants of the proposed 100 Fore Street Office Building and new building at 1 Hancock Street; therefore, additional or "new" vehicle trips are not generated by the proposed space.

Trip generation for the proposed multi-tenant office building was determined based upon trip tables presented in the seventh edition of the Institute of Transportation Engineers "**TRIP GENERATION**" handbook. The ITE publication provides numerous land use categories and the average volume of trips generated by each category.

The following trip rates were used to calculate trip generation for the proposed project:

Land Use #710 – General Office Building (77,000sf)

AM Peak Hour	Ln(T) = 0.80 Ln(X) + 1.55
PM Peak Hour	T = 1.12(X) + 78.81

Land Use #714 – Specialty Retail (2,000sf)

AM Peak Hour	= 2.71trips/1,000sf floor area [2]
PM Peak Hour	= 2.71trips/1,000sf floor area

NOTE: [2] The ITE publication doesn't provide a trip rate for the AM peak hour; the estimate of trip generation for this land-use in the "morning" peak hour is based upon the trip rate noted for the PM peak hour.

Table 1, as follows, presents the estimated peak hour trip generation for the proposed 100 Fore Street Office Building project:

Table 1
100 Fore Street
Peak -Hour Trip Generation Estimates

Proposed Building Use	AM Peak Hour Trips	PM Peak Hour Trips
General Office	152 trips	165 trips
Specialty Retail	5 trips	5 trips
TOTAL Trips	**157 trips**	**170 trips**

The proposed office building project can be expected to generate a total of **157** trips during the "*morning*" peak hour and **170** vehicle trips in the "*evening*" peak hour.

Existing Site Trip Generation Credit: A total of four building tenants most recently occupied the existing 30,000 square foot building located on the 100 Fore Street site. The tenants and the approximate building space occupied are listed as follows:

Hamilton Marine = 20,000 square feet
Express Copy = 5,000 square feet
IBec Creative = 2,500 square feet

Jade Integrated Health = 2,500 square feet

Peak hour trip generation estimates were prepared for the existing building tenants based upon the following processes:

Hamilton Marine – A manual traffic count was conducted on Wednesday, August 29, 2018 that recorded all vehicle trips both entering and exiting the Hamilton Marine Retail Store during the morning and afternoon peak commuter hours. From a summary of the data, it was determined that the AM peak hour falls between 8:45 and 9:45 AM with a total of 22 vehicle trips recorded. The PM peak hour occurred between 3:30 and 4:30 PM with a total of 44 trips recorded.

Express Copy – Land-Use Code 110 General Light Industrial estimates a print shop can be expected to generate a total of 5 trips during both peak hour time periods.

IBec Creative /Jade Integrated Health – Manual traffic data was recorded at the common entry door to both building tenants on Wednesday September 19, 2018. A summary of the data shows a total of 21 vehicle trips were recorded in the morning peak hour (8:00 to 9:00 AM) and 24 trips were measured between 4:30 and 5:30 PM, the evening peak hour.

Table 2 provides a summary of the peak hour trips generated by the existing building tenants for both peak hour time periods.

Table 2
100 Fore Street
Existing Tenant - Peak Hour Trip Generation

Existing Building Tenant	AM Peak Hour Trips	PM Peak Hour Trips
Hamilton Marine	22 trips	44 trips
Express Copy	5 trips	5 trips
IBec/ Jade Integrated Health	21 trips	24 trips
TOTAL Trips	**48 trips**	**73 trips**

The existing site tenants generated a total of **48** vehicle trips in the AM peak hour and **73** trips in the PM peak hour.

Shared Use Trip Adjustment: A portion of the trips generated by the tenant space in the multi-tenant building will visit or travel to multiple destinations within the general geographic area of the proposed building. These multipurpose trips, if not accounted for, overestimate the traffic impact of the proposed site.

The City approved a trip reduction value of 15% for the 0 Hancock Street office building project presently under construction. Remaining consistent with the prior approval process, a shared use trip reduction value of 15%, or 16 trips in the morning peak hour and 15 trips in the evening peak hour, was applied.

Other Development Trip Reduction: Employees of the office building are expected and will be encouraged thru the implementation of a comprehensive Transportation Demand Management

Plan, to utilize other modes of transportation traveling to/from the proposed new site at 100 Fore Street. These other transportation modes include: transit, ridesharing, bicycle travel or walking. A trip reduction value of 12.8% was applied; again, consistent with the Other Modes reduction value approved for the 0 Hancock Street development. It should also be noted the April 18, 2018 Preliminary Traffic Assessment report prepared for the proposed Shipyard Re-development Project applied a 15% Other Modes reduction value to the proposed non-residential site uses. Accordingly, a trip reduction of 12 trips in the morning peak hour and 10 trips in the evening peak hour is applied to account for other modes of travel by employees of the proposed office building.

"Net" Site Trip Generation: The "*net*" change in peak hour trip generation for the proposed 100 Fore Street office building site is determined by subtracting the trip credits discussed in the previous sections of the report from the total trip generation estimates prepared for the proposed office building project. Table 3, below, summarizes that process:

Table 3
Peak Hour Trip Generation
Adjustment Summary

	AM Peak Hour	PM Peak Hour
Total Site Trip Generation	157 trips	170 trips

Site Trip Adjustments	AM Peak Hour	PM Peak Hour
- Existing Site Trip Reduction	-48	- 73
- Shared-use Adjustment	-16	-15
- Other Modes Adjustment	- 12	-10
Total Adjusted New Peak Hour Trips	**81 trips**	**72 trips**

As presented in the previous table, the proposed 100 Fore Street office building project is projected to generate a total of 81 new trips in the AM peak hour and 72 new trips during the PM peak hour. The site is therefore forecast to generate considerably less than 100 vehicle trips during either peak hour time period. As a result, a MaineDOT Traffic Movement Permit for the proposed site isn't required.

ROADWAY SAFETY

The Maine Department of Transportation's (MDOT) Accident Records Section provided the latest three-year (2015 through 2017) crash data for the following street segments in the general vicinity of the proposed project site:

Franklin Arterial – Middle Street to Commercial Street
India Street – Congress Street to Commercial Street

Hancock Street/Middle Street to Commercial Street/Thames Street
Mountfort Street – Congress Street to India Street
Middle Street – Franklin Arterial to Hancock Street
Fore Street – Franklin Arterial to Mountfort Street
Commercial Street – Franklin Arterial to India Street
Thames Street – India Street to Hancock Street

MaineDOT's safety audit is summarized as follows and attached as an appendix to the report:

2015 -2017 Traffic Accident Summary

Location	Total Crashes	Critical Rate Factor
1. Franklin Arterial @ Commercial Street	10	0.53
2. Franklin Arterial @ Fore Street	7	0.37
3. Franklin Arterial @ Middle Street	20	1.00
4. Congress Street @ India Street	11	0.70
5. Federal Street @ India Street	3	0.96
6. India Street @ Newbury Street	2	0.65
7. India Street @ Middle Street	5	1.39
8. India Street @ Fore Street	1	0.20
9. Fore Street @ Mountfort Street	1	0.33
10. Mountfort Street @ Congress Street	10	0.63
11. Federal Street @ Mountfort Street	1	1.08
12. Mountfort Street @ Newbury Street	1	1.13
13. Fore Street @ Hancock Street	3	1.21
14. Hancock Street @ Thames Street	1	0.53
15. Middle Street @ Hampshire Street	1	0.62
16. India Street @ Newbury Street	2	0.65
17. Franklin Arterial btw. Commercial Street and Fore Street WB	1	0.48
18. Franklin Arterial btw. Fore Street and Middle Street WB	1	0.43
19. Franklin Arterial btw. Middle Street and Fore Street EB	1	0.43
20. Franklin Arterial btw. Fore Street and Commercial Street EB	2	0.86
21. India Street btw. Congress Street and Federal Street	1	0.31
22. India Street btw. Federal Street and Newbury Street	4	1.85
23. India Street btw. Newbury Street and Middle Street	1	0.43
24. Fore Street btw. India Street and Hancock Street	1	0.36
25. Fore Street btw. Franklin Arterial and India Street	5	1.43
26. Middle Street btw. Franklin Arterial and Hampshire Street	3	1.03
27. Middle Street btw. Hampshire Street and India Street	1	0.92
28. Commercial Street btw. Franklin Arterial and India Street/Thames Street	6	1.28
29. Fore Street btw. Mountfort Street and Hancock Street	4	1.31
30. Mountfort Street btw. Congress Street and Federal Street	3	1.09
31. Mountfort Street btw. Newbury Street and Fore Street	5	4.80
32. Hancock Street btw. Fore Street and Middle Street	1	1.07

The MDOT considers any roadway intersection or segment a high crash location if both of the following criteria are met:

- ***8 or more accidents and,***
- ***A Critical Rate Factor greater than 1.00***

As the data presented in the chart shows, there are no high crash locations within the expanded study area.

SUMMARY

1. The proposed 100 Fore Street office building site is forecast to generate a total of 157 unadjusted trips in the "*morning*" peak hour and an additional 170 unadjusted trips in the "*evening*" peak hour.

2. The actual increase in trips generated by the proposed office site is considerably less with appropriate reductions applied for existing site generated trips, shared trips and other modes of travel. The noted site trip adjustments reduce the actual "new" vehicle trips generated by the site to a total of 81 trips in the morning peak hour and 72 trips in the evening peak hour.

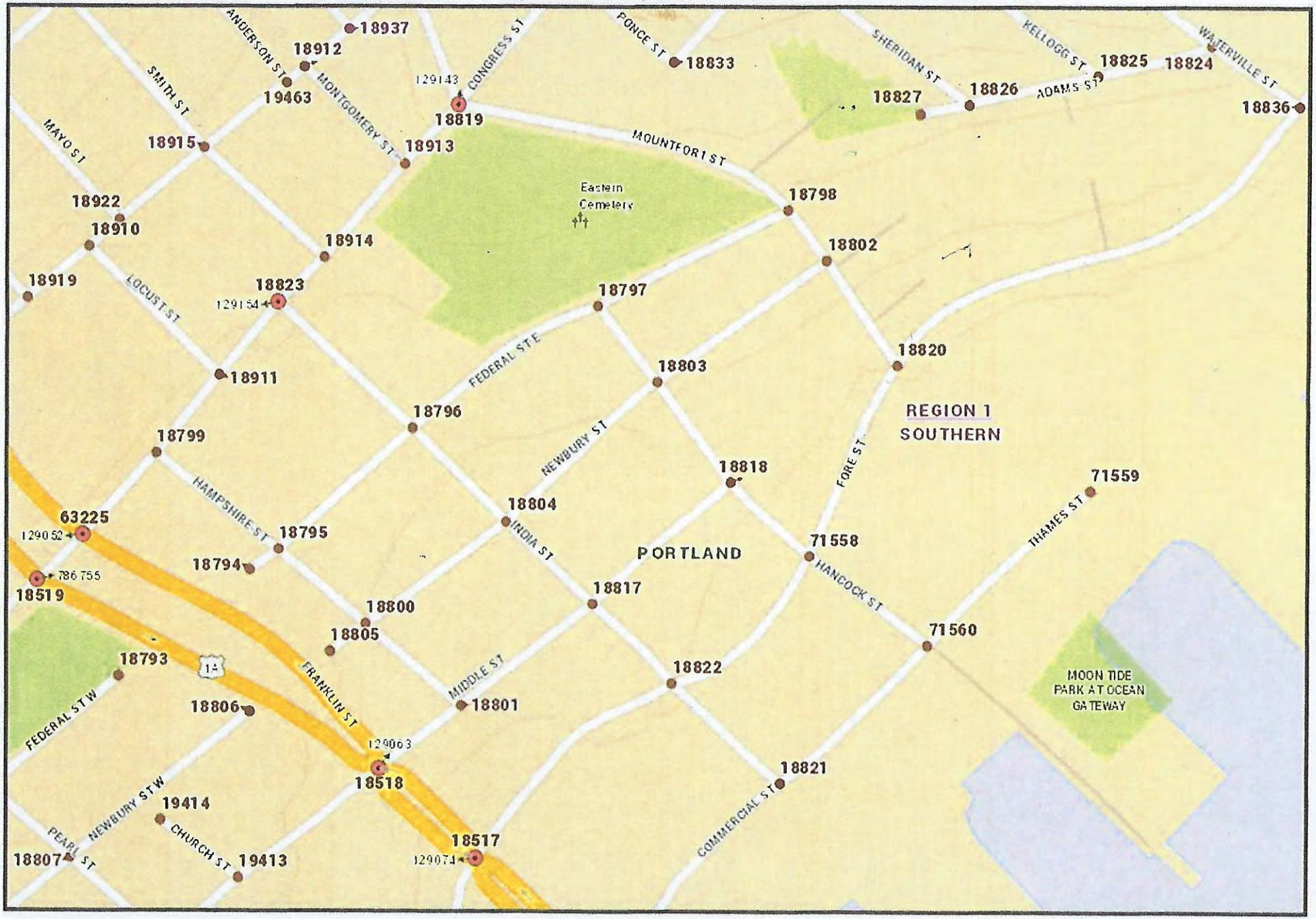
3. The proposed site is forecast to generate less than 100 new vehicle trips during either peak hour time period, accordingly, the proposed project will not be required to file for and obtain a MaineDOT Traffic Movement Permit.

4. MaineDOT's most current roadway safety data (2015 through 2017) for the street system serving the proposed site shows there are no high crash locations in the defined area.

5. A detailed traffic impact study will be completed for the proposed site that evaluates the project's traffic impacts on nearby intersections including, at a minimum, the following locations:
    a. Mountfort Street @ Fore Street
    b. Fore Street @ Hancock Street
    c. Fore Street @ India Street
    d. All proposed site access driveways



DEFAULT TITLE FROM MAP DOCUMENT



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0.1 Miles

1 inch = 0.07 miles

Date: 8/14/2017
Time: 9:16:53 AM

Maine Department Of Transportation - Traffic Engineering, Crash Records Section

Crash Summary Report

Report Selections and Input Parameters

REPORT SELECTIONS

☑ Crash Summary I ☐ Section Detail ☑ Crash Summary II ☐ 1320 Public ☐ 1320 Private ☐ 1320 Summary

REPORT DESCRIPTION

Franklin St Middle St area in Portland

REPORT PARAMETERS

Year 2015, Start Month 1 through Year 2017 End Month: 12

Route: **0001A**	Start Node: **15397**	Start Offset: **0**	☐ Exclude First Node
	End Node: **18518**	End Offset: **0**	☐ Exclude Last Node
Route: **001AS**	Start Node: **18518**	Start Offset: **0**	☑ Exclude First Node
	End Node: **18517**	End Offset: **0**	☑ Exclude Last Node
Route: **001AS**	Start Node: **18517**	Start Offset: **0**	☑ Exclude First Node
	End Node: **15397**	End Offset: **0**	☑ Exclude Last Node
Route: **0561000**	Start Node: **18823**	Start Offset: **0**	☐ Exclude First Node
	End Node: **18821**	End Offset: **0**	☐ Exclude Last Node
Route: **0560286**	Start Node: **18822**	Start Offset: **0**	☑ Exclude First Node
	End Node: **18517**	End Offset: **0**	☑ Exclude Last Node
Route: **0560286**	Start Node: **71558**	Start Offset: **0**	☑ Exclude First Node
	End Node: **18822**	End Offset: **0**	☑ Exclude Last Node
Route: **0560286**	Start Node: **18820**	Start Offset: **0**	☐ Exclude First Node
	End Node: **71558**	End Offset: **0**	☑ Exclude Last Node
Route: **0560505**	Start Node: **18518**	Start Offset: **0**	☑ Exclude First Node
	End Node: **18817**	End Offset: **0**	☑ Exclude Last Node
Route: **0560505**	Start Node: **18817**	Start Offset: **0**	☑ Exclude First Node
	End Node: **18818**	End Offset: **0**	☑ Exclude Last Node
Route: **0560344**	Start Node: **18818**	Start Offset: **0**	☐ Exclude First Node
	End Node: **71560**	End Offset: **0**	☐ Exclude Last Node

Maine Department Of Transportation - Traffic Engineering, Crash Records Section

Crash Summary Report

Report Selections and Input Parameters

REPORT SELECTIONS

☑ Crash Summary I ☐ Section Detail ☑ Crash Summary II ☐ 1320 Public ☐ 1320 Private ☐ 1320 Summary

REPORT DESCRIPTION

Franklin St Middle St area in Portland

REPORT PARAMETERS

Year 2015, Start Month 1 through Year 2017 End Month: 12

Route: **0561001**	Start Node: **15397**	Start Offset: **0**	☑ **Exclude First Node**
	End Node: **18821**	End Offset: **0**	☑ **Exclude Last Node**
Route: **0560524**	Start Node: **18819**	Start Offset: **0**	☐ **Exclude First Node**
	End Node: **18820**	End Offset: **0**	☑ **Exclude Last Node**

Crash Summary I

Nodes

Node	Route - MP	Node Description	U/R	Total Crashes	Injury Crashes K	A	B	C	PD	Percent Injury	Annual M Ent-Veh	Crash Rate	Critical Rate	CRF
15397	0001A - 11.81	Int of COMMERCIAL ST FRANKLIN ST MAINE STATE PIER	9	10	0	1	0	4	5	50.0	4.912	0.68	1.28	0.00
												Statewide Crash Rate:	0.74	
18518	0001A - 11.95	Int of FRANKLIN ST MIDDLE ST	9	20	0	0	1	6	13	35.0	5.305	1.26	1.26	0.00
												Statewide Crash Rate:	0.74	
18517	0001A - 11.89	Int of FORE ST FRANKLIN ST	9	7	0	0	1	2	4	42.9	4.920	0.47	1.28	0.00
												Statewide Crash Rate:	0.74	
18796	0561000 - 0.08	Int of FEDERAL ST E INDIA ST	2	3	0	0	0	1	2	33.3	2.124	0.47	0.49	0.00
												Statewide Crash Rate:	0.16	
18823	0561000 - 0	Int of CONGRESS ST INDIA ST	9	11	0	0	1	3	7	36.4	3.875	0.95	1.35	0.00
												Statewide Crash Rate:	0.74	
18817	0561000 - 0.18	Int of INDIA ST MIDDLE ST	2	5	0	0	1	1	3	40.0	2.569	0.65	0.47	1.39
												Statewide Crash Rate:	0.16	
18804	0561000 - 0.13	Int of INDIA ST NEWBURY ST	2	2	0	0	0	0	2	0.0	2.096	0.32	0.49	0.00
												Statewide Crash Rate:	0.16	
18822	0561000 - 0.23	Int of FORE ST INDIA ST	2	1	0	0	0	1	0	100.0	4.377	0.08	0.41	0.00
												Statewide Crash Rate:	0.16	
18821	0561000 - 0.29	Int of COMMERCIAL ST INDIA ST THAMES ST	2	0	0	0	0	0	0	0.0	2.941	0.00	0.45	0.00
												Statewide Crash Rate:	0.16	
18820	0560286 - 0.28	Int of FORE ST MOUNTFORT ST	2	1	0	0	1	0	0	100.0	2.189	0.15	0.46	0.00
												Statewide Crash Rate:	0.15	
18801	0560505 - 0.33	0509221 POR,MIDDLE,HAMPSHIRE ST	2	1	0	0	0	0	1	0.0	1.004	0.33	0.53	0.00
												Statewide Crash Rate:	0.14	
18818	0560344 - 0.09	Int of HANCOCK ST MIDDLE ST	2	0	0	0	0	0	0	0.0	0.542	0.00	0.59	0.00
												Statewide Crash Rate:	0.14	
71560	0560344 - 0.19	Int of HANCOCK ST THAMES ST	2	1	0	0	0	1	0	100.0	1.236	0.27	0.51	0.00
												Statewide Crash Rate:	0.14	
71558	0560344 - 0.13	Int of FORE ST HANCOCK ST	2	3	0	0	0	1	2	33.3	1.664	0.60	0.50	1.21
												Statewide Crash Rate:	0.15	
18802	0560524 - 0.17	Int of MOUNTFORT ST NEWBURY ST	2	1	0	0	0	0	1	0.0	0.495	0.67	0.59	1.13
												Statewide Crash Rate:	0.14	
18819	0560524 - 0	Int of CONGRESS ST, MOUNTFORT ST, WASHINGTON AV	9	10	0	0	0	0	10	0.0	3.933	0.85	1.34	0.00
												Statewide Crash Rate:	0.74	
18798	0560524 - 0.14	Int of FEDERAL ST E MOUNTFORT ST	2	1	0	0	0	0	1	0.0	0.524	0.64	0.59	1.08
												Statewide Crash Rate:	0.14	
Study Years: 3.00		**NODE TOTALS:**		77	0	1	5	20	51	33.8	44.706	0.57	0.60	0.95

Crash Summary I

Sections

Start Node	End Node	Element	Offset Begin - End	Route - MP	Section Length	U/R	Total Crashes	Injury Crashes K	A	B	C	PD	Percent Injury	Annual HMVM	Crash Rate	Critical Rate	CRF
15397	18517	3123025	0 - 0.08	0001A - 11.81	0.08	2	1	0	0	0	1	0	100.0	0.00091	366.82	765.02	0.00
Int of COMMERCIAL ST FRANKLIN ST MAINE STATE PIER				US 1A											Statewide Crash Rate: 218.74		
18517	18518	3118954	0 - 0.06	0001A - 11.89	0.06	2	1	0	0	0	0	1	0.0	0.00104	321.32	741.01	0.00
Int of FORE ST FRANKLIN ST				US 1A											Statewide Crash Rate: 218.74		
18517	18518	3118912	0 - 0.06	001AS - 2.08	0.06	2	1	0	0	1	0	0	100.0	0.00103	322.20	741.51	0.00
Int of FORE ST FRANKLIN ST				US 1AS											Statewide Crash Rate: 218.74		
15397	18517	3100256	0 - 0.08	001AS - 2.14	0.08	2	2	0	0	0	0	2	0.0	0.00105	634.20	738.62	0.00
Int of COMMERCIAL ST FRANKLIN ST MAINE STATE PIER				US 1AS											Statewide Crash Rate: 218.74		
18796	18823	3106811	0 - 0.08	0561000 - 0	0.08	2	1	0	0	0	0	1	0.0	0.00159	209.04	665.06	0.00
Int of FEDERAL ST E INDIA ST				RD INV 05 61000											Statewide Crash Rate: 218.74		
18796	18804	3130049	0 - 0.05	0561000 - 0.08	0.05	2	4	0	0	0	0	4	0.0	0.00095	1402.83	756.87	1.85
Int of FEDERAL ST E INDIA ST				RD INV 05 61000											Statewide Crash Rate: 218.74		
18804	18817	3122291	0 - 0.05	0561000 - 0.13	0.05	2	1	0	0	0	0	1	0.0	0.00104	319.15	739.79	0.00
Int of INDIA ST NEWBURY ST				RD INV 05 61000											Statewide Crash Rate: 218.74		
18817	18822	3106813	0 - 0.05	0561000 - 0.18	0.05	2	0	0	0	0	0	0	0.0	0.00111	0.00	728.90	0.00
Int of INDIA ST MIDDLE ST				RD INV 05 61000											Statewide Crash Rate: 218.74		
18821	18822	3106816	0 - 0.06	0561000 - 0.23	0.06	2	0	0	0	0	0	0	0.0	0.00142	0.00	685.41	0.00
Int of COMMERCIAL ST INDIA ST THAMES ST				RD INV 05 61000											Statewide Crash Rate: 218.74		
18517	18822	3106667	0 - 0.11	0560286 - 0.45	0.11	2	5	0	0	0	0	5	0.0	0.00227	732.76	514.00	1.43
Int of FORE ST FRANKLIN ST				RD INV 05 60286											Statewide Crash Rate: 174.88		
71558	18822	4047689	0 - 0.08	0560286 - 0.37	0.08	2	1	0	0	0	0	1	0.0	0.00168	197.98	555.21	0.00
Int of FORE ST HANCOCK ST				RD INV 05 60286											Statewide Crash Rate: 174.88		
18820	71558	4047688	0 - 0.09	0560286 - 0.28	0.09	2	4	0	0	0	0	4	0.0	0.00189	703.93	538.80	1.31
Int of FORE ST MOUNTFORT ST				RD INV 05 60286											Statewide Crash Rate: 174.88		
18518	18801	194025	0 - 0.06	0560505 - 0.27	0.06	2	3	0	0	0	2	1	66.7	0.00076	1312.51	1276.78	1.03
Int of FRANKLIN ST MIDDLE ST				RD INV 05 60505											Statewide Crash Rate: 407.65		
18801	18817	194399	0 - 0.06	0560505 - 0.33	0.06	2	1	0	0	0	0	1	0.0	0.00022	1548.39	1680.04	0.00
0509221 POR,MIDDLE,HAMPSHIRE ST				RD INV 05 60505											Statewide Crash Rate: 407.65		
18817	18818	194423	0 - 0.08	0560505 - 0.39	0.08	2	0	0	0	0	0	0	0.0	0.00038	0.00	1512.63	0.00
Int of INDIA ST MIDDLE ST				RD INV 05 60505											Statewide Crash Rate: 407.65		
71558	18818	4047715	0 - 0.04	0560344 - 0.09	0.04	2	1	0	0	0	0	1	0.0	0.00018	1847.17	1719.40	1.07
Int of FORE ST HANCOCK ST				RD INV 05 60344											Statewide Crash Rate: 407.65		
71560	71558	4047714	0 - 0.06	0560344 - 0.13	0.06	2	0	0	0	0	0	0	0.0	0.00046	0.00	1442.59	0.00
Int of HANCOCK ST THAMES ST				RD INV 05 60344											Statewide Crash Rate: 407.65		
15397	18821	3106035	0 - 0.11	0561001 - 0	0.11	2	6	0	0	0	0	5	0.0	0.00268	745.48	581.29	1.28
Int of COMMERCIAL ST FRANKLIN ST MAINE STATE PIER				RD INV 05 61001											Statewide Crash Rate: 218.74		
18798	18819	194394	0 - 0.14	0560524 - 0	0.14	2	3	0	0	0	0	3	0.0	0.00071	1417.05	1301.85	1.09
Int of FEDERAL ST E MOUNTFORT ST				RD INV 05 60524											Statewide Crash Rate: 407.65		

Crash Summary I

Sections

Start Node	End Node	Element	Offset Begin - End	Route - MP	Section Length	U/R	Total Crashes	Injury Crashes K	A	B	C	PD	Percent Injury	Annual HMVM	Crash Rate	Critical Rate	CRF
18798	18802	194393	0 - 0.03	0560524 - 0.14	0.03	2	0	0	0	0	0	0	0.0	0.00015	0.00	1748.98	0.00
Int of FEDERAL ST E	MOUNTFORT ST			RD INV 05 60524											Statewide Crash Rate: 407.65		
18802	18820	194401	0 - 0.05	0560524 - 0.17	0.05	2	5	0	0	0	0	3	0.0	0.00021	8124.93	1691.75	4.80
Int of MOUNTFORT ST	NEWBURY ST			RD INV 05 60524											Statewide Crash Rate: 407.65		
Study Years: 3.00				**Section Totals:**	1.48		40	0	0	1	3	33	10.0	0.02174	613.28	379.97	1.61
				Grand Totals:	1.48		117	0	1	6	23	84	25.6	0.02174	1793.84	521.86	3.44

ENVIRONMENTAL AND STORMWATER

The following statements are provided in accordance with the submission checklist and Section 14-526 of the ordinance.

(b) Environmental Quality Standards

Water Quality, Stormwater Management and Erosion Control (14-526 (b) 3 a)

- *Stormwater report in compliance with Section 5 of Technical Manual and DEP Chapter 500 stormwater for basic, general and flooding standards, as applicable*
- *Erosion control plan and measures*
- *Evidence of compliance with Urban Impaired Stream Standards pursuant to DEP Chapter 500 stormwater, as applicable*
- *Subsurface sanitary sewage disposal and groundwater protection*

3. Water Quality, Stormwater Management and Erosion Control:

a. Stormwater:

(i) The site currently contains a very limited drainage system consisting of several shallow catch basin inlets. The structures have not been maintained and are partially plugged and their outlets not exposed for examination, so it is uncertain where the structures might drain, although it is likely they connect to the existing sewer in Fore Street. The majority of the site consists of sheet flow conditions that results in runoff shedding towards the property edges and towards the southeast corner of the lot, where sheeting runoff appears to simply flow onto the City's gravel parking lot. Runoff from a portion of the existing building roofs appears to sheet onto the adjacent City property along the southerly property boundary. The proposed project will result in an insignificant impact to the site's drainage regime since the pre and post impervious areas will be relatively unchanged. The current proposal includes new roof drainage systems that will connect to the Fore Street sewer. The roof drainage will be separated from the domestic plumbing all the way out to the street thus allowing future connections to be possible if/when the sewer in the street is separated. It may also be possible to connect the new building roof drainage to a proposed large diameter (60") separated drainage system that is currently contemplated to run from Fore Street along the site's easterly side, southerly to an outfall into the river, as depicted on design plans prepared by Woodard & Curran, on behalf of the City.

(ii) Not applicable

(iii) Not applicable

(iv) The site's drainage conditions will remain basically unchanged as the site is nearly all developed under current conditions. The development team will continue to review and coordinate connection to a proposed City

separated drainage line to extend from Fore Street down the easterly side of the site to the Fore River outfall.

b. *Flooding Standards:*

The project will ultimately meet the General Standards under Chapter 500, Stormwater Law (City of Portland Technical Manual, Section 5 – Portland Stormwater Management and MaineDEP Ch. 500, 3 (e)). The Basic Standards will apply to this project and a detailed Soil Erosion and Sediment Control Plan has been developed to address this. One or more roof drain water quality units will be installed to treat runoff from the building roof and there will be an overall increase of pervious area including landscaping to aid with improving water quality, since the site is now nearly 100% covered with pavement or steeply sloped ground.

c. Not applicable.

d. Not applicable.

e. Construction at the site will be required to follow Local, State and Federal regulations and will be undertaken under the supervision of a suitably qualified environmental professional. Post-construction activities at the site do not pose a risk of groundwater contamination.

f. The project will be connected to the public sanitary sewer system which is adequately sized for the anticipated project flows. Provisions to connect the building roof drainage into a future separated drainage system within the easterly driveway with a routing and discharge to the Fore River remains under review and discussion with City officials.

PUBLIC INFRASTRUCTURE AND SAFETY

The following statements are provided in accordance with the submission and Section 14-526 of the ordinance.

(c) Public Infrastructure and Community Safety Standards.

Consistency with City Master Plans (14-526 (c) 1)

- *Identify consistency with master plans*
- *Proposed easements, rights and improvements to connect or continue off-premises public infrastructure, as applicable*

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 plans.

    b. Sanitary sewer flows from the development will go to the Portland WWTP.

Public Safety and Fire Prevention (14-526 (c) 2)

- *Address Crime Prevention through Environmental Design (CPTED) (Technical Manual, Section 3)*
- *Emergency vehicle access*
- *Address consistency with public safety standards (Technical Manual, Section 3)*
- *Submit a code summary referring NFPA 1 and all Fire Department standards (Technical Manual, Section 3) – Fire Checklist*

2. *Public Safety and Fire Prevention:*

    a. The site has been designed to promote a safe and welcoming office environment.

    b. The site provides access from Fore Street for emergency vehicles.

    c. Fire hydrants are located adjacent to the property along the existing streets. The building will be fully sprinklered. A summary letter to Division Chief Thompson is included at the end of this section.

Availability and Adequacy of Public Utilities (14-526 (c) 3) (Technical Manual, Sections 2 & 9)

- *Electrical services, including providing underground services*
- *Identify existing and proposed connections for public utilities and required public utility upgrades*
- *Sewer line connections are required, if there is a main within 200 feet*
- *Proposed solid waste management facilities on-site and management for the site*
- *Written evidence of the ability to serve from utility companies, as applicable*

a. The Applicant is securing letters from the applicable utilities stating their ability to serve the site. The project will require new or updated electrical, gas, sewer, and water services to the site.

b. All new electrical services to the site will be underground.

c. All new utility infrastructures from the existing overhead lines will meet the provisions of the Technical Manual.

d. The project will utilize a new service connection to the public sewer system within Fore Street.

e. All new sewer and stormwater infrastructure will meet City standards. Backflow prevention and an oil water separator for the garage deck drainages will be provided.

f. A solid waste collection and storage area will be provided with adequate capacity for the needs of the development. The owner will contract with a waste removal vendor as part of the onsite management of waste collection and recycling.

Attached are ability to serve letters from Unitil and Spectrum. We are continuing to work on coordination with the PWD and CMP and will forward these letters to the planning office upon receipt.

September 25, 2018

Stephen Bushey, P.E. Associate
Stantec Consulting Services, Inc.
482 Payne Rd.
Scarborough, ME 04074

Re: 100 Fore St., Portland, Maine

Dear Stephen,

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

Unitil has 6 inch steel natural gas main on Fore St. and can serve the proposed office building and parking garage with natural gas; expected load of 3,000 CFH is what was estimated by Chris Jordan of Johnson and Jordan and is the load that we evaluated.

As the project progresses, please send me the breakdown of natural gas equipment so that the information can be added to our records. If you have any further questions or require additional information, please contact me directly at (207) 541-2543 or at carpenters@unitil.com.

Sincerely,

Scott Carpenter

Scott Carpenter
Senior Business Development Representative
Unitil Corporation
(o) 207-541-2543 (f) 207-541-2593

From: Pelletier, Mark
To: Daniell, Celina
Subject: RE: 100 Fore Street - Portland ABS Request
Date: Thursday, September 27, 2018 1:30:42 PM

Celina,

Spectrum Cable has both Coax and fiber on the existing pole lines on Fore St and Mountfort Rd surrounding your project.
Spectrum Cable, We will require one 4 inch conduit swept up above final grade and against the riser pole and swept up above finished floor in elec room. 1/4in pull rope in place.

Any costs if any would be discussed with the company requesting our services, Whether coax or fiber. Any reworking or upgrade needed(if Any) will be done when a have a request of by a tenant.

Spectrum Cable can provide services to this project when services are requested.

Mark

From: Daniell, Celina [mailto:Celina.Daniell@stantec.com]
Sent: Monday, September 24, 2018 2:03 PM
To: Pelletier, Mark <Mark.Pelletier@charter.com>
Cc: Bushey, Stephen <Stephen.Bushey@stantec.com>
Subject: 100 Fore Street - Portland ABS Request

Attached please find an Ability to Serve request for the above referenced project.

If you have any questions with regards to the information submitted, please contact our office.

Thank you,

Celina Daniell
Senior Technical Assistant

Direct: 207 887-3469
Fax: 207 879-0896
Celina.Daniell@stantec.com

Stantec
482 Payne Road Scarborough Court
Scarborough ME 04074-8929 US

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Stantec Consulting Services Inc.
482 Payne Road Scarborough Court, Scarborough ME 04074-8929

September 24, 2018

Mr. Brad Roland, PE
City of Portland Public Works
55 Portland Street
Portland, Maine 04104-3553

Subject: Proposed Land Development
100 Fore Street, Portland, Maine
Request for Ability to Serve Letter

Dear Brad:

Our office is working as a consultant in the site planning and permitting associated with the proposed development of land at 100 Fore Street in Portland, Maine. The project site is located within a portion of property identified on Tax Map 19/Block A/Lot 10 according to the City of Portland Tax Assessor's Maps. We would like to verify the City's wastewater division has ability to provide wastewater capacity for the project and to determine any impact fees.

The project will consist of construction of a new multi-level parking garage and additional office space, with size and use summarized as follows:

Space	Use (SF)
Parking Garage	600 spaces
Office Use (770 Employees)	77,000 SF
Ground Level Retail Space (10 employees)	4,000 SF

We note a portion of the existing building will be demolished to make way for the garage and office building. A portion of the existing building area that contains the Hamilton Marine retail space will be partially demolished and the remaining interior renovated for the development of a private gymnasium space. We expect that the existing sanitary sewer service connection will remain in place to serve this renovated building space.

The projected water use for the new building using the Maine State Plumbing Code and typical City of Portland flow information is as follows:

Building – Parking Garage/Office	Design Flow (GPD)
Parking Garage 600 spaces @ 1 gpd/space	600
Office – 770 Employees @ 12 gpd/employee	9,240
Retail Space – 10 Employees @ 12 gpd/employee	120
Total Parking Garage/Office/Retail	**9,960**

Based on this amount of flow, we trust that the existing sanitary sewer system in Fore Street has adequate capacity to serve this project. We understand that the City has long range plans for the separation of the combined system within Fore Street. This may involve the installation of a large storm drain pipe that will extend from Fore Street down the easterly side of the 100 Fore property to the Thames Street Extension and ultimately to a new outfall within the Amethyst Site. This separation project would ultimately free up capacity in the existing Fore Street sewer system.

If you have any questions regarding this request, please do not hesitate to our office.

Sincerely,

STANTEC CONSULTING SERVICES INC.
Stephen Bushey, PE
Associate, Senior Project Manager
Phone: (207) 887-3478
Fax: 207-883-3376
Stephen.Bushey@stantec.com

Attachment: Wastewater Application

v:\2108\active\210801622\civil\admin\working_documents\utility letters\abs_portland_roland_20180924.docx

CITY OF PORTLAND WASTEWATER CAPACITY APPLICATION

Portland Dept. of Public Works -
Water Resources
55 Portland Street,
Portland, Maine 04101-2991

Bradley Roland, P.E.
Water Resources Division
Department of Public Works
55 Portland Street
Portland, ME 04103

Date: 09/24/2018

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

Site Address: 100 Fore Street

Chart Block Lot Number: Map 19/Block A/Lot 10

Proposed Use: Parking Garage / Office
Previous Use: Office/Retail
Existing Sanitary Flows: * GPD
Existing Process Flows: 0 GPD
Description and location of City sewer that is to receive the proposed building sewer lateral.
36" combined sewer interceptor in Fore Street
*Have requested records from PWD

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: Christine Grimando Phone:
Owner/Developer Name: Jonathan Cohen - 100 Fore Street LLC
Owner/Developer Address: P.O. Box 910, Westbrook, ME 04098-0910
Phone: 207.776.0304 Fax: E-mail: jcohen@a-d-w.bix
Engineering Consultant Name: Stephen R. Bushey, PE - Stantec
Engineering Consultant Address: 482 Payne Road - Scarborough, ME 04074
Phone: 207.887.3478 Fax: 207.883.3376 E-mail: stephen.bushey@stantec.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: 450 employees x 12 gpd/employee = 5,400 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.

Stantec Consulting Services Inc.
482 Payne Road, Scarborough Court, Scarborough, ME 04074

October 10, 2018

Division Chief Robert Thompson
City of Portland Fire Department
380 Congress Street
Portland, Maine 04101

Subject: 100 Fore Street
Fire Safety Checklist

Dear Chief Thompson:

In accordance with instructions in the City's Level III Site Plan and Subdivision Review packet, please find enclosed the drawings necessary for your review of the proposed multi-level parking garage and commercial office building on 100 Fore. As part of the building design, the architect will retain a third-party Fire Protection Engineer to review NFPA 101. We have listed each item in your checklist below, followed by our response.

1. *Name, address, telephone number of applicant.*

   100 Fore Street, LLC
   Attn: Jonathan Cohen
   PO Box 910
   Westbrook, ME 04092

2. *Name, address, telephone number of architect/contractor.*

   Archetype
   48 Union Wharf
   Portland, ME 04101
   207.772.6022
   Attn: Bill Hopkins

   Johnson & Jordan
   18 Mussey Road
   Scarborough, ME 04074
   207.883.8345
   Attn: Chris Jordan

3. *Proposed uses of any structures (NFPA and IBC classification).*

Building	IBC Code	NFPA Code	Sprinkler
Office Building/Assembly Construction Type II-A (protected, noncombustible)	S-2, B	2009	Yes NFPA13

*Systems designed to meet NFPA

4. *Square footage of all structures (total and per story).*

Building	Footprint Area (SF)
First Floor (ground) – Parking	64,424
Second Floor – Parking	64,235
Third Floor – Parking	64,877
Fourth Floor – Office	42,900
Fifth Floor – Office	39,500
Total	275,936

5. *Elevation of all structures.*

   Architectural building elevations accompany this letter and they show the various locations of door openings, etc. around the building perimeter.

6. *Proposed fire protection of all structures.*

   The proposed 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 system design which will be performed prior to the request for a building permit.

7. *Hydrant locations.*

   Multiple fire hydrants are currently located on Fore Street opposite the project site less than 100 feet from the building.

8. *Water main(s) size and location.*

   The site will be served by a 6" sprinkler service to be extended into the building off an existing 12" water main along either Fore Street or a new main line water pipe that will extend from Fore Street to Thames Street Extension. A 4" domestic service will also be extended to the building. The building is expected to have internal sprinkler risers and a Siamese fire pump connection on the Fore Street side of the building.

9. *Access to all structures (min. 2 sides).*

   The accompanying site plan depicts the site's access conditions that include access to two or more sides of the buildings.

10. *A code summary shall be included referencing NFPA 1 and all fire department technical standards.*

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 public streets. The following street widths are currently available:

Street	Width
Fore Street	38'

Per NFPA 1 – Chapter 18.2.3.2.2.1, all first story floors shall be located not more than 450 ft. 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).

Supporting Evidence: 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.

Supporting Evidence: As depicted on the Site Plan, the proposed building layout provides for a minimum two-sided access to the structure.

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.*

Supporting Evidence: The proposed development layout has contemplated emergency access conditions and provides for safe and efficient access along the public and private streets 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.

Supporting Evidence: The building will be provided with exterior doors that will be within 50' of a Fire Department access route, namely Fore Street and the easterly driveway connecting Fore Street to Thames Street Extension.

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

Supporting Evidence: A minimum of 9 feet vertical clearance will be provided below any overhead signage or utilities entering the site.

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

Supporting Evidence: The proposed elevator will be designed to satisfy this requirement.

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

Supporting Evidence: Currently, the project location is 100 Fore Street. The applicant will work with the City's Public Services Division to confirm that this will remain the street address to meet City standards.

If you need any further information regarding this review, please contact our office.

Regards,

STANTEC CONSULTING SERVICES INC.



Stephen R. Bushey, P.E.
Associate
Tel: 207-887-3478
Stephen.bushey@stantec.com

Attachments

c: Planning Authority

V:\2108\active\210801622\civil\admin\permitting\local\Site Plan\ltr_thompson_fire_20181010.docx

SITE DESIGN

The following statements are provided in accordance with the submission and Section 14-526 of the ordinance.

(d) Site Design Standards.

Massing, Ventilations and Wind Impact (14-526 (d) 1)

- *Wind and ventilation impacts on adjoining structures and/or adjacent public spaces. Wind study, if applicable.*
- *Bulk, location or height impacts on adjoining structures*
- *Identify and locate HVAC equipment and venting away from public spaces and residential properties*
- *Identify screening and manufacturing specifications for noise, if applicable*

1. *Massing, Ventilation and Wind Impact:*

   a. The project proposes construction of a new multi-story building. The project will not result in any significant changes to the wind environment proximate to the site.

   b. The project will not result in any significant impacts to abutting properties and is consistent with the Eastern Waterfront Master Plan and other zoning considerations.

   c. HVAC venting, if necessary, will be directed through building roof top mounted units and will not impact any adjacent public spaces.

Shadows (14-526 (d) 2), if applicable

- Shadow analysis of impacts on publicly accessible open space (Technical Manual, Section 11)

2. *Shadows:*

   a. The proposed building at the site will not cast significant shadows onto neighboring properties, or block access to direct sunlight for structures utilizing solar energy. The Site Layout Plan and Grading and Drainage Plan show the proposed site improvements and their relationships to property lines. The grading plan shows the relative elevations of the building with respect to elevations along the property lines.

Snow and Ice Loading (14-526 (d) 3)

- *Building design to prevent snow and ice from loading or falling onto adjacent properties or public ways.*

3. *Snow and Ice Loading:*

   a. The proposed building has been designed and located such that accumulated snow and ice will not fall onto adjacent properties or public ways. Snow will be

removed from the upper level parking deck and will require contracted services to remove from the property, when required.

View Corridors (14-526 (d) 4), if applicable

- *Protection of designated view corridors (Portland Design Manual, Appendix 1)*

4. *View Corridors:*
    a. The project entails construction of a multi-story building at the site in manner that is compliant with the Downtown Vision View Corridor protection plan, the B6 Urban Commercial Business Zone, and Eastern Waterfront Mixed Zone plans and objectives. Specific site measures to preserve the Mountfort Street corridor through to Thames Street has been made. In addition, the easterly driveway maintained an access and view corridor from Fore Street to Thames Street.

Historic Resources (14-526 (d) 5), if applicable

- *Identify developments within Historic Districts or affecting Designated Landmarks*
- *Certificate of Appropriateness or other evidence*
- *Identify Developments within 100 feet of Historic Districts or affecting Designated Landmarks. Advisory HP review may be required*
- *Address preservation and documentation of Archaeological Resources*

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 or within 100 feet of a designated landmark, historic district, or historic landscape district.
    c. There are no known archaeological resources on the site

Exterior Lighting (14-526 (d) 6)

- *Cut sheets of on-site light fixtures and any architectural or specialty lights (Technical Manual, Section 12)*
- *Engineered details for any lights proposed in street right-of-way (Technical Manual, Section 10)*

6. *Exterior Lighting:*
    a. Site Lighting
        (i) All new exterior lighting at the site will be full cutoff with no light emitted above the horizontal plane, and in accordance with Section 12 of the Technical Manual. A photometric Lighting Plan has been developed by Swaney Lighting demonstrating illumination levels throughout the site consistent with City Standards and is included with submission package.
    b. Architectural and Specialty Lighting
        (i) Not applicable to the project.

c. Street Lighting

(i) There are existing street lights along Fore Street. The accompanying lighting materials include the installation of new City standard street lights along Fore Street.

Noise and Vibration (14-526 (d) 7)

- *Evidence of noise levels for equipment, such as equipment specifications, to demonstrate consistency with zoning requirements*

7. Noise and Vibration:

Project noise levels will be designed to meet the permitted standards within the zone. HVAC units will be located on the ground adjacent the building or on the roof top. Equipment cut sheets can be provided upon request.

Signage and Wayfinding (14-526 (d) 8), if applicable

- *Signage plan showing the location, dimensions, height and setback of all existing and proposed signs. Signs in Historic Districts are reviewed by Historic Preservation staff*
- *Proposed commercial and directional signage on site*

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) Proposed commercial signage is still being designed and subject to a condition of approval.

(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.

Zone Related Design Standards (14-526 (d) 9)

- Address Historic Preservation Design Review, if applicable
- Address any applicable design review standards by zone
- Address submission requirements from Design Manual, page 1, addressing neighborhood context
- Description of exterior materials, color, finish, and samples

9. Zoning Related Design Standards:

Information provided by Archetype, PA:

"The project proposed for 100 Fore Street includes 5 levels of use – 3 levels of parking, including parking on grade, as well as 2 levels of office space. Once

above grade, the shape of the building is defined by existing parameters set up by the city in the B-6 height overlay zone and proposed roads. The perimeter is defined by Fore Street, the property line, Mountfort Extension and the proposed connector road between Fore Street and Thames Street Extension. The height of the building is defined by the recently amended zoning in the B-6 height overlay zone.

Once these parameters are applied, the shape is carved out from the allowable mass. The parking levels above grade maximize the buildable area allowed within this perimeter and the design benefits from the existing site condition of the 14'-16' grade change. This allows the larger portion of the mass to be buried into the slope as it relates to Fore Street so that only one level of parking is at an elevation similar to that of Fore Street. Where the parking meets Fore Street, it will be framed on either corner with retail. Between the retail and at the northwest corner is more formal landscaping. It should be noted the space between the two retail spaces is of sufficient depth to be filled in with more retail at a future date.

Once above the top parking level, the building use transitions to office. At this point the mass no longer maximizes the allowable footprint, it now is carved out to create wings of approximately 125' width which is appropriate for the use. On top of the stepping created by this use limitation, there has been a setback put in place for how the building relates to Fore Street in terms of height. The mass is not to exceed 35' in height above the adjacent Fore Street elevation within 40' of the Fore Street right-of-way. This keeps the building sensitive to its surrounding neighbors and how it relates in scale to the streetscape.

Now that the building mass and uses have been determined, we can understand approximately what the size of the 3 uses will be. The three levels of parking allow the project +/-560 parking spaces. This is a very beneficial use to the surrounding neighborhood. Parking in the area is currently maxed out and most of the available

spaces are located in surface level lots. Being that the area is in close proximity to the waterfront and situated between the old port and the east end residential and commercial zone, it is a prime area for new development and park systems and is greatly underutilized as surface level parking. By stacking and concealing our spaces our project helps to alleviate the need for parking in the area in a way that is consistent with the desires of the B-6 zone, the Eastern Waterfront Master Plan and Portland's Comprehensive Plan.

The two office levels proposed create approximately 80,000 S.F. of rentable space. This use reflects changes that have been occurring in this area of Portland recently. As mentioned previously, our location is in a prime location for development being one block from the waterfront and in between the Old Port and the East End. Portland is a prospering city and the peninsula has strong commercial and residential districts but room for growth in the office realm is limited within the historic district whereas this waterfront zone that includes the new hotels and WEX allows for office use to expand along with the rest of the city and take advantage of sites that were not the best and highest use for the area such as the surface level lots and single story industrial buildings.

Finally, the retail space offers 3000-4000 S.F. of space that allow the project to interact more with the public domain. Fore Street is a main connection between

the residential and commercial districts on the peninsula and the distance between them means it is a prime route not only for vehicular traffic but also for foot and bike traffic. This makes it an ideal spot for some smaller retail spaces that act as an extension from the Old Port and easy access from residences.

The three uses together create a project that is mixed-use which is the most desirable use for the area. The project balances the need for good architectural planning with financial viability and produces a project that helps alleviate parking problems in the neighborhood while producing much needed tax revenue and jobs and blending into the city at the pedestrian scale."

Architectural renderings are included with this section.

ENDURA SERIES

WALL/BUILDING MOUNT

Cat.#

Job

Type

BEACON design . performance . technology

Approvals

SPECIFICATIONS

Intended Use:
The Endura is a ceiling surface mounted or pendant mounted parking structure luminaire with a field replaceable LED light-engine & optical bezel system. Internal components are totally enclosed in a rain-tight and corrosion-resistant die cast aluminum housing. The Endura Luminaire is CSA certified and suitable for damp locations (wet location available on request).

Construction:
- Die cast aluminum two-piece housing
- Shape of the top housing is designed as a bird nesting deterrent
- Die cast main (thermal) housing provides direct-heat exchange between the LED light engine and the cool outdoor air
- Main housing is designed with heat dissipating fins for LED thermal management without the use of metallic screens, cages, or fans
- Main and top housings are designed to hinge open for easy mounting and easy access

LED/Optics:
- Endura luminaire is supplied with an optical one piece cartridge system consisting of an LED engine, LED lamps, optics, gasket and stainless steel bezel
- Cartridge is held together with internal brass standoffs soldered to the board so that it can be field replaced as a one piece optical system
- Two-piece silicone and polycarbonate foam gasket ensures a weather-proof seal around each individual LED
- Endura comes standard with 70 CRI
- Cartridge assembly is available in various lighting distributions using TIR designed acrylic optical lenses over each LED

Electrical:
- 120V through 277V, 50 Hz to 60 Hz
- Dimming drivers are standard, but 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 600 VAC at 50°C or higher
- Plug disconnects are certified by UL for use at 600 VAC, 13A or higher. 13A rating applies to primary (AC) side only
- Surge protection - 20kA

Controls/Options:
- Endura is available with an optional passive infrared (PIR) motion sensor capable of detecting motion 360° around the luminaire. When no motion is detected for the specified time, the Motion Response system reduces the wattage down to a factory preset level, reducing light level accordingly. When motion is detected, the luminaire returns to full wattage and full light output. Please contact Beacon Products if project requirements vary from the standard configurations
- Available with Energeni for optional set dimming, timed dimming with simple delay, or timed dimming based on time of night. see Energeni product page for more details www.beaconproducts.com/products/energeni
- In addition, Endura 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 for more details: www.hubbell-automation.com/products/sitesync/

Installation:
- Top housing is designed with various bolt patterns for mounting to a recessed, surface or rigid-pendant hung ceiling junction box and rigid stem (provided by others)
- After mounting the top housing to the junction box, the main housing is designed to hang and hinge closed after connecting the male and female quick connectors
- Mounting design permits a simple retrofit to existing parking structure luminaires that utilize surface mount or recessed junction boxes

Finish
- IFS polyester powder-coat electro-statically applied and thermocured.
- IFS finish consists of a five stage iron phosphate chemical pretreatment regimen with a polymer primer sealer, ovendry 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

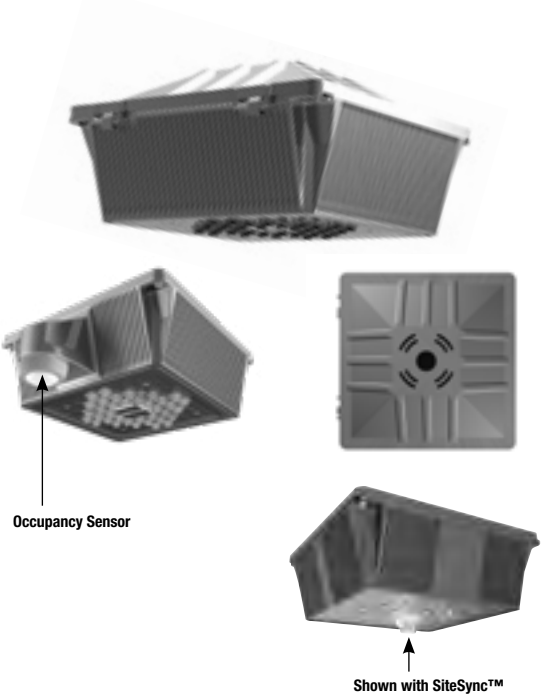
Listings:
- The luminaire shall bear a CSA label and be marked suitable for damp locations (standard). Luminaire may be specified for wet locations.
- This product is approved by the Florida Fish and Wildlife Conservation Commission. Separate Turtle Friendly spec available at: http://www.beaconproducts.com/products/endura

Warranty:
Five year limited warranty for more information visit: www.hubbelllighting.com/resources/warranty

CERTIFICATIONS/LISTINGS

C SP US

PRODUCT IMAGE(S)



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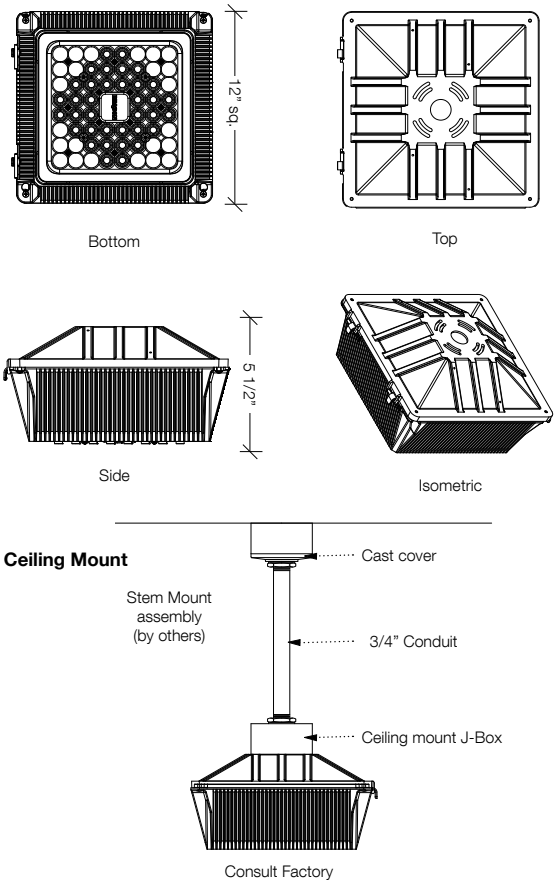

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HUBBELL Lighting

ORDERING INFORMATION ORDERING EXAMPLE: EDR/36L-80/5K7/5W/UNV/GENI-02/BL

SERIES		ENGINE-WATTS		CCT/CRI[11]	
EDR	Endura	24L-27	27 Watts - LED array	3K7	3000K, 70 CRI
		24L-55	55 Watts - LED array	4K7	4000K, 70 CRI
		36L-80	80 Watts - LED array	5K7	5000K , 70 CRI (std.)
		48L-110	110 Watts - LED array		

OPTICS	
5R	Type V, rectangular
5W	Type V, wide
5QM	Type V, square medium
5QN	Type V, square narrow
5QW	Type V, square wide

HIGHER MOUNTING APPLICATIONS	
2X2	Type V Concentrated Spot
4X4	Type V Concentrated Narrow
5X5	Type V Concentrated Medium
5X3	Type V Concentrated Rectangular

VOLTAGE	
UNV	120-277V
120	120V
208	208V
240	240V
277	277V
347	347V
480	480V

ELECTRICAL OPTIONS	
PEC-120	photocell, button 120V
PEC-208	photocell, button 208V
PEC-240	photocell, button 240V
PEC-277	photocell, button 277V
2PF[1,2,8]	Dual power feed
BPC[4,8]	Cold weather battery pack
BP[4,8]	0° C battery pack

CONTROL OPTIONS	
GENI-XX[5,9]	Energeni
SWP[6,9]	SiteSync Wireless Pre-Commission
SWPM[6,7,9]	SiteSync Wireless Pre-Commission w/ Motion Detection

FINISH	
BL	Black textured
DB	Dark bronze
GYS	Light gray smooth
PS	Platinum silver
WH	White textured

SENSOR OPTIONS	
MOB[3,7,9]	Occupancy Sensor (33% or 50% dimming
OCS[9,10]	Occupancy Sensor (on/off)

[1] Not available on 24L-27
[2] Not available @347V or 480V input
[3] Not available on 48L-110
[4] 36L-80 only
[5] When ordering Energeni, specify the routine setting code (example GENI-04). See Energeni brochure and instructions for setting table and options. Not available with sensor options.
[6] Must specify group and zone information at time or order. See www.hubbell-automation.com/products/sitesync/ for further details.
[7] Specify time delay; dimming level and mounting height.
[8] Not available with SWP or SWPM control options
[9] Not available with other control or sensor options
[10] Specify mounting height
[11] This product is approved by the Florida Fish and Wildlife Conservation Commission. Separate spec available at: http://cdn.beaconproducts.com/content/products/specs/specs_files/Endura_turtle_LED_spec_sheet.pdf

Accessories and Services (Ordered Separately)

Catalog Number	Description
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.

* 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.

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: EDR/24L-55/4K7/5W/UNV/SWP/BL — SiteSync only
EDR/24L-55/4K7/5W/UNV/SWPM-20F/BL — SiteSync with Motion Control

MOB ORDERING INFORMATION: When ordering a fixture with a dimming occupancy sensor (MOB), please specify the appropriate information. These settings are specified in the ordering as shown in the example below.

EDR/24L-55/4K7/5R/UNV/MOB - 1 to 30 min. - 33% or 50% - ?? / BL

High to Dim Delay | Low Level | Mounting Height (ft.)



SiteSync Lighting Control is available from our most popular brands in a broad range of award-winning product families.

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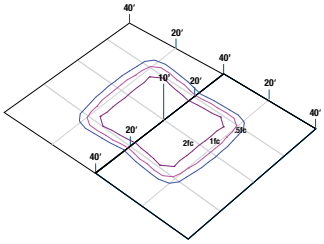
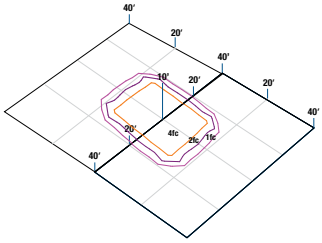
PHOTOMETRICS

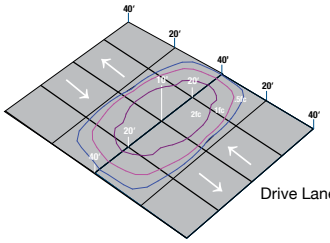
Type V Square Medium
EDR-48L-110-5QM



Type V Square Narrow
EDR-48L-110-5QN



Type V Rectangular
EDR-48L-110-5R



Drive Lane Direction

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
24	350mA	27W	2X2	3567	129	N/A	N/A	N/A	3640	131	N/A	N/A	N/A	3278	118	N/A	N/A	N/A
			4X4	3490	126	N/A	N/A	N/A	3561	129	N/A	N/A	N/A	3207	116	N/A	N/A	N/A
			5QM	3275	118	2	0	0	3341	121	2	0	0	3010	109	2	0	0
			5QN	3072	111	2	1	2	3135	113	2	1	2	2824	102	2	1	2
			5R	3330	120	2	1	2	3398	123	2	1	2	3061	110	2	1	2
			5W	3309	119	2	1	1	3376	122	2	1	1	3041	110	2	1	1
			5X3	3300	119	N/A	N/A	N/A	3367	122	N/A	N/A	N/A	3033	109	N/A	N/A	N/A
			5X5	3373	122	N/A	N/A	N/A	3441	124	N/A	N/A	N/A	3100	112	N/A	N/A	N/A
24	700mA	55W	2X2	6611	121	N/A	N/A	N/A	3746	124	N/A	N/A	N/A	6076	111	N/A	N/A	N/A
			4X4	6468	119	N/A	N/A	N/A	6600	121	N/A	N/A	N/A	5944	109	N/A	N/A	N/A
			5QM	6069	111	2	0	1	6193	114	2	0	1	5578	102	2	0	1
			5QN	5694	104	3	1	2	5810	107	3	1	2	5233	96	3	1	2
			5R	6172	113	3	1	3	6298	116	3	1	3	5673	104	3	1	3
			5W	6132	113	3	1	1	6257	115	3	1	1	5636	103	3	1	1
			5X3	6115	112	N/A	N/A	N/A	6240	114	N/A	N/A	N/A	5621	103	N/A	N/A	N/A
			5X5	6251	115	N/A	N/A	N/A	6378	117	N/A	N/A	N/A	5745	105	N/A	N/A	N/A
36	700mA	80W	2X2	9916	121	N/A	N/A	N/A	10119	124	N/A	N/A	N/A	9114	112	N/A	N/A	N/A
			4X4	9702	119	N/A	N/A	N/A	9900	121	N/A	N/A	N/A	8917	109	N/A	N/A	N/A
			5QM	9103	111	3	0	1	9289	114	3	0	1	8367	102	3	0	1
			5QN	8541	105	4	1	3	8715	107	4	1	3	7850	96	4	1	3
			5R	9258	113	3	2	3	9447	116	3	2	3	8509	104	3	2	3
			5W	9198	113	3	2	2	9386	115	3	2	2	8454	103	3	2	2
			5X3	9173	112	N/A	N/A	N/A	9360	115	N/A	N/A	N/A	8431	103	N/A	N/A	N/A
			5X5	9376	115	N/A	N/A	N/A	9568	117	N/A	N/A	N/A	8617	105	N/A	N/A	N/A
48	700mA	110W	2X2	13222	121	N/A	N/A	N/A	13492	123	N/A	N/A	N/A	12152	111	N/A	N/A	N/A
			4X4	12936	118	N/A	N/A	N/A	13200	120	N/A	N/A	N/A	11889	108	N/A	N/A	N/A
			5QM	12138	110	3	0	2	12386	113	3	0	2	11156	102	3	0	2
			5QN	11388	104	4	2	3	11620	107	4	2	3	10466	96	4	2	3
			5R	12344	113	3	2	3	12596	116	3	2	3	11345	104	3	2	3
			5W	12264	112	4	2	2	12514	115	4	2	2	11272	103	4	2	2
			5X3	12231	112	N/A	N/A	N/A	12480	114	N/A	N/A	N/A	11241	103	N/A	N/A	N/A
			5X5	12501	114	N/A	N/A	N/A	12757	117	N/A	N/A	N/A	11490	105	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.

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HUBBELL Lighting

ELECTRICAL DATA

# OF LEDS	NUMBER OF DRIVERS	DRIVE CURRENT (mA)	INPUT VOLTAGE (V)	SYSTEM POWER (w)	CURRENT (Amps)
24	1	350mA	120	27	0.2
			277		0.1
			347		0.1
			480		0.1
24	2	700mA	120	55	0.5
			277		0.2
			347		0.2
			480		0.1
36	1	700mA	120	80	0.7
			277		0.3
			347		0.2
			480		0.2
48	1	700mA	120	110	0.9
			277		0.4
			347		0.3
			480		0.2
60	1	700mA	120	136	1.1
			277		0.5
			347		0.4
			480		0.3

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).

PROJECTED LUMEN MAINTENANCE

AMBIENT TEMP.	0	25,000	50,000	[1]TM-21-11 60,000	100,000	Calculated L70 (HOURS)
25°C / 77°C	1.00	0.97	0.95	0.94	0.91	434,000

[1] Projected per IESNA TM-21-11
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.

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VIPER S OPTICS STRIKE

SMALL VIPER LUMINAIRE

Cat.#	
Job	Type

BEACON design . performance . technology

Approvals

SPECIFICATIONS

Intended Use:

The Beacon Viper luminaire is available with a wide choice of different LED Wattage configurations and optical distributions designed to replace HID lighting up to 400W MH or HPS.

Construction:

- Manufactured with die cast aluminum.
- Coated with a polyester finish that meets ASTM B117 corrosion test requirements and ASTM D522 cracking and loss of adhesion test requirements.
- External hardware is corrosion resistant.
- One piece optical cartridge system consisting of an LED engine, LED lamps, optics, gasket and stainless steel bezel.
- Cartridge is held together with internal brass standoffs soldered to the board so that it can be field replaced as a one piece optical system.
- Two-piece silicone and micro-cellular polyurethane foam gasket ensures a weather-proof seal around each individual LED.

Electrical:

- 100V through 277V, 50 Hz to 60 Hz (UNV), or 347V or 480V input.
- Power factor is ≥.90 at full load.
- Dimming drivers are standard, but 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.
- Plug disconnects are certified by UL for use at 600 VAC, 13A or higher. 13A rating applies to primary (AC) side only.
- Fixture electrical compartment shall contain all LED driver components and shall be provided with a push-button terminal block for AC power connections.
- Surge protection - 20kA.
- Optional 7-pin ANSI C136.41-2013 twist-lock photo control receptacle available. Compatible with ANSI C136.41 external wireless control devices.
- Lifeshield™ Circuit - protects luminaire from excessive temperature. The device shall activate at a specific, factory-preset temperature, and progressively reduce power over a finite temperature range. Operation shall be smooth and undetectable to the eye. Thermal circuit is designed to "fail on", allowing the luminaire to revert to full power in the event of an interruption of its power supply, or faulty wiring connection to the drivers. The device shall be able to co-exist with other 0-10V control devices (occupancy sensors, external dimmers, etc.).

Controls/Options:

- Available with an optional passive infrared (PIR) motion sensor capable of detecting motion 360° around the luminaire. When no motion is detected for the specified time, the Motion Response system reduces the wattage to factory preset level, reducing the light level accordingly. When motion is detected by the PIR sensor, the luminaire returns to full wattage and full light output. Please contact Beacon Products if project requirements vary from standard configuration.
- Available with Energeni for optional set dimming, timed dimming with simple delay, or timed dimming based on time of night (see www.beaconproducts.com/products/energeni).
- In addition, Viper can be specified with **SiteSync™** wireless control system for reduction in energy and maintenance costs while optimizing light quality 24/7. For more details, see ordering information or visit: www.hubbelllighting.com/sitesync

Installation:

- Mounting options for horizontal arm, vertical tenon or traditional arm mounting available. Mounting hardware included.

Finish:

- IFS polyester powder-coat electrostatically 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 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.

Certifications/Ratings:

- DesignLights Consortium (DLC) qualified, consult DLC website for more details: http://www.designlights.org/QPL
- Certified to UL 1598, UL 8750 and CSA C22.2 No.250.0
- IDA approved
- This product is approved by the Florida Fish and Wildlife Conservation Commission. Separate spec available at: http://www.beaconproducts.com/products/vipersmall

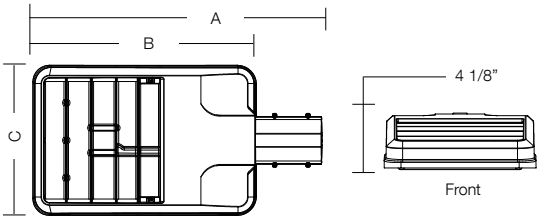
Warranty:

Five year limited warranty for more information visit: www.hubbelllighting.com/resources/warranty

PRODUCT IMAGE(S)

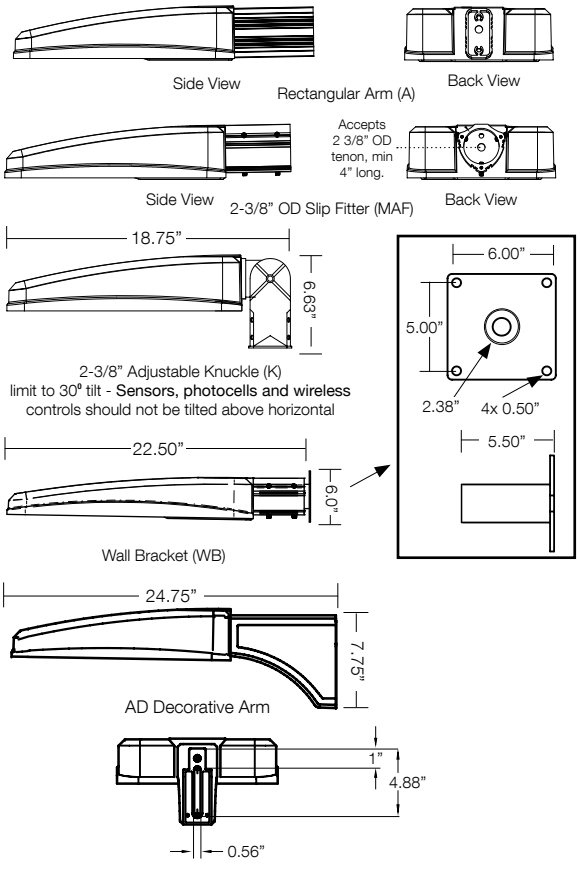


DIMENSIONS



A	B	C	Weight:	EPA
21.75" (552 mm)	16.75" (425 mm)	11.25" (286 mm)	15.0 lbs (6.8 kg)	.67 ft²

MOUNTING OPTIONS



CERTIFICATIONS/LISTINGS

C US

*3000K and warmer CCTs only

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HUBBELL Lighting

ORDERING INFORMATION ORDERING EXAMPLE: VPS/24L-55/4K7/4W/UNV/A/DBT/7PR-TL/GENI-04/BC

VPS										

SERIES
- **VPS** Viper

LED ENGINE
- **24L-55** 55W, LED array
- **36L-65** 65W, LED array
- **36L-80** 80W, LED array
- **48L-110** 110W, LED array
- **60L-136** 136W, LED array

CCT/CRI[7]
- **3K7** 3000K, 70 CRI
- **4K7** 4000K, 70 CRI
- **5K7** 5000K, 70 CRI

ROTATION
- Leave blank for no rotation
- **L[5]** Optic rotation left
- **R[5]** Optic rotation right

VOLTAGE
- **UNV** 120-277V
- **120** 120V
- **208** 208V
- **240** 240V
- **277** 277V
- **347** 347V
- **480** 480V

COLOR
- **BL** Black Textured
- **DB** Dark Bronze Textured
- **GYS** Light Gray Smooth
- **PS** Platinum Silver Smooth
- **WH** White Textured
- **CC** Custom Color

OPTIONS
- **F** Fusing
- **BSP** Bird Spikes
- **BC** BacksheidId (available for FR, 2, 3, 4, 4W Optics)

DISTRIBUTION
- **FR** Type 1/Front Row
- **2** Type 2
- **3** Type 3
- **4** Type 4
- **4W** Type 4 Wide
- **5QM** Type 5QM
- **5R** Type 5R (rectangular)
- **5W** Type 5W (round wide)
- **TC** Tennis Court

MOUNTING
- **A** Rectangular Arm (formerly RA) for square or round pole
- **MAF** Mast Arm Fitter (formerly SF2) for 2-3/8" OD horizontal arm
- **K** Knuckle (formerly PK2) limit to 45° tilt or 2-3/8" OD horizontal arm or vertical tenon
- **WB** Wall Bracket
- **AD** Universal Arm for square pole
- **AD3** Universal Arm for 2.4"-4.1" round pole
- **AD4** Universal Arm for 4.2" -5.3" round pole
- **AD5** Universal Arm for 5.5" -5.9" round pole
- **AD6** Universal Arm for 6.0"-6.5" round pole

CONTROL OPTIONS
- **7PR** 7-Pin Receptacle only (shorting cap, photo control, or wireless control provided by others)
- **7PR-SC** 7-Pin Receptacle w/Shorting Cap
- **7PR-TL** 7-Pin Receptacle w/Twist Lock photo control
- **SCP/_F[1,2,6]** Programmable Occupancy Sensor w/ daylight control (120-277 volts only)
- **GENI-XX[3]** ENERGENI
- **SWP[1,4]** SiteSync Pre-Commission
- **SWPM[1,2,4]** SiteSync Pre-Comm w/ Sensor

HOUSE SIDE SHIELD ACCESSORIES
- **HSS/VP-S/90-FB/XXX** 90° shield front or back
- **HSS/VP-S/90-LR/XXX** 90° shield left or right
- **HSS/VP-S/270-FB/XXX** 270° shield front or back
- **HSS/VP-S/270-LR/XXX** 270° shield left or right
- **HSS/VP-S/360/XXX** Full shield

(Replace XXX with notation for desired finish color)
(Refer to page 5 for shield images)

MOUNTING ACCESSORIES
- **VPL-AD-RPA3** 2.4"-4.1" Round Pole Adapter for AD arm
- **VPL-AD-RPA4** 4.2"-5.3" Round Pole Adapter for AD arm
- **VPL-AD-RPA5** 5.5"-5.9" Round Pole Adapter for AD arm
- **VPL-AD-RPA6** 6.0"-6.5" Round Pole Adapter for AD arm

[1] Not available with other wireless control or sensor options
[2] Specify mounting height; 8=8' or less, 40=9' to 40'
[3] Specify routine setting code (example GENI-04). See ENERGENI brochure and instructions for setting table and options. Not available with sensor or SiteSync options.
[4] Specify group and zone at time of order. See www.hubbelllighting.com/sitesync for further details. Order at least one SiteSync interface Accessory SWUSB or SWTAB. Each option contains SiteSync License, GUI, and Bridge Node
[5] Only available with 1A, 2, 3, 4, 4W and 5R distributions
[6] Order at least one SCP-REMOTE per project location to program and control the occupancy sensor.
[7] This product is approved by the Florida Fish and Wildlife Conservation Commission. Separate spec available at: http://cdn.beaconproducts.com/content/products/specs/specs_files/Viper_Small_LED_turtle_spec_sheet.pdf

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 Motion control (SWPM) require the mounting height of the fixture for selection of the lens.

Examples: VPS/24L-55/4K7/3/UNV/A/DBT/SWP/ SiteSync only
VPS/24L-55/4K7/3/UNV/A/DBT/SWPM-40F/ SiteSync with Motion Control

Accessories and Services (Ordered Separately)

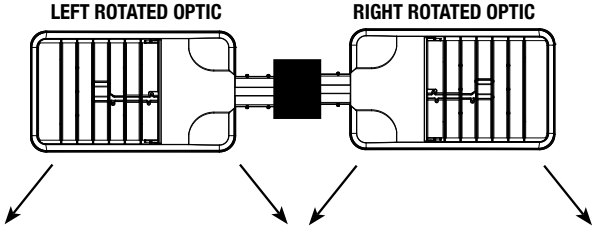
Catalog Number	Description
SWUSB*	SiteSync interface software loaded on USB flash drive for use with owner supplied PC (Windows based only). Includes SiteSync license, software and USB radio bridge node
SWTAB*	Windows tablet and SiteSync interface software. Includes tablet with preloaded software, SiteSync 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.
SCP-REMOTE	Remote Control for SCP/_F option. Order at least one per project to program and control
SW7PR+	SiteSync 7 Pin on fixture module On/Off/Dim, Daylight Sensor 120-480VAC

* When ordering SiteSync at least one of these two interface options must be ordered per project.
+ Available as a SiteSync retrofit solution for fixtures with an existing 7pin receptacle.

Hubbell Control Solutions - Accessories (sold separately)

Catalog Number	Description	HCS System
NXOFM-1R1D-UNV	On-fixture Module (7-pin), On / Off / Dim, Daylight Sensor with HubbNET Radio and Bluetooth® Radio, 120-480VAC	NX Distributed Intelligence™
WIR-RME-L	On-fixture Module (7-pin or 5-pin), On / Off / Dim, Daylight Sensor with wiSCAPE Radio, 110-480VAC	wiSCAPE® Lighting Control

For additional information related to these accessories please visit www.hubbellcontrolsolutions.com. Options provided for use with integrated sensor, please view specification sheet ordering information table for details.



SiteSync 7-Pin Module


SW7PR

- SiteSync features in a new form
- Available as an accessory for new construction or retrofit applications (with existing 7-Pin receptacle)
- Does no interface with occupancy sensors

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PERFORMANCE DATA

# LED'S	DRIVE CURRENT (MILLIAMPS)	SYSTEM WATTS	DISTRIBUTION TYPE	5K (5000K nominal, 70 CRI)					4K (4000K nominal, 70 CRI)					3K (3000K nominal, 70 CRI)				
				LUMENS	LPW[1]	B	U	G	LUMENS	LPW[1]	B	U	G	LUMENS	LPW[1]	B	U	G
24	700 mA	55W	FR	6357	118	1	0	1	6486	120	1	0	1	5804	107	1	0	1
			2	6132	114	1	0	1	6257	116	1	0	2	5599	104	1	0	1
			3	6015	111	1	0	2	6137	114	1	0	2	5492	102	1	0	2
			4	5921	110	1	0	2	6034	112	1	0	2	5400	100	1	0	2
			4W	5805	108	1	0	2	5921	110	1	0	2	5282	98	1	0	2
			5QM	6022	112	2	0	1	6145	114	2	0	1	5499	102	2	0	1
			5R	6063	112	3	0	3	6187	115	3	0	3	5536	103	3	0	3
			5W	5908	109	3	0	1	6028	112	3	0	1	5908	102	3	0	1
			TC	6183	115	1	0	1	6309	118	1	0	1	5645	105	1	0	1
36	560 mA	65W	FR	7864	121	1	0	1	8041	124	1	0	1	7189	111	1	0	1
			2	7586	117	1	0	2	7757	119	1	0	2	6934	107	1	0	2
			3	7441	114	1	0	2	7609	117	1	0	2	6802	105	1	0	2
			4	7317	110	1	0	2	7482	112	1	0	2	6688	100	1	0	2
			4W	7325	113	1	0	2	7490	115	1	0	2	6696	103	1	0	2
			5QM	7450	115	3	0	1	7618	117	3	0	1	6810	105	3	0	1
			5R	7501	115	3	0	3	7670	118	3	0	3	6857	105	3	0	3
			5W	7309	112	3	0	2	7473	115	3	0	2	6681	103	3	0	1
36	700 mA	80W	FR	9535	118	1	0	1	9730	120	1	0	1	8706	107	1	0	1
			2	9197	114	1	0	2	9385	116	1	0	2	8398	104	1	0	2
			3	9022	111	1	0	2	9206	114	1	0	2	8238	102	1	0	2
			4	8871	110	1	0	2	9052	112	1	0	2	8100	100	1	0	2
			4W	8707	108	1	0	2	8881	110	1	0	2	7923	98	1	0	2
			5QM	9033	112	3	0	1	9217	114	3	0	1	8248	102	3	0	1
			5R	9095	112	3	0	3	9280	115	3	0	3	8304	103	3	0	3
			5W	8861	109	3	0	2	9043	112	3	0	2	8092	100	3	0	2
			TC	9275	115	1	0	1	9464	118	1	0	1	8468	105	1	0	1
48	700 mA	110W	FR	12713	118	1	0	1	12973	120	2	0	1	11608	107	1	0	1
			2	12263	114	2	0	2	12513	116	2	0	2	11197	104	2	0	2
			3	12029	111	2	0	2	11275	114	2	0	2	10984	102	1	0	2
			4	11828	110	1	0	3	12069	112	1	0	3	10800	100	1	0	2
			4W	11609	108	1	0	3	11841	110	1	0	3	10564	98	1	0	3
			5QM	12044	112	3	0	2	12290	114	3	0	2	10997	102	3	0	1
			5R	12126	112	3	0	3	12374	115	3	0	3	11072	103	3	0	3
			5W	12126	109	4	0	2	12057	112	4	0	2	10789	100	4	0	2
			TC	12366	115	1	0	2	12619	118	1	0	2	11290	105	1	0	2
60	700 mA	136W	FR	15891	117	2	0	2	16216	120	2	0	2	14511	107	2	0	1
			2	15329	113	2	0	2	15642	116	2	0	2	13997	103	2	0	2
			3	15037	111	2	0	3	15344	113	2	0	3	13730	101	2	0	3
			4	14784	109	1	0	3	15086	111	1	0	3	13500	100	1	0	3
			4W	14511	108	2	0	4	14802	110	2	0	4	13205	98	2	0	3
			5QM	15055	111	3	0	2	15362	114	3	0	2	13747	102	3	0	2
			5R	15158	112	4	0	4	15469	114	4	0	4	13841	102	4	0	4
			5W	14781	109	4	0	2	15083	111	4	0	2	13495	100	4	0	2
			TC	15458	115	1	0	2	15834	118	1	0	2	14113	105	1	0	2

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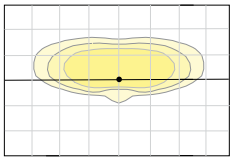
PHOTOMETRICS

Type FR - Front Row/Auto Optic



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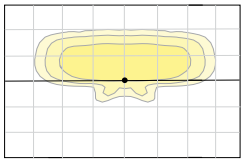

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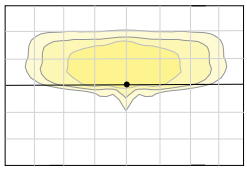

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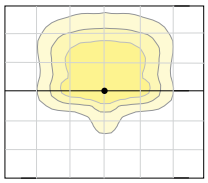
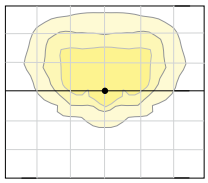


Type 4W



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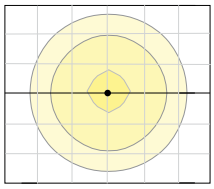

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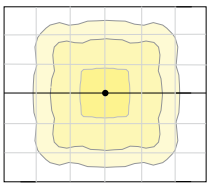
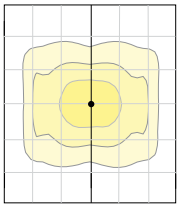


Type 5R



[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-use environment and application.

ELECTRICAL DATA

# OF LEDS	NUMBER OF DRIVERS	DRIVE CURRENT (mA)	INPUT VOLTAGE (V)	SYSTEM POWER (w)	CURRENT (Amps)
24	2	700 mA	120	55	0.5
			277		0.2
			347		0.2
			480		0.1
36	1	560 mA	120	65	0.65
			277		0.28
			347		0.22
			480		0.16
		700 mA	120	80	0.7
			277		0.3
			347		0.2
			480		0.2
48	1	700 mA	120	110	0.9
			277		0.4
			347		0.3
			480		0.2
60	1	700 mA	120	136	1.1
			277		0.5
			347		0.4
			480		0.3

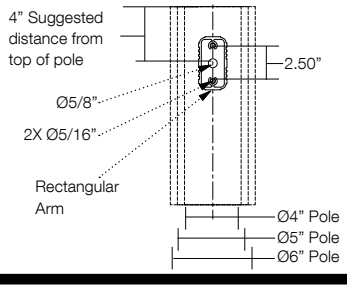
PROJECTED LUMEN MAINTENANCE

AMBIENT TEMP.	0	25,000	50,000	[1]TM-21-11 60,000	100,000	Calculated L70 (HOURS)
25°C / 77°C	1.00	0.97	0.95	0.95	0.92	>377,000

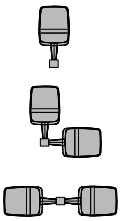
[1] Projected per IESNA TM-21-11
Data references the extrapolated performance projections for the base model in a 25°C ambient, based on 10,000 hours of LED testing per IESNA LM-80-08.

DRILL PATTERN

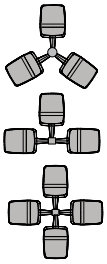
RECTANGULAR ARM (A)
Compatible with Pole drill pattern B4



EPA



Config.	EPA
1	.67
2 @ 90°	1.06
2 @ 180°	1.34



Config.	EPA
3 @ 120°	1.68
3 @ 90°	1.73
4 @ 90°	2.12

TENON TOP POLE BRACKET ACCESSORIES (Order Separately)

(2 3/8" OD tenon)

Catalog Number	Description
SETAVP-XX	Square tenon adapter (4 at 90º) for A - Rectangular Arm mounting option only
RETAVP-XX	Round tenon adapter (4 at 90º) for A - Rectangular Arm mounting option only
TETAVP-XX	Hexagonal tenon adapter (4 at 90º) for A - Rectangular Arm mounting option only
SETA2XX	Square tenon adapter (4 at 90º) for AD - Universal Arm mounting option only
RETA2XX	Round tenon adapter (4 at 90º) for AD3 - Universal Arm mounting option only
TETA2XX	Hexagonal tenon adapter (3 at 120º) for AD - Universal Arm mounting option only

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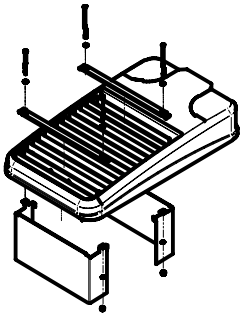
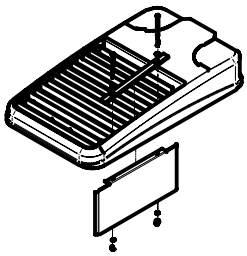
HUBBELL Lighting

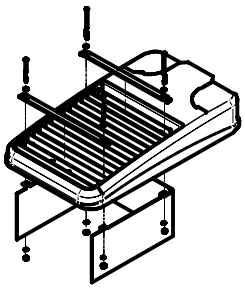
HOUSE SIDE SHIELD FIELD INSTALL ACCESSORIES



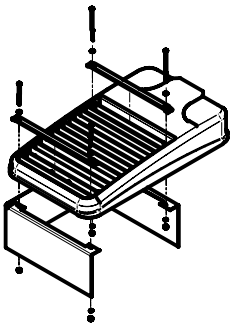
HSS/VP-S/90-FB/XXX
90° shield front or back
(2 shields shown)



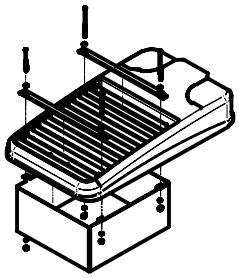
HSS/VP-S/90-LR/XXX
90° shield left or right
(1 shield shown in left orientation)



HSS/VP-S/270-FB/XXX
270° shield front or back
(1 shield shown in back orientation)

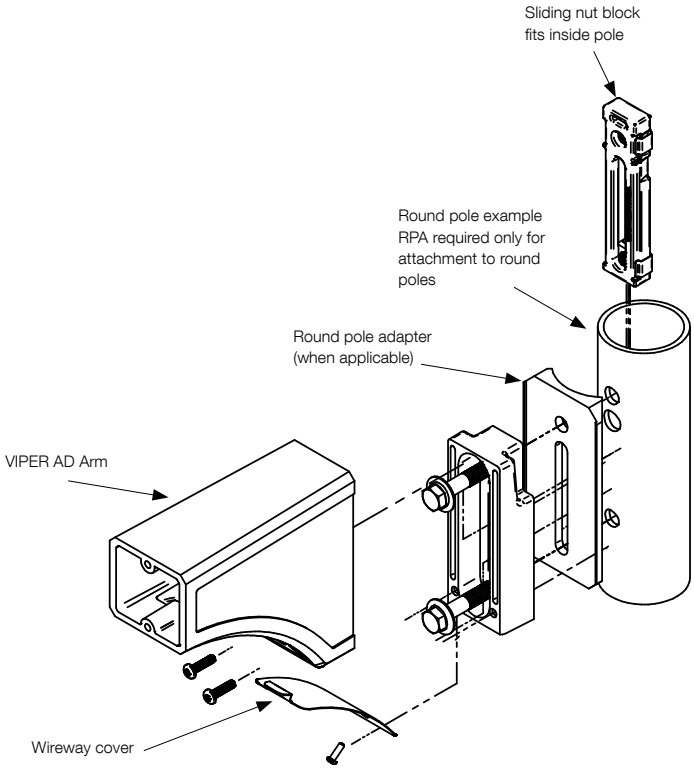


HSS/VP-S/270-LR/XXX
270° shield left or right
(1 shield shown in right orientation)

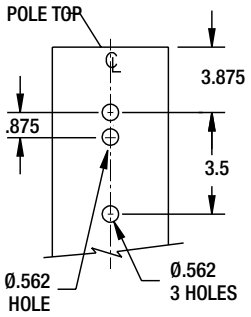


HSS/VP-S/360/XXX
Full shield (1 shield shown)

AD ARM MOUNTING INSTRUCTIONS



DECORATIVE ARM (AD)
Compatible with pole drill pattern S2



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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 (U0), 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:

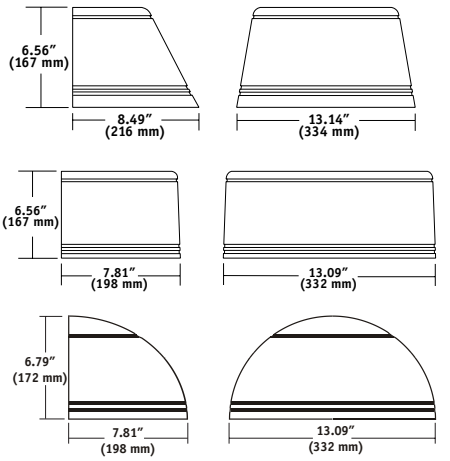
- For more information visit:

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 Trapezoid	**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)

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ACCESSORIES - Order separately

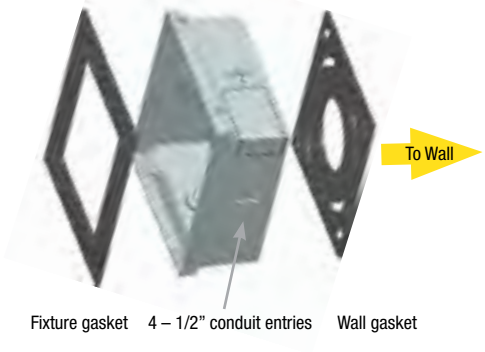
Catalog Number	Description
SCP-REMOTE[2]	Remote control for SCP option. Order at least one per project to program and control.
BB-GEO-XX	Back box with 4 - 1/2" threaded conduit holes, specify finish by replacing "XX" with finish selection, eg. Dark Bronze "DB"

[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

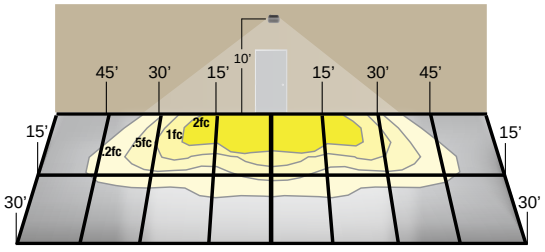
Ambient Temp.	Operating Hours 0	25,000	50,000	TM-21-11[1] 60,000	100,000	L70 (hours)
25°C/77°F	1.00	0.98	0.97	0.95	0.91	>345,000
40°C/104°F	1.00	0.96	0.95	0.92	0.87	>268,000

LUMINAIRE AMBIENT TEMPERATURE FACTOR (LATF)

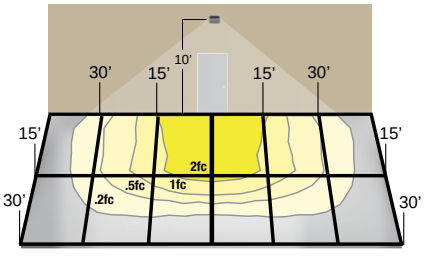
AMBIENT TEMPERATURE		LUMEN MULTIPLIER
0° C	32° F	1.02
10° C	50° F	1.01
20° C	68° F	1.00
25° C	77° F	1.00
30° C	86° F	1.00
40° C	104° F	0.99
50° C	122° F	0.98

Use these factors to determine relative lumen output for average ambient temperatures from 0-40°C (32-104°F).

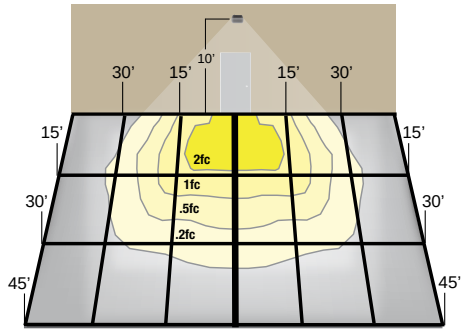
PHOTOMETRIC REPORTS
(30w, 4000K shown)



TYPE II



TYPE III



TYPE IV (Forward throw)

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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:

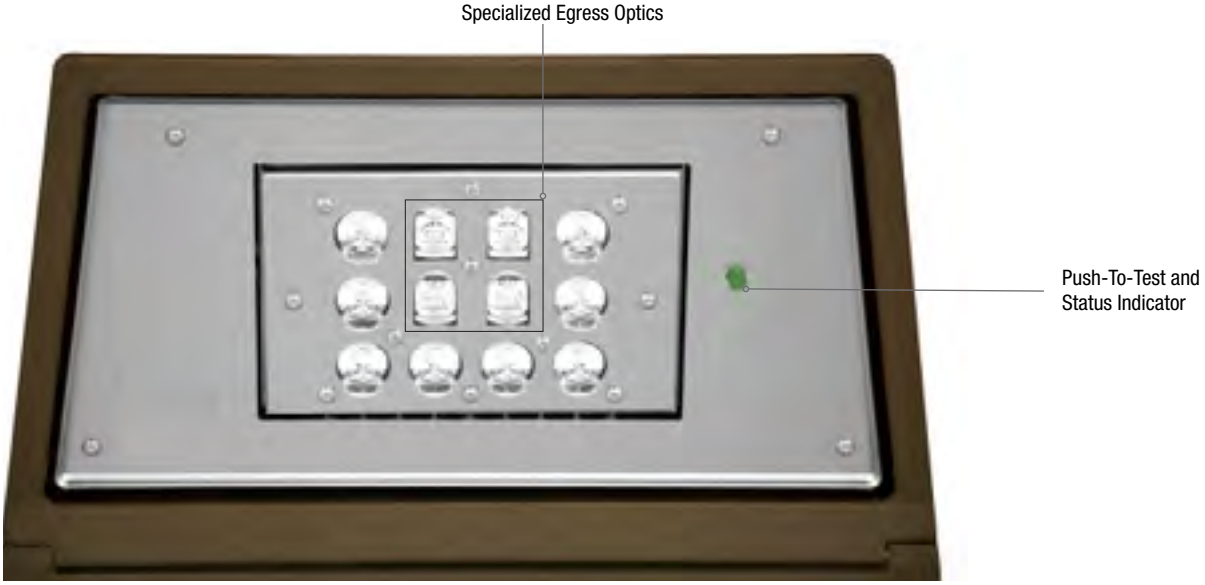
- Battery re-charge within 24 hours
- AC Lock-out circuit
- Self-diagnostics monitors LED status, LED driver circuit, battery capacity and charger function and displays any fault detection by means of a flashing code.
- Self-Test feature runs a 1 minute test once a month and an alternating 30 or 60 minute 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).
- Battery backup units consume 6 watts when charging a dead battery and 2 watts during maintenance charging. EH (units with a heater) consume up to an additional 8 watts when charging if the battery temp is lower than 10°C

Emergency Photometric Performance (1 fc average .1 fc minimum)

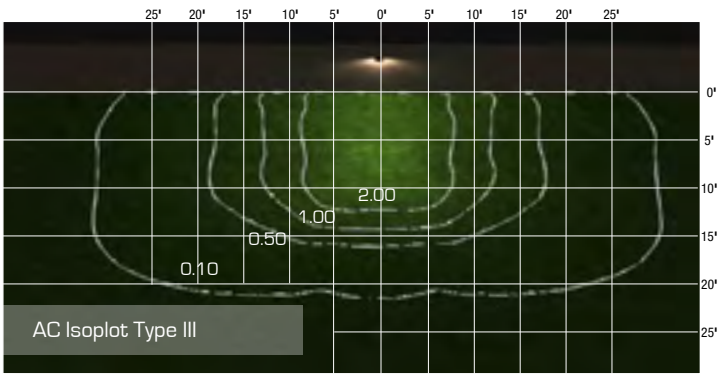
28’ multi-unit spacing at 10’ MH with 0/30/10 reflectances on a 6’ path

26’ x 10’ single unit coverage at 10’ MH with 0/30/10 reflectances

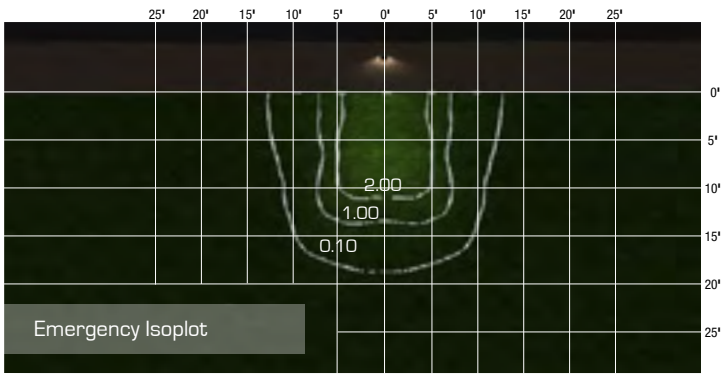
6’ x 19’ forward throw coverage at 10’ MH with 0/30/10 reflectances



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.

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ARCHITECTS




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ENVIRONMENTAL AND LANDSCAPE FEATURES

The following statements are provided in accordance with the Section 14-526 of the ordinance.

(b) Environmental Quality Standards

Preservation of Significant Natural Features (14-526 (b) 1), if applicable

- *Trees, plants, habitats listed on State or Federal list of endangered or threatened*
- *High and moderate value waterfowl and wading habitat*
- *Aquifers on Casco Bay Islands*
- *Waterbodies (including wetlands, watercourses, significant vernal pools and floodplains)*
- *Proposed preservation areas and protection measures*
- *Documentation from environmental consultants, determinations from applicable state agencies*

1. *Preservation of Significant Natural Features:*
    - The existing site retains no prominent significant natural features therefore no issue related to the preservation of these features applies.

Landscaping and Landscape Preservation (14-526 (b) 2 a)

- *Preservation of trees and preservation within required zoning setbacks (Technical Manual, Section 4)*
- *Protection measures of existing vegetation during construction*
- *Protection measures within Shoreland Zone, if applicable*

2. *Landscaping and Landscape Prevention:*
    a. *Landscape Preservation.*

        (i) There are no existing landscape features or elements at the site. A substantial amount of new landscaping will be provided to the site.

        (ii) Not applicable.

        (iii) There is no specific vegetation protection required on the site.

        (iv) The Applicant will request a waiver from this standard.

        (v) Not applicable (not in Shoreland Zone).

Landscaping and Landscape Preservation (14-526 (b) 2 b i)

    a. *Screening and buffering of service areas and between non-residential and residential uses*
    b. *Planting plans with plant schedule and sizes*

2. Landscaping and Landscape Prevention:

b. Site Landscaping:

(i) Landscaped Buffers:

(a) There is an existing loading area at the end of the existing building to remain and this area will remain open. Any trash collection will be within a secure area that will contain solid screening in the form of a fence or wall system.

(b) The development is not subject to zoning setbacks or buffering requirements.

(c) Not applicable.

(d) Not applicable.

Landscaping and Landscape Preservation (14-526 (b) 2 b ii)

Parking Lot Landscaping, if applicable

- *Landscaped islands within parking areas (Technical Manual, Section 4)*

2. Landscaping and Landscape Preservation:

a. Site Landscaping.

(ii) Parking Lot Landscaping:

a) thru d) Parking lot and area landscaping will be provided for on the landscape plans by ALA Landscape Architecture. Landscape renderings are included with this section. A formal Landscape Plan will be submitted to the City.

Street Trees (14-526 (b) 2 b iii)

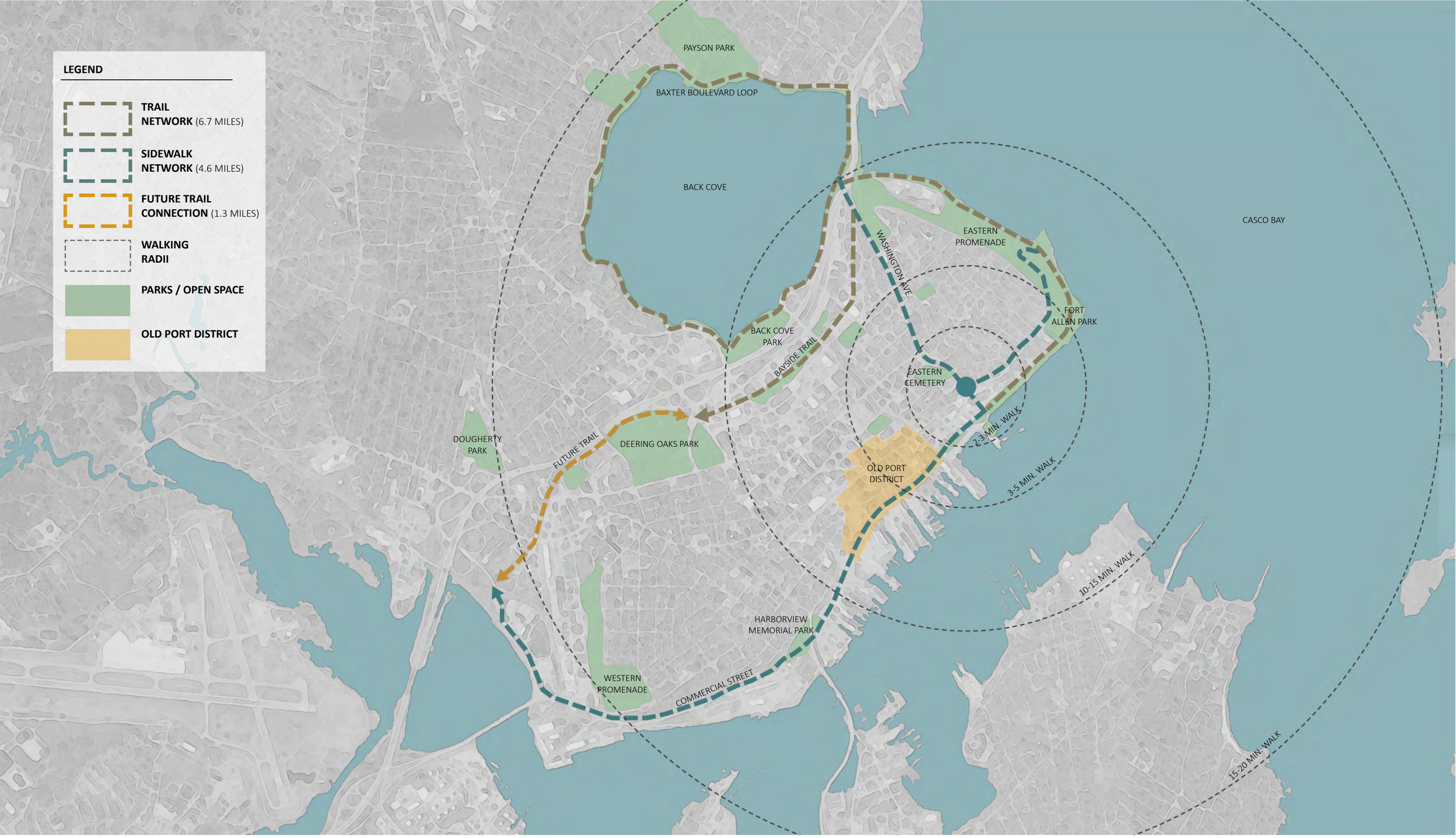
- *Existing Heritage or Feature Trees on site and measures to preserve*
- *Identify street trees on the plan meeting the site plan and Technical Manual standards (Section 4) or identify alternative measures, if applicable*

2. Landscaping and Landscape Preservation:

b. Site Landscaping.

(iii) Street Trees:

(a) The landscape architect will coordinate plantings with the City arborist.



100 FORE STREET | SITE CONTEXT
10.10.2018

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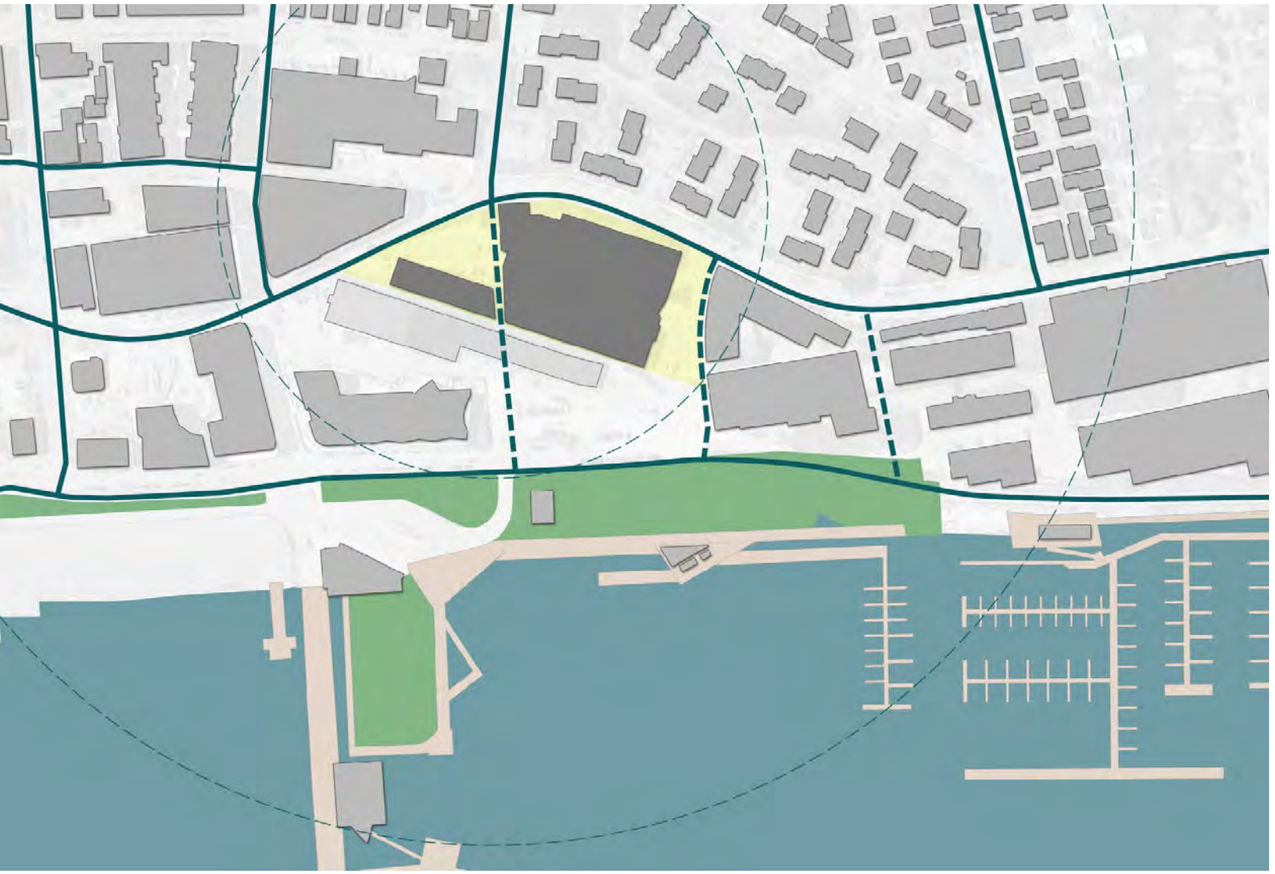
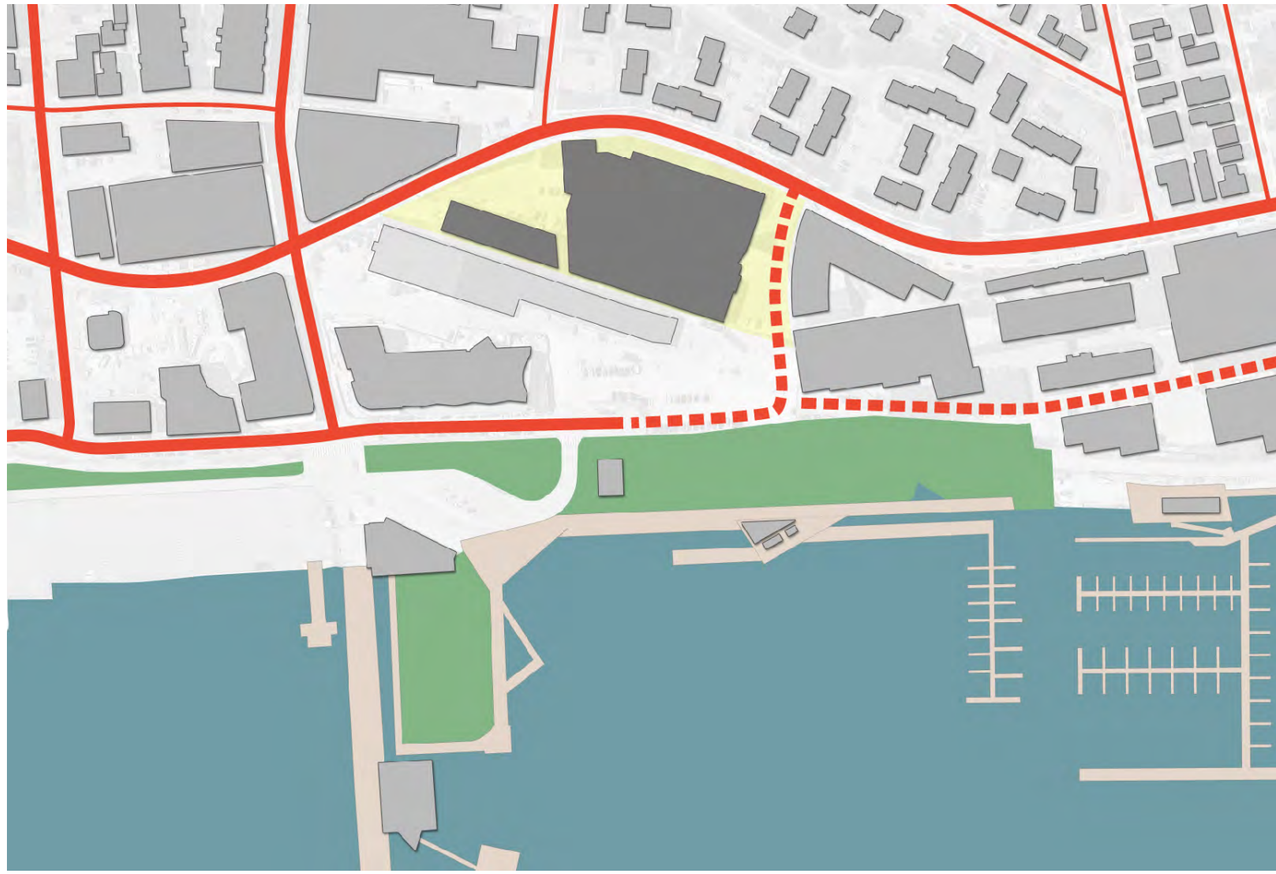


PEDESTRIAN CONNECTIVITY



VEHICULAR CONNECTIVITY

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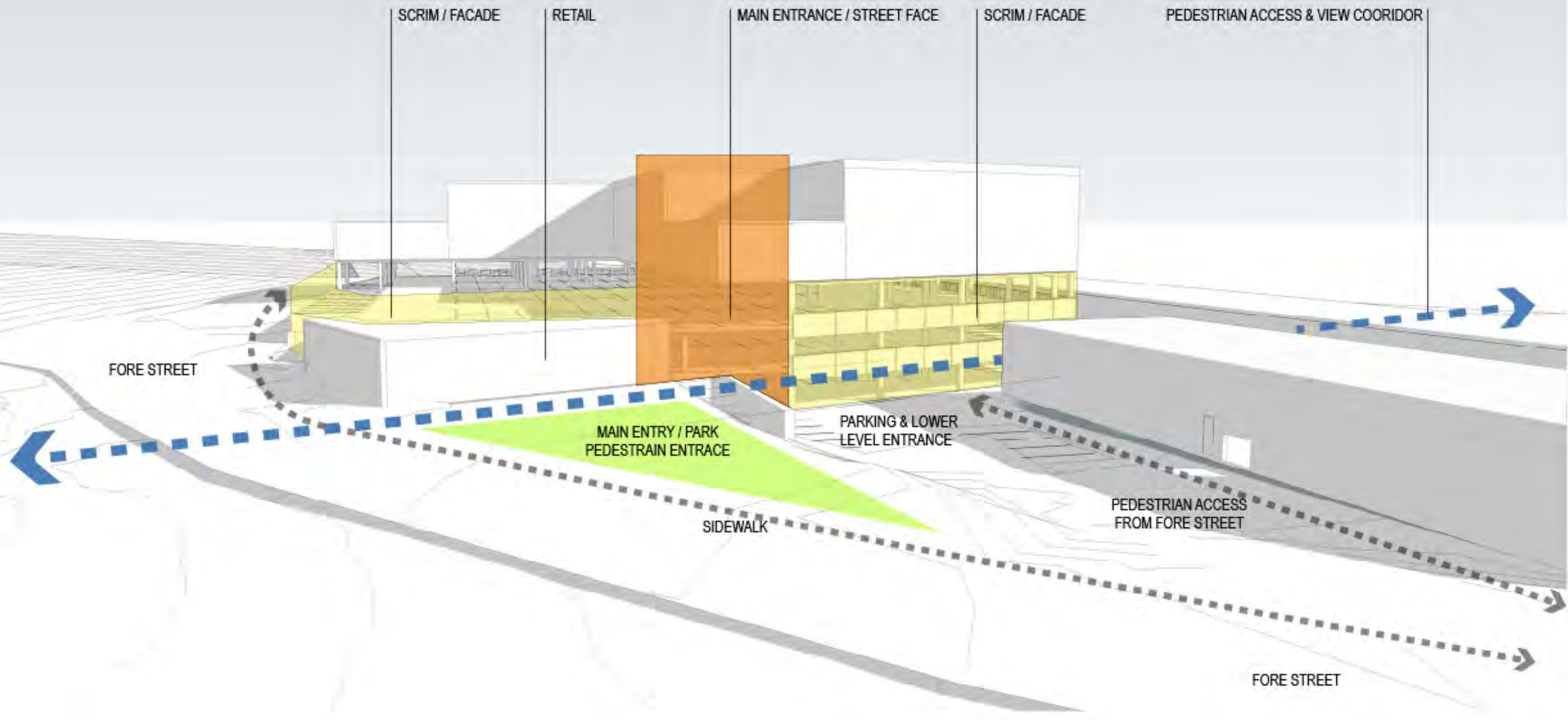

100 FORE STREET | SITE DIAGRAM
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GREENROOF W/ NATIVE LOW MAINT. PLANTS

SCRIM CONTINUES AT 2ND FLOOR
TO CONCEAL PARKING AND REINFORCE
STREET WALL ALONG FORE ST.

OPEN STEPS ALLOWS FLEXIBLE MOVEMENT ALONG PUBLIC SIDEWALK. GRADE SEPARATION AND PAVING MATERIAL CHANGE DELINEATES PUBLIC AND PRIVATE SPACE

STEPPED WALLS BREAK UP MASS OF WALL - OPENS VIEWS TO EAST

UPPER LEVEL ENTRY

SHADE STRUCTURE FRAMES VIEWS TO THE BAY AND PROVIDE A SENSE OF ENCLOSURE AND SHADE WHILE IMPLYING A CONTINUATION OF THE STREET WALL

SCRIM / SCREEN CONCEALS PARKING DECKS

GREEN ROOF PROVIDES FRAMED HORIZON FRAMING
VIEW TO CASCO BAY



100 FORE STREET | SOUTH ENTRY PLAZA VIEW
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NORTH RETAIL ENTRY

STAGGERED SEATING,
EXTENDING SIDEWALK SPACE

SCRIM CONTINUES AT 2ND FLOOR
TO CONCEAL PARKING AND REINFORCE
STREET WALL ALONG FORE ST.

VEGETATIVE SCREEN OF PARKING,
ADDING SHADE FOR SEATING

ADDITIONAL SIDEWALK
LEVEL RETAIL ENTRY

GROUND FLOOR
STROEFRONT



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CONSTRUCTION MANAGEMENT PLAN

A Construction Management Plan has been prepared by Cianbro Corporation.

Construction Management Plan
100 Fore Street
Cianbro Corporation

This document and its subsequent attachments comprise The Construction Management Plan being submitted to the City of Portland for the 100 Fore Street Project, located at 100 Fore Street. This plan is being submitted by Cianbro Corporation on behalf of the Owner of the property, 100 Fore Street LLC. The Construction Management plan contains information pertaining to the overall planning and coordination of the project.
The 100 Fore Street Project involves a new three story parking garage with 2 levels of office space above that. Total of approximately 600 new parking spaces with one floor of office space approximately 42,870 sf and the other office space approximately 39,080. The footprint of the building is +/-67,450sf.

A. Construction Management Principles

The impact of this project on the public will be minimized via the following construction management principles:

- The construction zone will be fully secured with hard barriers/fencing preventing any access into the site by the public.
- All construction activities will occur within the construction barriers/fencing to ensure the public is never exposed to any risks caused by the activities.
- There will be an onsite staging and unloading area for all deliveries which will prevent any impacts caused by offsite staging of trucks.
- All deliveries will be coordinated and scheduled to ensure that there is no off site queuing required. Cianbro plans to schedule as many deliveries as possible in the early morning to limit impact on the surrounding area.
- All construction activities will occur within normal working hours to minimize sound impacts to the surrounding area.

B. Development Review of Construction Management Plan

Cianbro has developed a logistics plan specific to this project. Please see **Exhibit A** of this document for the logistics plan.

Cianbro will also utilize a site specific safety program for all team members who work on the construction site. Each team member will complete a job specific orientation before starting work on the project site. The public will not be put at risk at any point throughout this project, as all work will be completed within the fenced off jobsite. At no point of the project will the public have access to this job site.

Cianbro 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. Minimizing impacts to areas surrounding the building/construction site will be primary considerations in the process.

The Planning Authority and the Department of Public Works have the right to seek revisions to an approved Construction Management Plan or require a condition of approval that states an applicant shall coordinate a project's construction schedule with the timing of nearby construction activity, in order to avoid cumulative impacts on a neighborhood.

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

All fees, permits, and guarantees will be paid/issued prior to construction commencing.

This project will require public street openings for utility tie-ins. All required permits will be requested and granted by the Department of Public Works prior to any street openings occurring. Street openings will need to occur on Fore Street. MUTCD plans will be submitted to and approved by the City of Portland for any traffic disruptions caused by street openings.

D. Construction Administration and Communication

The contact person for all construction activities for the project will be:

Brian Larsen: Project Manager
(207) 614-4342
blarsen@cianbro.com

Temporary signage will be posted onsite with additional contact information for the contractor.

E. Construction Schedule

The preliminary construction schedule for the project starts in November of 2018 and runs through December of 2019.

A detailed construction schedule with be submitted as more information is received and put into the schedule.

All construction activities will be completed during daytime hours, there will be no need for night work. All deliveries for this project will also occur during normal daytime hours.

F. Security & Public Safety

See **Exhibit A** for fencing and barriers to be used to isolate the construction site from the public. All gates into the project will have knox locking devices to allow for emergency access.

The fire safety program onsite will consist of the following:

- Fire extinguishers placed throughout the construction site for the duration of the project.
- The new fire alarm system installation will be ongoing throughout the project duration.
- All team members will be briefed on the emergency evacuation plan for the project site prior to starting work.

G. Construction Permitting and Traffic Control Plans

Construction Activity in Public Streets: This project will require street openings on Fore Street. These openings are required to tie the building into the electrical, water, sewer, and storm water systems. Prior to any of this work starting, permits will be submitted for and approved by the Street Opening Clerk at the Department of Public Works.

Sewer and Storm Water: This building will need to connect to the sewer and storm water systems on Fore Street. All required permits will be submitted for and approved by the Street Opening Clerk at the Department of Public Works.

Traffic Control Plans: There will be periods of time throughout the project where construction activity impacts the existing public street system. Prior to any interruptions and MUTCD plan will be created and submitted to the city for approval. The MUTCD will ensure that traffic and safe passage for the public is maintained in a satisfactory manner.

H. Site Management and Controls

The following actions will be taken by Cianbro as regular site management and control activities:

- Construction site signage will be provided, installed, and maintained by Cianbro throughout the duration of the project.
- Access to the site will be controlled
- Trash and debris will be removed from site via a construction dumpster which will be changed out as needed on a regular basis.
- Street cleaning will not be required on a regular basis, but if it is deemed necessary Cianbro will coordinate the cleaning of any excess dirt that has resulted from construction activities.
- Onsite snow removal will be Cianbro's responsibility.

I. Erosion Control and Preservation of Trees

Erosion control measures will be installed onsite prior to any work commencing. A complete erosion control plan will be put together and reviewed with the city at the preconstruction meeting. Some of the measures that will be taken are utilization of silt sacks and fences to protect the surrounding area from any silt run off form the site. The control measures will be maintained daily and inspected weekly or after any major rain event. The inspections will be documented for review by the City of Portland, Maine Department of Environmental Protection or the U.S. Environmental Protection Agency.

All stored materials onsite will be located away from any trees of vegetation.

J. Construction Staging Area

Exhibit A of this document is the site logistics plan for the project. This plan shows the location of the onsite staging area for materials. The logistics plan also depicts the onsite truck unloading/staging area. All trucks will be unloaded within the construction site's foot print to avoid and impacts on public traffic. An offsite marshalling area will not be required for this project.

A plan will be submitted showing the truck access route for deliveries to the site once Cianbro can sign up contractors and determine the best route to get trucks into the site.

K. Parking During Construction

Construction parking will be the responsibility of each contractor working on the project and will be off-site. Each contractor will make arrangements to get their team members to the site.

L. Special Measures as Necessary

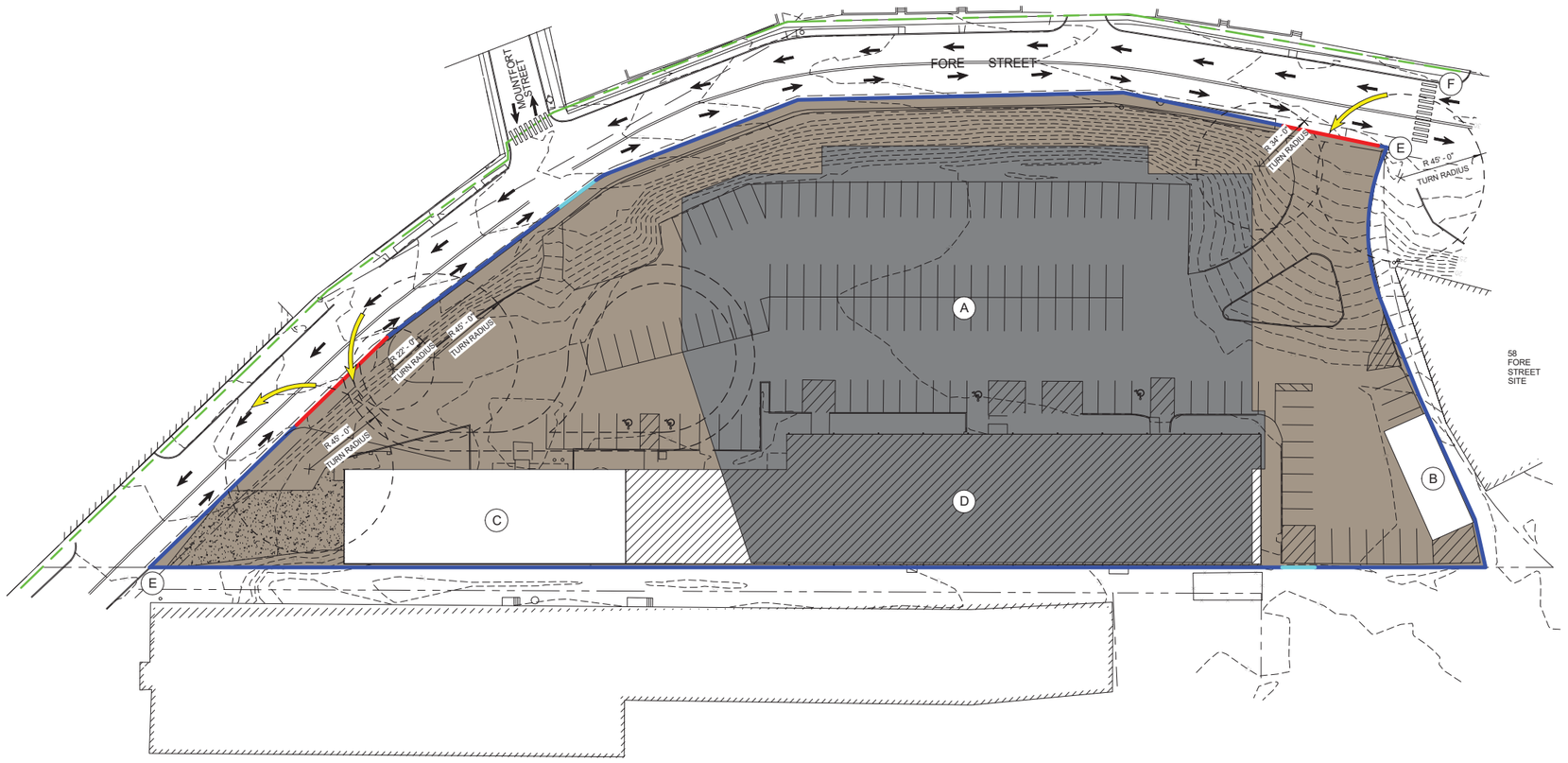
There will be no special measures necessary for this project.

Please do not hesitate to contact me with any comments, questions, or concerns regarding the 100 Fore Street Project and subsequent construction management plan.

Sincerely,

Brian Larsen
Project Manager
Building
CIANBRO
Mobile (207) 614-4342

EXHIBIT A



GRAPHIC KEY

- TRAFFIC FLOW
- PEDESTRIAN ACCESS
- JERSEY BARRIERS WITH FENCE PANELS
- CONSTRUCTION ACCESS GATE WITH SIGNAGE
- PERSONAL ACCESS GATE WITH SIGNAGE
- CONSTRUCTION ACCESS ONLY

LEGEND

- (A) PROPOSED BUILDING FOOTPRINT
- (B) LOCATION OF SITE OFFICE
- (C) EXISTING BUILDING TO REMAIN
- (D) EXISTING BUILDING TO BE DEMOLISHED
- (E) SIDE WALK ALONG CONSTRUCTION SITE CLOSED
- (F) CROSSWALK TO REROUTE PEDESTRIAN ACCESS

SIGNAGE AT ALL ACCESS GATES









NOTES:

CLIENT:
0 HANCOCK STREET, LLC

CIANBRO

PROJECT:
100 FORE STREET
100 FORE STREET
PORTLAND, ME 04101

Rev.	Description	Date

SCALE: 1/32" = 1'-0"
PROJECT NO:
ISSUE DATE: 10/05/18
CAD DWG:
DRAWN BY: MFP
CHK'D BY: LED

COPYRIGHT:
FINAL DRAFT CAD LLC
203 Anderson Street, Portland, ME 04101
207-805-8786 | www.finaldraftcad.com

SHEET TITLE:
SITE LOGISTICS PLAN

L101

SHEET NO. 1 OF 1

LEVEL III SITE DEVELOPMENT PLANS

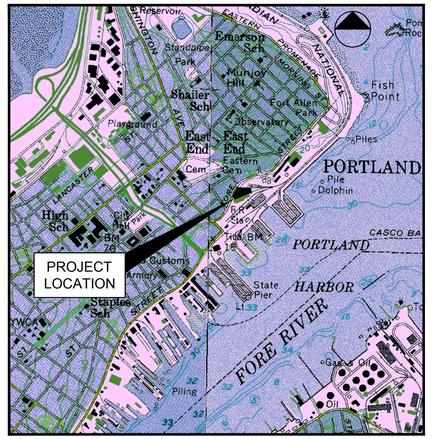
FOR A 540± SPACE PARKING GARAGE & COMMERCIAL OFFICE BUILDING (82,400 SF±) AND ANCILLARY RETAIL ON

100 FORE STREET PROPERTY

PORTLAND, MAINE

OCTOBER 2018

PERMIT SET



LOCATION MAP
N.T.S.

INDEX

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C-1.1 GENERAL NOTES & LEGEND
C-2.0 TOPOGRAPHIC SURVEY - BY OWEN HASKELL
C-2.1 EXISTING CONDITIONS & DEMOLITION PLAN
C-3.0 SITE LAYOUT PLAN
* C-3.1 ALTERNATIVE PLAN
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C-4.1 SITE SECTIONS - SHEET 1 OF 3
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* NOT INCLUDED IN THIS SUBMISSION

I HEREBY ACKNOWLEDGE THAT THESE PLANS AND SPECIFICATIONS WERE PREPARED UNDER MY DIRECT SUPERVISION, AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MAINE AND THAT I AM COMPETENT TO PREPARE THIS DOCUMENT.

TAX MAP - BLOCK - LOT (ADDRESS)

19-BLOCK A - LOT 10
CCRD BOOK 33748, PAGE 1
100 FORE STREET
PORTLAND, MAINE

CURRENT APPLICANT/DEVELOPER/OWNER

100 FORE STREET LLC
P.O. BOX 910
865 SPRING STREET
WESTBROOK, MAINE 04098-0910
ATTN: JONATHAN COHEN
CCRD BOOK 53748, PAGE 1

UTILITIES

WATER:
PORTLAND WATER DISTRICT
22 DOUGLASS STREET
P.O. BOX 3553
PORTLAND, MAINE 04104
207.774.5961
CONTACT: ROBERT BARTELLS

SEWER / STREETS:
CITY OF PORTLAND
PUBLIC SERVICES DIVISION
55 PORTLAND STREET
PORTLAND, MAINE 04102
207.874.8846
CONTACT: BRAD ROLAND, P.E. -
SENIOR PROJECT ENGINEER

ELECTRIC:
CENTRAL MAINE POWER
162 CANCO ROAD
PORTLAND, MAINE 04103
207.842.2367
CONTACT: JAMIE COUGH/PAUL DUPERRE

TELEPHONE:
CONSOLIDATED COMMUNICATIONS
5 DAVIS HILL FARM ROAD
PORTLAND, MAINE 04103
207.797.1866
CONTACT: PATRICK MORRISON

NATURAL GAS:
NORTHERN UTILITIES
1075 FOREST AVENUE
PORTLAND, MAINE 04103
207.541.2570
CONTACT: CRAIG CAMPBELL /
SCOTT CARPENTER
cell 207.650.6716

CABLE:
TIME WARNER CABLE/SPECTRUM
COMMUNICATIONS
115 JOHNSON ROAD
PORTLAND, MAINE 04102
207.253.2324
CONTACT: MARK PELLETIER

DIG SAFE:
CALL BEFORE YOU DIG
888.344.7233

PERMITS / APPROVALS

TYPE:	GOVERNING BODY:	STATUS/DATE ISSUED:
LOCAL		
SITE PLAN/LEVEL III APPROVAL:	CITY OF PORTLAND PLANNING AUTHORITY CITY HALL, CONGRESS STREET PORTLAND, MAINE 04103 207.874.8722	LEVEL III SITE PLAN SUBMISSION FILED WEEK OF 10.08.18
BUILDING PERMIT:	CITY OF PORTLAND CODE ENFORCEMENT OFFICE CITY HALL, CONGRESS STREET PORTLAND, MAINE 04103 207.874.8900	TO BE FILED BY BUILDING CONTRACTOR
UTILITY / STREET OPENING PERMITS:	CITY OF PORTLAND PUBLIC SERVICES DIVISION 55 PORTLAND STREET PORTLAND, ME 04102 207.874.8801	TO BE FILED PRIOR TO CONSTRUCTION BY BUILDING CONTRACTOR
TRAFFIC MOVEMENT PERMIT:	CITY OF PORTLAND PLANNING AUTHORITY CITY HALL, CONGRESS STREET PORTLAND, MAINE 04103	A TRAFFIC MOVEMENT PERMIT IS NOT REQUIRED TRAFFIC STUDY SUBMITTED AS PART OF LEVEL III APPLICATION

CONSULTANT LIST

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STEPHEN.BUSHEY@STANTEC.COM

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Archetype Architects
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HOPKINS@ARCHETYPEPA.COM

SURVEYOR:
Owen Haskell, Inc.
390 US ROUTE 1, UNIT 10
FALMOUTH, MAINE 04105
207.774.0424
ATTN: RANDY LOUBIER

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WESTBROOK, MAINE 04092
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BGOULET@ESBOULOS.COM

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PORTLAND, ME 04101
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ATTN: CHRIS JORDAN
CJORDAN@JOHNSONAND JORDAN.COM

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17 MOUNTAINVIEW
GORHAM, MAINE 04038
207.774.3603
CONTACT: BILL BRAY
TRAFFICSOLUTIONS@MAINE.RR.COM

DESIGN BUILD LEADER:
CIANBRO CORPORATION
RICKERS WHARF MARINA FACILITY
PORTLAND, MAINE 04102
207.773.5852
CONTACT: JONATHAN DICENTES

TDM CONSULTANT:
CUSHMAN TRANSPORTATION CONSULTING, LLC
94 BECKETT STREET, 2ND FLOOR
PORTLAND, MAINE 04101
207.200.1900
ATTN: SARAH CUSHMAN
SARAH@SARAHCUSHMAN.COM

Stantec
482 Payne Road Scarborough Court
Scarborough, Maine 04074-8929
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www.stantec.com

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Consultants
ARCHITECT
ARCHETYPE
LANDSCAPE ARCHITECT
ALA
SURVEYOR
OWEN HASKELL
CONTRACTOR
CIANBRO

Notes

Revision	By	Appd.	DATE
3 LEVEL III SUBMISSION TO CITY	SRB	SRB	18.10.09
2 PROGRESS SET	SRB	SRB	18.09.24
1 INTERNAL REVIEW	SRB	SRB	18.09.14

File Name: 195350450_cov | PBF DWN. | DBS CHKD. | SRB DSGN. | 18.09.14 DATE
P.E. STEPHEN R. BUSHEY

Permit-Seal

STATE OF MAINE
STEPHEN R. BUSHEY
10-09-18
LICENSED PROFESSIONAL ENGINEER

Client/Project
100 FORE STREET LLC
WESTBROOK, ME

100 FORE STREET
PORTLAND, MAINE

Title
COVER SHEET

Project No. 210801622
Scale N.T.S.

Sheet
C-1.0

V:\210\active\210801622\civil\cad\permit\dwg\01622_cov.dwg pfilletaz 10/10/2018 11:49 AM

GENERAL NOTES:

1. THIS PROJECT IS SUBJECT TO THE TERMS AND CONDITIONS OF ALL REGULATIONS ADMINISTERED BY THE LOCAL UTILITY COMPANIES AND THE CITY OF PORTLAND.
2. THE CONTRACTOR SHALL REFER TO THE ARCHITECTURAL PLANS FOR EXACT LOCATIONS AND DIMENSIONS OF THE ENTRANCES, EXITS, PRECISE BUILDING DIMENSIONS, AND EXACT BUILDING UTILITY ENTRANCE POINTS.
3. ALL REQUIRED AND NECESSARY INSPECTIONS AND/OR CERTIFICATIONS REQUIRED BY CODES AND/OR UTILITY SERVICE COMPANIES SHALL BE PERFORMED PRIOR TO ANNOUNCED BUILDING POSSESSION AND THE FINAL SERVICE CONNECTIONS.
4. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR THE ELEVATION OF THE EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THIS INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY AND DIG SAFE (1-888-DIGSAFE), IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS, AT NO EXTRA EXPENSE TO THE OWNER.
5. MAINTENANCE OF EROSION CONTROL MEASURES IS OF PARAMOUNT IMPORTANCE TO THE OWNER AND THE CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH ALL EROSION CONTROL MEASURES SHOWN ON THE PLANS. ADDITIONAL EROSION CONTROL MEASURES SHALL BE INSTALLED IF DEEMED NECESSARY BY ONSITE INSPECTIONS OF THE OWNER OR THEIR REPRESENTATIVES AT NO ADDITIONAL COST TO THE OWNER.
6. ALL MATERIAL SCHEDULES SHOWN ON THE PLANS ARE FOR GENERAL INFORMATION ONLY. THE CONTRACTOR SHALL PREPARE HIS OWN MATERIAL SCHEDULES BASED UPON HIS PLAN REVIEW. ALL SCHEDULES SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO ORDERING MATERIALS OR PERFORMING WORK.
7. ALL MATERIALS AND CONSTRUCTION METHODS SHALL CONFORM TO PROJECT CONTRACT SPECIFICATIONS, AND THE CITY OF PORTLAND TECHNICAL MANUAL STANDARDS, WHICHEVER IS MORE STRINGENT.
8. TOPOGRAPHIC SURVEY INFORMATION WAS PROVIDED BY OWEN HASKELL, INC. BENCHMARK = STREET SIDE HYDRANT BONNET BOLT ON FORE STREET, ELEVATION 30.68, NGVD 1929 DATUM.
9. FEMA MAP COMMUNITY PANEL NUMBER 23005100014B. THE SITE IS LOCATED IN A C ZONE.
10. THE PROPERTY SHOWN ON THIS PLAN MAY BE DEVELOPED AND USED ONLY AS DEPICTED IN THIS APPROVED PLAN. ALL ELEMENTS AND FEATURES OF THE PLAN AND ALL THE PROPERTY WHICH APPEARS IN THE RECORD OF THE PLANNING BOARD PROCEEDINGS ARE CONDITIONS OF THE APPROVAL. NO CHANGE FROM THE CONDITIONS OF APPROVALS IS PERMITTED UNLESS AN AMENDED PLAN IS FIRST SUBMITTED TO AND APPROVED BY THE PLANNING AUTHORITY.
11. ALL SIGNAGE SHALL CONFORM TO THE STANDARDS FOR SIZE, HEIGHT, LOCATION AND REFLECTIVITY SET FORTH IN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
12. ALL CURB SHALL CONFORM TO THE FOLLOWING SPECIFICATIONS AS NOTED ON THE PLANS:
    GRANITE AND BITUMINOUS CONCRETE CURB SHALL MEET THE REQUIREMENTS OF MAINE DEPARTMENT OF TRANSPORTATION SPECIFICATIONS 609.03 AND 609.04 AND CITY OF PORTLAND TECHNICAL STANDARDS.
13. ALL DIMENSIONING UNLESS OTHERWISE NOTED IS TO THE FACE OF CURB OR FACE OF BUILDING.
14. THE FACILITY IS SERVICED BY PUBLIC WATER, SEWER, NATURAL GAS AND OVERHEAD POWER. THE PROJECT INCLUDES UPDATES TO THE POWER SERVICE INCLUDING THE INSTALLATION OF NEW UNDERGROUND SYSTEM. SEE SITE ELECTRICAL PLANS FOR DETAILS.

PERMITTING NOTES:

1. THIS PROJECT IS SUBJECT TO THE TERMS AND CONDITIONS OF THE SITE PLAN REVIEW PERMIT FROM THE CITY OF PORTLAND WHICH WILL BE MADE A PART OF THE CONTRACT BID DOCUMENTS. THE CONSTRUCTION WILL BE GOVERNED BY THE ZONING ORDINANCES WHICH ARE AVAILABLE FOR VIEWING AT THE OFFICE OF THE ENGINEER OR THE MUNICIPAL OFFICE.

SITE PLAN REVIEW: (CONDITION OF APPROVAL)

1. TBD - WILL BE ADDED TO FINAL PLANS ISSUED PRIOR TO CONSTRUCTION.

GRADING AND DRAINAGE NOTES:

1. ALL STORM DRAIN PIPE SHALL BE SMOOTH BORE INTERIOR PROVIDING A MANNINGS ROUGHNESS COEFFICIENT OF n = 0.013 OR LESS. UNLESS A SPECIFIC PIPE MATERIAL IS CALLED FOR ON THE CONTRACT DRAWINGS. PVC PIPING SHALL NOT BE USED IN AREAS OF EXPOSED SUNLIGHT.
2. SLOPE PROTECTION IS TO BE PROVIDED PER THE DESIGN PLANS AND MAY INCLUDE RIPRAP, SOD OR MULCH.
3. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION DURING EARTHWORK OPERATIONS TO INSURE THAT DISTURBANCE TO ANY STEEP SLOPE AREAS ARE MINIMIZED TO THE EXTENT PRACTICABLE.
4. THE CONTRACTOR IS HEREBY CAUTIONED THAT ALL SITE FEATURES SHOWN ARE BASED ON FIELD OBSERVATIONS BY THE SURVEYOR AND BY INFORMATION PROVIDED BY OTHERS. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR SHALL CONTACT DIG SAFE (1-888-DIGSAFE) AT LEAST THREE (3) BUT NOT MORE THAN THIRTY (30) DAYS PRIOR TO COMMENCEMENT OF EXCAVATION OR DEMOLITION TO VERIFY HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITIES.
5. ALL PAVING WITHIN THE PUBLIC R.O.W. SHALL BE PERFORMED IN ACCORDANCE WITH THE CITY OF PORTLAND RULES AND REGULATIONS FOR EXCAVATION ACTIVITIES IN THE PUBLIC R.O.W.
6. NO HOLES, TRENCHES OR STRUCTURES SHALL BE LEFT OPEN OVERNIGHT IN ANY EXCAVATION ACCESSIBLE TO THE PUBLIC OR IN PUBLIC RIGHTS-OF-WAY.
7. THE CONTRACTOR SHALL TAKE FULL RESPONSIBILITY FOR ANY CHANGES AND DEVIATION OF APPROVED PLANS NOT AUTHORIZED BY THE ARCHITECT/ENGINEER AND/OR CLIENT/OWNER.
8. CONTRACTOR SHALL INCORPORATE PROVISIONS AS NECESSARY IN CONSTRUCTION TO PROTECT EXISTING STRUCTURES AND PHYSICAL FEATURES THAT ARE OUTSIDE THE SCOPE OF WORK. THE CONTRACTOR SHALL MAINTAIN SITE STABILITY DURING CONSTRUCTION TO AVOID EROSION AND SEDIMENT TRANSPORT. CONTRACTOR SHALL RESTORE ALL AREAS TO A FINAL STABILIZED CONDITION AS DIRECTED BY DESIGN DRAWINGS.
9. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO FABRICATION AND ERECTION OF ANY MATERIAL. ANY UNUSUAL CONDITIONS SHALL BE REPORTED TO THE ATTENTION OF THE ENGINEER.
10. EXTERIOR GRADES AROUND PROPOSED STRUCTURE SHALL BE COORDINATED WITH FINAL BUILDING PLANS AND PROVIDE FOR ALL ACCESS OPENINGS.
11. SUBGRADE FILL PLACED BENEATH ALL PERMANENT PAVEMENT, SIDEWALK OR CONCRETE SURFACES EXCLUDING ANY BUILDING AREAS, SHALL BE STRUCTURAL FILL OR GRAVEL BORROW PER THE GEOTECHNICAL REPORT. SUBGRADE FILL PLACED BENEATH ALL LANDSCAPE AREAS EXCEPT THOSE ADJACENT THE FOUNDATION SYSTEMS MAY BE A COMMON BORROW MATERIAL SUITABLE FOR EMBANKMENT CONSTRUCTION, FREE FROM FROZEN MATERIAL, PERISHABLE RUBBLE, PEAT, ORGANICS, ROCKS LARGER THAN 12" IN DIAMETER, VEGETATION AND OTHER MATERIAL UNSUITABLE FOR ROADWAY AND SUBGRADE CONSTRUCTION. EXCAVATED ON-SITE MATERIALS MAY BE USED FOR FILL PROVIDED THE MATERIAL IS FREE FROM UNSUITABLE MATERIAL DESCRIBED IN THIS NOTE AND UPON APPROVAL OF THE ENGINEER. EXCAVATED ONSITE MATERIALS MAY NOT BE USED AS COMPACTED STRUCTURAL FILL BENEATH THE BUILDING AREAS OR AS FOUNDATION BACKFILL. GRANULAR BORROW AND COMMON BORROW SHALL COMPLY WITH THE MDOT SPECIFICATIONS.
12. ALL FILLS SHALL BE PLACED IN LAYERS NOT MORE THAN 12" LOOSE DEPTH AND COMPACTED BY HEAVY COMPACTION EQUIPMENT. MINIMUM COMPACTION SHALL BE 95% OF MAXIMUM DENSITY ASTM 1557, MODIFIED AND FIELD DENSITY ASTM D2922 (NUCLEAR METHODS).
13. 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.

UTILITY NOTES:

1. ALL REQUIRED UTILITIES SERVING THE PROJECT SHALL BE COORDINATED BETWEEN THE SITE WORK CONTRACTOR AND MEP CONTRACTOR(S). THE SITE WORK CONTRACTOR SHALL BE RESPONSIBLE TO EXTEND ALL PROPOSED UTILITIES TO WITHIN FIVE (5) FEET OF THE BUILDING TO A LOCATION COORDINATED WITH THE MECHANICAL AND ELECTRICAL SUBCONTRACTORS. THE BUILDING CONTRACTOR SHALL BE RESPONSIBLE FOR ALL UTILITIES WITHIN FIVE (5) FEET AND INSIDE THE BUILDING OR UNDER SLAB.
2. THE CONTRACTOR SHALL COORDINATE THE INSTALLATION OF AND/OR RELOCATION OF OVERHEAD AND UNDERGROUND TELEPHONE WITHCONSOLIDATED COMMUNICATIONS. CONTRACTOR SHALL BE RESPONSIBLE FOR CONDUITS, PULL WIRES, TRENCHING AND BACKFILLING NECESSARY TO COMPLETE THE WORK.
3. THE CONTRACTOR SHALL COORDINATE THE INSTALLATION OF ELECTRIC SERVICE WITH CENTRAL MAINE POWER; THE TELECOMMUNICATIONS SERVICE WITH CONSOLIDATED COMMUNICATIONS AND CABLE SERVICE WITH SPECTRUM CABLE. ALL WORK SHALL CONFORM TO THE PROJECT SPECIFICATIONS OR UTILITY COMPANY STANDARDS, WHICHEVER IS MORE STRINGENT.
4. ADJUST ALL MANHOLES, CATCH BASINS, CURB BOXES, ETC. WITHIN LIMITS OF WORK TO FINISH GRADE AT NO ADDITIONAL EXPENSE TO THE OWNER.
5. ALL UNDERGROUND CONDUITS SHALL HAVE NYLON PULL ROPES TO FACILITATE PULLING CABLES.
6. THE CONTRACTOR SHALL OBTAIN, PAY FOR, AND COMPLY WITH ALL REQUIRED PERMITS, ARRANGE FOR ALL INSPECTIONS, AND SUBMIT COPIES OF ACCEPTANCE CERTIFICATES TO THE OWNER PRIOR TO COMPLETION OF THE PROJECT.
7. 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.
8. A 10 FOOT MINIMUM EDGE TO EDGE HORIZONTAL SEPARATION SHALL BE PROVIDED BETWEEN ALL WATER AND SANITARY SEWER LINES. A 12 INCH OUTSIDE TO OUTSIDE VERTICAL SEPARATION SHALL BE PROVIDED AT ALL WATER AND SANITARY SEWER CROSSINGS.
9. THE CONTRACTOR SHALL PROVIDE TEMPORARY SERVICES AS REQUIRED TO PROVIDE CONTINUOUS SERVICE TO THE JOBSITE. TEMPORARY SERVICES SHALL COMPLY WITH ALL FEDERAL, STATE, LOCAL AND UTILITY COMPANY STANDARDS. COORDINATE ALL TEMPORARY SERVICES WITH UTILITY COMPANY, OWNER AND AFFECTED BUSINESSES.
10. CONTRACTOR SHALL PROVIDE AND INSTALL ALL NECESSARY ELECTRICAL SERVICES IN CONDUIT TO SITE LIGHTING, COMPLYING WITH APPLICABLE CODES. COORDINATE WITH OWNER, SITE ELECTRICAL, ARCHITECTURAL AND CMP PLANS.
11. ALL SANITARY SERVICES AND APPURTENANCES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT STANDARDS AND SPECIFICATIONS OF THE CITY OF PORTLAND PUBLIC WORKS DEPARTMENT. ALL SANITARY SERVICES AND APPURTENANCES TO BE ABANDONED SHALL BE PROPERLY RECORDED WITH PORTLAND PUBLIC WORKS ENGINEERING DEPARTMENT. A DIGITAL VIDEOTAPE SHALL BE MADE OF SANITARY SEWER SYSTEMS TO BE UTILIZED PRIOR TO CONSTRUCTION; UPSTREAM PIPES INTENDED FOR ABANDONMENT SHALL BE INSPECTED TO VERIFY THAT THEY NO LONGER SERVE OTHER FACILITIES.

EROSION CONTROL NOTES:

THE PROJECT SITE IS RELATIVELY SMALL AND WILL PRIMARILY FEATURE BELOW GROUND EXCAVATION THAT WILL RESULT IN AN INTERNALLY DRAINING RUNOFF PATTERN. NEARLY THE ENTIRE PROJECT SITE WILL BE STABILIZED BY ROOFTOP, PAVEMENT, OR BRICK SIDEWALKS.

THE PRIMARY EMPHASIS OF THE EROSION AND SEDIMENTATION CONTROL PLAN TO BE IMPLEMENTED FOR THIS PROJECT IS AS FOLLOWS:

1. PLANNING THE PROJECT TO PROVIDE THE ABILITY TO CAPTURE ANY ERODED MATERIALS FROM THE WORK AREA ON THE SITE.
2. DEVELOPMENT OF A CAREFUL CONSTRUCTION SEQUENCE.
3. RAPID STABILIZATION OF DENUDED AREAS TO MINIMIZE THE PERIOD OF SOIL EXPOSURE.
4. PREVENTING SEDIMENT LADEN RUNOFF FROM ENTERING THE EXISTING STORM DRAIN NETWORK ON AND AROUND THE SITE.
5. KEEPING SURROUNDING STREETS FREE OF MUD AND DUST BY REGULARLY SWEEPING.

EROSION/SEDIMENTATION CONTROL DEVICES

AS PART OF THE SITE DEVELOPMENT THE CONTRACTOR WILL IMPLEMENT THE FOLLOWING EROSION AND SEDIMENT CONTROL DEVICES. THESE DEVICES SHALL BE INSTALLED AS INDICATED ON THE PLANS OR AS DESCRIBED HEREIN. FOR FURTHER REFERENCE, SEE THE "MAINE EROSION AND SEDIMENT CONTROL BMPS" HANDBOOK PUBLISHED BY THE MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

1. SILTATION FENCE SHALL BE INSTALLED DOWN SLOPE OF ANY DISTURBED AREAS TO TRAP RUNOFF-BORNE SEDIMENTS UNTIL THE SITE IS REVEGETATED. THE SILT FENCE SHALL BE INSTALLED PER THE DETAIL PROVIDED IN THE PLAN SET AND INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. THE CONTRACTOR SHALL MAKE REPAIRS IMMEDIATELY IF THERE ARE ANY SIGNS OF EROSION OR SEDIMENTATION BELOW THE FENCE LINE. PROPER PLACEMENT OF STAKES AND KEYING THE BOTTOM OF THE FABRIC INTO THE GROUND ARE CRITICAL TO THE FENCE'S EFFECTIVENESS. IF THERE ARE SIGNS OF UNDERCUTTING AT THE CENTER OR THE EDGES, OR IMPOUNDING OF LARGE VOLUMES OF WATER BEHIND THE FENCE, THE BARRIER SHALL BE REPLACED WITH A STONE CHECK DAM. THE SILTATION FENCE SHALL REMAIN IN PLACE AND PROPERLY MAINTAINED UNTIL THE SITE IS PERMANENTLY STABILIZED.
2. CATCH BASIN INLET PROTECTION: STONE SEDIMENT TRAPS OR A PREMANUFACTURED SILTSACK™ WILL BE INSTALLED AT CATCH BASIN INLETS TO PREVENT SILT FROM ENTERING THE STORM DRAIN SYSTEM. INSTALLATION DETAILS ARE PROVIDED IN THE PLAN SET. INLET PROTECTION SHALL REMAIN IN PLACE AND PROPERLY MAINTAINED UNTIL TRIBUTARY AREAS ARE PERMANENTLY STABILIZED.

TEMPORARY EROSION & SEDIMENTATION CONTROL MEASURES

ACTIONS MUST BE TAKEN TO ENSURE THAT ACTIVITIES DO NOT RESULT IN EROSION OF SOILS OR FUGITIVE DUST EMISSIONS DURING OR AFTER CONSTRUCTION. THE FOLLOWING ARE PLANNED AS TEMPORARY EROSION/SEDIMENTATION CONTROL MEASURES DURING CONSTRUCTION:

1. SILTATION FENCE AND CATCH BASIN INLET PROTECTION AS DESCRIBED ABOVE.
2. IF OPERATIONS DURING WET MONTHS RESULT IN TRACKING OF MUD OFF THE SITE ONTO PUBLIC ROADS, ROADS SHALL BE SWEPT AT LEAST ONCE A WEEK AND PRIOR TO SIGNIFICANT STORM EVENTS. WHERE CHRONIC MUD TRACKING OCCURS, A STABILIZED CONSTRUCTION ENTRANCE SHOULD BE PROVIDED.
3. IF OPERATIONS DURING DRY MONTHS RESULT IN FUGITIVE DUST EMISSION, ADJACENT ROADS SHALL BE SPRAYED WITH WATER ONCE A WEEK OR MORE FREQUENTLY, AS NEEDED.
4. STABILIZE WITH MULCH OR OTHER NON-ERODIBLE COVER ANY SOILS THAT WILL NOT BE WORKED FOR MORE THAN 7 DAYS.
5. LITTER, CONSTRUCTION DEBRIS, AND CHEMICALS MUST NOT BE STORED IN A MANNER THAT WILL CREATE A POLLUTANT SOURCE IF EXPOSED TO STORMWATER RUNOFF.

TIMING AND SEQUENCE OF EROSION/SEDIMENTATION CONTROL MEASURES

THE FOLLOWING BASIC CONSTRUCTION SEQUENCE SHALL BE REQUIRED TO ENSURE THE EFFECTIVENESS OF THE EROSION AND SEDIMENTATION CONTROL MEASURES IS OPTIMIZED. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL SUBMIT TO THE OWNER A SPECIFIC CONSTRUCTION SCHEDULE, WHICH SHALL BE SUBJECT TO THE APPROVAL OF THE OWNER.

NOTE: FOR ALL GRADING ACTIVITIES, THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION NOT TO OVEREXPOSE THE SITE BY LIMITING THE DISTURBED AREA.

1. INSTALL PERIMETER SILTATION FENCE & CATCH BASIN INLET PROTECTION. THE CONTRACTOR MUST INSTALL ANY ADDED MEASURES WHICH MAY BE NECESSARY TO CONTROL EROSION/SEDIMENTATION FROM THE SITE AND FUGITIVE DUST EMISSIONS DEPENDENT UPON THE ACTUAL SITE AND WEATHER CONDITIONS.
2. CLEAR AND GRUB THE WORK AREA FOR THE BUILDING, HAUL OFF THE LOAM, AND EXCAVATE FOR THE BUILDING FOUNDATION.
3. CONSTRUCT THE DRAINAGE SYSTEM.
4. INSTALL STONE AND HAY BALE CHECK DAMS AT ANY CONCENTRATED FLOW DISCHARGE POINTS.
5. INSTALL SIDEWALKS AND PAVEMENT AS DETAILED ON THE SITE PLANS.
6. REMOVE ALL TEMPORARY EROSION CONTROL DEVICES ONCE THE SITE IS STABILIZED.

PROVISIONS FOR MAINTENANCE OF THE EROSION/SEDIMENTATION CONTROL FEATURES

DURING CONSTRUCTION OF THE BUILDING AND ASSOCIATED SITE DEVELOPMENT THE CONTRACTOR SHALL BE REQUIRED TO PERFORM THE FOLLOWING:

1. INSPECTION OF THE PROJECT WORK SITE ON A WEEKLY BASIS AND AFTER EACH SIGNIFICANT RAINFALL EVENT (0.5 INCH OR MORE WITHIN ANY CONSECUTIVE 24-HOUR PERIOD) DURING CONSTRUCTION UNTIL THE SITE HAS BEEN PERMANENTLY STABILIZED. INSPECTION OF THE PROJECT WORK SITE SHALL INCLUDE:
   - IDENTIFICATION OF PROPER EROSION CONTROL MEASURE INSTALLATION IN ACCORDANCE WITH THE EROSION CONTROL DETAILS OR AS SPECIFIED HEREIN.
   - DETERMINE WHETHER EACH EROSION CONTROL MEASURE IS OPERATING PROPERLY. IF NOT, IDENTIFY DAMAGE TO THE CONTROL DEVICE AND DETERMINE REMEDIAL MEASURES.
   - IDENTIFY AREAS THAT APPEAR VULNERABLE TO EROSION AND DETERMINE ADDITIONAL EROSION CONTROL MEASURES THAT SHOULD BE USED TO IMPROVE CONDITIONS.
   - DETERMINE THE NEED TO SWEEP ADJACENT STREETS OR APPLY WATER FOR DUST CONTROL.

   ACCUMULATED SILT/SEDIMENT SHOULD BE REMOVED WHEN THE DEPTH OF SEDIMENT REACHES 50 PERCENT OF THE BARRIER HEIGHT. ACCUMULATED SILT/SEDIMENT SHOULD BE REMOVED FROM BEHIND SILT FENCING WHEN THE DEPTH OF THE SEDIMENT REACHES 6 INCHES.
2. IF INSPECTION OF THE SITE INDICATES A CHANGE SHOULD BE MADE TO THE EROSION CONTROL PLAN, EITHER TO IMPROVE EFFECTIVENESS OR CORRECT A SITE-SPECIFIC DEFICIENCY, THE INSPECTOR SHALL IMMEDIATELY IMPLEMENT THE CORRECTIVE MEASURE AND NOTIFY THE OWNER OF THE CHANGE.
3. THE CONTRACTOR SHALL KEEP A LOG (REPORT) SUMMARIZING THE INSPECTIONS AND ANY CORRECTIVE ACTION TAKEN. THE LOG MUST INCLUDE THE NAME(S) AND QUALIFICATIONS OF THE PERSON MAKING THE INSPECTIONS, THE DATE(S) OF THE INSPECTIONS, AND MAJOR OBSERVATIONS ABOUT THE OPERATION AND MAINTENANCE OF EROSION AND SEDIMENTATION CONTROLS, MATERIALS STORAGE AREAS, AND VEHICLES ACCESS POINTS TO THE PARCEL. MAJOR OBSERVATIONS MUST INCLUDE BMPS THAT NEED MAINTENANCE, BMPS THAT FAILED TO OPERATE AS DESIGNED OR PROVED INADEQUATE FOR A PARTICULAR LOCATION, AND LOCATION(S) WHERE ADDITIONAL BMPS ARE NEEDED. FOR EACH BMP REQUIRING MAINTENANCE, BMP NEEDING REPLACEMENT, AND LOCATION NEEDING ADDITIONAL BMPS, NOTE IN THE LOG THE CORRECTIVE ACTION TAKEN AND WHEN IT WAS TAKEN.

   THE LOG MUST BE MADE ACCESSIBLE TO THE OWNER AND REGULATORY STAFF, AND A COPY MUST BE PROVIDED UPON REQUEST.
4. ONCE THE SITE HAS BEEN PERMANENTLY STABILIZED, THE TEMPORARY EROSION CONTROL MEASURES SHOULD BE REMOVED.

PRELIMINARY - NOT FOR CONSTRUCTION

CONSTRUCTION MANAGEMENT NOTES:

1. ALL CONSTRUCTION SHALL COMPLY WITH 2009 NFPA 1 CHAPTER 16 SAFE GUARDS DURING BUILDING CONSTRUCTION, ALTERATION AND DEMOLITION OPERATIONS.
2. ANY CUTTING AND WELDING WORK PERFORMED ONSITE SHALL REQUIRE A "HOT WORK" PERMIT FROM THE PORTLAND FIRE DEPARTMENT.
3. THE GENERAL CONTRACTOR SHALL POST EMERGENCY CONTACT INFORMATION ON THE PROJECT SITE PROPERTY DURING CONSTRUCTION IN THE EVENT OF AN AFTER HOURS EMERGENCY. THIS CONTACT INFORMATION SHALL ALSO BE PROVIDED TO THE PORTLAND FIRE DEPARTMENT.
4. IF THE SITE IS SECURED BY TEMPORARY OR PERMANENT FENCING WITH LOCKED GATES, THEN THE APPLICANT OR ASSIGNED REPRESENTATIVE SHALL PURCHASE A KNOX PADLOCK FROM THE PORTLAND FIRE DEPARTMENT TO ALLOW ACCESS BY THE PORTLAND FIRE DEPARTMENT.
5. STREETS SHALL MAINTAIN A 20' WIDTH FOR FIRE DEPARTMENT ACCESS AT ALL TIMES.
6. FIRE HYDRANTS SHALL NOT BE BLOCKED OR ENCLOSED BY FENCING. A 3' CLEARANCE SHALL BE MAINTAINED AT ALL TIMES AROUND FIRE HYDRANTS.

ZONING SUMMARY TABLE:

B-6 Urban Commercial Business Zone and Eastern Waterfront Mixed Zone Dimensional Requirements

Description	B-6 Requirement	100 FORE STREET LLC
Minimum Lot Size	None	129,212 s.f.
Minimum Frontage	None	737.67'
Minimum Front Yard	None	0'
Minimum Side Yard	None	>10'
Minimum Rear Yard	None	>10'
Maximum Front Yard	10 Feet	Meets overlay standard
Maximum Lot Coverage	100%	< 90%
Maximum Building Height	SEE CITY COUNCIL ORDER 68-18/19	DESIGNEDTO MEET RECENTLY ENACTED HEIGHT ALLOWANCES
Parking Retail Use	1 space per 200 s.f. of first floor area in excess of 2,000 s.f. not used for bulk storage	Retail 3,301 s.f. less 2,000 s.f. = 1,301/200 = 7 spaces
Parking Office Use	1 space per 400 s.f.	82,400 s.f./400 = 206 spaces
Total Spaces		559 spaces

GEOTECHNICAL

1. SEE FINDINGS AND RECOMMENDATIONS CONTAINED IN THE GEOTECHNICAL REPORT - BY SUMMIT ENGINEERING SERVICES, DATED 00/00/18. PROJECT # 16063. THIS REPORT SHALL BE MADE PART OF THE CONSTRUCTION DOCUMENTS IN ITS ENTIRETY.
2. ALL FILL WITHIN THE BUILDING FOOTPRINT SHALL BE STRUCTURAL FILL; ALL FILL OUTSIDE OF THE BUILDING FOOTPRINT SHALL BE FOUNDATION BACK-FILL (MDOT 703.06 TYPE E), OR ¾" CRUSHED STONE AS APPROVED BY THE GEOTECHNICAL ENGINEER.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVALS OF UNSUITABLE SOILS AND ALL ABANDONED SUBSURFACE CONDITIONS INCLUDING FOUNDATIONS, PIPE, AND RELATED INFRASTRUCTURE ASSOCIATED WITH THE HISTORICAL SITE USE. NO EXTRA PAYMENT WILL BE MADE FOR REMOVALS AND REPLACEMENT WITH STRUCTURAL FILL OR GRAVEL BORROW.

LEGEND:

PROPOSED		EXISTING	
	BUILDING		IRON PIN FOUND (IPF) OR CAPPED IRON ROD FOUND (CIR)
	BUILDING (FLOORS ABOVE GROUND ENTRANCE)	E	ELECTRIC MANHOLE
	EDGE OF PAVEMENT		CATCH BASIN
	VERTICAL GRANITE CURB		SEWER MANHOLE
	BRICK SIDEWALK	D	DRAIN MANHOLE
	BRICK SIDEWALK		DOWN SPOUT
SMH1	SEWER MANHOLE	WSO	WATER VALVE
DMH1	DRAIN MANHOLE		WATER SHUTOFF
CB1 ■ ■ CB1	CATCH BASIN		UTILITY POLE
12"SD	STORM DRAIN		SIGN
6" G	GAS LINE		LIGHT POLE
12"SAN	SEWER LINE		ELECTRIC METER
8"W	WATER LINE		GAS METER
OHE/T/C	AERIAL POWER - TEL - CABLE		EDGE OF PAVEMENT
UGE/T/C	POWER - TEL - CABLE LINES		CURB (GRANITE, UNLESS NOTED)
	UTILITY POLE		EDGE OF GRAVEL
	CONIFER		TREE
			STUMP
		70	EXISTING CONTOUR
		(x=48.3)	SPOT GRADE
			PROPERTY LINE
			RIGHT OF WAY
		SD	STORM DRAIN
		S	SEWER
		W	UNDERGROUND WATER
		OHP	OVERHEAD UTILITY WIRES
			WOOD STOCKADE FENCE
		X	CHAIN LINK FENCE
	DECIDUOUS		GUARD RAIL
			EXISTING BUILDING
	SHRUB		

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ALA

SURVEYOR
OWEN HASKELL

CONTRACTOR
CIANBRO

Notes

No.	Revision	By	Appd.	YY.MM.DD
3	LEVEL III SUBMISSION TO CITY	SRB	SRB	18.10.09
2	PROCESS SET	SRB	SRB	18.09.24
1	INTERNAL REVIEW	SRB	SRB	18.09.14

File Name: 193350450_gen	PBF	DBS	SRB	17.09.14
P.E. STEPHEN R. BUSHEY	DWN.	CHKD.	DSGN.	DATE

Permit-Seal

STATE OF MAINE
STEPHEN R. BUSHEY
10-09-18
LICENSED
PROFESSIONAL ENGINEER

Client/Project
100 FORE STREET LLC
WESTBROOK, ME

100 FORE STREET
PORTLAND, MAINE

Title
GENERAL NOTES & LEGEND

Project No. 210801622
Scale N.T.S.

Sheet
C-1.1

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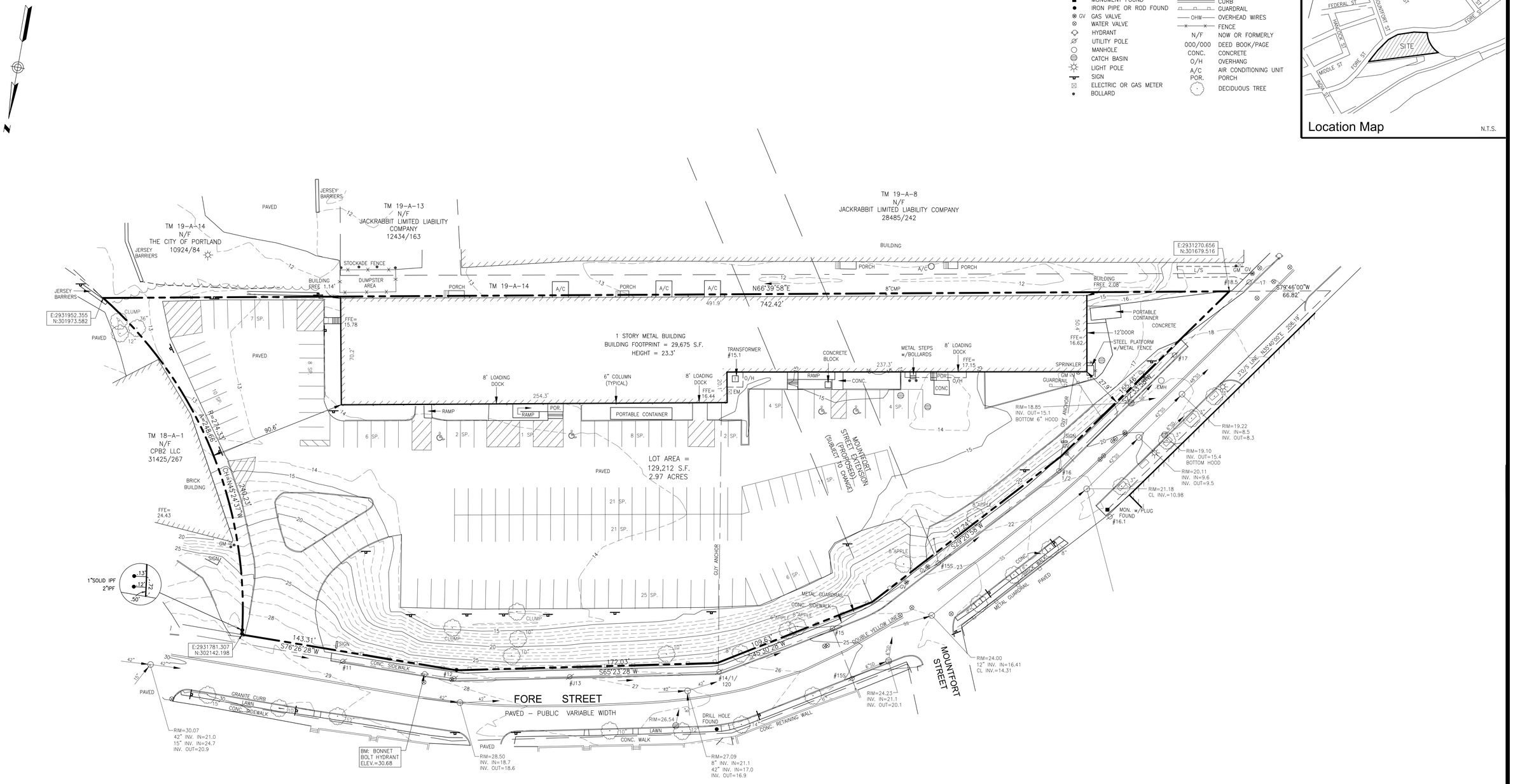
Legend
MONUMENT FOUND
IRON PIPE OR ROD FOUND
GV GAS VALVE
WATER VALVE
HYDRANT
UTILITY POLE
MANHOLE
CATCH BASIN
LIGHT POLE
SIGN
ELECTRIC OR GAS METER
BOLLARD
CURB
GUARDRAIL
OHW OVERHEAD WIRES
FENCE
N/F NOW OR FORMERLY
000/000 DEED BOOK/PAGE
CONC. CONCRETE
O/H OVERHANG
A/C AIR CONDITIONING UNIT
POR. PORCH
DECIDUOUS TREE
Location Map
N.T.S.
SHERMAN ST
ADAMS ST
WATERVILLE ST
FEDERAL ST
MOUNTFORT ST
FORE ST
TRAVERSE ST
SITE
MIDDLE ST
INDIA ST
TM 19-A-14
N/F
THE CITY OF PORTLAND
10924/84
TM 19-A-13
N/F
JACKRABBIT LIMITED LIABILITY COMPANY
12434/163
TM 19-A-8
N/F
JACKRABBIT LIMITED LIABILITY COMPANY
28485/242
JERSEY BARRIERS
PAVED
STOCKADE FENCE
DUMPSTER AREA
BUILDING FREE 1.14'
BUILDING FREE 2.08'
PORCH
A/C
BUILDING
E:2931952.355
N:301973.582
E:2931270.656
N:301679.516
CLUMP
36"
12"
N66°39'58"E
742.42'
491.9'
8"CMP
S79°46'00"W
66.82'
1 STORY METAL BUILDING
BUILDING FOOTPRINT = 29,675 S.F.
HEIGHT = 23.3'
FFE= 15.78
70.2'
8' LOADING DOCK
6" COLUMN (TYPICAL)
254.3'
RAMP
POR.
PORTABLE CONTAINER
TRANSFORMER #15.1
CONCRETE BLOCK
METAL STEPS w/BOLLARDS
FFE= 17.15
237.3'
CONC.
O/H
PORTABLE CONTAINER
CONCRETE
12'DOOR
STEEL PLATFORM w/METAL FENCE
FFE= 16.62
55.4'
SPRINKLER
GM
GUARDRAIL
ANCHOR
RIM=18.85
INV. OUT=15.1
BOTTOM 6" HOOD
#17
#16
#16 1/2
#15
#15S
#14/1/120
#13
#12
#11
#J13
#J14
#J15
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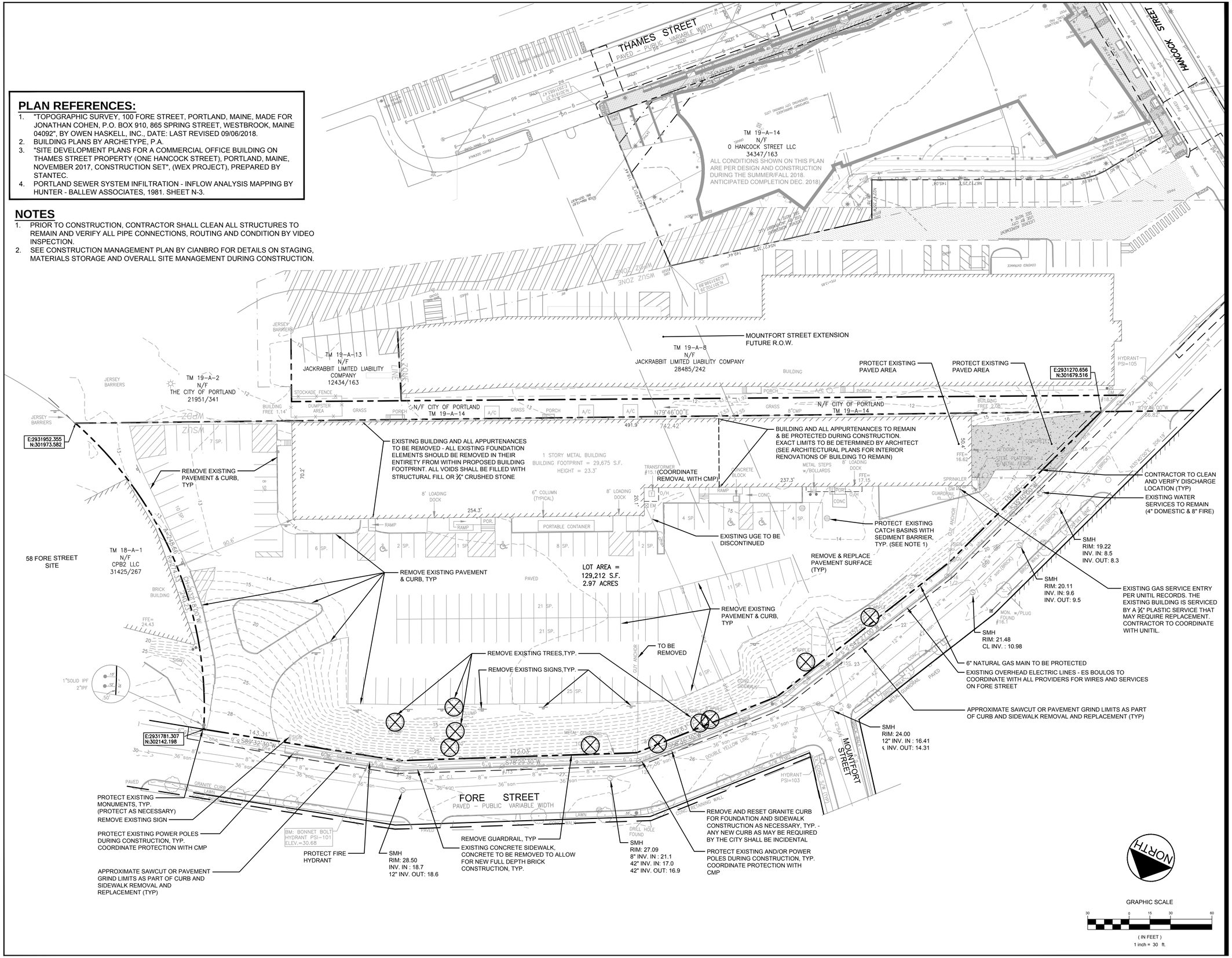
#J49
#J50
#J51
#J52

PLAN REFERENCES:

1. "TOPOGRAPHIC SURVEY, 100 FORE STREET, PORTLAND, MAINE, MADE FOR JONATHAN COHEN, P.O. BOX 910, 865 SPRING STREET, WESTBROOK, MAINE 04092", BY OWEN HASKELL, INC., DATE: LAST REVISED 09/06/2018.
2. BUILDING PLANS BY ARCHETYPE, P.A.
3. "SITE DEVELOPMENT PLANS FOR A COMMERCIAL OFFICE BUILDING ON THAMES STREET PROPERTY (ONE HANCOCK STREET), PORTLAND, MAINE, NOVEMBER 2017, CONSTRUCTION SET", (WEX PROJECT), PREPARED BY STANTEC.
4. PORTLAND SEWER SYSTEM INFILTRATION - INFLOW ANALYSIS MAPPING BY HUNTER - BALLEW ASSOCIATES, 1981. SHEET N-3.

NOTES

1. PRIOR TO CONSTRUCTION, CONTRACTOR SHALL CLEAN ALL STRUCTURES TO REMAIN AND VERIFY ALL PIPE CONNECTIONS, ROUTING AND CONDITION BY VIDEO INSPECTION.
2. SEE CONSTRUCTION MANAGEMENT PLAN BY CIANBRO FOR DETAILS ON STAGING, MATERIALS STORAGE AND OVERALL SITE MANAGEMENT DURING CONSTRUCTION.



GRAPHIC SCALE

30 0 15 30 60

(IN FEET)
1 inch = 30 ft.

NORTH

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ALA

SURVEYOR
OWEN HASKELL

CONTRACTOR
CIANBRO

Notes

OWNER OF RECORD:

100 FORE STREET LLC
P.O. BOX 910
WESTBROOK, ME 04098
CCRD BOOK 33748, PAGE 001

Revision	By	Appd.	YY.MM.DD
3 LEVEL III SUBMISSION TO CITY	SRB	SRB	18.10.09
2 PROGRESS SET	SRB	SRB	18.09.24
1 INTERNAL REVIEW	SRB	SRB	18.09.14

File Name: 01622_base	PBF	DBS	SRB	18.09.14
P.E. STEPHEN R. BUSHEY	DWN.	CHKD.	DSGN.	DATE

Permit-Seal

STATE OF MAINE
STEPHEN R. BUSHEY
10-09-18
LICENSED
PROFESSIONAL ENGINEER

Client/Project

100 FORE STREET LLC
WESTBROOK, ME

100 FORE STREET
PORTLAND, MAINE

Title

EXISTING CONDITIONS & DEMOLITION PLAN

Project No. 210801622

Scale 1" = 30'

Sheet

C-2.1

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FUTURE THAMES STREET EXTENSION (BY OTHERS)

FUTURE ROADWAY (BY OTHERS)

ALL OFFSITE DESIGN FOR CONNECTION OF DRIVE AND SIDEWALKS TO THAMES STREET EXTENSION ARE SUBJECT TO COORDINATION WITH CITY AND 58 FORE STREET DEVELOPER

TM 19-A-14
N/F
0 HANCOCK STREET LLC
34347/163

WEX BUILDING UNDER CONSTRUCTION

TM 19-A-13
N/F
JACKRABBIT LIMITED LIABILITY COMPANY
12434/163

TM 19-A-2
N/F
THE CITY OF PORTLAND
21951/341

MOUNTFORT STREET EXTENSION FUTURE R.O.W.

TM 19-A-8
N/F
JACKRABBIT LIMITED LIABILITY COMPANY
28485/242

EXISTING DRIVEWAY TO REMAIN FOR SERVICE ACCESS ONLY

E:2931270.656
N:301679.516

E:2931952.355
N:301973.582

N/F CITY OF PORTLAND
TM 19-A-14

MODULAR BLOCK RETAINING WALL (DESIGNED BY CONTRACTOR)

STANDARD DUTY PAVEMENT SECTION MEETING CITY DESIGN STANDARDS (TYP)

24' WIDE ENTRY / EXIT TO LEVEL 1 PARKING DECK

FLUSH GRANITE, TYP

1ST LEVEL ENTRY/EXIT

EXISTING BUILDING TO REMAIN
(SEE ARCHITECTURAL PLANS FOR INTERIOR RENOVATIONS AND RECONFIGURATION OF BUILDING ENTRANCES)

PEDESTRIAN ENTRY TO LEVEL 1 DECK/STAIR/ELEVATOR

BIKE RACKS SEE LANDSCAPE DETAILS

SLIPFORM CONCRETE OR GRANITE CURB (TYP)

PROPOSED 540 SPACE PARKING GARAGE
(3 LEVELS) & UPPER LEVEL OFFICE BUILDING
(2 LEVELS) TOTAL GLA= 82,400 SF
TOTAL GLA= 274,936 SF
64,980 SF FOOTPRINT

LOT AREA =
129,212 S.F.
2.97 ACRES

GROUND LEVEL ENTRY/EXIT

RETAINING WALL

58 FORE STREET SITE

TM 18-A-1
N/F
CPB2 LLC
31425/267

VERTICAL GRANITE CURB (TYP)

DRIVEWAY #1 ENTRY TO GROUND LEVEL PARKING

5' PEDESTRIAN ACCESS INTO BUILDING AT LEVEL 1 DECK

24' WIDE ENTRY / EXIT TO LEVEL 2 PARKING DECK

2ND LEVEL ENTRY/EXIT

RETAIL 2,056 SF FFE: 25'

REMOVE & RESET GRANITE CURB AND PROVIDE NEW GRANITE CURB AS NECESSARY TO MEET CITY STANDARDS. REMOVE EXISTING SIDEWALK AND RECONSTRUCT WITH NEW FULL DEPTH BRICK SIDEWALK MEETING CITY STANDARDS (TYP)

MATCH EXISTING SIDEWALK

RETAIL 1,245 SF FFE: 28'

ELEC. ROOM

E:2931781.307
N:302142.198

GROUND LEVEL RETAIL STORE FRONT - SUBJECT TO DIMENSIONAL REFINEMENT BASED ON PROPOSED PLAZA DESIGN AND TENANT INPUT

PAVER CROSSWALK, TYP

WIDEN EXISTING SIDEWALK TO 10' ALONG FORE STREET

DRIVEWAY #2 - ACCESS TO OFFICE SPACE LOBBY. SEE SHEET C-3.1 FOR ALTERNATIVE TEMPORARY ACCESS DRIVE CONFIGURATION.

EXISTING OVERHEAD LINES TO REMAIN

FORE STREET

MOUNTFORT STREET

L / S PLAZA (PLANS BY ALA)

LEVELS - APPROXIMATE GRADES:

PARKING GARAGE
GROUND - 14.0'
LEVEL 1 - 24.5'
LEVEL 2 - 35.0'
OFFICE SPACE
LEVELS 3-4 - T.B.D.

PLAN REFERENCES:

1. "Topographic Survey, 100 Fore Street, Portland, Maine, made for Jonathan Cohen, P.O. Box 910, 865 Spring Street, Westbrook, Maine 04092", by Owen Haskell, Inc., Date: last revised 09/06/2018.
2. Building plans by Archetype, P.A.
3. "Site Development Plans for a commercial office building on Thames Street Property (One Hancock Street), Portland, Maine, November 2017, Construction Set", (Wex project), prepared by Stantec.
4. Portland sewer system infiltration - inflow analysis mapping by Hunter - Ballew associates, 1981. sheet N-3.

CURB LEGEND

GRANITE CURB

TD — TIP DOWN

GRAPHIC SCALE

30 0 15 30 60

(IN FEET)
1 inch = 30 ft.

NORTH

DIMENSIONAL REQUIREMENTS FOR THE B-6 EASTERN WATERFRONT BUSINESS ZONE		
ITEM DESCRIPTION	LAND USE ORDINANCE REQUIREMENT	PROPOSED
MIN. LOT SIZE	NONE	2.97 ACRES
MIN. FRONTAGE	NONE	737.67 FEET
MIN. FRONT SETBACK	NONE (BUILD TO KEY BLDG. ENVELOPES SHOWN ON B6 BLDG. HEIGHT OVERLAY & BLDG. ENVELOPES MAP)	6 INCHES ±
MIN. SIDE SETBACK	NONE	71 FEET
MIN. REAR SETBACK	NONE	10.67 FEET
MAX. BUILDING SETBACK FROM STREET LINE	10 FEET (BUILD TO KEY BLDG. ENVELOPES SHOWN ON B6 BLDG. HEIGHT OVERLAY & BLDG. ENVELOPES MAP)	6 INCHES ±
MIN. LENGTH OF BLDG. WALL REQUIRED TO BE LOCATED ALONG STREET FRONTAGE OF LOT	70% OF LOT STREET FRONTAGE OR 25% OF BUILDING PERIMETER	30% OF BUILDING PERIMETER
MAX. LOT COVERAGE	100%	80% ±
MAX. BLDG. HEIGHT	SEE CITY COUNCIL ORDER 68-18/19	SEE ARCHITECTURAL PLANS FOR DETAILS

PRELIMINARY - NOT FOR CONSTRUCTION

SIGN LEGEND

STOP — R1-1 24"x24" A

RESERVED PARKING — R7-8 18"x12" B

R7-8A 12"x6"

COMPACT CAR PARKING — 18"x12" C

NO PARKING — 18"x12" D

24"x24" E

OWNER:
100 FORE STREET LLC
P.O. BOX 910
865 SPRING STREET
WESTBROOK, MAINE 04098-0910
ATTN: JONATHAN COHEN

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2 PROCESS SET	SRB	SRB	18.09.24
1 INTERNAL REVIEW	SRB	SRB	18.09.14
	SRB	SRB	18.10.09

File Name: 193350450_SP | DRWN: DBS | CHKD.: SRB | DSGN.: | 18.09.12 DATE
P.E. STEPHEN R. BUSHEY

Permit-Seal

STATE OF MAINE
STEPHEN R. BUSHEY
10-09-18
LICENSED PROFESSIONAL ENGINEER

Client/Project
100 FORE STREET LLC
WESTBROOK, ME

100 FORE STREET
PORTLAND, MAINE

Title
SITE LAYOUT PLAN

Project No. 210801622
Scale 1" = 30'

Sheet
C-3.0

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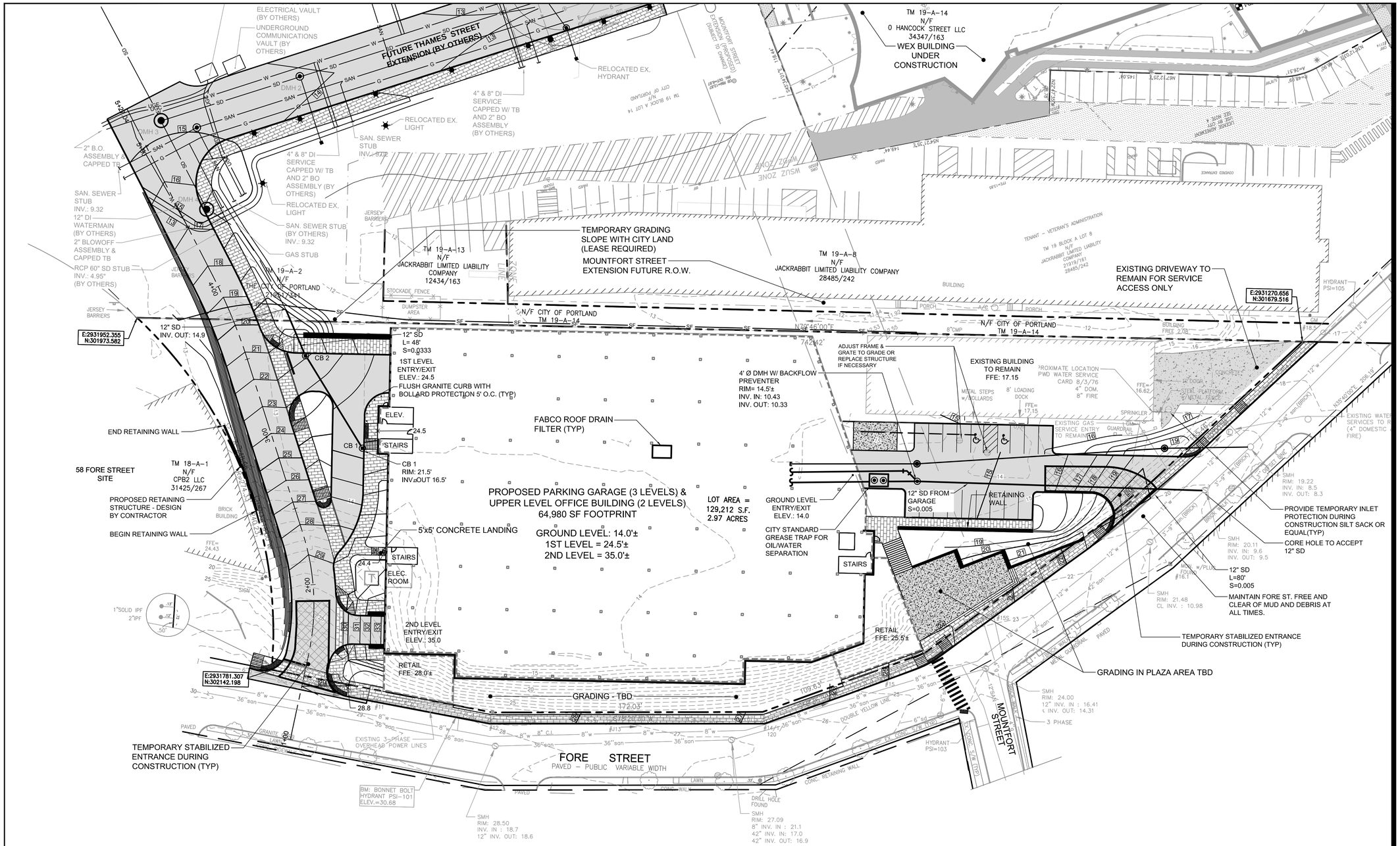

PLAN REFERENCES:

1. "TOPOGRAPHIC SURVEY, 100 FORE STREET, PORTLAND, MAINE, MADE FOR JONATHAN COHEN, P.O. BOX 910, 865 SPRING STREET, WESTBROOK, MAINE 04092", BY OWEN HASKELL, INC., DATE: LAST REVISED 09/06/2018.
2. BUILDING PLANS BY ARCHETYPE, P.A.
3. "SITE DEVELOPMENT PLANS FOR A COMMERCIAL OFFICE BUILDING ON THAMES STREET PROPERTY (ONE HANCOCK STREET), PORTLAND, MAINE, NOVEMBER 2017, CONSTRUCTION SET", (WEX PROJECT), PREPARED BY STANTEC.
4. PORTLAND SEWER SYSTEM INFILTRATION - INFLOW ANALYSIS MAPPING BY HUNTER - BALLEW ASSOCIATES, 1981. SHEET N-3.

LEVELS - APPROXIMATE GRADES:

PARKING GARAGE
GROUND - 14.0'
LEVEL 1 - 24.5'
LEVEL 2 - 35.0'
OFFICE SPACE
LEVELS 3-4 - T.B.D.

NORTH

GRAPHIC SCALE
30 0 15 30 60
(IN FEET)
1 inch = 30 ft.

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ARCHITECT
ARCHETYPE
LANDSCAPE ARCHITECT
ALA
SURVEYOR
OWEN HASKELL
CONTRACTOR
CIANBRO

Notes

No.	Revision	By	Appd.	YY.MM.DD
3	LEVEL III SUBMISSION TO CITY	SRB	SRB	18.10.09
2	PROGRESS SET	SRB	SRB	18.09.24
1	INTERNAL REVIEW	SRB	SRB	18.09.14

File Name: 195350450_SP	DWN.	DBS	SRB	18.09.12
P.E. STEPHEN R. BUSHEY	DWN.	CHKD.	DSGN.	DATE

Permit-Seal
STATE OF MAINE STEPHEN R. BUSHEY 10-09-18 LICENSED PROFESSIONAL ENGINEER

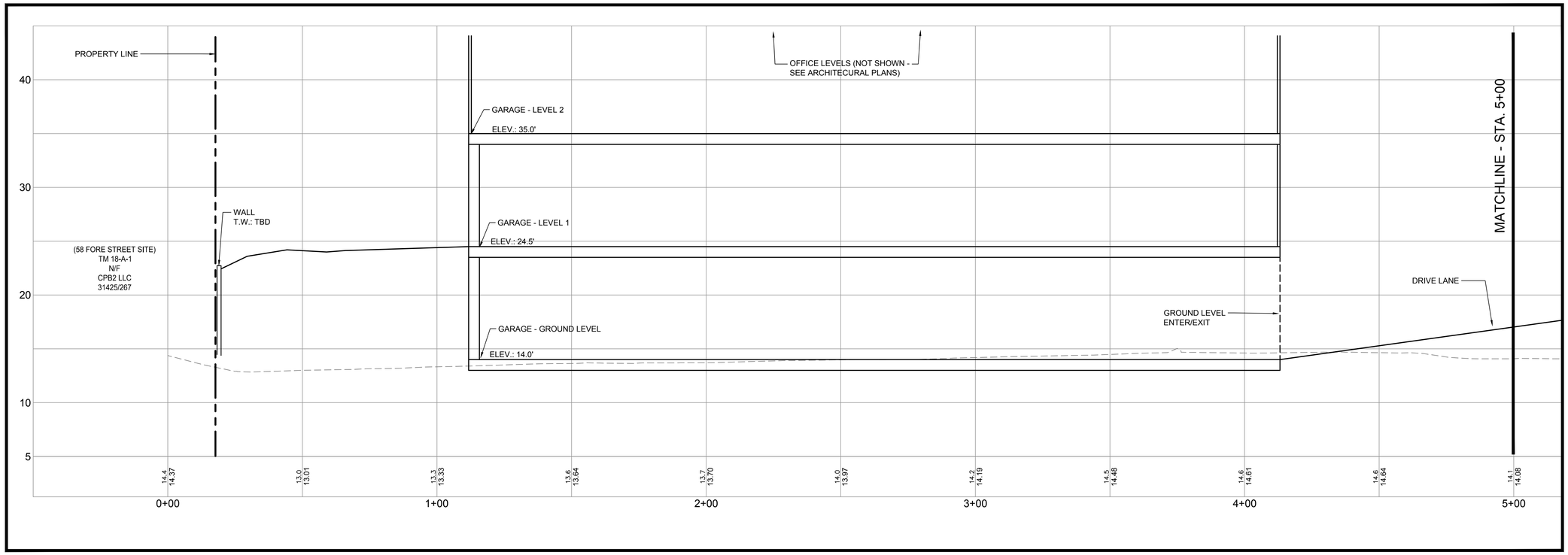
Client/Project
100 FORE STREET LLC
WESTBROOK, ME

100 FORE STREET
PORTLAND, MAINE

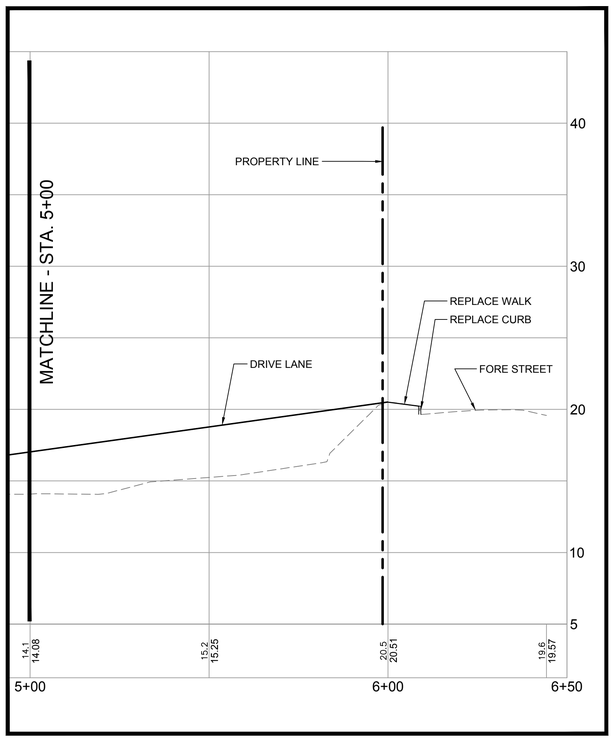
Title
GRADING, DRAINAGE AND EROSION CONTROL PLAN

Project No. 210801622
Scale N.T.S.

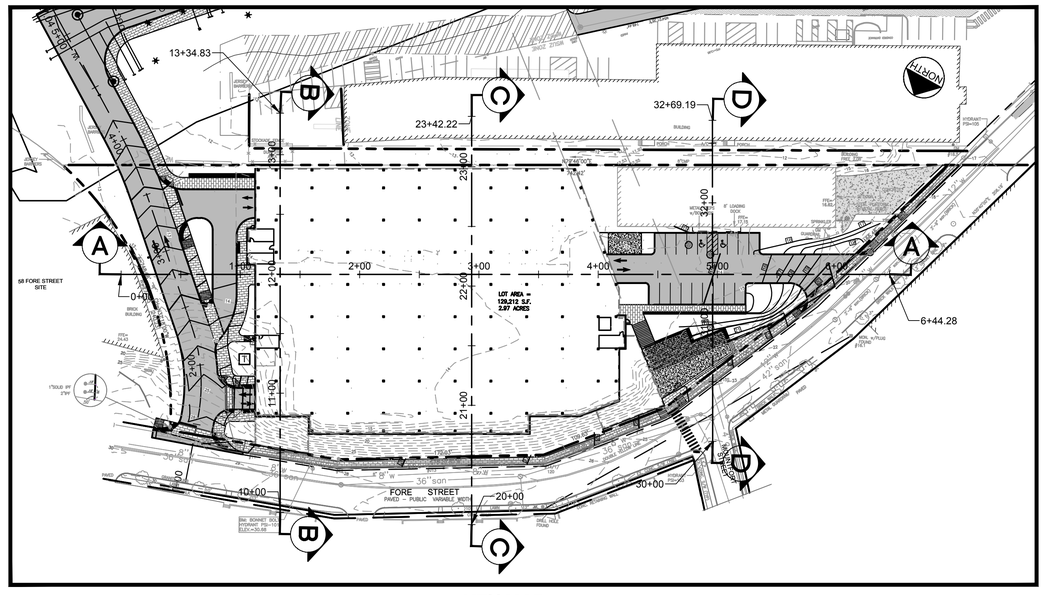
Sheet
C-4.0



SITE PLAN SECTION A-A
HZ: 1" = 20'
VT: 1" = 4'



SITE PLAN SECTION A-A
HZ: 1" = 20'
VT: 1" = 4'



KEY MAP
HZ: 1" = 60'

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No.	Revision	By	Appd.	YY.MM.DD
3	LEVEL III SUBMISSION TO CITY	SRB	SRB	18.10.09
2	PROGRESS SET	SRB	SRB	18.09.24
1	INTERNAL REVIEW	SRB	SRB	18.09.14

File Name: 01622_sections	PBF	DBS	SRB	18.09.14
P.E. STEPHEN R. BUSHEY	DWN.	CHKD.	DSGN.	DATE

Permit-Seal



Client/Project
100 FORE STREET LLC
WESTBROOK, ME

100 FORE STREET
PORTLAND, MAINE

Title
SITE CROSS SECTIONS - SHEET 1 OF 3

Project No. 210801622
Scale

Sheet
C-4.1

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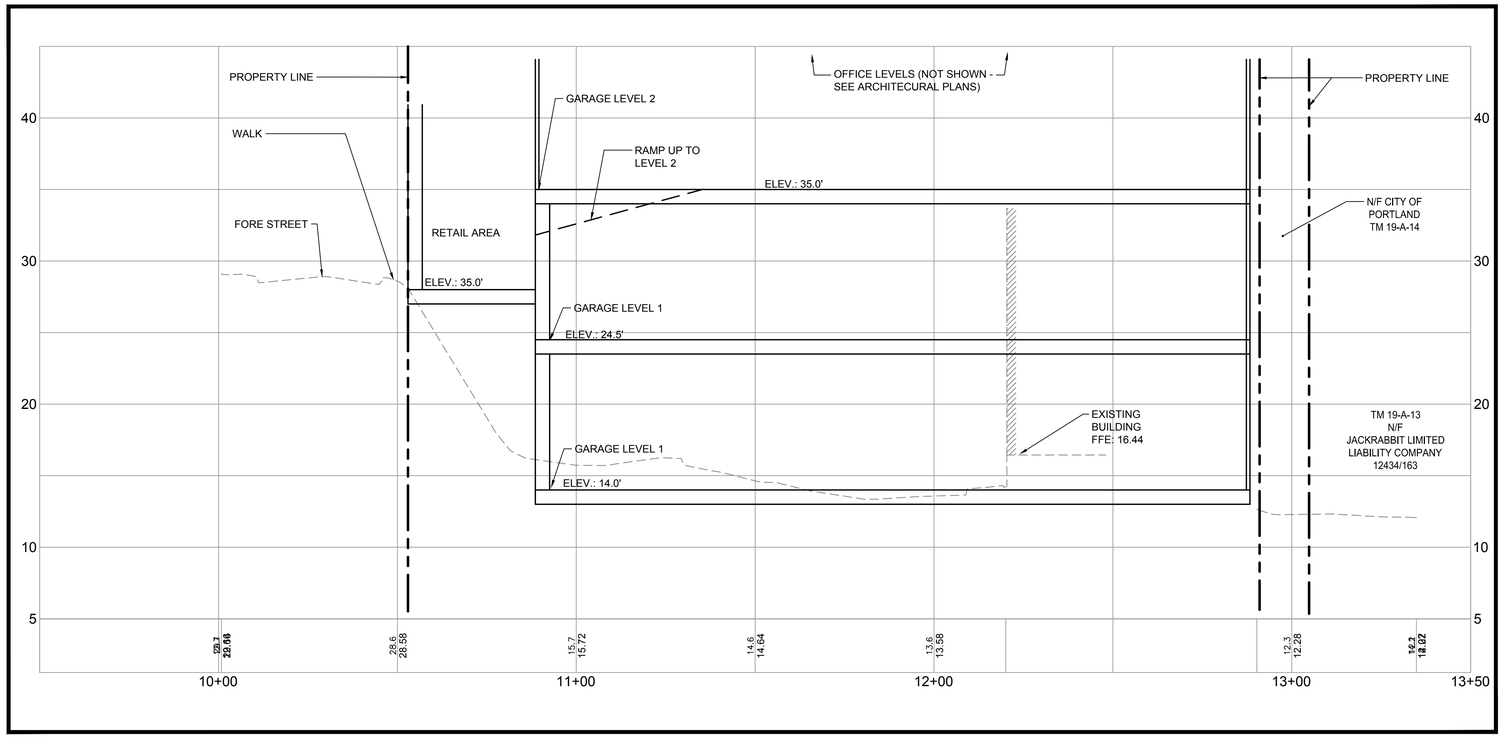
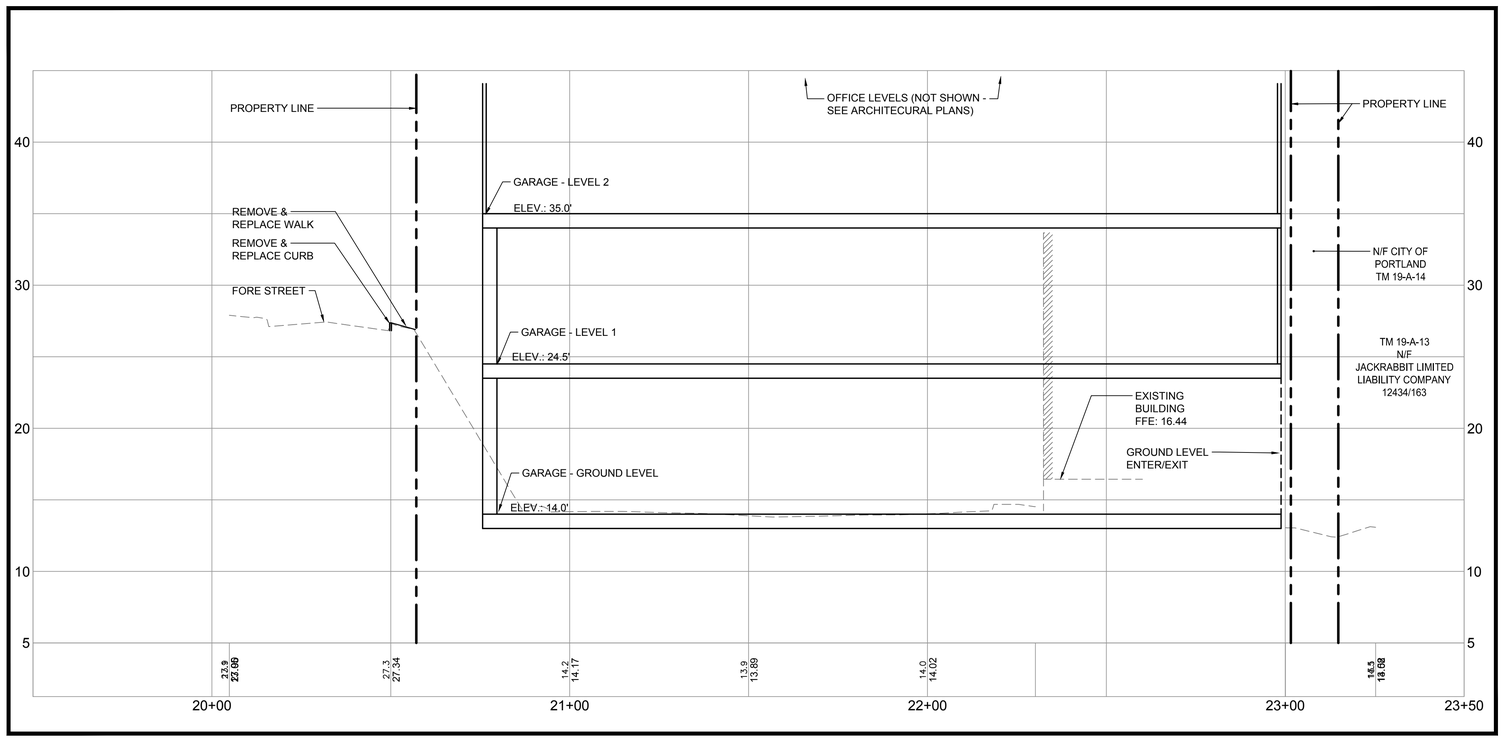


SITE PLAN SECTION B-B

HZ: 1" = 20'
VT: 1" = 4'



SITE PLAN SECTION C-C

HZ: 1" = 20'
VT: 1" = 4'

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Revision	By	Appd.	YY.MM.DD
3 LEVEL III SUBMISSION TO CITY	SRB	SRB	18.10.09
2 PROGRESS SET	SRB	SRB	18.09.24
1 INTERNAL REVIEW	SRB	SRB	18.09.14

File Name: 195350450_SP	PBF	DBS	SRB	18.09.14
P.E. STEPHEN R. BUSHEY	DWN.	CHKD.	DSGN.	DATE

Permit-Seal

STATE OF MAINE
STEPHEN R. BUSHEY
No. 7200
10-09-18
LICENSED
PROFESSIONAL ENGINEER

Client/Project

100 FORE STREET LLC
WESTBROOK, ME

100 FORE STREET
PORTLAND, MAINE

Title

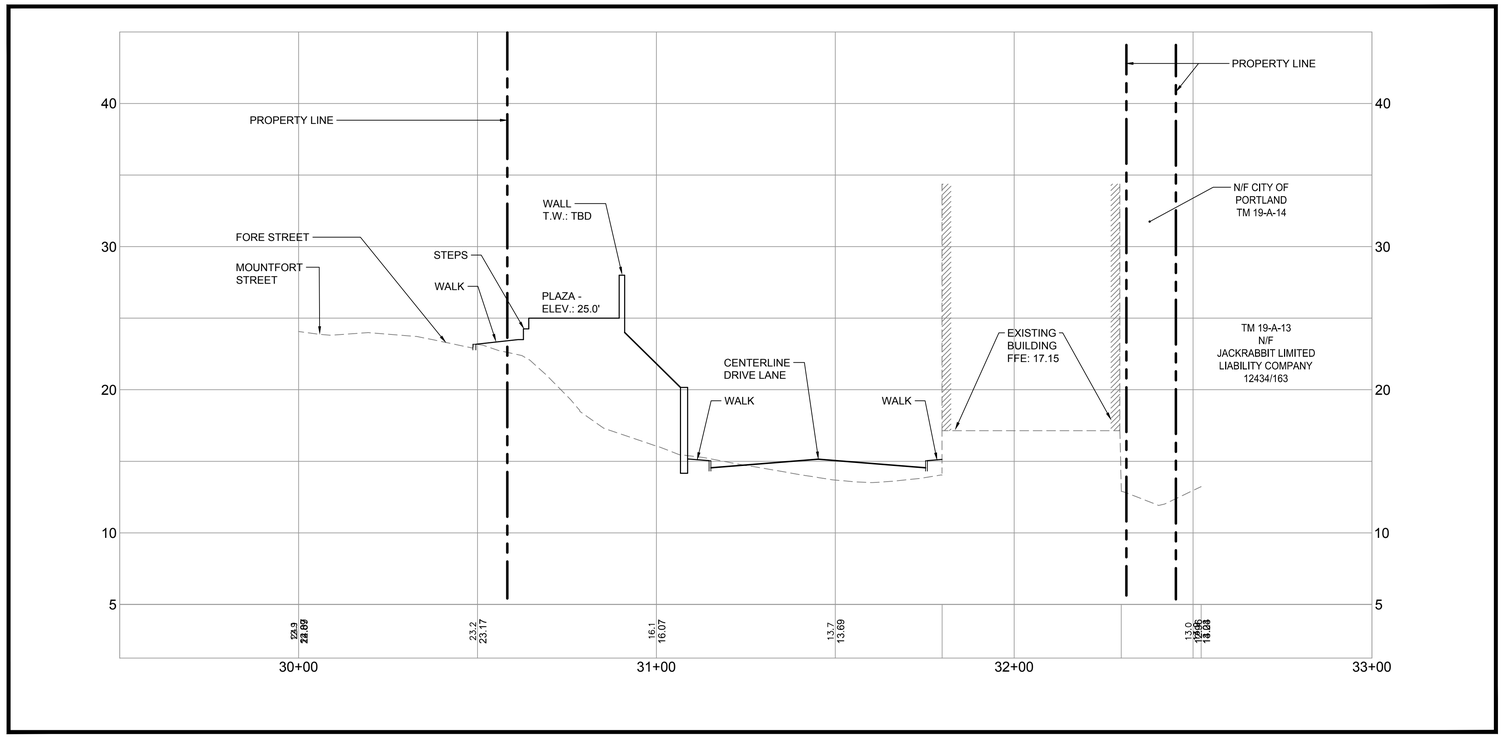
SITE CROSS SECTIONS - SHEET 2 OF 3

Project No. 210801622

Scale

Sheet

C-4.2



SITE PLAN SECTION D-D

HZ: 1" = 20'
VT: 1" = 4'

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File Name: 195350450_SP	PBF	DBS	SRB	18.09.14
P.E. STEPHEN R. BUSHEY	DWN.	CHKD.	DSGN.	DATE

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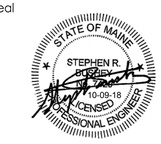


Client/Project

100 FORE STREET LLC
WESTBROOK, ME

100 FORE STREET
PORTLAND, MAINE

Title

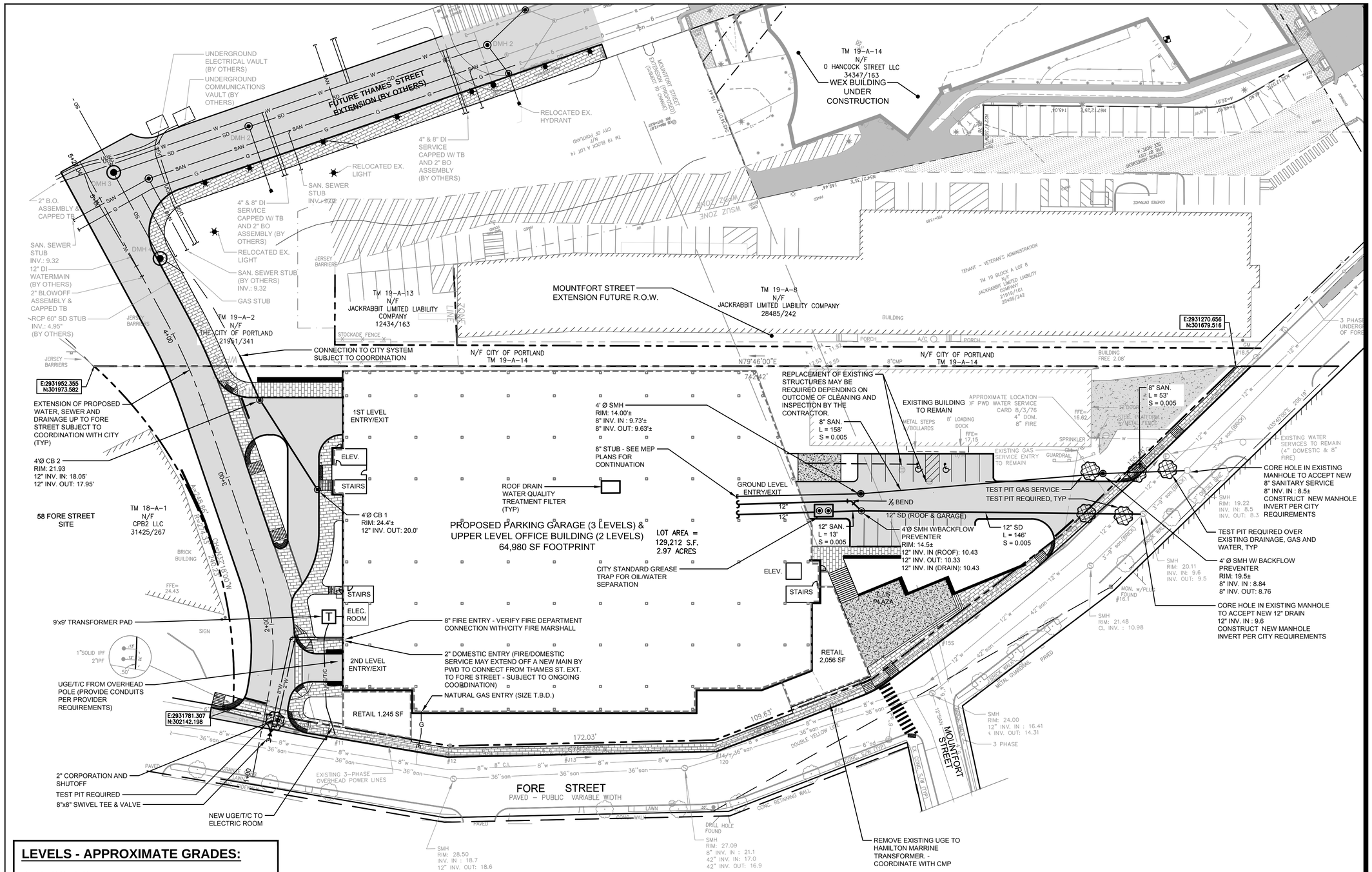
SITE CROSS SECTIONS - SHEET 3 OF 3

Project No. 210801622

Scale

Sheet

C-4.3



LEVELS - APPROXIMATE GRADES:

PARKING GARAGE
GROUND - 14.0'
LEVEL 1 - 24.5'
LEVEL 2 - 35.0'
OFFICE SPACE
LEVELS 3-4 - T.B.D.

PLAN REFERENCES:

1. "TOPOGRAPHIC SURVEY, 100 FORE STREET, PORTLAND, MAINE, MADE FOR JONATHAN COHEN, P.O. BOX 910, 865 SPRING STREET, WESTBROOK, MAINE 04092", BY OWEN HASKELL, INC., DATE: LAST REVISED 09/06/2018.
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4. PORTLAND SEWER SYSTEM INFILTRATION - INFLOW ANALYSIS MAPPING BY HUNTER - BALLEW ASSOCIATES, 1981. SHEET N-3.

PRELIMINARY - NOT FOR CONSTRUCTION

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Notes

Revision	By	Appd.	YY.MM.DD
3 LEVEL III SUBMISSION TO CITY	SRB	DBS	18.10.09
2 PROGRESS SET	SRB	SRB	18.09.24
1 INTERNAL REVIEW	SRB	SRB	18.09.14

File Name: 195350450_SP | DRWN: DBS | CHKD: SRB | DSGN: | 18.09.12 DATE
P.E. STEPHEN R. BUSHEY | DWN.

Permit-Seal
STATE OF MAINE STEPHEN R. BUSHEY 10-09-18 LICENSED PROFESSIONAL ENGINEER

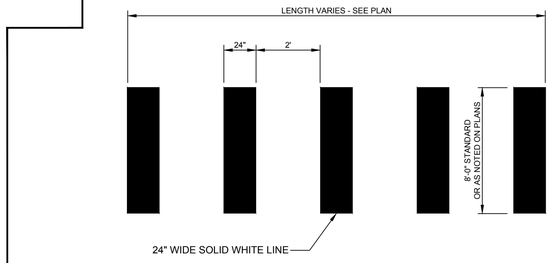
Client/Project
100 FORE STREET LLC
WESTBROOK, ME

100 FORE STREET
PORTLAND, MAINE

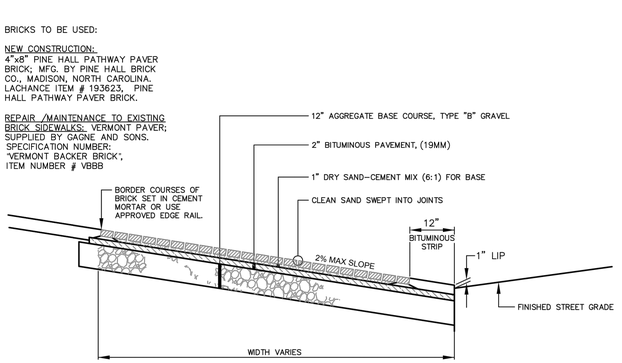
Title
UTILITY PLAN

Project No. 210801622 | Scale 1" = 30'

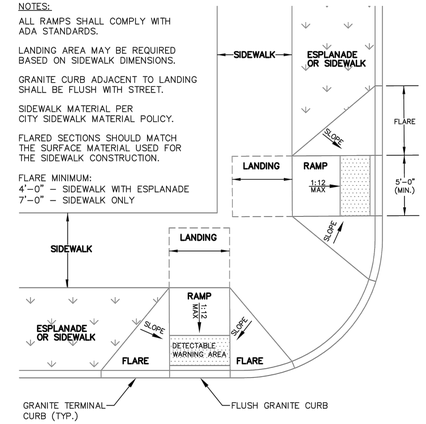
Sheet
C-5.0



A CROSSWALK STRIPING DETAIL
N.T.S.



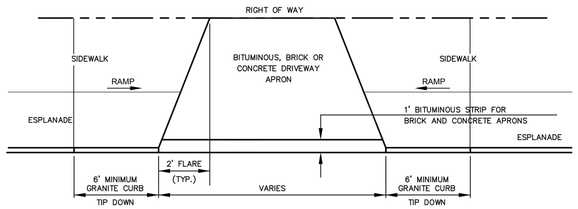
D BRICK DRIVEWAY APRON WITH BITUMINOUS BASE
N.T.S.



G PREFERRED SIDEWALK RAMP AT INTERSECTION
N.T.S.

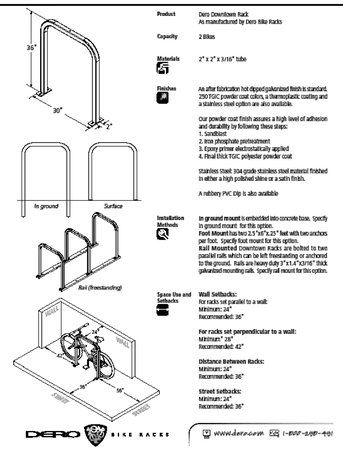
AS OBTAINED FROM THE CITY OF PORTLAND "TECHNICAL MANUAL"

NOTE:
MATCH GRADE OF EXISTING DRIVEWAY AT R. O. W. LINE, EXCEPT WHEN DIRECTED OTHERWISE BY CITY ENGINEER.

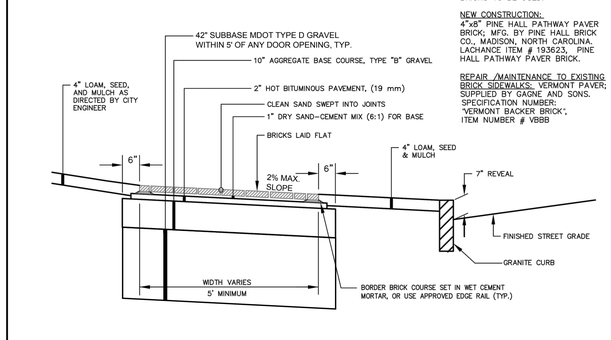


DRIVEWAY APRON LAYOUT
NOT TO SCALE

B DRIVEWAY APRON LAYOUT
N.T.S.

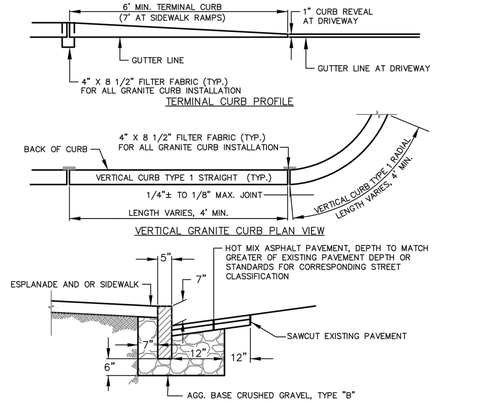


C BICYCLE RACK SPECIFICATION - DOWNTOWN RACK
N.T.S.



E BRICK SIDEWALK WITH BITUMINOUS BASE
N.T.S.

AS OBTAINED FROM THE CITY OF PORTLAND "TECHNICAL MANUAL."

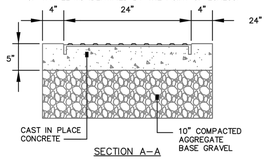


F VERTICAL GRANITE CURB INSTALLATION IN EXIST. STREETS
N.T.S.

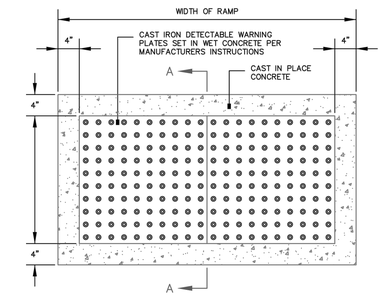
AS OBTAINED FROM THE CITY OF PORTLAND "TECHNICAL MANUAL."

NOTES:

1. ALL DETECTABLE WARNING PLATES SHALL BE UNCOATED CAST IRON. FOLLOW MANUFACTURER'S INSTRUCTIONS FOR INSTALLATION.
2. CAST IN PLACE CONCRETE SHALL MEET SPECIFICATIONS FOR MDOT CLASS A STRUCTURAL CONCRETE, MINIMUM COMPRESSIVE STRENGTH 4,000 PSI. THE EXPOSED CONCRETE BORDER SHALL RECEIVE A UNIFORM BROOM FINISH PERPENDICULAR TO THE FLOW OF PEDESTRIAN TRAFFIC.
3. TRUNCATED DOMES SHALL BE ALIGNED IN ROWS, PARALLEL AND PERPENDICULAR TO THE PREDOMINANT DIRECTION OF TRAVEL. TRUNCATED DOME BRICKS AND GRANITE PAVERS ARE NOT ALLOWED.
4. SIZE: THE DETECTABLE WARNING PLATES SHALL EXTEND 24 INCHES MINIMUM IN THE DIRECTION OF TRAVEL AND THE FULL WIDTH OF THE CURB RAMP, LANDING, OR BLENDED TRANSITION TO THE STREET.
5. ORIENTATION: THE DETECTABLE WARNING PANEL SHALL BE LOCATED SO THAT THE EDGE NEAREST THE CURB LINE IS 6 INCHES MINIMUM AND 8 INCHES MAXIMUM FROM THE CURB LINE. THE PANEL SHALL BE ORIENTED TO THE DIRECTION OF TRAVEL AS IDENTIFIED BY THE POINT OF EGRESS.



SECTION A–A



PLAN VIEW

H SIDEWALK RAMP DETECTABLE WARNING PANEL
N.T.S.

AS OBTAINED FROM THE CITY OF PORTLAND "TECHNICAL MANUAL"

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LANDSCAPE ARCHITECT
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Notes

Revision	By	Appd.	Date
3 LEVEL III SUBMISSION TO CITY	SRB	SRB	11.10.09
2 PROGRESS SET	SRB	SRB	11.09.24
1 INTERNAL REVIEW	SRB	SRB	11.09.14

File Name: 195350450_det | DWN. RJR | CHKD. DBS | DSGN. SRB | DATE 12.09.12
P.E. STEPHEN R. BUSHEY

Permit-Seal



Client/Project
100 FORE STREET LLC
WESTBROOK, ME

100 FORE STREET
PORTLAND, MAINE

Title
LANDSCAPE, SITE AND SIDEWALK DETAILS

Project No. 210801622 | Scale N.T.S.

Sheet
C-6.0

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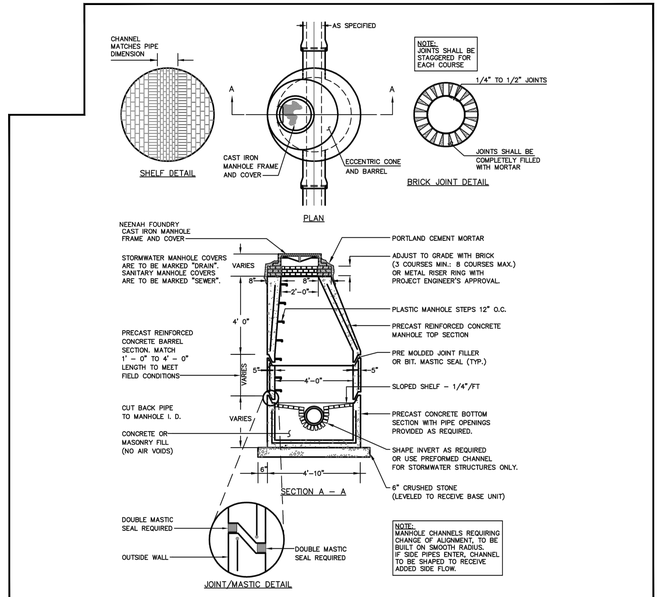
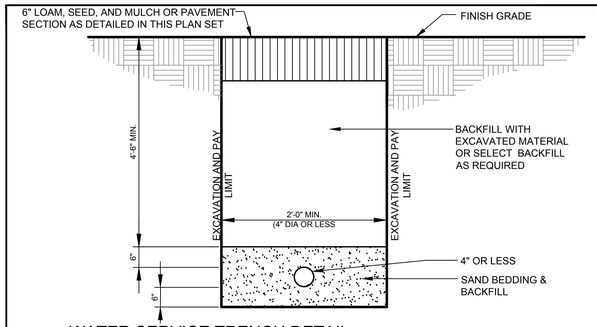


A PRECAST CONCRETE MANHOLE

N.T.S.

AS OBTAINED FROM THE CITY OF PORTLAND "TECHNICAL MANUAL"



B WATER SERVICE TRENCH DETAIL

N.T.S.

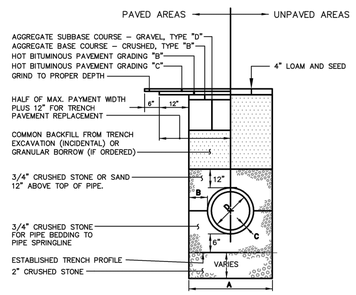
NOTES

1. ALTERNATIVE CONSTRUCTION METHODS OR PAYMENT METHODS SHALL BE APPROVED IN ADVANCE BY THE CITY.
2. 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.
3. 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 6".
4. 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 FOLLOWING TABLE.

PIPE DIAMETER, D (INCHES)	MAX. TRENCH WIDTH, A (FEET)
4 – – – –	4.0
6	4.0
8	4.0
10	4.0
12	5.0
15	5.0
18 – – – –	5.0
21	5.0
24	6.0
27	6.0
30	6.0
36 – – – –	6.0
42	7.0
48	7.0

NOTES:
DEPTH OF BITUMINOUS PAVEMENT AND AGGREGATE COURSES SHALL BE DETERMINED BY STREET CLASSIFICATION.

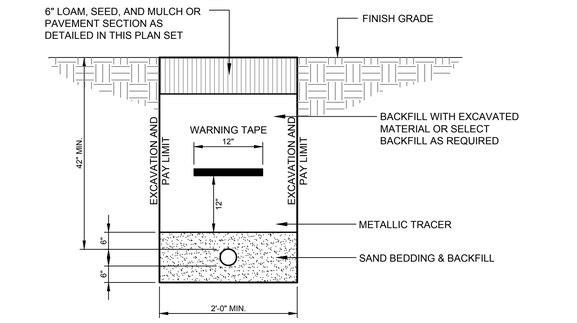
ANY ALTERNATE TRENCHING OR PAYMENT METHODS SHALL BE APPROVED IN ADVANCE BY THE CITY OF PORTLAND, DEPARTMENT OF PUBLIC SERVICES..



D TYPICAL PIPE TRENCH INSTALLATION AND NOTES

N.T.S.

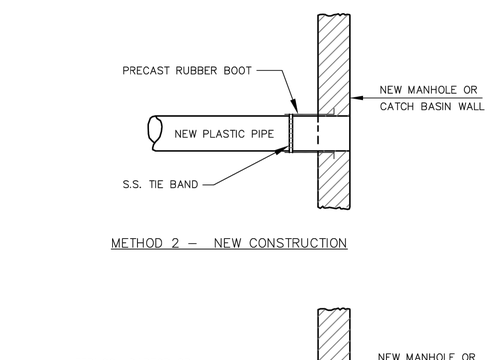
AS OBTAINED FROM THE CITY OF PORTLAND "TECHNICAL MANUAL"



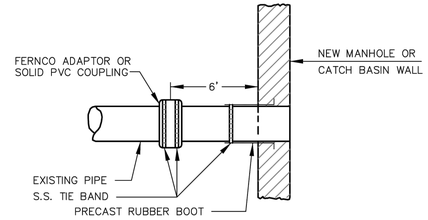
NOTE:
GAS LINE TO BE INSTALLED BY OTHERS. SITE CONTRACTOR IS RESPONSIBLE FOR EXCAVATION AND BACKFILL OF THE GAS LINE AND PLACEMENT OF THE WARNING TAPES AND TRACER.

E GAS SERVICE TRENCH SECTION

N.T.S.



METHOD 2 – NEW CONSTRUCTION



METHOD 1 – EXISTING PIPE INTO NEW STRUCTURE

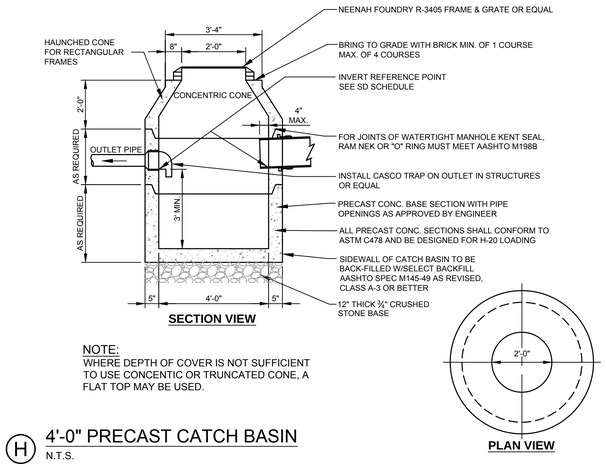
PLASTIC PIPE CONNECTIONS

NOT TO SCALE

H PLASTIC PIPE CONNECTION METHODS 1 & 2

N.T.S.

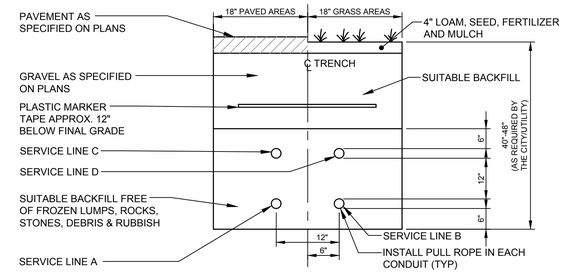
AS OBTAINED FROM THE CITY OF PORTLAND "TECHNICAL MANUAL"



NOTE:
WHERE DEPTH OF COVER IS NOT SUFFICIENT TO USE CONCENTIC OR TRUNCATED CONE, A FLAT TOP MAY BE USED.

H 4'-0" PRECAST CATCH BASIN

N.T.S.



CONDUIT TYPE

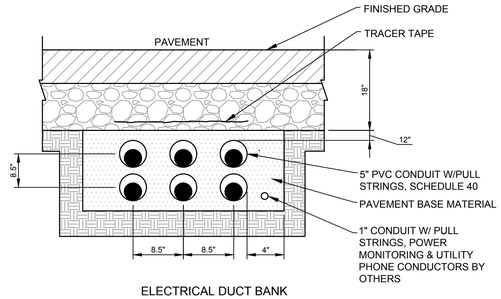
SERVICE	CONDUIT SIZE	GRASS AREAS	PAVED AREAS	UTILITY	REMARKS
A	2-6"	SCHEDULE 40 PVC ELECTRICAL GRADE	RIGID GALVANIZED STEEL, ASTM A120*	POWER	SEE NOTE
B	2-4"	SCHEDULE 40 PVC	RIGID GALVANIZED STEEL, ASTM A120*	TELEPHONE	SEE NOTE
C	2-4"	SCHEDULE 40 PVC	RIGID GALVANIZED STEEL, ASTM A120*	COMMUNICATION	SEE NOTE
D	2-4"	SCHEDULE 40 PVC	RIGID GALVANIZED STEEL, ASTM A120*	SPARES	SEE NOTE

*AS REQUIRED BY CITY /UTILITY

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. COORDINATE WITH ELECTRICAL SITE PLANS BY E.S. BOULOS.
2. IN CITY RIGHT OF WAY, CONDUITS TO HAVE 36" MIN. COVER AND BE ENCASED WITH MIN. 3" CONCRETE ON ALL SIDES.

F UTILITY TRENCH - PRIMARY ELEC., TEL. & COMM.

N.T.S.



ELECTRICAL DUCT BANK
SIX ELECTRICAL DUCTS

NOTES:
1. CONDUIT BANK WILL EXTEND 5' BEYOND FOUNDATION WALL. CAP ALL CONDUITS.

SECONDARY UNDERGROUND ELECTRIC CONDUIT BANK DETAIL

N.T.S.

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ARCHETYPE
LANDSCAPE ARCHITECT
ALA
SURVEYOR
OWEN HASKELL
CONTRACTOR
CIANBRO

Notes

Revision	By	Appd.	YY.MM.DD
3 LEVEL III SUBMISSION TO CITY	SRB	SRB	18.10.09
2 PROGRESS SET	SRB	SRB	18.09.24
1 INTERNAL REVIEW	SRB	SRB	18.09.14

File Name: 195350430_det	RJR	DBS	SRB	17.09.12
P.E. STEPHEN R. BUSHEY	DWN.	CHKD.	DSGN.	DATE

Permit-Seal



Client/Project
100 FORE STREET LLC
WESTBROOK, ME

100 FORE STREET
PORTLAND, MAINE

Title
STORMDRAIN AND UTILITY DETAILS

Project No. 210801622
Scale N.T.S.

Sheet
C-6.1

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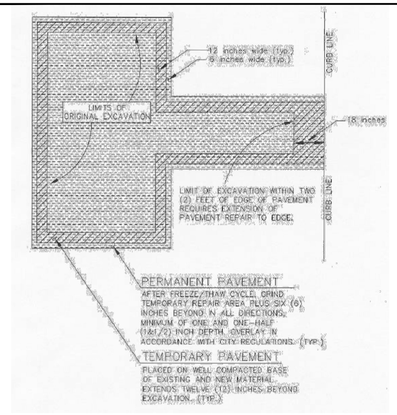
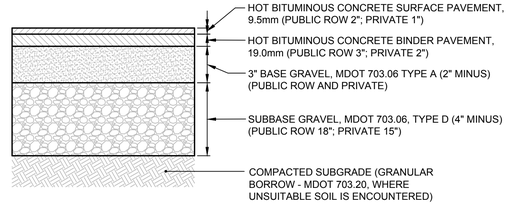


A PLAN VIEW OF MINOR EXCAVATION PAVEMENT REPAIR

A

AS OBTAINED FROM THE CITY OF PORTLAND "RULES AND REGULATIONS FOR EXCAVATION ACTIVITIES IN THE PUBLIC RIGHT OF WAY"

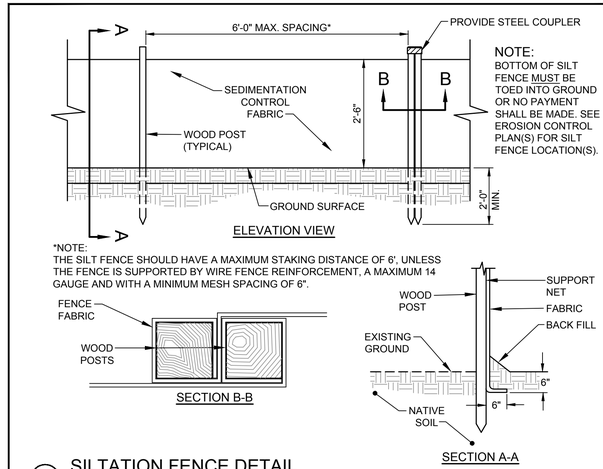


NOTES:

1. APPLY TACK COAT BETWEEN BINDER AND SURFACE COURSES.
2. ALL MATERIALS SHALL CONFORM TO MDOT SPECIFICATIONS, LATEST REVISION AND/OR CITY OF PORTLAND TECHNICAL STANDARD, WHICHEVER IS MORE STRINGENT. COMPACTION OF ALL MATERIALS TO BE IN ACCORDANCE WITH THE SPECIFICATIONS AND THE GEOTECHNICAL REPORT.

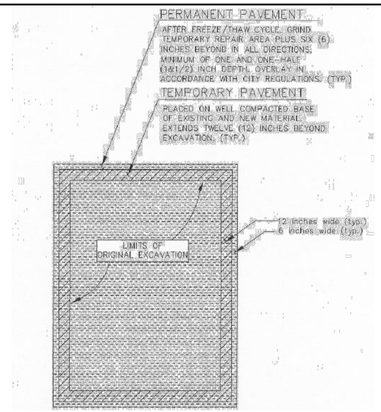
D BITUMINOUS CONCRETE PAVEMENT SECTION

N.T.S.



G SILTATION FENCE DETAIL

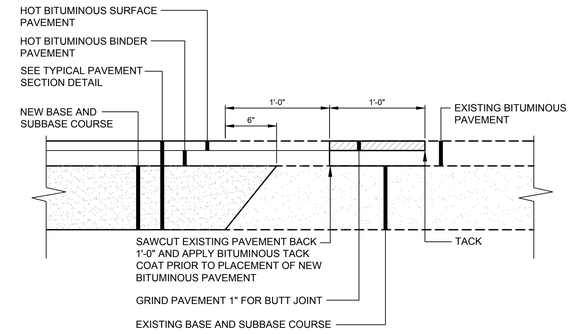
N.T.S.



B PLAN VIEW OF MINOR EXCAVATION PAVEMENT REPAIR

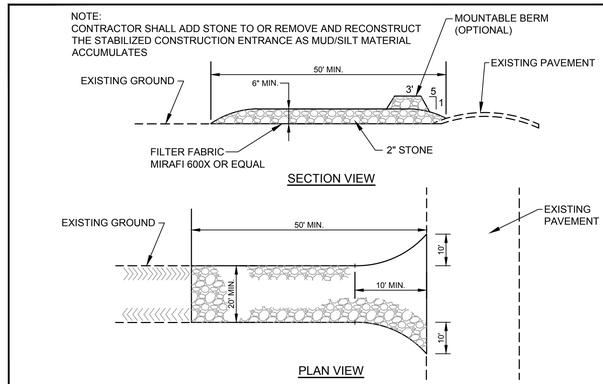
B

AS OBTAINED FROM THE CITY OF PORTLAND "RULES AND REGULATIONS FOR EXCAVATION ACTIVITIES IN THE PUBLIC RIGHT OF WAY"



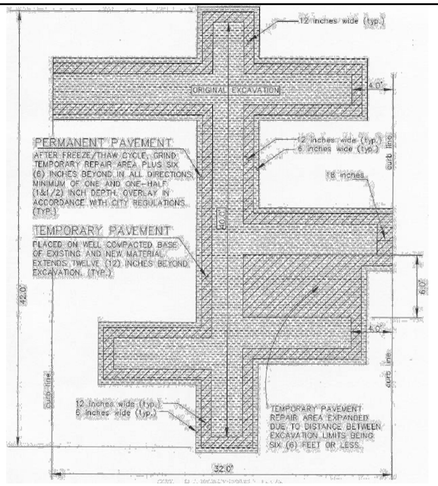
E PAVEMENT SAWCUT DETAIL

N.T.S.



H STABILIZED CONSTRUCTION ENTRANCE DETAIL

N.T.S.



C PLAN VIEW OF MAJOR EXCAVATION PAVEMENT REPAIR

C

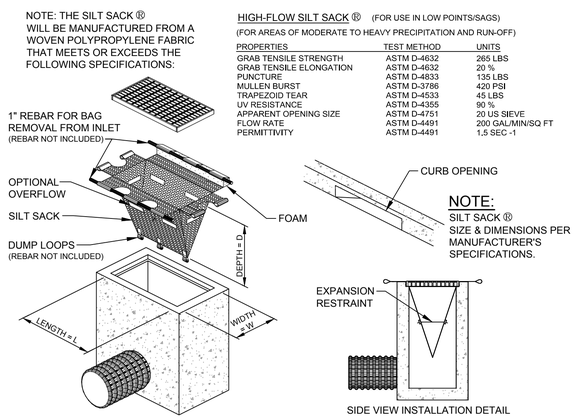
AS OBTAINED FROM THE CITY OF PORTLAND "RULES AND REGULATIONS FOR EXCAVATION ACTIVITIES IN THE PUBLIC RIGHT OF WAY"

NOTE: THE SILT SACK ® WILL BE MANUFACTURED FROM A WOVEN POLYPROPYLENE FABRIC THAT MEETS OR EXCEEDS THE FOLLOWING SPECIFICATIONS:

HIGH-FLOW SILT SACK ® (FOR USE IN LOW POINTS/SAGS)

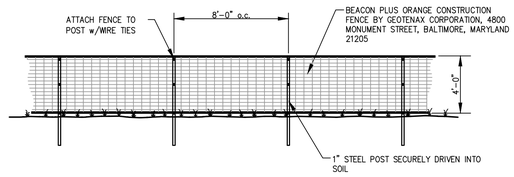
(FOR AREAS OF MODERATE TO HEAVY PRECIPITATION AND RUN-OFF)

PROPERTIES	TEST METHOD	UNITS
GRAB TENSILE STRENGTH	ASTM D-4632	265 LBS
GRAB TENSILE ELONGATION	ASTM D-4632	20 %
PUNCTURE	ASTM D-4833	135 LBS
MULLEN BURST	ASTM D-3786	420 PSI
TRAPEZOID TEAR	ASTM D-4533	45 LBS
UV RESISTANCE	ASTM D-4355	90 %
APPARENT OPENING SIZE	ASTM D-4751	20 US SIEVE
FLOW RATE	ASTM D-4491	200 GAL/MIN/SQ FT
PERMITTIVITY	ASTM D-4491	1.5 SEC -1



F SILT SACK® DETAIL & SPECIFICATIONS

N.T.S.



I ORANGE CONSTRUCTION FENCE DETAIL

N.T.S.

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Consultants

ARCHITECT
ARCHETYPE

LANDSCAPE ARCHITECT
ALA

SURVEYOR
OWEN HASKELL

CONTRACTOR
CIANBRO

Notes

Revision	By	Appd.	DD/MM/YY
3 LEVEL III SUBMISSION TO CITY	SRB	SRB	18.10.09
2 PROGRESS SET	SRB	SRB	18.09.24
1 INTERNAL REVIEW	SRB	SRB	18.09.14

File Name: 195350450_det	RJR	DBS	SRB	12.09.12
P.E. STEPHEN R. BUSHEY	DWN.	CHKD.	DSGN.	DATE

Permit-Seal

STATE OF MAINE
STEPHEN R. BUSHEY
10-09-18
LICENSED PROFESSIONAL ENGINEER

Client/Project

100 FORE STREET LLC
WESTBROOK, ME

100 FORE STREET
PORTLAND, MAINE

Title

PAVEMENT, EROSION AND MISCELLANEOUS DETAILS

Project No. 210801622

Scale N.T.S.

Sheet

C-6.2

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NOTES:

1. WEIGHT (APPROX):
   A) EMPTY W/CARTRIDGES: 50-LB (MAX)
   B) FULL OF WATER: 1800-LB (MAX)

2. MATERIAL:
   A) FILTER HOUSING AND COVER: HDPE, WHITE
   B) CARTRIDGE PLATE: 5052-H32 ALUMINUM ALLOY
   C) SUPPORT HARDWARE: CRES 300 SERIES OR EQUAL

3. PERFORMANCE CHARACTERISTICS (TYP):
   A) DEBRIS CAPACITY: 11.0 CU-FT
   B) FILTERED FLOW RATE: SEE TABLE 1
   C) BYPASS FLOW RATE: 3100 GPM (6.9 CFS)

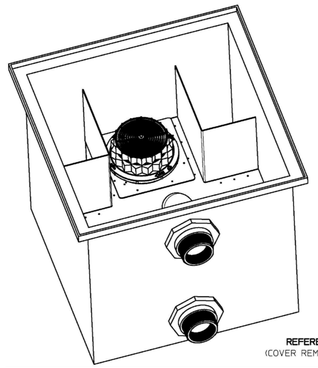
4. TYPICAL INSTALLATION: CUT DOWNSPOUT PIPE AND CONNECT THE 4" INLET AND OUTLET PIPES AS REQUIRED TO REDIRECT RAIN FLOW THROUGH THE FILTER BOX.

5. USE ONLY WITH FABCO REPLACEABLE MEDIA CARTRIDGES.

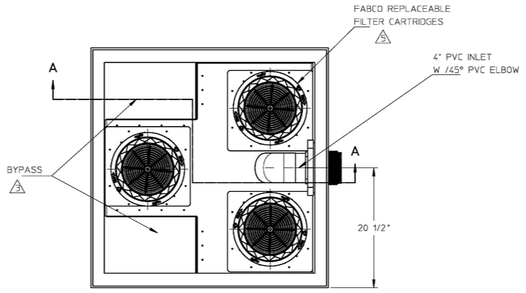
6. ALL TANK DIMENSIONS ARE REFERENCE AND VARY BY THE STANDARD ROTATIONAL MOLDING TOLERANCE OF ± 3%

TABLE 1 (3)(5)
ADDITIONAL CARTRIDGE DESIGNS

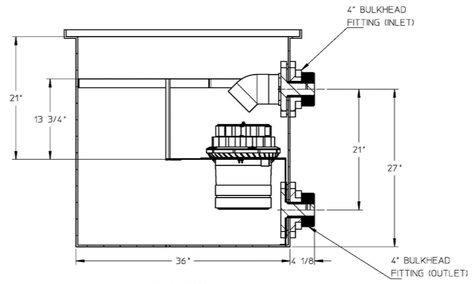
ORDER NUMBER	DESCRIPTION	COLOR CODE	FLOW RATE (TYP)
9718-1	STANDARD	RED	115 GPM (.26 CFS)
9718-2	BACTERIA	YELLOW	115 GPM (.26 CFS)
9718-3	HYDROCARBONS	BLUE	115 GPM (.26 CFS)
9718-4	HEAVY METALS	GREY	60 GPM (.13 CFS)
9718-5	STANDARD (SHORT)	MINT	115 GPM (.26 CFS)
9718-6	NUTRIENTS	GREEN	100 GPM (.22 CFS)
9718-7	HIGH FLOW	RED (MARKED)	260 GPM (.58 CFS)



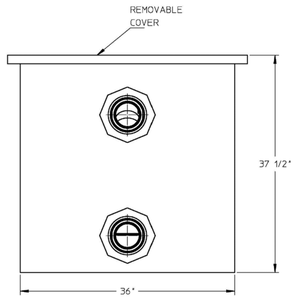
REFERENCE VIEW
(COVER REMOVED FOR CLARITY)



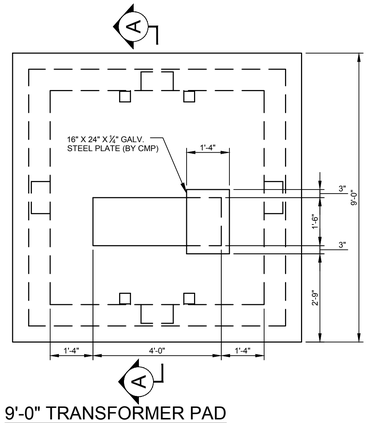
COVER REMOVED FOR CLARITY



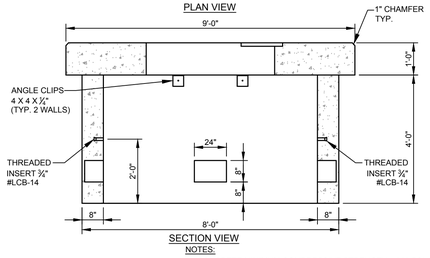
SECTION A-A



(A) FABCO DOWNSPOUT FILTER UNIT DETAIL
N.T.S.



(B) 9'-0" TRANSFORMER PAD
N.T.S.



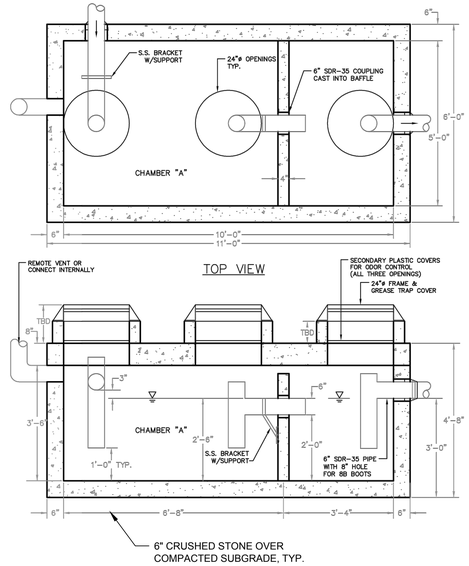
SECTION VIEW

NOTES:
1. CONCRETE MINIMUM COMPRESSIVE STRENGTH 4,000 PSI @ 28 DAYS WITH STEEL REINFORCEMENT.
2. AS PER CENTRAL MAINE POWER COMPANY SPECIFICATIONS.
3. ONE 8" x 24" KNOCKOUT PROVIDED EACH WALL.
4. FOR 750 - 5000 KVA THREE PHASE TRANSFORMER.
5. FINISH GRADE SHALL BE GRADED TO ALLOW SURFACE WATER TO FLOW AWAY FROM THE PAD.

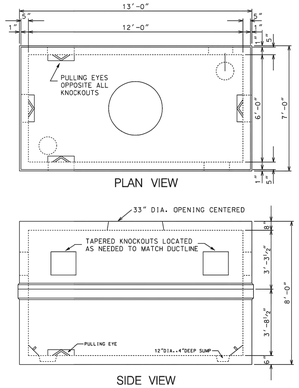
DESIGN NOTES:
1. CONCRETE 5000 PSI AT 28 DAYS.
2. H-20 LOADING
3. JOINTS SEALED WITH BUTYL RUBBER JOINT SEALANT (ASSHTO M-19)
4. ALL TEES/BAFFLES PROVIDED BY PRECAST.

THIS STRUCTURE MUST DISCHARGE TO A CITY OF PORTLAND STANDARD MANHOLE WITH CHANNEL (CONTROL/SAMPLING MANHOLE).

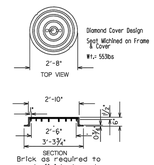
FORMULA FOR SIZING THE TRAP: CHAMBER "A" (2/3 OF TANK VOLUME) MUST BE EQUIVALENT TO THE AVERAGE DAILY PROCESS FLOW FROM THE FACILITY WITH NO SANITARY OR OTHER EXTRANEOUS WASTES FLOWING THROUGH IT.



(C) GREASE TRAP (TO FUNCTION AS OIL / WATER SEPARATOR FOR GARAGE DRAINS)
N.T.S.
AS OBTAINED FROM THE CITY OF PORTLAND "TECHNICAL MANUAL"



MANHOLE DETAIL
N.T.S.
(Ref.Type: 38Y)



COVER DETAIL
N.T.S.

NOTES
1) Vault shall be designed to withstand H20 wheel loading with 6 inches of overburden. The design shall also meet the AASHTO design requirements of National Electrical Safety Code Section 323A. Provide shop drawings stamped by a State of Maine Registered Professional Engineer upon Request
2) Joints sealed with asphalt.
3) Mountings for cable racks etc. cast in wall by further plans or field located.
4) Manhole shall be set on a suitable gravel base.
5) Cables are to be racked along one wall only.

(D) CMP PRECAST CONCRETE 38Y MANHOLE (IF REQUIRED BY CMP)
N.T.S.

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File Name: 195350450_det | RSR DWN. | DBS CHKD. | SRB DSGN. | 18.09.12 DATE
P.E. STEPHEN R. BUSHEY
Permit-Seal



Client/Project
100 FORE STREET LLC
WESTBROOK, ME

100 FORE STREET
PORTLAND, MAINE

Title
MISCELLANEOUS UTILITY DETAILS

Project No. 210801622 | Scale N.T.S.

Sheet
C-6.3

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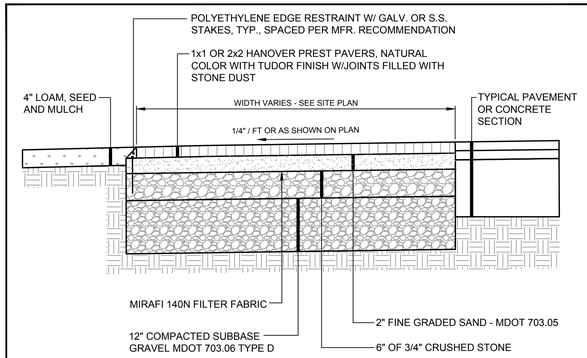
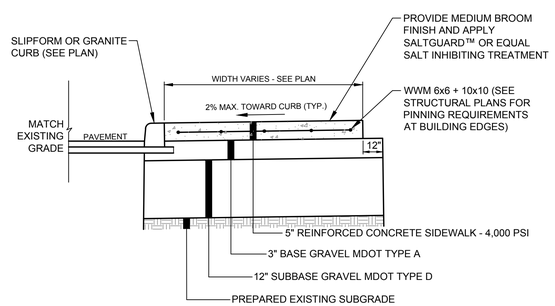
Ⓐ VACANT
N.T.S.



Ⓑ TYPICAL PAVER DETAIL
N.T.S.



NOTE:
INSTALL CONSTRUCTION JOINTS AT 12' SPACING.

Ⓒ CONCRETE SIDEWALK DETAIL
N.T.S.

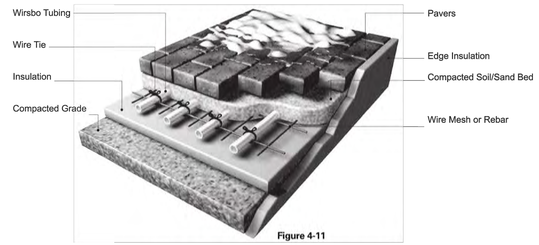


Figure 4-11

Pavers Over a Compactable Soil/Sand Bed

Application

This method is for designs with light vertical load requirements. With insulation, the heated area is isolated from high movement of energy from the system to the surrounding frozen soil. Response time is fairly quick and even faster if the system is idled.

Where Used

This installation is applicable to the following applications.

- Sidewalks
- Driveways
- Low-density roads

How to Install

There are two ways to install the tubing over the high-density insulation. As shown in **Figure 4-11**, secure the tubing to the wire mesh or rebar which has been placed over the high-density insulation board. In the alternative method, secure the tubing to the high-density insulation using Wirsbo plastic staples with the manual stapler.

Install vertical insulation along the entire edge down to the depth of the horizontal insulation. The insulation creates a thermal break between the heated area and the frozen ground.

After installing the tubing, cover with a compactable soil/sand bed (typically 2 to 3 inches) prior to applying pavers or bricks.

What to Look For

- Make sure the base material is properly compacted as specified by the project engineer.
- Verify whether a high water table or moist soil conditions exist within 8 to 10 vertical feet of the snow and ice melting system. If found, isolate the system from the moisture.
- Using approved insulation with vertical compressive strength is critical. Consult with the insulation manufacturer or project engineer for recommendations.
- Supply water temperatures for this application should be no higher than 150°F.

Control Strategy

Use the semi- or fully automatic strategy for this installation method.

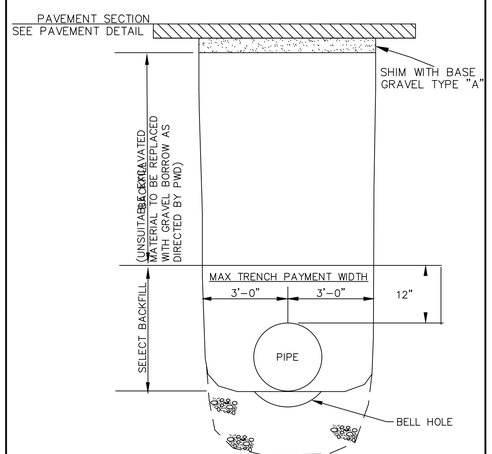
NOTE:

SNOWMELT SYSTEM INSTALLATION TO BE COORDINATED WITH MEP PLANS AND CITY OF PORTLAND PUBLIC WORKS (WHEN SYSTEM IS IN THE R.O.W.).

WIRSBO
Life. Safety. Comfort Systems

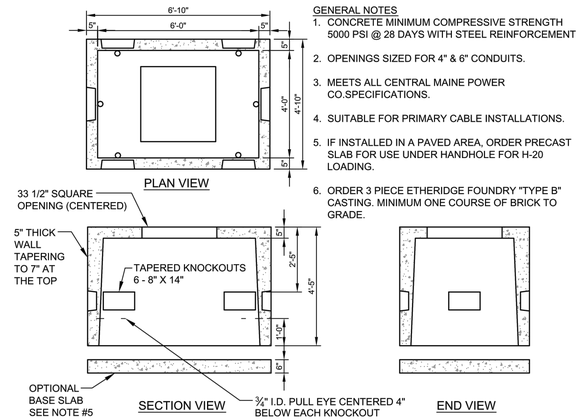
27

Ⓓ SNOWMELT PAVER DETAIL (LOCATIONS T.B.D.)
N.T.S.



Ⓔ TYPICAL WATER TRENCH DETAIL
N.T.S.

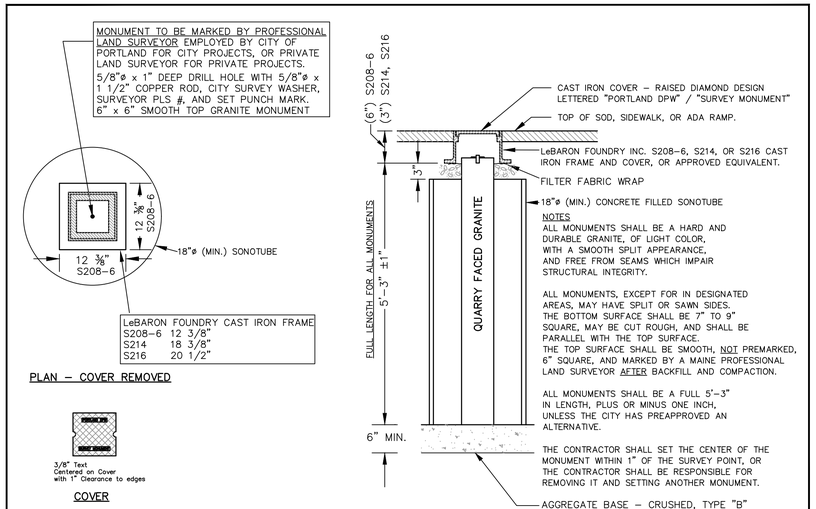
Ⓞ VACANT
N.T.S.



GENERAL NOTES

1. CONCRETE MINIMUM COMPRESSIVE STRENGTH 5000 PSI @ 28 DAYS WITH STEEL REINFORCEMENT
2. OPENINGS SIZED FOR 4" & 6" CONDUITS.
3. MEETS ALL CENTRAL MAINE POWER CO.SPECIFICATIONS.
4. SUITABLE FOR PRIMARY CABLE INSTALLATIONS.
5. IF INSTALLED IN A PAVED AREA, ORDER PRECAST SLAB FOR USE UNDER HANDHOLE FOR H-20 LOADING.
6. ORDER 3 PIECE ETHERIDGE FOUNDRY "TYPE B" CASTING. MINIMUM ONE COURSE OF BRICK TO GRADE.

Ⓕ SPLICE BOX DETAIL
N.T.S.



NOTES
ALL MONUMENTS SHALL BE A HARD AND DURABLE GRANITE, OF LIGHT COLOR, WITH A SMOOTH SPLIT APPEARANCE, AND FREE FROM SEAMS WHICH IMPAIR STRUCTURAL INTEGRITY.

ALL MONUMENTS, EXCEPT FOR IN DESIGNATED AREAS, MAY HAVE SPLIT OR SAWN SIDES. THE BOTTOM SURFACE SHALL BE 7" TO 9" SQUARE, MAY BE CUT ROUGH, AND SHALL BE PARALLEL WITH THE TOP SURFACE. THE TOP SURFACE SHALL BE SMOOTH, NOT PREMARKED, 6" SQUARE, AND MARKED BY A MAINE PROFESSIONAL LAND SURVEYOR AFTER BACKFILL AND COMPACTION.

ALL MONUMENTS SHALL BE A FULL 5'–3" IN LENGTH, PLUS OR MINUS ONE INCH, UNLESS THE CITY HAS PREAPPROVED AN ALTERNATIVE.

THE CONTRACTOR SHALL SET THE CENTER OF THE MONUMENT WITHIN 1" OF THE SURVEY POINT, OR THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING IT AND SETTING ANOTHER MONUMENT.

Ⓖ GRANITE STREET MONUMENT DETAIL
N.T.S.

V:\210\Active\210801622\civil\cadd\permit\dwg\01622_det.dwg oddube 10/10/2018 11:56 AM

Stantec
482 Payne Road Scarborough Court
Scarborough, Maine 04074-8929
Tel. 207.883.3355
www.stantec.com

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The Contractor shall verify and be responsible for all dimensions. DO NOT scale the drawing - any errors or omissions shall be reported to Stantec without delay.
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Consultants

ARCHITECT
ARCHETYPE

LANDSCAPE ARCHITECT
ALA

SURVEYOR
OWEN HASKELL

CONTRACTOR
CIANBRO

Notes

Revision	By	Appd.	DATE
3 LEVEL III SUBMISSION TO CITY	SRB	SRB	10.10.18
2 PROGRESS SET	SRB	SRB	8.09.24
1 INTERNAL REVIEW	SRB	SRB	8.09.14

File Name: 195350450_det	DWN.	DBS	SRB	12.09.12
P.E. STEPHEN R. BUSHEY	DWN.	CHKD.	DSGN.	DATE

Permit-Seal

STATE OF MAINE
STEPHEN R. BUSHEY
10-09-18
LICENSED PROFESSIONAL ENGINEER

Client/Project
100 FORE STREET LLC
WESTBROOK, ME

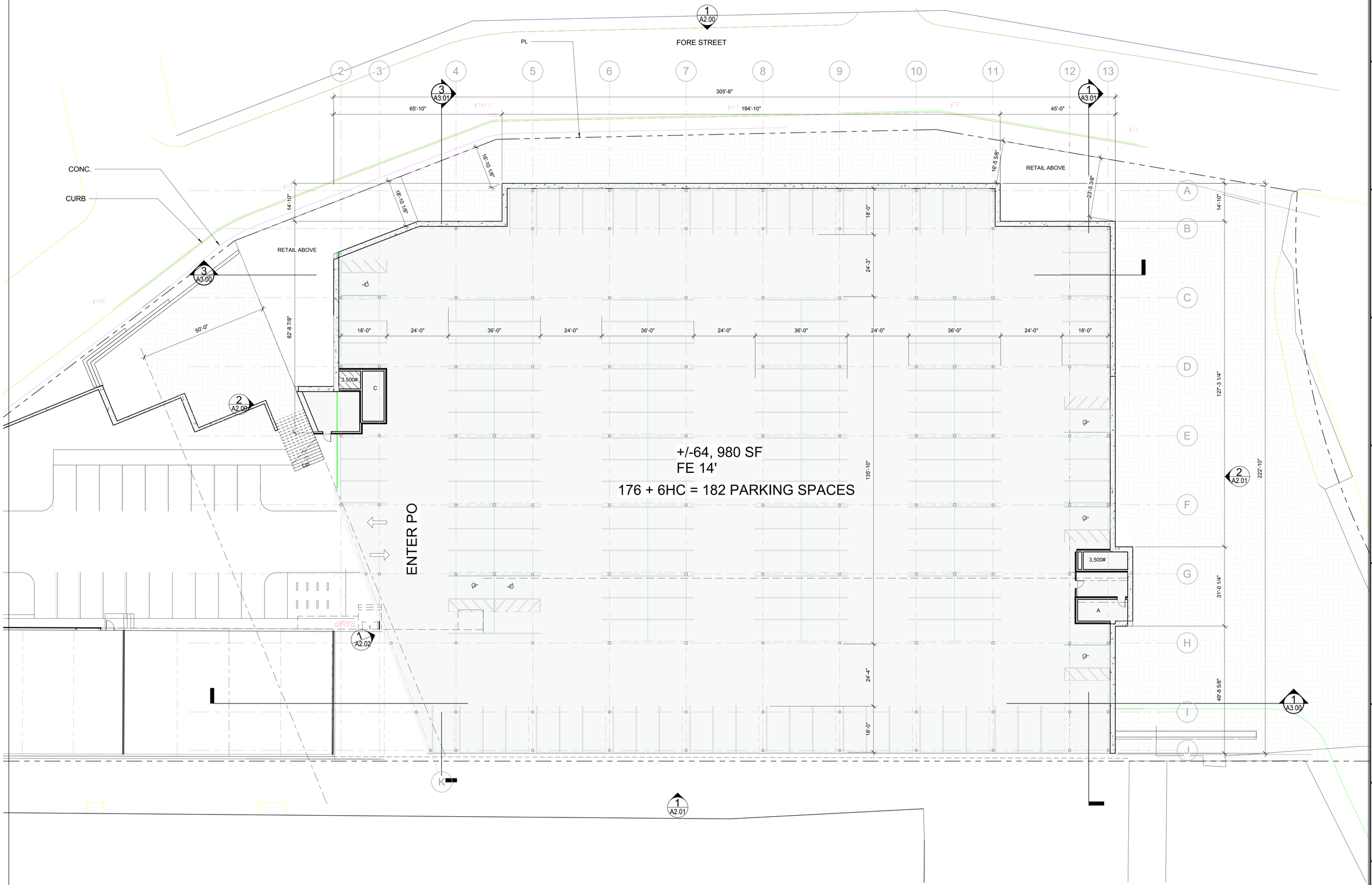
100 FORE STREET
PORTLAND, MAINE

Title
MISCELLANEOUS DETAILS

Project No.
210801622

Scale
N.T.S.

Sheet
C-6.4



1 | PO - GROUND LEVEL
1/16" = 1'-0"

10/10/2018
1:52:06 PM

Prepared For:

Consultant:

Architect:
ARCHETYPE ARCHITECTS
48 Union Wharf Portland, Maine 04101
(207) 772-6022ARCHETYPE@ARCHETYPEPA.COM

Project:
100 FORE STREET
Address
City, State

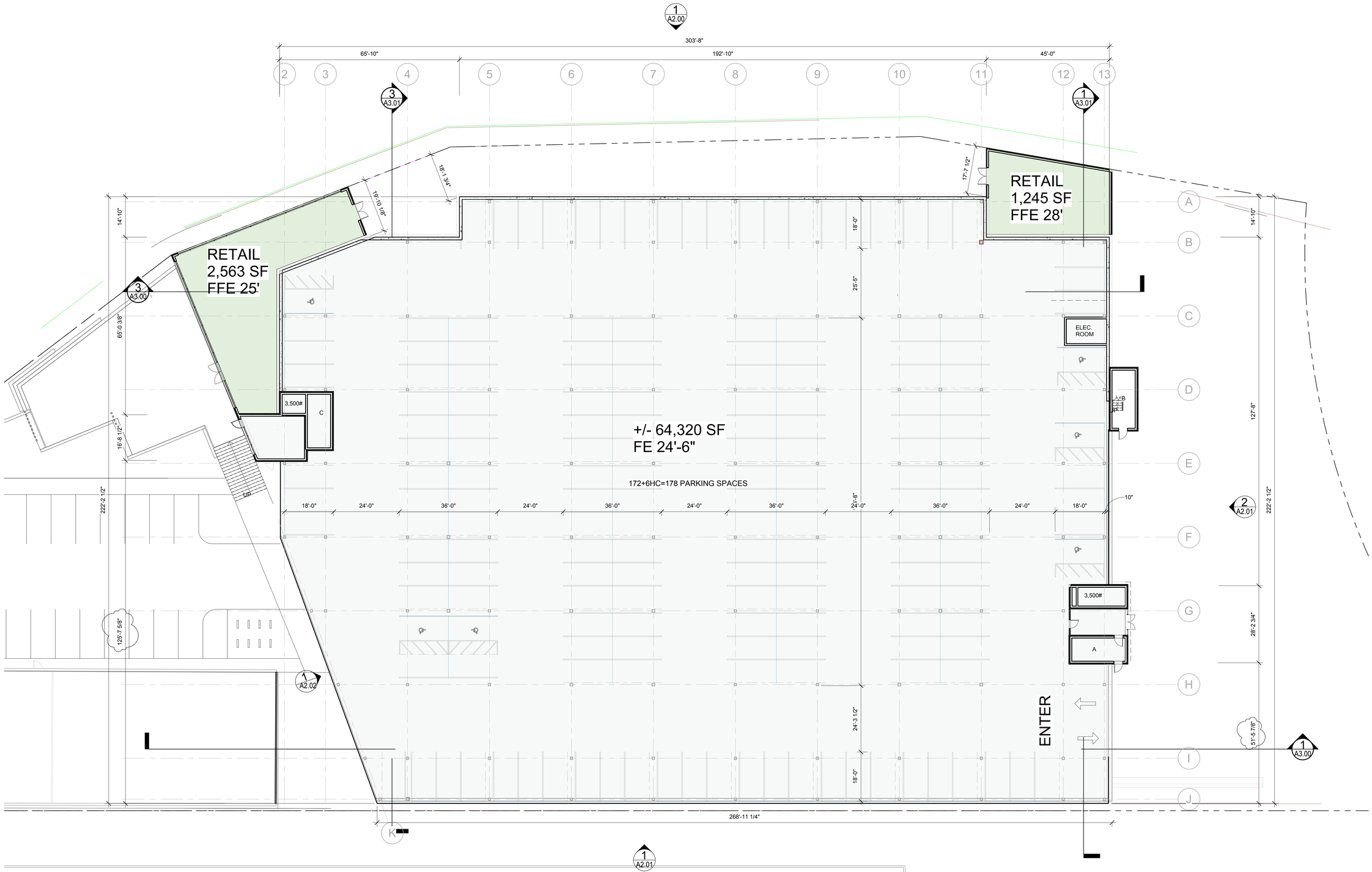
Revisions:
LEVEL III SITE SUBMISSION

Scale:
1/16" = 1'-0"

Date:
10-10-2018

P0- GROUND LEVEL PARKING

A1.00



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Prepared For:

Consultant:

Architect:
ARCHETYPE ARCHITECTS
48 Union Wharf Portland, Maine 04101
(207) 772-6022 ARCHETYPE@ARCHETYPEPA.COM

Project:
100 FORE STREET
Address
City, State

Revisions:

1	Date 1	Revision 1

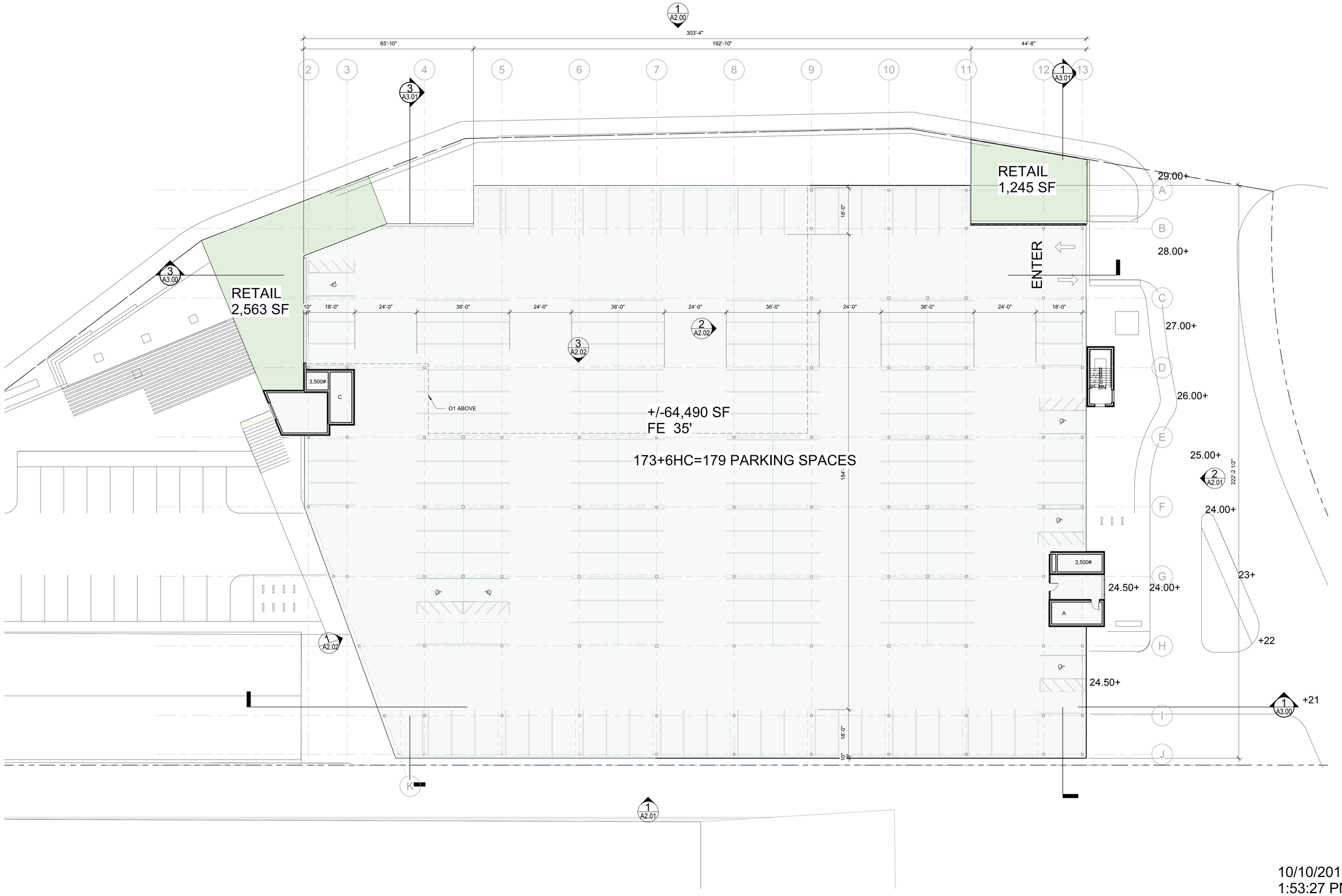
LEVEL III SITE SUBMISSION

Scale: 1/16" = 1'-0"

Date: 10-10-2018

P1 -ELEVATED PARKING (1)

A1.01



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Prepared For:

Consultant:

Architect:
ARCHETYPE ARCHITECTS
48 Union Wharf Portland, Maine 04101
(207) 772-6022 ARCHETYPE@ARCHETYPEPA.COM

Project:
100 FORE STREET

Address:
City, State

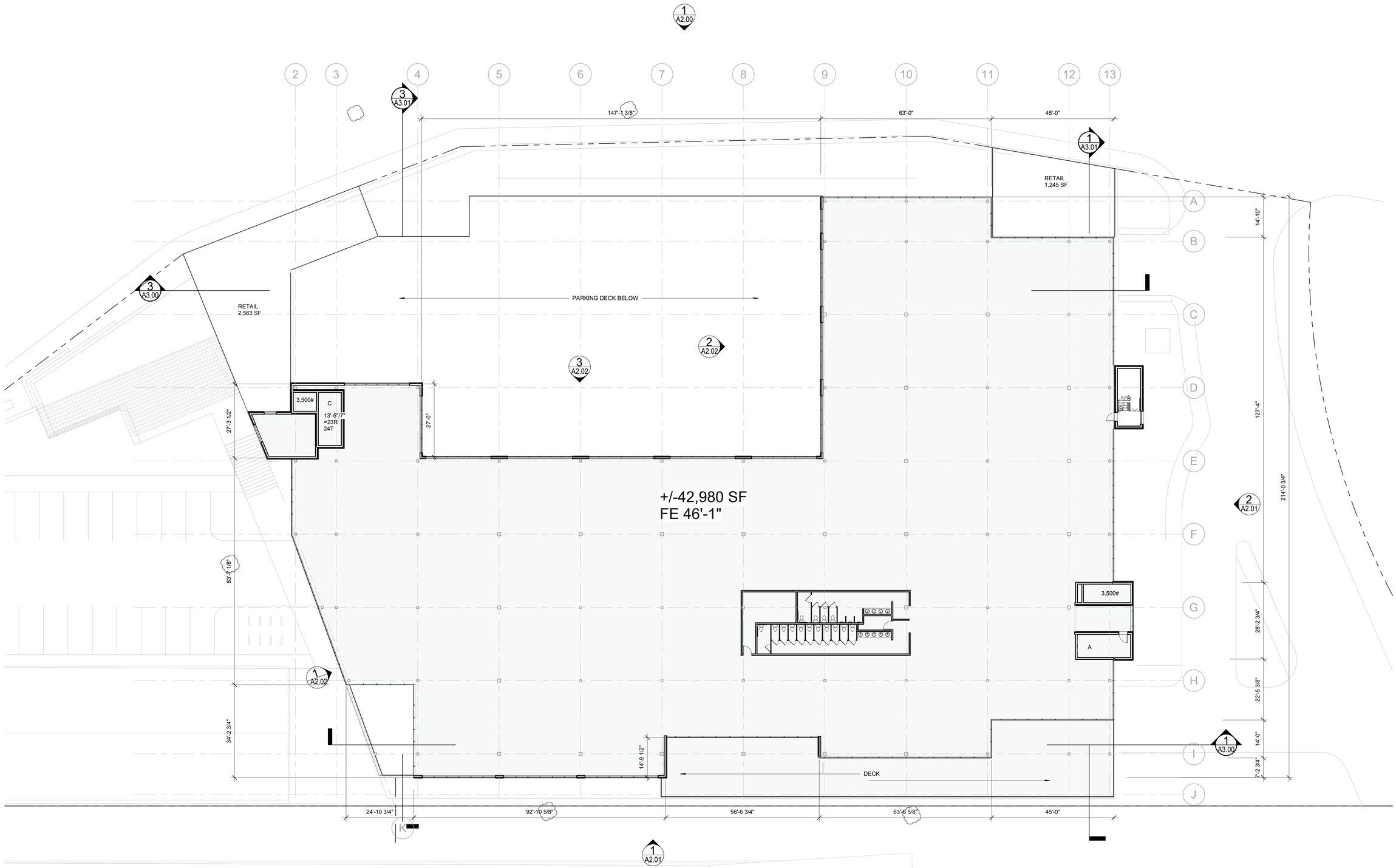
Revisions:
LEVEL III SITE SUBMISSION

Scale: 1/16" = 1'-0"

Date: 10-10-2018

P2 - ELEVATED PARKING (2)

A1.02



1 | O1
1/16" = 1'-0"

10/10/2018
1:54:27 PM

Prepared For:

Address
City, State

Consultant:

Architect:
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48 Union Wharf Portland, Maine 04101
(207) 772-6022 ARCHETYPE@ARCHETYPEPA.COM

Project:
100 FORE STREET

Address
City, State

Revisions:

	Date	Revision
1	Date 1	Revision 1

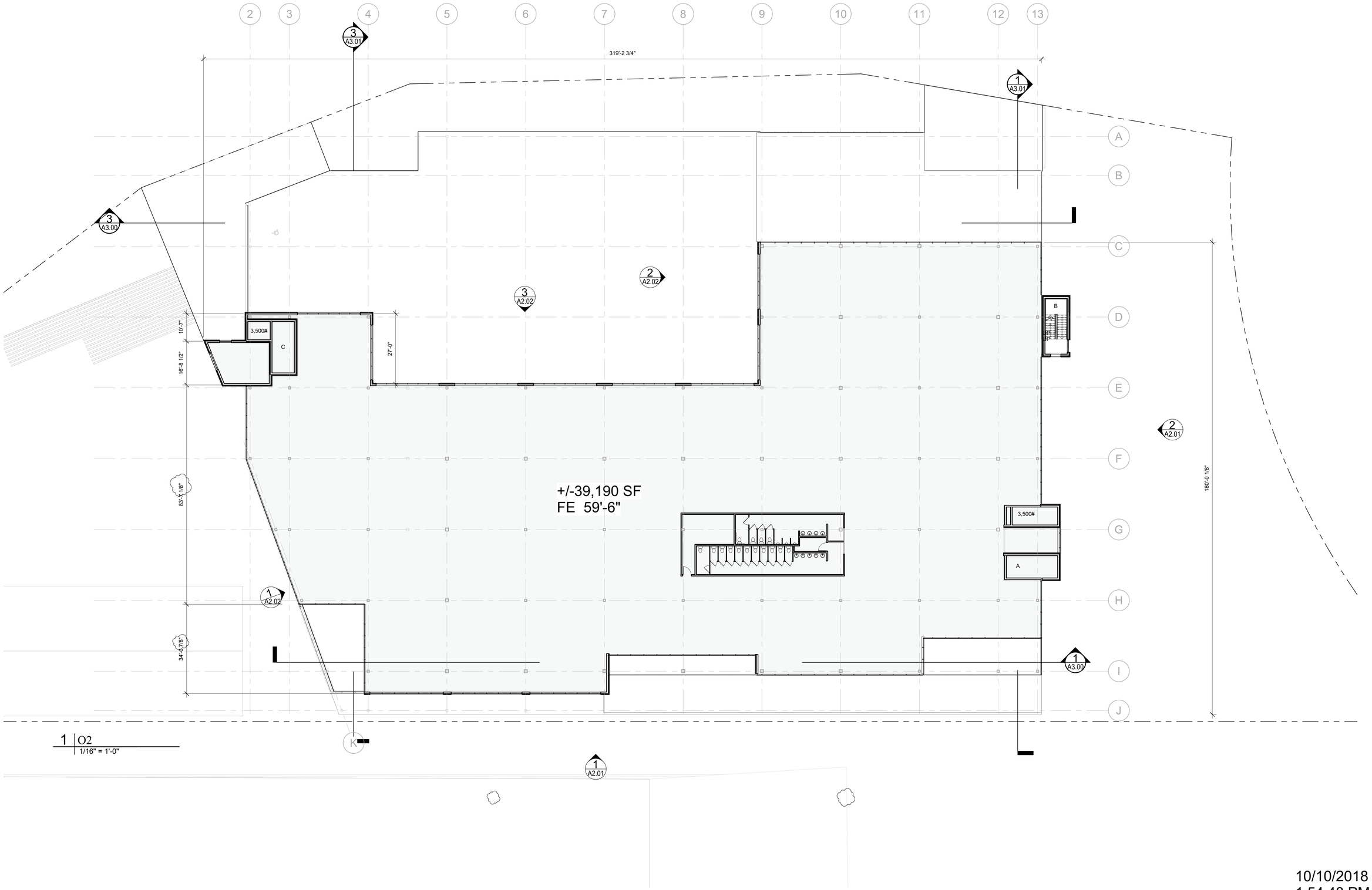
LEVEL III SITE SUBMISSION

Scale: 1/16" = 1'-0"

Date: 10-10-2018

O1 - OFFICE (1)

A1.03



1 | O2
1/16" = 1'-0"

10/10/2018
1:54:48 PM

Prepared For:

Address
City, State

Consultant:

Architect:
ARCHETYPE ARCHITECTS
48 Union Wharf Portland, Maine 04101
(207) 772-6022 ARCHETYPE@ARCHETYPEPA.COM

Project:
100 FORE STREET

Address:
City, State

Revisions:

	Date	
1	Date 1	Revision 1

LEVEL III SITE SUBMISSION

Scale: 1/16" = 1'-0"

Date: 10-10-2018

O2 - OFFICE (2)

A1.04

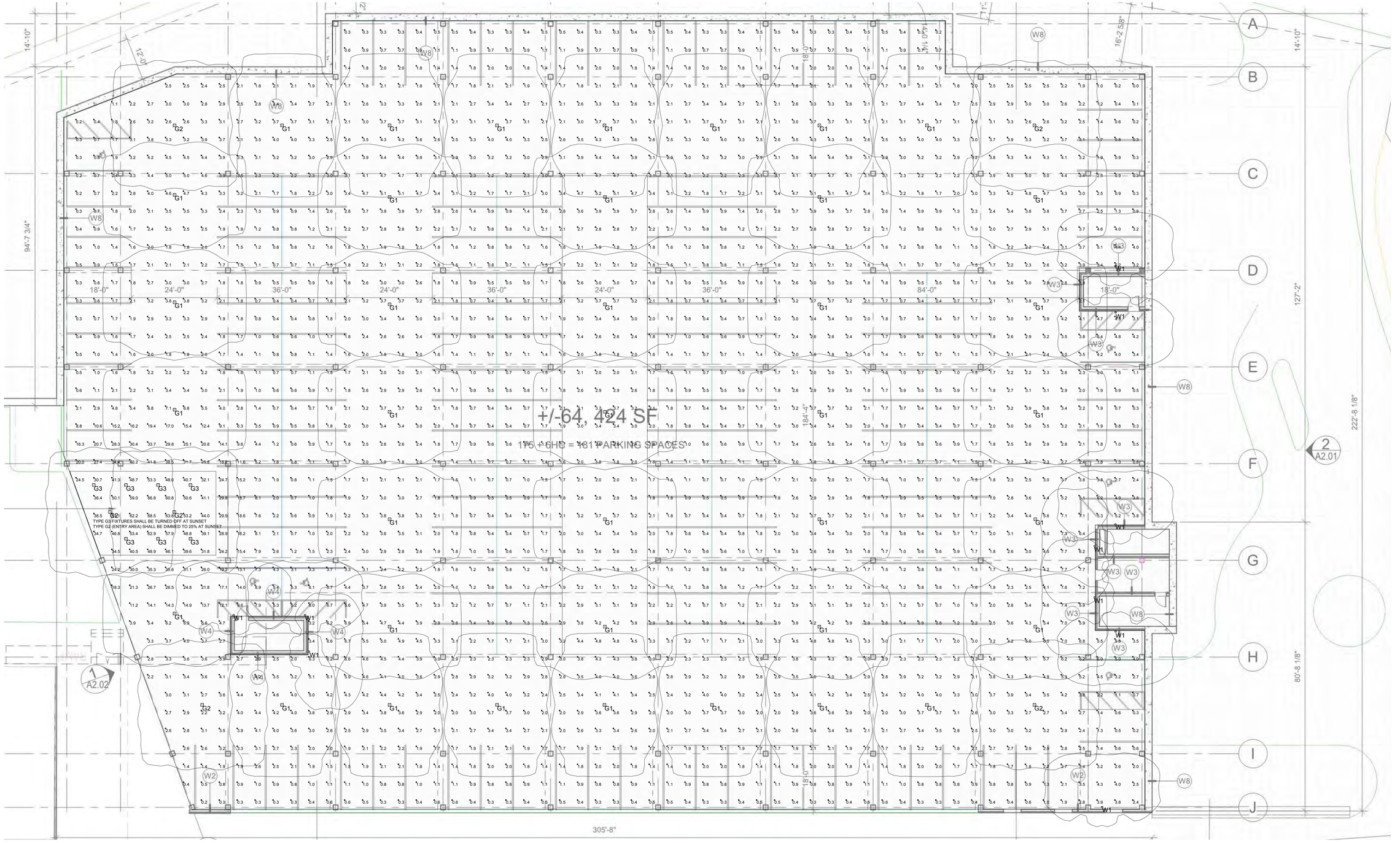
Calculation Summary					
Room Name	**Avg**	**Max**	**Min**	**Avg/Min**	**Max/Min**
ground level_Floor	3.43	68.5	0.0	N.A.	N.A.
ENTRY	47.15	68.5	24.5	1.9	2.8
TYP DRIVE LANE	2.89	5.2	1.8	1.6	2.9

Room Summary	
Room Name	**Wall Ht.**
ground level	10

Luminaire Schedule (note fixture catalogue numbers are not complete)					
Tag	**Qty**	**Lum. Lumens**	**LLF**	**Lum. Watts**	**Description**
G3	7	12386	0.900	109.855	EDR-48L-110-4K7-5QM-U
W1	10	2140	0.900	19.9	TRP1-12L20-4K7-3
G1	38	3398	0.900	27.7	EDR-24L-27-4K7-5R-U
G2	6	3341	0.900	27.7	EDR-24L-27-4K7-5QM-U

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.
3) READINGS SHOWN ARE INITIAL HORIZONTAL FOOTCANDLES TAKEN AS SHOWN IN CALCULATION SUMMARY UNLESS OTHERWISE INDICATED.
4) THIS CALCULATION IS BASED ON LIMITED INFORMATION SUPPLIED BY OTHERS TO SWANEY LIGHTING ASSOCIATES AND STANDARD ASSUMPTIONS OF THE SPACE.
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 APEAR 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

TITLE
100 FORE STREET
PORTLAND, ME
PO-GROUND LEVEL - LIGHTING LAYOUT

GENERATED FOR: STANTEC

SCALE AS SHOWN

Page 1 of 1

Date:10/2/2018

GENERATED BY SWANEY LIGHTING, SCARBOROUGH ME - 207-883-7100 - swaneylighting.com

REF. NO. PARK P0 - OPTION 1.AGI

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Calculation Summary					
Room Name	**Avg**	**Max**	**Min**	**Avg/Min**	**Max/Min**
P1 level_Floor	3.60	76.3	0.0	N.A.	N.A.
ENTRY	49.91	76.3	29.7	1.7	2.6
TYP DRIVE LANE	2.78	5.4	1.7	1.6	3.2

Room Summary	
Room Name	**Wall Ht.**
P1 level	10

Luminaire Schedule (note fixture catalogue numbers are not complete)					
Tag	**Qty**	**Lum. Lumens**	**LLF**	**Lum. Watts**	**Description**
G3	8	12386	0.900	109.855	EDR-48L-110-4K7-5QM-U
W1	11	2140	0.900	19.9	TRP1-12L20-4K7-3
G1	39	3398	0.900	27.7	EDR-24L-27-4K7-5R-U
G2	5	3341	0.900	27.7	EDR-24L-27-4K7-5QM-U

NOTES:
1) EXACT MOUNTING DETAILS TO BE DETERMINED AT JOBSITE BY OTHERS.
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PLAN VIEW

GENERATED FOR: STANTEC
SCALE AS SHOWN

TITLE
100 FORE STREET
PORTLAND, ME
P1 LEVEL - LIGHTING LAYOUT

Date:10/3/2018

GENERATED BY SWANEY LIGHTING, SCARBOROUGH ME - 207-883-7100 - swaneylighting.com

REF. NO. PARK P1 - OPTION 1.AGI

Page 1 of 1

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Calculation Summary					
Room Name	**Avg**	**Max**	**Min**	**Avg/Min**	**Max/Min**
parking deck	3.43	75.1	0.1	34.3	751.0
OPEN DECK	1.45	3.1	0.4	3.6	7.8

Luminaire Schedule (note fixture catalogue numbers are not complete)					
Tag	**Qty**	**Lum. Lumens**	**LLF**	**Lum. Watts**	**Description**
G1	28	3398	0.900	27.7	EDR-24L-27-4K7-5R-U
G2	4	3341	0.900	27.7	EDR-24L-27-4K7-5QM-U
G3	8	12386	0.900	109.855	EDR-48L-110-4K7-5QM-U
S4B	5	3399	0.900	53.2	VP-S-24L-55-3K7-4W-BC
S5	2	5908	0.900	57.8907	VP-S-24L-55-3K7-5W
W1	10	2140	0.900	19.9	TRP1-12L20-4K7-3

NOTES:
1) EXACT MOUNTING DETAILS TO BE DETERMINED AT JOBSITE BY OTHERS.
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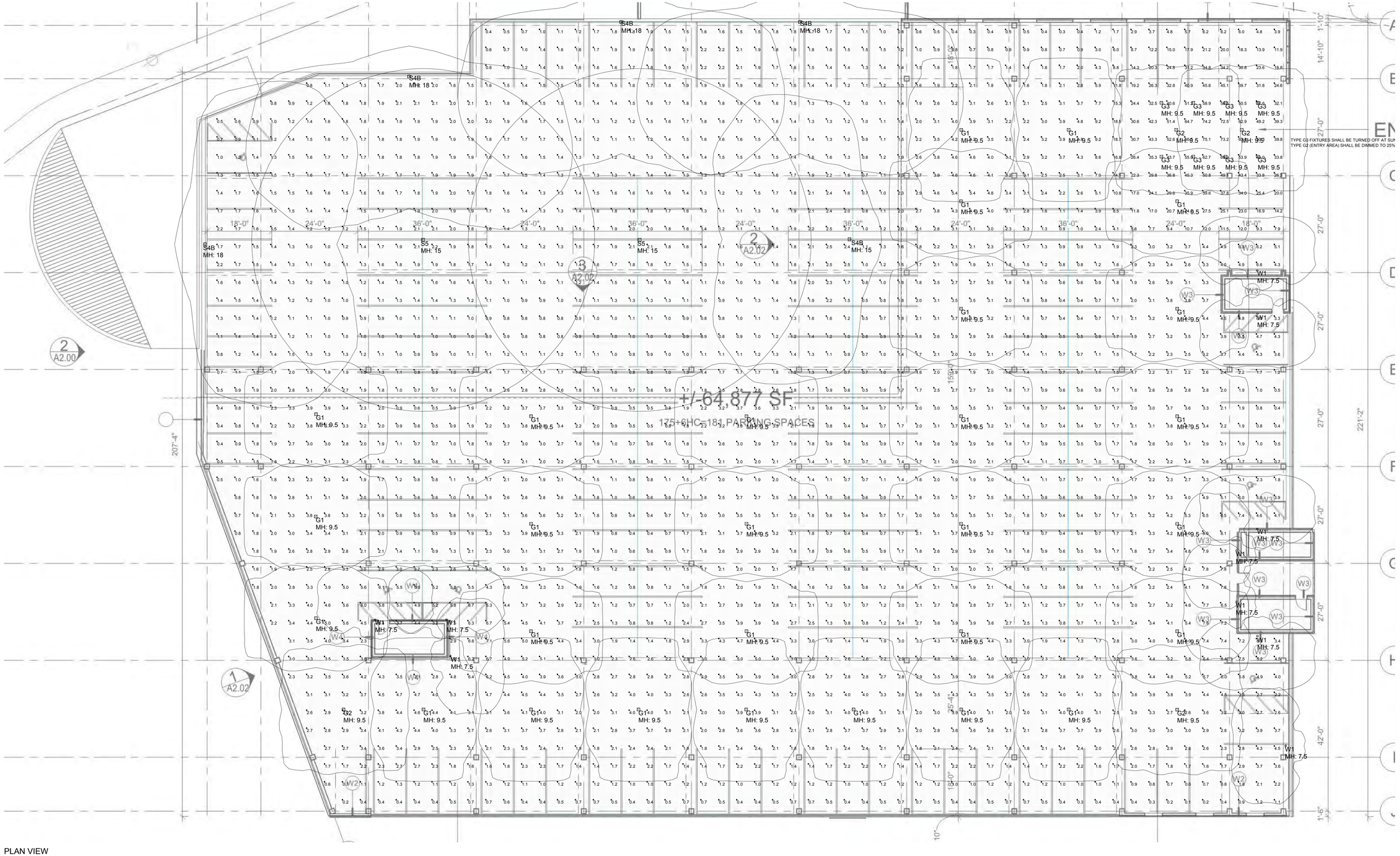

PLAN VIEW

TITLE
100 FORE STREET
PORTLAND, ME
P2 LEVEL - LIGHTING LAYOUT

REF. NO. PARK P2 - OPTION 1.AGI

GENERATED BY SWANEY LIGHTING, SCARBOROUGH ME - 207-883-7100 - swaneylighting.com

Date:10/9/2018

GENERATED FOR: STANTEC

SCALE AS SHOWN

Page 1 of 1

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Calculation Summary					
Room Name	**Avg**	**Max**	**Min**	**Avg/Min**	**Max/Min**
SITE	0.46	4.6	0.0	N.A.	N.A.
west parking	1.36	1.9	0.6	2.3	3.2

Luminaire Schedule (note fixture cataloge numbers are not complete)					
Tag	**Qty**	**Lum. Lumens**	**LLF**	**Lum. Watts**	**Description**
S3B	2	3758	0.900	54.88	VP-S-24L-55-3K7-3-BC
S4B	8	3399	0.900	53.2	VP-S-24L-55-3K7-4W-BC
W1	10	2140	0.900	19.9	TRP1-12L20-4K7-3
X5C	5	6220	0.900	109	ESL 110 4K AS X 7 DS

NOTES:
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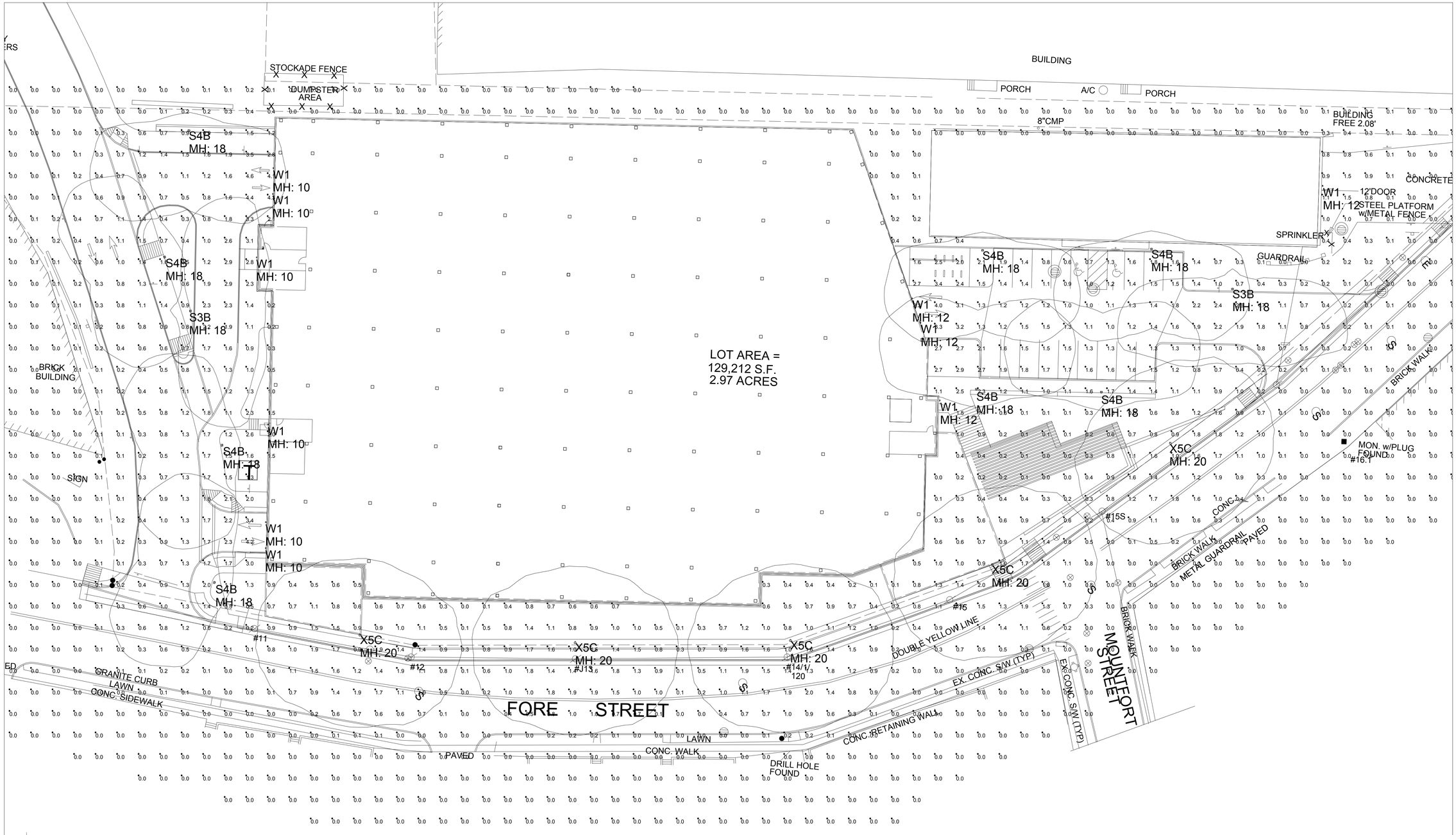

PLAN VIEW

REF. NO. site 10-6-18.AGI

TITLE
100 FORE STREET
PORTLAND, ME
SITE LIGHTING LAYOUT

GENERATED FOR: STANTEC

SCALE AS SHOWN

Page 1 of 1

Date:10/10/2018

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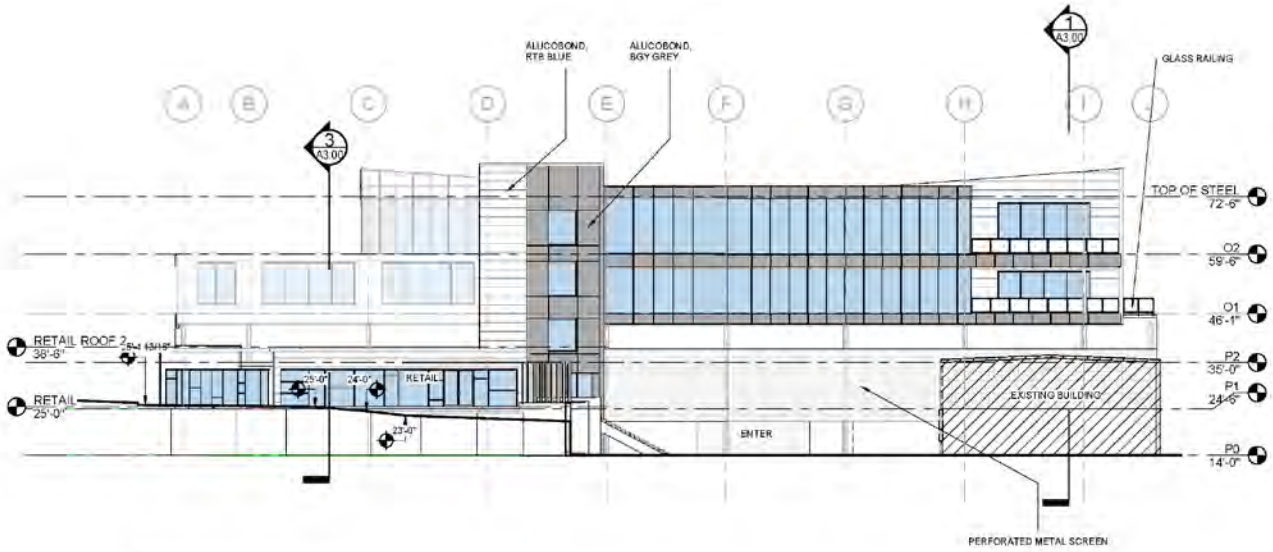
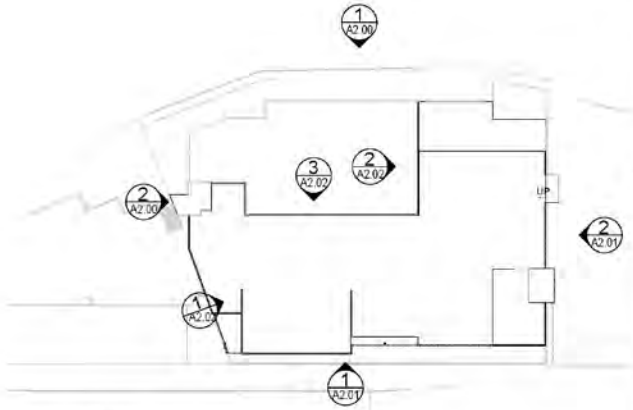
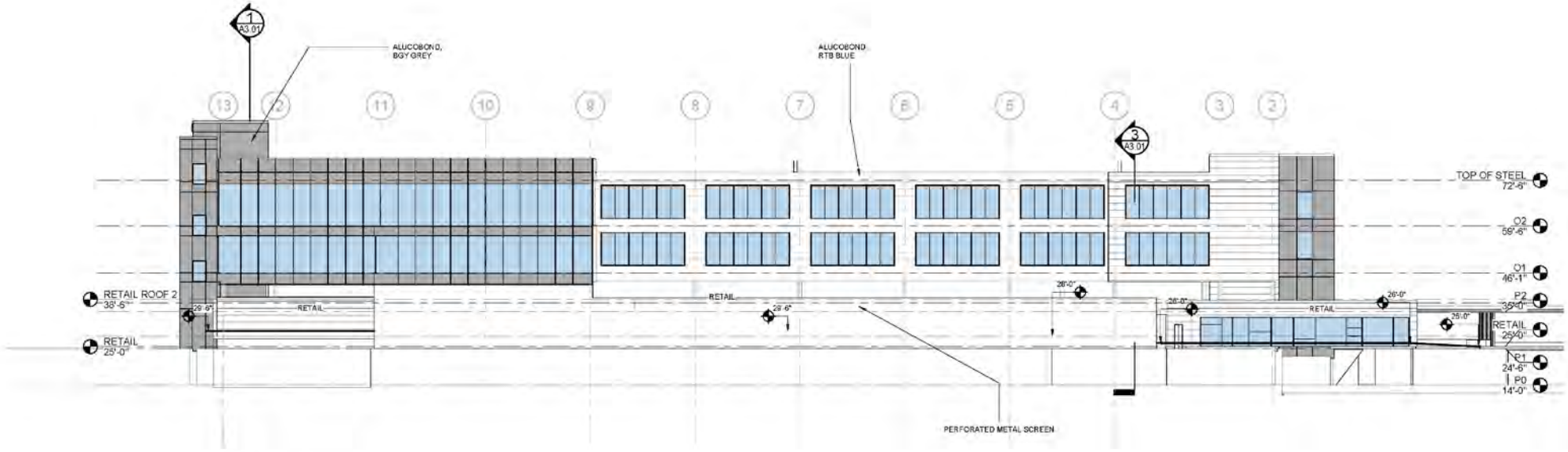


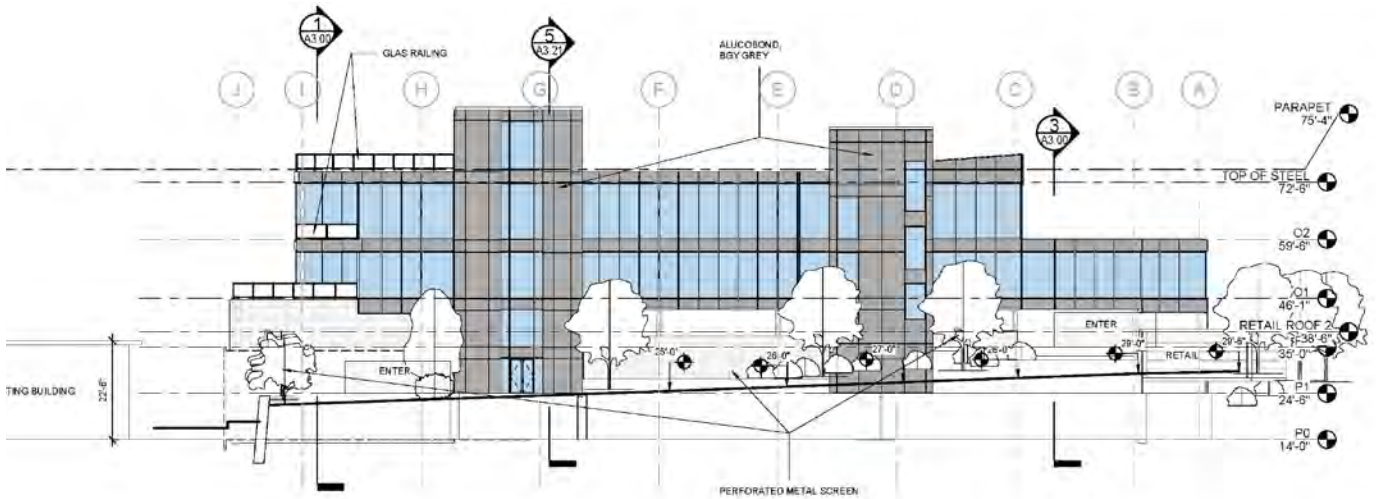
2 | WEST ELEVATION
1/16" = 1'-0"



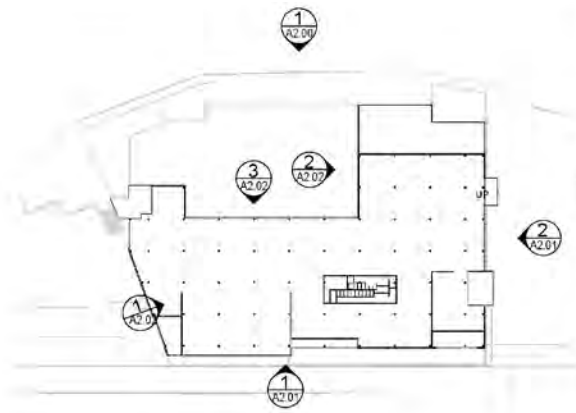
3 | KEY PLAN
1" = 60'-0"



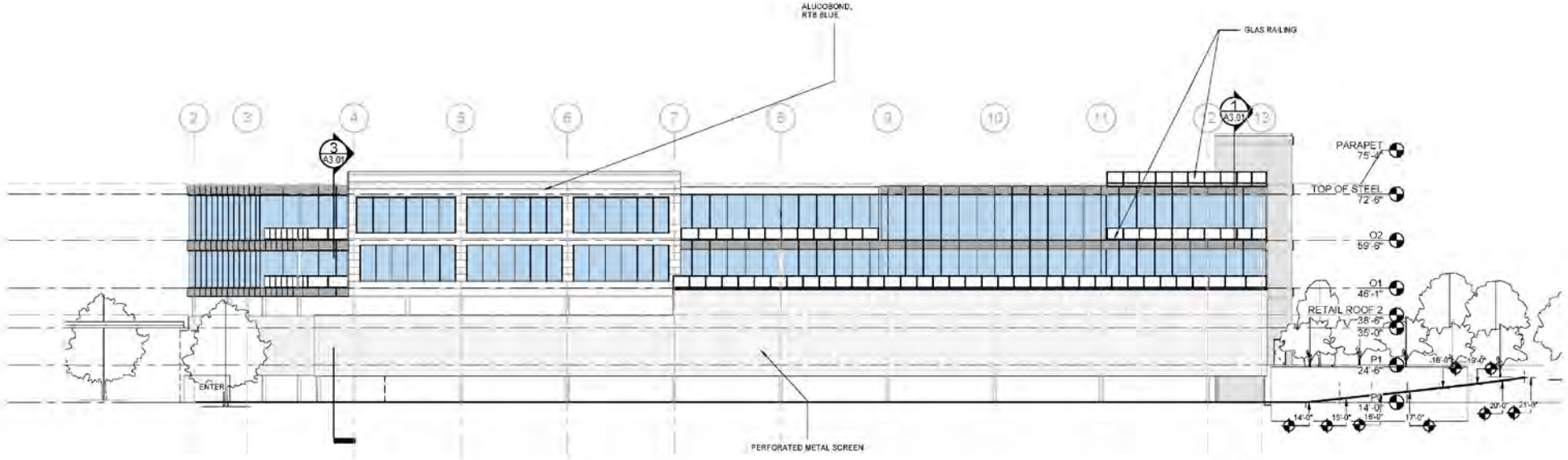
1 | NORTH ELEVATION
1/16" = 1'-0"



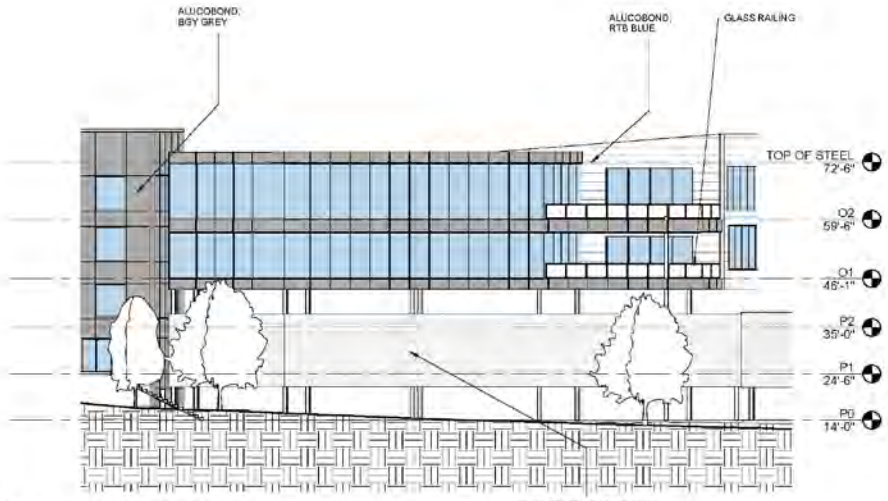
2 | EAST ELEVATION
1/16" = 1'-0"



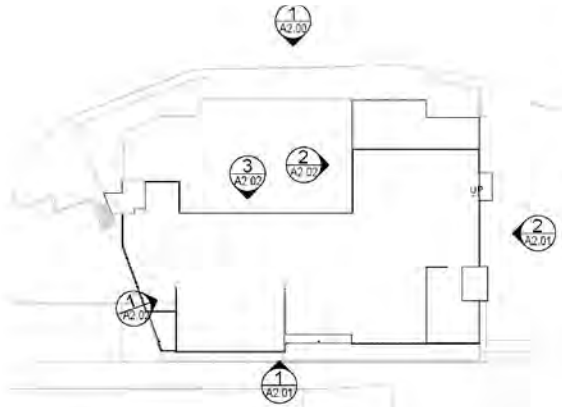
3 | KEY PLAN
1" = 60'-0"



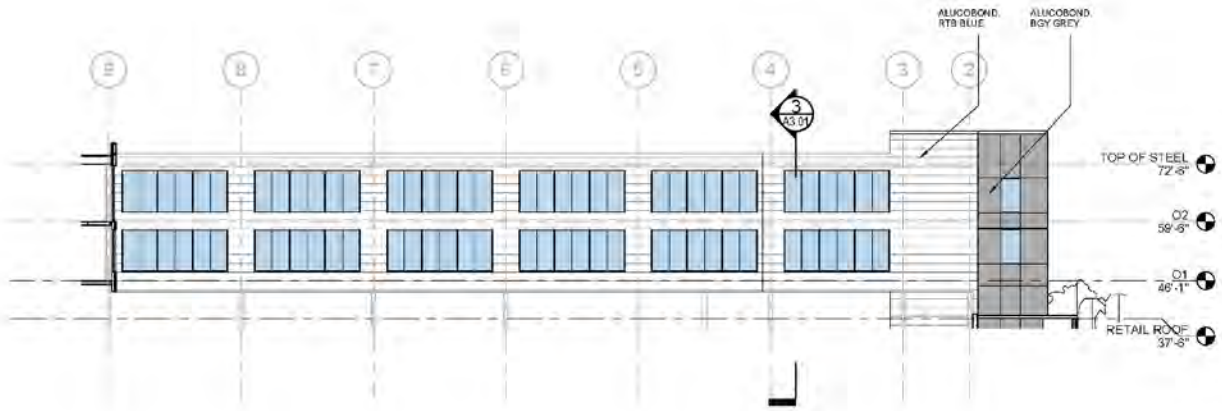
1 | SOUTH ELEVATION
1/16" = 1'-0"



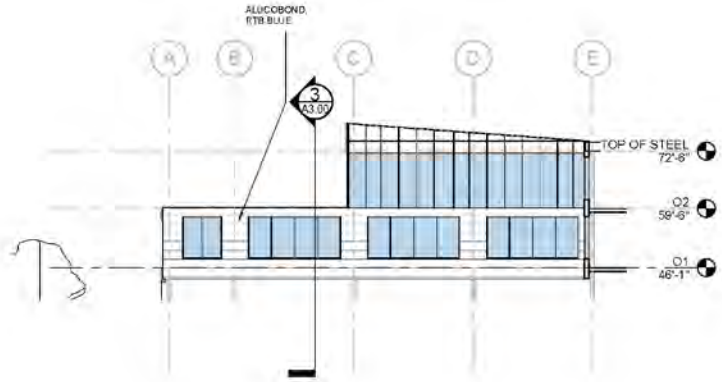
1 | SOUTH WEST ELEVATION
1/16" = 1'-0"



4 | KEY PLAN
1" = 60'-0"



3 | SOUTH OFFICE ELEVATION
1/16" = 1'-0"



2 | WEST OFFICE ELEVATION
1/16" = 1'-0"


HM
HAMILTON
MARINE







Google Groups

Re: 100 Fore Street

Christian MilNeil <c.neal.milneil@gmail.com> Oct 23, 2018 3:24 PM
Posted in group: **Planning Board**

To the planning department and planning board:

If you haven't already, please take a look at the IPCC's "Summary for Policymakers" document from the recent "Special Report on Global Warming of 1.5 °C (SR15)":
http://report.ipcc.ch/sr15/pdf/sr15_spm_final.pdf

The most important takeaway is essentially that we (the City of Portland, along with every other public jurisdiction on Earth) need to cut emissions in half within the next 10 years, and completely by 2040, in order to preserve the conditions necessary for civilization:

 Screen Shot 2018-10-23 at 11.18.54 AM.png
And in fact, the jurisdictions that care about these impacts (and I would hope that the City of Portland is among them) will need to act even faster, and more dramatically, to compensate from a lack of action from other jurisdictions that don't take sufficient action.

In practical terms for us, this means continuing our work to reduce heating and cooling expenditures, and increasing our use of renewable energy, both on-site and from the grid. In those sectors the data suggest that Maine and Portland are more or less on track to meet the IPCC's requirements.

But building systems and electricity are each a small component of Maine's emissions – the biggest source of greenhouse gases here comes from motor vehicle tailpipes, and those emissions are still increasing statewide.

As a city, we need to shift from a place where 80% of trips are made by automobile to a place where 80% of trips are made on foot, bike or public transit. And, if we want to preserve the legal, ecological and economic systems that enable our city to exist, we need to do this *in the next 10 years*.

These are the laws of physics; let's now turn to the zoning laws of the City of Portland, where, contrary to the threats we face, businesses like Wex are still being required to build hundreds of parking spaces in a downtown location with abundant access to bike routes, walkable neighborhoods, buses and ferry routes.

I understand that the Planning Board does not have the authority to demand that Jonathan Cohen redesign his project for the car-free future we urgently need to build. And I don't expect Wex, a company in the business of facilitating gasoline purchases, to take bold leadership here.

Rather, this example, and the thousands of additional parking garage spaces currently being planned in our downtown, should serve as an urgent warning that the city's planning staff need to come up with new policies, *now*, that give our city a fighting chance of staying above water.

This case – where a developer is proposing a structure to hold 600 climate-baking machines in a location that will almost certainly be flooded by mid-century if other developers continue to follow the same example – serves as a clear wake-up call to how out-of-date and self-destructive Portland's current zoning and transportation policies are.

We need you to do better.

Yours,
Christian MilNeil
45 Smith Street

- - - - - - - - - - - - -
double u double u double u dot christianmilneil dot com

Google Groups

Proposed parking at 100 Fore Street

Pamela Day <pday2304@gmail.com> Oct 23, 2018 3:16 PM
Posted in group: **Planning Board**

Dear Planning Board Members:

We live at 25 Waterville Street in Portland. We are a very short distance from the current Hamilton Marina at 100 Fore Street. We strongly oppose putting almost 600 parking spaces on this site. Traffic in the area is already congested, especially in the summer, and street parking has become increasingly difficult. Already, people using the ferries or visiting the Old Port end up parking on our street.

In addition to its impact on traffic and parking, the idea of placing 600 parking places in this space, with its view of the waterfront, is quite incongruous with the mission of the Planning Board to preserve the waterfront for public use and enjoyment.

We urge the City and the Planning Board to pursue other options for parking, including shuttles from existing parking areas.

Sincerely,

Pamela Day & Michael Petit
25 Waterville St, Portland, ME 04101

Google Groups

Re: 100 Fore Street Level Site 3 Plan (540 parking spaces)

Berry Manter <berrymanter@yahoo.com> Oct 23, 2018 3:09 PM
Posted in group: **Planning Board**

To Whom it May Concern and Planning Board,

As an Eastern Promenade resident who's route through and out of the city to all destinations west and south is via Franklin Street. I have serious concerns about the impact of the added parking spaces and the work hour flow that this adds to the already bloated new business areas of India Street, new residences, and new hotels in the lower penninsula and waterfront. This represents, in combined total, a massive increase into Portland's already notable " urban rush hour" glut on this main thoroughfare in and out of the city. THIS is the time to think "FUTURE" vision of this city with longterm plans that accommodate growth.

Approving such massive parking slots ahead of creating progressive public transportation plans and placing parking locations closer to the marginal way/295 satellite lots is short sighted.

The second concern this presents is related to HOUSING. Look around the city at present. Count the parking garages of significant height, all with ocean views. These are already in great number. Such facilities replace and eliminate now desirable ground for future housing with walkable city access, which is what we all want and the city needs NOW, as noted by the current controversial transformation of Munjoy Hill where I reside.

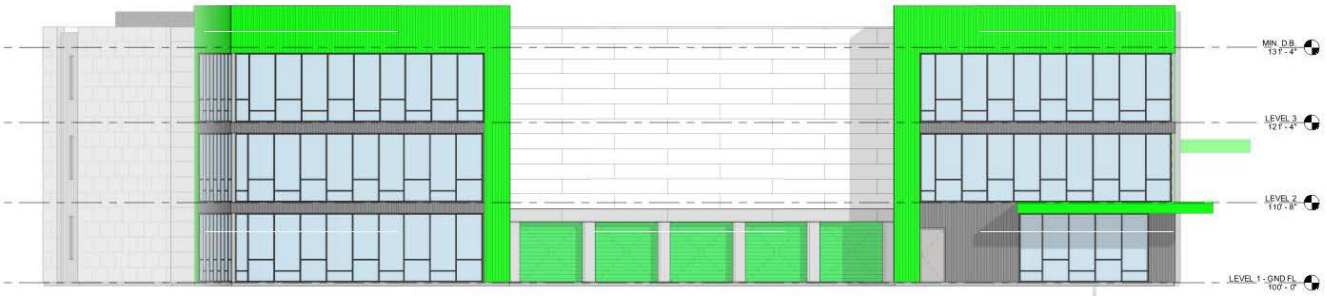
PLEASE, NOW is the time for walkable housing and keeping the city commutable and clear of needless traffic glut — NO MORE INTOWN PARKING FACILITIES.

Thank you,

Berry Manter
46 Eastern Promenade
Portland

PLANNING BOARD REPORT
PORTLAND, MAINE
150 Riverside Street
Self-Storage Facility
Level III Site Plan
PL-000310-2018
Applicant: Patagon Storage, LLC

Submitted to Portland Planning Board Workshop Date: October 23, 2018	Prepared by: Christian Roadman Date: October 19, 2018



Proposed front (east) building elevation (image provided by applicant team)

I. INTRODUCTION / PROPOSED DEVELOPMENT

Patagon Storage seeks to construct a three story 100,343 square foot self-storage facility on a partially developed site in the B-4 Commercial Corridor zone. The proposed project is located at 150 Riverside Street, which is north of Larrabee Road near the City's boundary with Westbrook. Two lots, totaling 156,711 square feet, comprise the site.

At present, a one story building exists on the site. This building, previously used for furniture sales, would be demolished under the applicant's proposal. Another portion of the site served as inventory storage for a car dealer.

The applicant currently proposes 116 parking spaces, significantly more than the required 33 spaces. Much of the extra parking is intended to serve as vehicle storage, though this is not permissible as proposed. Other, permissible approaches could be pursued by the applicant (including construction of an additional building to store vehicles).

Due to scheduling changes, this project did not go through the normal cycle of comments and revisions prior to its first workshop. This is reflected in the number and character of staff and peer review comments, which should be addressed prior to a public hearing. The Planning Department sent 42 notices of this workshop to property owners within 500 feet. Legal ads for the meeting ran on October 12 and October 13.


The site in May 2018. Riverside Street is visible in the top right of the picture. (image: Pictometry)

Applicant: Daniel Lyman, Patagon Storage, LLC
Consultants: Sebago Technics (engineering, surveying) Di'Velept (architecture)

II. REQUIRED REVIEWS

Review	Relevant Code
Site Plan	*Section 14-526*

III. PROJECT DATA

Existing Zoning	B-4 Commercial Corridor Zone
Existing Use	Commercial (vacant; formerly furniture sale and car dealer inventory)
Proposed Development Program	Three-story self-storage facility
Parcel Size	156,711

	Existing	*Proposed*	*Net Change*
Building Footprint (sq. ft.)	19,900	33,344	13,444
Building Floor Area (sq. ft.)	19,900	100,343	80,443
Impervious Surface Area (sq. ft.)	113,842	88,426.8	25,415.2
Parking Spaces	45	116	71
Bicycle Parking Spaces	0	4	4
Estimated Cost of Project	Not provided		

IV. PUBLIC COMMENT AND NEIGHBORHOOD MEETING

The Planning Department did not receive public comment regarding this project.

At the time of this writing, staff is not aware of any neighborhood meeting held or scheduled by the applicant. A neighborhood meeting will need to be held at least seven days in advance of a potential public hearing.

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

The applicant submitted a quitclaim deed (attachment C) as evidence of ownership of the property in question.

Staff seek further clarity from the applicant regarding the boundaries of the tax lot parcels included in the proposed project. Additionally, the existing conditions survey (attachment P2) does not include a relevant scale – this should be corrected.

Depending on how the applicant decides to proceed with the site's development, a new deed combining each of the relevant tax lot parcels may be required.

A reference letter from Chad Neubecker, Senior Vice President of BOK Financial stated that the project has sufficient funding in place (attachment F).

A document provided by the applicant (attachment G) cites the project team's experience, and the applicant's previous self-storage projects, as evidence of capacity for successful project completion.

VI. ZONING ANALYSIS

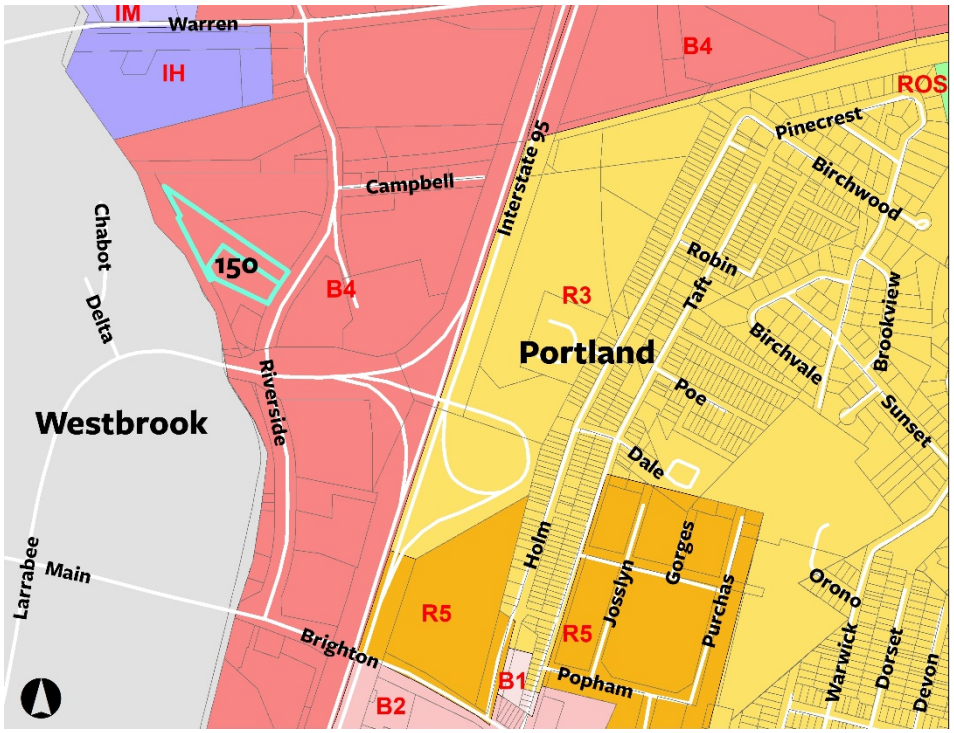
Self-storage facilities are a permissible use under the B-4 zone. The proposed development conforms to height, setback, floor area ratio, and impervious surface percentage requirements.

As part of the development, the applicant proposed 116 parking spaces, significantly above the 33 required. Per the City's Land Use Code, parking in excess of 10% above the required amount shall be justified by the applicant. Regardless, the intended use for these spaces (vehicle storage) is not permissible per the requirements of the B-4 zone.

In the Land Use Code, self-storage facility is defined as "fully enclosed buildings with individual, secure units (accessed

with or without supervision) used for the exclusive purpose of storage of non-hazardous business or personal materials." Per discussions with the Zoning Administrator, if the applicant wishes to pursue vehicle storage it should be within a building. The applicant may wish to consider including a structure to serve this purpose or to pursue alternative development scenarios. Otherwise the excess proposed parking should be eliminated.

Based on the proposed development, three bicycle parking spaces are required. The applicant proposes two bike racks for a total of four spaces, which will meet the requirement. However, the placement and spacing of the racks should be shown on the site plan (attachment P3). The current site plan is imprecise regarding bike rack placement.



Zoning context of proposed 150 Riverside project. Associated project parcels are outlined in turquoise.

VII. DEVELOPMENT REVIEW

A. SITE PLAN (Section 14-526)

The proposed development prompts review for conformance with relevant standards of Portland's site plan ordinance and applicable regulations.

1. Transportation Standards

a) Impact on Surrounding Street Systems, Access, and Circulation; Sidewalks; Parking; Also: Construction Management Plan

The applicant's proposal involves some work along Riverside Street, which is currently under a road cut moratorium. The applicant is aware of this moratorium and seeks an approach that satisfies the City but does not require full repaving. The Department of Public Works requested additional information for assessment. Specifically, the applicant must provide a cross section of Riverside Street showing travel lanes, shoulders, and the extent of any impact to pavement.

Tom Errico, the City's consulting traffic engineer, reviewed the proposed project (attachment 1). Mr. Errico accepts the trip generation estimate provided by the applicant (attachment H) as evidence that the project will not have a significant impact on area vehicle traffic operations. A traffic impact study is not required.

Mr. Errico expressed concern about the proposed driveway design, suggesting that it be modified to more effectively restrict travel movements to right in and right out only. He noted that a sidewalk connection to the building from the Riverside Street sidewalk should be provided, and that an esplanade separating the sidewalk and roadway should be considered. Lauren Swett, the City's consulting civil engineer, also reviewed the proposed project (attachment 2). She

noted that the new sidewalk proposed along Riverside Street should comply with the City's Standard Bituminous Sidewalk detail, and that the details should be revised accordingly for work within the right-of-way.

Consulting traffic engineer Tom Errico reviewed the applicant's construction management plan (attachment P14) and requested greater detail related to lane closures on Riverside Street and sidewalk closure. Mr. Errico also noted that applicant's proposed parking lot design (which must be revised as detailed above) includes parking stall sizes and aisle widths that do not meet the City's Technical Standards. If pursued further, these require formal waiver requests.

Planning staff note that curbs within the right-of-way should be granite, and that this should be specified on the site plan.

b) Public Transit Access

The proposed development does not require installation of a bus shelter; Riverside Street is not part of Metro bus routes.

2. Environmental Quality Standards

a) Preservation of Significant Natural Features

Consulting Civil Engineer Lauren Swett noted that the proposed project is located within the watershed of Capisic Brook, a designated Urban Impaired Stream. Per the City's Technical Manual, the applicant must either pay a compensation fee or mitigate project impacts by treating, reducing, or eliminating an off-site or on-site re-development impervious stormwater source.

Ms. Swett also noted that, because the project will disturb over an acre, it will require a Construction General Permit from the Maine Department of Environmental Protection. A copy of the authorization to proceed under the Construction General Permit should be provided to the City upon receipt.

b) Landscaping and Landscape Preservation

Jeff Tarling, the City Arborist provided feedback (attachment 3) on the project's landscape plan (attachment P5), which "contains a well thought out design with a good selection of plant material. Overall the proposed landscape improves the site. Parking lot islands benefit from having curbing to protect the plant material."

c) Water Quality, Stormwater Management and Erosion Control

As noted above, the proposed project must address the City's Technical Standards regarding development within the watershed of an urban impaired stream. Consulting Civil Engineer Lauren Swett provided a number of comments related to water quality, stormwater management, and erosion control. The applicant should review these comments (attachment 2) in detail, as they identify a number of necessary revisions and clarifications to their HydroCAD model (attachment L) and plans.

3. Public Infrastructure and Community Safety Standards

a) Public Safety and Fire Prevention

The Fire Department has not yet provided written comment about this project. In their land use code conformance analysis (attachment N) the applicant indicates that the proposed plantings and parking lot lighting/access were designed to facilitate crime prevention and that there is adequate access to the site for emergency vehicles. The applicant also provided a fire checklist (attachment I).

b) Availability and Adequate Capacity of Public Utilities

The applicant submitted an ability to serve letter from the Portland Water District (attachment J). The applicant applied for municipal confirmation of wastewater capacity (attachment K), but this has not yet been provided. This confirmation will be necessary for project approval.

Consulting Civil Engineer Lauren Swett noted that the applicant proposes to connect to a catch basin that appears to be within the City right-of-way. This does not meet the City's Technical Manual standards, and the applicant should propose an alternate means of storm drain connection or work with the Department of Public Works to determine if the proposed approach is acceptable.

The applicant proposes underground utilities running to the site from an existing utility pole standing in the right-of-way in front of the project.

4. Site Design Standards

a) Snow and Ice Loading

The proposed project is anticipated to have adequate capacity for snow and ice loading. Snow storage areas are noted on the submitted site plan (attachment P3).

b) Historic Resources

The proposed project is not located within a historic district, nor is it expected to impact historic resources.

c) Exterior Lighting

The applicant provided a lighting plan (attachment P13) and lighting cutsheets (attachment M). The lighting plan (attachment P13) anticipates light spillage across the property line in excess of the Technical Standard requirement of .1 foot candles. This should be revised or sufficiently addressed in the applicant's land use code conformance analysis and waiver requests.

It is unclear if all of the lighting fixtures (attachment M) are full cutoff – the applicant should confirm/ensure that this is the case.

d) Noise and Vibration

The applicant noted (attachment N) that no equipment associated with the proposed use should result in the generation of noise or vibrations. The applicant should confirm / ensure that the building's HVAC system will not result in undue noise or vibration.

e) Materials & Waste

In their land use code conformance analysis (attachment N) the applicant specifies that no on-site dumpsters or solid waste removal is provided, because any required waste removal will be the responsibility of individuals renting storage units. The applicant also states that any waste generated by the on-site office will be minimal and hauled off site by a private service.

f) Zoning Related Design Standards

The B-4 zone does not have associated design standards. However, the applicant must submit an elevation for the back (west) side of the building. Duplicate elevation documents (attachments P11 and P12) detail the other sides of the building.

VIII. NEXT STEPS

As written above, Planning staff moved this proposed project forward to a workshop soon after receipt of the application. Thus, the applicant team did not receive formal staff and peer review comments prior to this report, and did not have an opportunity to revise the proposal. The applicant is expected to review the feedback contained here as well as in the reviewer comments (attachments 1-3) and to make necessary revisions.

After the project materials are updated, re-submitted, and reviewed, the project can be scheduled for a public hearing. However, a neighborhood meeting must be held at least seven days in advance of such a hearing.

REPORT ATTACHMENTS

1. T Errico Comments 10-18-18
2. L Swett Comments 10-19-18
3. Energov Comments Report 10-19-18

APPLICANT'S SUBMITTALS

A. Cover Sheet
B. Checklist and Application
C. Right Title and Interest Documentation
D. Easements
E. Zoning Analysis Table
F. Financial Capacity Letter
G. Technical Capacity Documents
H. Traffic Memo
I. Fire Checklist
J. Portland Water District Ability to Serve Letter
K. Wastewater Capacity Application
L. Stormwater Management Report
M. Lighting Cutsheets
N. Land Use Code Conformance Analysis

PLANS

P1. Cover Sheet
P2. Existing Conditions
P3. Site Plan
P4. Grading and Utility
P5. Landscape Plan
P6. Detail Plan 1
P7. Detail Plan 2
P8. Detail Plan 3
P9. Stormwater-PRE
P10. Stormwater-POST
P11. Elevations 1
P12. Elevations 2
P13. Lighting
P14. Construction Management

Portland Maine | Yes. Google's good here.

Christian Roadman <croadman@portlandmaine.gov>

150 Riverside Street - Preliminary Traffic Comments

Tom Errico <thomas.errico@tylin.com> Thu, Oct 18, 2018 at 1:57 PM
To: Christian Roadman <croadman@portlandmaine.gov>
Cc: Keith Gray <kgray@portlandmaine.gov>, Bruce Hyman <bhyman@portlandmaine.gov>, Jeremiah Bartlett <JBartlett@portlandmaine.gov>, "Jeff Tarling (JST@portlandmaine.gov)" <JST@portlandmaine.gov>

Hi Christian – I have reviewed the application materials and offer the following preliminary traffic comments.

- The Applicant has conducted a trip generation estimate and the project is not expected to generate a significant number of new vehicle trips. I concur that the project will not have a significant impact on area vehicle traffic operations. A traffic impact study is not required.
- Given traffic conditions on Riverside Street, the Applicant is proposing to restrict site movements to right in/out only. I am concerned about the geometric layout of the driveway and making illegal movements difficult. It is recommended that the driveway configuration be modified to achieve the objective of restricted movements.
- A sidewalk connection to the building from the Riverside Street sidewalk should be provided.
- An esplanade separating the sidewalk from the roadway (similar condition exist to the north), should be considered.
- The Applicant has noted pavement moratorium restrictions and this issue will need to be coordinated with DPW.
- The Applicant has provided a Construction Management Plan. Greater detail is required as it related to lane closures on Riverside Street and sidewalk closure.
- It is my understanding that the parking lot design will be revised. I would note that parking stall size and aisle width under the current layout requires formal waiver requests.

If you have any questions, please contact me.

Best regards,

Thomas A. Errico, PE
Senior Associate
Traffic Engineering Director
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T 207.774.2112
F 207.774.6635

Comments

The Applicant submitted a Wastewater Capacity Application in March of 2018; the response confirming ability to serve the proposed development should be submitted upon receipt.

The Applicant should note that the new sidewalk proposed along Riverside Street should comply with the City's Standard Bituminous Sidewalk detail (Figure I-12 of the City's Technical Manual). The details should be revised accordingly for work within the Right-of-Way.

The Applicant has indicated on the submission checklist that evidence of state or federal approvals do not apply to the project; however, the project will disturb over an acre and as such will require a Construction General Permit from the MaineDEP. A copy of the authorization to proceed under the Construction General Permit should be provided to the City upon receipt.

The existing conditions plan shows a sewer line along the northern portion of the parcel; however, this sewer line is not shown on the proposed grading and utility plan and it is not specified for removal or abandonment. The Applicant should clarify the intent for the existing sewer line and verify whether it will conflict with proposed storm drain infrastructure.

The plans indicate that several existing drainage structures will be abandoned or reused as part of the project, but it is unclear where existing drainage structures flow to or from and what purpose they serve or whether they will conflict with the proposed infrastructure. The Applicant should clarify and field verify components of the system as necessary. We note the following specific structures: (1) Existing DMH 1241 is shown with only one pipe inlet/outlet, and it is unclear whether the existing drainage system associated with the structure will conflict with the proposed drainage system; (2) There is an existing catch basin that has not been field verified and does not show any inlets or outlets; it is unclear whether this catch basin will be abandoned or demolished or whether the existing drainage system associated with the structure will conflict with the proposed drainage system; (3) CB 1086 will be modified by plugging the existing inlet and installing new inlets and outlets, with the new outlet connecting to an existing storm drain that is also not shown on the plans; (4) The Grading and Utility Plan indicates that existing CB 1435 should be abandoned; however, the catch basin is located within the proposed parking lot area, which will be re-graded. The Applicant should clarify how this structure will be abandoned.

Several storm drains are proposed with less than 1.5-feet of cover; precast drainage structures typically require at least 1.5-feet of cover in order to drill the holes for the storm drain inlets/outlets. The Applicant should verify that the precast drainage structures can be constructed as designed. Additionally, the Applicant should clarify what provisions have been made for frost conditions for storm drain pipes with less than three feet of cover.

The Applicant is proposing to connect to existing CB 1433, which appears to be located within the City Right-of-Way. Stormdrain pipes are not permitted to be connected into City of Portland catch basins per the City of Portland Technical Manual, Section 2.7.8. The Applicant should propose an alternate means of stormdrain connection or work with DPS to determine if the proposed approach is acceptable.

The plans should specify proposed locations and details for catch basin inlet protection measures.

The HydroCAD model indicates that the roof runoff from the new building will discharge directly to the Riverside Street drainage system, but the plans do not appear to specify a roof drain system; the Applicant should clarify how roof runoff from the new building will be collected and discharged from the site.

The "decorative stone spreader" detail refers to a "focal point inlet structure"; the Applicant should clarify where this "decorative stone spreader" detail applies and what is meant by the "focal point inlet structure".

The HydroCAD model should be revised as necessary to address the following comments to confirm that the Flooding Standard will be met: (1) The Pre-Development Watershed Map shows the Time of Concentration Path for Subcatchment 2S going through the existing building; the Time of Concentration should be adjusted to go around the building; (2) The dimensions and elevations utilized to model the storage, the elevations of the outlets, and the size of the overflow drains associated with the FocalPoint systems do not appear to agree with the dimensional data provided on the plan detail sheet; the Applicant should revise as necessary to ensure that the model and the plans are consistent; (3) It appears that the HydroCAD model is accounting for storage within the FocalPoint filter media; this is not typical and should be removed.

The Applicant is proposing a buffer to provide stormwater treatment; per Chapter 5 of Volume III of the MaineDEP Stormwater BMP Manual. Based on NRCS web soil survey data, the proposed buffer is located within Hydrologic Soil Group C/D; soils that in their natural condition are in group D are assigned to dual classes. Meadow buffers are not allowed on Hydrologic Soil Group D soils. A forested buffer is allowed if the D soils in a buffer are not wetland soils. In addition, the buffer sizing calculations indicate that insufficient berm length will be provided. The proposed meadow buffer is not suitable for use unless the Applicant has a soil investigation completed to provide verification that soil conditions are adequate to meet DEP requirements, or provides documentation that the DEP finds the location to be suitable. If a buffer is to be used, it must be protected from disturbance by deed restrictions and covenants, and the Inspection, Maintenance, and Housekeeping Plan should include provisions for the maintenance criteria specified in the BMP manual.

The Applicant is proposing several FocalPoint systems to provide stormwater treatment; per the MaineDEP Approval Letter for FocalPoint systems dated February 2, 2017, the following comments should be addressed:

(1) A HydroCAD model must demonstrate that the entire volume of a 0.95 inch Type III 24-hr storm is treated prior to activation of the bypass/overflow; a HydroCAD report demonstrating this should be provided. A HydroCAD report should also be provided demonstrating that the Cultech chamber system has been appropriately sized for the 1-year storm event.
(2) The ratio of the surface area of the filter media bed in square feet to the ponding volume in cubic feet must be no less than 1 to 5.
(3) The FocalPoint system must be placed in-line with a subsurface chamber-based treatment row approved by the Department such that both the treated discharge and the bypass discharge from the FocalPoint system drain to the treatment row; FocalPoint-1 drains to FocalPoint-2 rather than its own treatment row.
(4) It does not appear that sufficient storage will be provided for the required water quality volume downstream of the FocalPoint and treatment row.

The project is located within the Capisic Brook Watershed, which is identified as an Urban Impaired Stream by the Maine DEP. Section 5 of the City of Portland Technical Manual requires that all development within the Capisic Brook watershed, except single and two family homes, comply with the Urban Impaired Stream Standard pursuant to MaineDEP Chapter 500 Rules. To meet the Urban Impaired Stream standard, the Applicant must either pay a compensation fee or mitigate project impacts by treating, reducing, or eliminating an off-site or on-site pre-development impervious stormwater source.

The Inspection, Maintenance, and Housekeeping Plan should include provisions for the requirements of Chapter 32 of the City of Portland Code of Ordinances and maintenance requirements associated with the Cultech chamber system.

A stormwater maintenance agreement with the City of Portland will be required.

PLAN CORRECTIONS REPORT PL-000310-2018
FOR CITY OF PORTLAND

PLAN ADDRESS: 150 Riverside St
Portland, Maine 04103

PARCEL: 267 A006001

APPLICATION DATE: 08/31/2018

SQUARE FEET: 0.00

EXPIRATION DATE:

VALUATION: $0.00

DESCRIPTION: The proposed project consists of the redevelopment of a 1.37-acre parcel at 142 Riverside Street and a 2.23-acre parcel at 150 Riverside Street. The 150 Riverside Street parcel is currently the site of used furniture store. The existing building will be removed to allow for the construction of a three-story, climate controlled, self-storage facility. The remaining portion of this parcel and the parcel at 142 Riverside Street will be used to provide parking and roadway areas to service the self-storage building.

CONTACTS	Name	Company	Address
Agent/Representative	James Seymour	Sebago Technics Inc.	75 John Roberts Rd., Suite 1A South Portland, ME 04106

Comments & Corrections Required

City Arborist — Jeff Tarling

Comment(s)/ Recommendation(s):

The proposed landscape plan contains a well thought out design with a good selection of plant material. Overall the proposed landscape improves the site. Parking lot islands benefit from having curbing to protect the plant material.

Civil Engineering - Third Party Reviewer — Lauren Swett

v.1.00 - Not Resolved

Correction: General

The “decorative stone spreader” detail refers to a “focal point inlet structure”; the Applicant should clarify where this “decorative stone spreader” detail applies and what is meant by the “focal point inlet structure”.

Correction: General

A stormwater maintenance agreement with the City of Portland will be required.

Correction: General

Several storm drains are proposed with less than 1.5-feet of cover; precast drainage structures typically require at least 1.5-feet of cover in order to drill the holes for the storm drain inlets/outlets. The Applicant should verify that the precast drainage structures can be constructed as designed. Additionally, the Applicant should clarify what provisions have been made for frost conditions for storm drain pipes with less than three feet of cover.

Correction: General

The plans should specify proposed locations and details for catch basin inlet protection measures.

Correction: General

The plans indicate that several existing drainage structures will be abandoned or reused as part of the project, but it is unclear where existing drainage structures flow to or from and what purpose they serve or whether they will conflict with the proposed infrastructure. The Applicant should clarify and field verify components of the system as necessary. We note the following specific structures: (1) Existing DMH 1241 is shown with only one pipe inlet/outlet, and it is unclear whether the existing drainage system associated with the structure will conflict with the proposed drainage system; (2) There is an existing catch basin that has not been field verified and does not show any inlets or outlets; it is unclear whether this catch basin will be abandoned or demolished or whether the existing drainage system associated with the structure will conflict with the proposed drainage system; (3) CB 1086 will be modified by plugging the existing inlet and installing new inlets and outlets, with the new outlet connecting to an existing storm drain that is also not shown on the plans; (4) The Grading and Utility Plan indicates that existing CB 1435 should be abandoned; however, the catch basin is located within the proposed parking lot area, which will be re-graded. The Applicant should clarify how this structure will be abandoned.

Correction: General

The Inspection, Maintenance, and Housekeeping Plan should include provisions for the requirements of Chapter 32 of the City of Portland Code of Ordinances and maintenance requirements associated with the Cultech chamber system.

Correction: General

The Applicant is proposing a buffer to provide stormwater treatment; per Chapter 5 of Volume III of the MaineDEP Stormwater BMP Manual. Based on NRCS web soil survey data, the proposed buffer is located within Hydrologic Soil Group C/D; soils that in their natural condition are in group D are assigned to dual classes. Meadow buffers are not allowed on Hydrologic Soil Group D soils. A forested buffer is allowed if the D soils in a buffer are not wetland soils. In addition, the buffer sizing calculations indicate that insufficient berm length will be provided. The proposed meadow buffer is not suitable for use unless the Applicant has a soil investigation completed to provide verification that soil conditions are adequate to meet DEP requirements, or provides documentation that the DEP finds the location to be suitable. If a buffer is to be used, it must be protected from disturbance by deed restrictions and covenants, and the Inspection, Maintenance, and Housekeeping Plan should include provisions for the maintenance criteria specified in the BMP manual.

Correction: General

The Applicant submitted a Wastewater Capacity Application in March of 2018; the response confirming ability to serve the proposed development should be submitted upon receipt.

Correction: General

The HydroCAD model indicates that the roof runoff from the new building will discharge directly to the Riverside Street drainage system, but the plans do not appear to specify a roof drain system; the Applicant should clarify how roof runoff from the new building will be collected and discharged from the site.

Correction: General

The Applicant is proposing several FocalPoint systems to provide stormwater treatment; per the MaineDEP Approval Letter for FocalPoint systems dated February 2, 2017, the following comments should be addressed:

(1) A HydroCAD model must demonstrate that the entire volume of a 0.95 inch Type III 24-hr storm is treated prior to activation of the bypass/overflow; a HydroCAD report demonstrating this should be provided. A HydroCAD report should also be provided demonstrating that the Cultech chamber system has been appropriately sized for the 1-year storm event.

(2) The ratio of the surface area of the filter media bed in square feet to the ponding volume in cubic feet must be no less than 1 to 5.

(3) The FocalPoint system must be placed in-line with a subsurface chamber-based treatment row approved by the Department such that both the treated discharge and the bypass discharge from the FocalPoint system drain to the treatment row; FocalPoint-1 drains to FocalPoint-2 rather than its own treatment row.

(4) It does not appear that sufficient storage will be provided for the required water quality volume downstream of the FocalPoint and treatment row.

Correction: General

The project is located within the Capisic Brook Watershed, which is identified as an Urban Impaired Stream by the Maine DEP. Section 5 of the City of Portland Technical Manual requires that all development within the Capisic Brook watershed, except single and two family homes, comply with the Urban Impaired Stream Standard pursuant to MaineDEP Chapter 500 Rules. To meet the Urban Impaired Stream standard, the Applicant must either pay a compensation fee or mitigate project impacts by treating, reducing, or eliminating an off-site or on-site pre-development impervious stormwater source.

Correction: General

The Applicant should note that the new sidewalk proposed along Riverside Street should comply with the City's Standard Bituminous Sidewalk detail (Figure I-12 of the City's Technical Manual). The details should be revised accordingly for work within the Right-of-Way.

Correction: General

The HydroCAD model should be revised as necessary to address the following comments to confirm that the Flooding Standard will be met: (1) The Pre-Development Watershed Map shows the Time of Concentration Path for Subcatchment 2S going through the existing building; the Time of Concentration should be adjusted to go around the building; (2) The dimensions and elevations utilized to model the storage, the elevations of the outlets, and the size of the overflow drains associated with the FocalPoint systems do not appear to agree with the dimensional data provided on the plan detail sheet; the Applicant should revise as necessary to ensure that the model and the plans are consistent; (3) It appears that the HydroCAD model is accounting for storage within the FocalPoint filter media; this is not typical and should be removed.

Correction: General

The Applicant has indicated on the submission checklist that evidence of state or federal approvals do not apply to the project; however, the project will disturb over an acre and as such will require a Construction General Permit from the MaineDEP. A copy of the authorization to proceed under the Construction General Permit should be provided to the City upon receipt.

Correction: General

The existing conditions plan shows a sewer line along the northern portion of the parcel; however, this sewer line is not shown on the proposed grading and utility plan and it is not specified for removal or abandonment. The Applicant should clarify the intent for the existing sewer line and verify whether it will conflict with proposed storm drain infrastructure.

Correction: General

The Applicant is proposing to connect to existing CB 1433, which appears to be located within the City Right-of-Way. Stormdrain pipes are not permitted to be connected into City of Portland catch basins per the City of Portland Technical Manual, Section 2.7.8. The Applicant should propose an alternate means of stormdrain connection or work with DPS to determine if the proposed approach is acceptable.

Fire	Pool Fire
Planning	Christian Roadman
Traffic - Third Party Reviewer	Tom Errico
Transportation/Planning	Bruce Hyman

Conditions Required

September 17, 2018
17500

Barbara Barhydt
City of Portland
389 Congress Street
4th Floor
Portland, ME 04101

Level 3 Site Plan Application
150 & 142 Riverside Street, Portland, Patagon –Climate Controlled Self Storage Facility

Dear Ms. Barhydt:

On behalf of our client Patagon Storage, LLC, Sebago Technics Inc. is please to submit the following Site Plan application for your consideration. The proposed project involves the construction of a three story, climate controlled self-storage facility on a previously developed lot on Riverside Street.

Project Description:

Project Site: The project site was originally two separate lots, 150 Riverside Street and 142 Riverside Street, but has been recently closed to consist of one holding; The property now referred to as 150 Riverside Street is a combination of the lots consisting of 3.6 acres. The Original 150 Riverside lot was 2.23-acre parcel that was the site of a small used furniture store. 142 Riverside Street is a 1.37-acre parcel that is was as an inventory lot for a used car dealership. Both parcels are located within the City of Portland's Industrial B-4 Zone.

Proposed Project: The proposed project consists of the redevelopment of the two parcels for a self-storage facility. The existing building at 150 Riverside Street will be removed to allow for the construction of the proposed three-story, climate controlled, self-storage facility. The remaining portion of this 3.6 ac. parcel will be used to provide parking and roadway areas to service the self-storage building, and will be preserved in a buffer for stormwater treatment, and apportion holds the common detention for this site and the adjacent property.

The site anticipates to utilize all existing utilities that served the furniture store, but will require realignment and trench relocation to serve the proposed structure. There was an existing sewer main that was in place to feed the rear of the lot, that was installed to serve a proposed hotel project, and that was never completed. That utility will be removed and abandoned due to the conflicts it will have the stormwater measures being proposed.

The site will be treated for stormwater utilizing a device called Focal Point, as required due to the site falling within the watershed of Capisic Brook as listed by the Maine DEOP as an Urban Impaired Stream.

We are aware of the improvement that have been completed at Riverside Street and the MTA Exit 48 improvements. The owner did attempt to get some improvements completed prior to the final paving but due to closing dates and terms of the closing they were not able to close an entrance the will need to for the project. We are hopeful we can work out a curb install with the City of Portland that will limit the disturbance along the roadside edge, such that we can safely proceed with the site work and not compromise the road surface. We understand that the street is in a moratorium state, and will work to find a solution with the City. Otherwise we foresee no reason to conduct any other work within the street itself.

We have also discovered that the site is under a difficult geological formation of soft soils consisting of silt clay which further hampered some of our design efforts, and due to the bearing capacities we were forced to hold the site at the approximate same grade/elevation that the structures are currently established. In establishing that floor grade, it presented challenges to the overall stromwater design, given the shallow depths of the existing storm drains in Riverside Street. However, we feel we have devised a manner to connect and meet both State and City treatment standards for the proposed site.

We feel we have provided a complete application and look forward, to being placed on the next available Planning Board agenda for a Public Hearing.

As always, please contact me if you have any questions or require further information.

Sincerely,

SEBAGO TECHNICS, INC.

James R. Seymour, P.E.
Sr. Project Manager

JRS:

Portland, Maine Yes. Life's good here.

Planning & Urban Development Department

LEVEL II and LEVEL III APPLICATION SUBMISSION CHECKLIST

Please submit each document as a separate PDF file.
Please confirm by electronically checking the boxes to the left

General Application Documents

Checklist	Items to be Provided
Yes NA Plan ✔	PROJECT DESCRIPTION • Cover Letter with detailed project description
Yes NA Plan ✔	COMPLETED CHECKLIST – LEVEL III APPLICATION
Yes NA Plan ✔	RIGHT, TITLE AND INTEREST • Deeds, leases, or purchase and sales agreements
Yes NA Plan ✔	EVIDENCE OF STATE OR FEDERAL APPROVALS, if applicable • Permits or letters of non-jurisdiction, if applicable
Yes NA Plan ✔	ZONING ASSESSMENT • Table listing required and proposed uses and dimensional standards Zoning Assessment Table
Yes NA Plan ✔	EXISTING &/OR PROPOSED EASEMENTS OR COVENANTS, if applicable • Evidence of existing easements and any proposed easements
Yes NA Plan ✔	WAIVER REQUESTS • Written request for waiver describing request and reason. Waiver Table
Yes NA Plan ✔	FINANCIAL CAPABILITY • Letter or evidence from a financial institution or third party verifying financial capacity to undertake project
Yes NA Plan ✔	TECHNICAL CAPABILITY • Evidence of technical capability of applicant and consultants – resumes and/or examples of past projects

LEVEL II AND LEVEL III SITE PLAN STANDARDS AND SUBMISSION CHECKLIST

Provide assessment of compliance with standards and include supplemental documentation, as applicable.

Please submit each document as a separate PDF file.

TRANSPORTATION

Check list	Assess/Provide/Document:
Yes NA Plan ✔	**Transportation Analysis- Traffic Impact (14-526 (a) 1)** • Provisions for pedestrian, bicycle, vehicle, and loading circulation and incremental volume of traffic impacts • Traffic Impact Study (Technical Manual, Section 1) if applicable
Yes NA Plan ✔	**Access and Circulation (14-526 (a) 2 a)** • Access and internal circulation, addressing ADA access • Access and egress impacts on traffic flows • Description and use of drive-up features, if applicable
Yes NA Plan ✔	**Loading and Servicing (14-526 (a) 2 b)** • Loading and servicing needs, route and travel way geometrics for deliveries • Turning templates for delivery vehicles, if applicable
Yes NA Plan ✔	**Sidewalks (14-526 (a) 2 c)** • Sidewalks and condition along street frontages and internal walkways • Engineered details for ADA ramps and public sidewalk details meeting sidewalk materials policy and ADA ramp construction details as applicable (Technical Manual, Section 1)
Yes NA Plan ✔	**Public Transit (14-526 (a) 3), if applicable** • Existing available transit services • Proposed site plan design details, such as easement, pad base, and shelter
Yes NA Plan ✔	**Off-Street Parking: Vehicle & Motorcycle/Scooter) (14-526 (a) 4 a and c)** • Expected parking demand, proposed parking supply, ADA parking, and applicable Zoning Requirements • Address Technical Manual standards (Section 1) for curb cut separation and parking lot layout and locate on site plan
Yes NA Plan ✔	**Bicycle Parking (14-526 (a) 4 b)** • Address bicycle parking requirements and identify locations on-site • Construction details for bike racks (Technical Manual, Section 1)
Yes NA Plan ✔	**Snow Storage (14-526 (a) 4 d)** • Management plan for snow removal and locate snow storage areas on plan
Yes NA Plan ✔	**Traffic Demand Management (TDM) (14-526 (a) 5), if applicable** • Develop TDM with Trip Reduction Targets and Strategies

ENVIRONMENTAL AND LANDSCAPE FEATURES	
Check list	Assess/Provide/Document:
Yes NA Plan ☐ ✔ ☐	**Preservation of Significant Natural Features (14-526 (b) 1), if applicable** • Trees, plants, habitats listed on State or Federal list of endangered or threatened • High and moderate value waterfowl and wading habitat • Aquifers on Casco Bay Islands • Waterbodies (including wetlands, watercourses, significant vernal pools and floodplains) • Proposed preservation areas and protection measures • Documentation from environmental consultants, determinations from applicable state agencies
Yes NA Plan ✔ ☐ ☐	**Landscaping and Landscape Preservation (14-526 (b) 2 a)** • Preservation of trees and preservation within required zoning setbacks (Technical Manual, Section 4) • Protection measures of existing vegetation during construction • Protection measures within Shoreland Zone, if applicable
Yes NA Plan ✔ ☐ ☐	**Site Landscaping (14-526 (b) 2 b)** • Screening and buffering of service areas and between non-residential and residential uses • Planting plans with plant schedule and sizes (Technical Manual, Section 4)
Yes NA Plan ✔ ☐ ☐	**Parking Lot Landscaping (14-526 (b) 2 b ii), if applicable** • Landscaped islands within parking areas (Technical Manual, Section 4)
Yes NA Plan ✔ ☐ ☐	**Street Trees (14-526 (b) 2 b iii)** • Existing Heritage or Feature Trees on site and measures to preserve • Identify street trees on the plan meeting the site plan and Technical Manual standards (Section 4) or identify alternative measures, if applicable

ENVIRONMENTAL AND STORMWATER	
Check list	Assess/Provide/Document:
Yes NA Plan ✔ ☐ ☐	**Water Quality, Stormwater Management and Erosion Control (14-526 (b) 3 a)** • Stormwater report in compliance with Section 5 of Technical Manual and DEP Chapter 500 stormwater for basic, general and flooding standards, as applicable • Erosion control plan and measures • Evidence of compliance with Urban Impaired Stream Standards pursuant to DEP Chapter 500 stormwater, as applicable • Subsurface sanitary sewage disposal and groundwater protection

PUBLIC INFRASTRUCTURE AND SAFETY	
Check list	Assess/Provide/Document:
Yes NA Plan ✔	**Consistency with City Master Plans (14-526 (c) 1)** • Identify consistency with master plans • Proposed easements, rights and improvements to connect or continue off-premises public infrastructure, as applicable
Yes NA Plan ✔	**Public Safety and Fire Prevention (14-526 (c))** • Address Crime Prevention through Environmental Design (CPTED) (Technical Manual, Section 3) • Emergency vehicle access • Address consistency with public safety standards (Technical Manual, Section 3) • Submit a code summary referring NFPA 1 and all Fire Department standards (Technical Manual, Section 3) – Fire Checklist
Yes NA Plan ✔	**Availability and Adequacy of Public Utilities (14-526 (c) 3) (Technical Manual, Sections 2 & 9)** • Electrical services, including providing underground services • Identify existing and proposed connections for public utilities and required public utility upgrades • Sewer line connections are required, if there is a main within 200 feet • Proposed solid waste management facilities on-site and management for the site • Written evidence of the ability to serve from utility companies, as applicable
SITE DESIGN	
Check list	Assess/Provide/Document:
Yes NA Plan ✔	**Massing, Ventilations and Wind Impact (14-526 (d) 1)** • Wind and ventilation impacts on adjoining structures and/or adjacent public spaces. Wind study, if applicable • Bulk, location or height impacts on adjoining structures • Identify and locate HVAC equipment and venting away from public spaces and residential properties • Identify screening and manufacturing specifications for noise, if applicable
Yes NA Plan ✔	**Shadows (14-526 (d) 2), if applicable** • Shadow analysis of impacts on publicly accessible open space (Technical Manual, Section 11)
Yes NA Plan ✔	**Snow and Ice Loading (14-526 (d) 3)** • Building design to prevent snow and ice from loading or falling onto adjacent properties or public ways
Yes NA Plan ✔	**View Corridors (14-526 (d) 4), if applicable** • Protection of designated view corridors (Portland Design Manual, Appendix 1)

Yes NA Plan ☐ ✔ ☐	**Historic Resources (14-526 (d) 5), if applicable** • Identify developments within Historic Districts or affecting Designated Landmarks • Certificate of Appropriateness or other evidence • Identify Developments within 100 feet of Historic Districts or affecting Designated Landmarks. Advisory HP review may be required • Address preservation and documentation of Archaeological Resources
Yes NA Plan ✔ ☐ ☐	**Exterior Lighting (14-526 (d) 6)** • Cut sheets of on-site light fixtures and any architectural or specialty lights (Technical Manual, Section 12) • Engineered details for any lights proposed in street right-of-way (Technical Manual, Section 10)
Yes NA Plan ☐ ✔ ☐	**Noise and Vibration (14-526 (d) 7)** • Evidence of noise levels for equipment, such as equipment specifications, to demonstrate consistency with zoning requirements
Yes NA Plan ✔ ☐ ☐	**Signage and Wayfinding (14-526 (d) 8), if applicable** • Signage plan showing the location, dimensions, height and setback of all existing and proposed signs. Signs in Historic Districts are reviewed by Historic Preservation staff • Proposed commercial and directional signage on site
Yes NA Plan ☐ ✔ ☐	**Zone Related Design Standards (14-526 (d) 5)** • Address Historic Preservation Design Review, if applicable • Address any applicable design review standards by zone • Address submission requirements from Design Manual, page 1, addressing neighborhood context • Description of exterior materials, color, finish, and samples
Construction Management Plan	
Check list	
Yes NA Plan ✔ ☐ ☐	**Construction Management Plan** • Construction Management Document and Plan

Level II and Level III Site Plan Checklist

Please upload the following drawings with the listed details into e-Plan as separate pdfs.

☐ **RECENT BOUNDARY SURVEY** (stamped by Maine Licensed Surveyor)

Must be in compliance with Technical Manual, Section 13

SITE PLAN(s) (stamped by Maine Licensed Engineer) including:

☐ **Existing Conditions**

- Approximate location of structures on abutting property
- Topography
- Locate water courses
- Delineate wetlands
- Zone lines

☐ **Proposed Site Plan**

- Ground floor area, and grade elevations for all buildings

☐ **Access, Circulation, and Parking**

- Streets and intersections adjacent to site , any proposed geometric modifications
- Location, dimensions and materials of all existing and proposed driveways, vehicle, bicycle, & pedestrian access ways with corresponding curb lines
- Engineered specifications/ cross-sections for proposed driveways, sidewalks & paved areas
- Location and dimensions of proposed loading areas
- Existing and proposed transit infrastructure with dimensions/ engineering specifications
- Location of vehicle and bicycle parking with dimensions and engineering specifications

☐ **Site Considerations**

- Identify snow storage areas
- Location of fire hydrants
- Location of solid waste management facilities

☐ **UTILITY PLAN** including:

- Existing utilities on site and within public streets
- Location, sizing, and directional flows of all existing and proposed utilities
- Location and dimensions of off-premises public or publicly accessible infrastructure adjacent to site
- Electric utility infrastructure

☐	**GRADING and DRAINAGE PLAN** including:
	• Existing grades and drainage • Proposed grades • Proposed stormwater management meeting Technical Manual (Section 5) standards • Location and proposed alteration of a water course • Preservation or alteration of wetlands
☐	**EROSION CONTROL**
	• Must be in compliance with Technical Manual, Section 5
☐	**LANDSCAPE PLAN** including:
	• Existing vegetation to be preserved and preservation measures • Proposed landscaping and buffers • Planting schedule
☐	**RECORDING PLAT**, if applicable
	• IF SUBDIVISION: Must be in compliance with requirements of Section 14-496 (b)
☐	**ARCHITECTURAL PLANS & RENDERINGS** including:
	• Exterior building elevations, color renderings, illustrations of all sides • Location and dimensions of all existing & proposed HVAC & mechanical equipment, all proposed screening • Provide context drawings, if applicable (Design Manual, page 1) • Floor plans

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:	Patagon Storage
Proposed Development Address:	142 & 150 Riverside st.
Project Description:	Self Storage Facility
Chart/Block/Lot:	267 / A / 4&6
Preliminary Plan	
Final Plan	

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

APPLICANT

Name:	Daniel Lyman
Business Name:	Patagon Storage, LLC
Address:	1700 Main St. - Suite 70
City/State:	Washaugal, Washington
Zip Code:	98671
Work #:	801-550-6109
Home #:	N/A
Cell #:	801-550-6109
Fax #:	N/A
E-mail:	dl@patagon.co

OWNER

Name:	Patagon Storage, LLC
Address:	1700 Main St. - Suite 70
City/State:	Washaugal, Washington
Zip Code:	98671
Work #:	801-550-6109
Home #:	N/A
Cell #:	801-550-6109
Fax #:	N/A
E-mail:	dl@patagon.co

AGENT/REPRESENTATIVE

Name:	James Seymour
Address:	75 John Roberts Rd. Suite 4A
City/State:	South Portland / Maine
Zip Code:	04106
Work #:	207-200-2083
Home #:	N/A
Cell #:	N/A
Fax #:	N/A
E-mail:	jseymour@sebagotechnics.com

BILLING (to whom invoices will be forwarded to)

Name:	Patagon Storage, LLC attn: Daniel Lyman
Address:	1700 Main St, Suite 70
City/State:	Washaugal, Washington
Zip Code:	98671
Work #:	801-550-6109
Home #:	N/A
Cell #:	801-550-6109
Fax #:	N/A
E-mail:	dl@patagon.co

ENGINEER

Name:	James Seymour
Address:	75 John Roberts Rd. Suite 4A
City/State:	South Portland / Maine
Zip Code:	04106
Work #:	207-200-2083
Home #:	N/A
Cell #:	N/A
Fax #:	N/A
E-mail:	jseymour@sebagotechnics.com

SURVEYOR

Name:	Jimmy Courbron
Address:	75 John Roberts Rd. Suite 4A
City/State:	South Portland / Maine
Zip Code:	04106
Work #:	207-200-2084
Home #:	N/A
Cell #:	N/A
Fax #:	N/A
E-mail:	jcourbron@sebagotechnics.com

ARCHITECT

Name:	Jarod Hall
Address:	454 N 600 W
City/State:	Salt Lake City / Utah
Zip Code:	04116
Work #:	801-680-4485
Home #:	N/A
Cell #:	801-680-4485
Fax #:	N/A
E-mail:	j@divelept.com

ATTORNEY

Name:	N/A
Address:	N/A
City/State:	N/A
Zip Code:	N/A
Work #:	N/A
Home #:	N/A
Cell #:	N/A
Fax #:	N/A
E-mail:	N/A

DESIGNATED PERSON(S) FOR UPLOADING INTO e-PLAN

Name:	James Seymour
E-mail:	jseymour@sebagotechnics.com
Name:	Rebecca Gabryszewski
E-mail:	rgabryszewski@sebagotechnics.com
Name:	Dylan Stuart
E-mail:	dstuart@sebagotechnics.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:	$ 1750.00

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	156,711	sq. ft.
PROPOSED DISTURBED AREA OF THE SITE		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)	113,842	sq. ft.
Impervious Area (Total Proposed)		sq. ft.
Building Ground Floor Area and Total Floor		
Building Footprint (Total Existing)	19,900	sq. ft.
Building Footprint (Total Proposed)	33,344	sq. ft.
Building Floor Area (Total Existing)	19,900	sq. ft.
Building Floor Area (Total Proposed)	100,343	sq. ft.
ZONING		
Existing	B-4	
Proposed, if applicable	N/A	
LAND USE		
Existing	Furniture Sales and Car dealer inventory	
Proposed	Self Storage	
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)	504	
# of Parking Spaces (Total Proposed)	57	
# of Handicapped Spaces (Total Proposed)	1	
BICYCLE PARKING SPACES		
# of Bicycle Spaces (Total Existing)	0	
# of Bicycle Spaces (Total Proposed)	0	
ESTIMATED COST OF THE PROJECT	$	

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:	9/14/18

COPY

QUITCLAIM DEED With COVENANT (LONG FORM)

KNOW ALL BY THESE PRESENTS,

THAT **J PROPERTIES LP** , a Maine Limited Partnership, and **DOVER DEVELOPMENT CORP.**, Maine Corporation, both of having a place of business in Portland, Cumberland County, Maine in consideration of ONE DOLLAR and other valuable consideration paid by **BOYER PATAGON HOLDINGS, L.C.** , a Utah Limited Liability Company with a place of business in Salt Lake City, Utah, and whose mailing address is 101 South 200 East, Suite 200 Salt Lake City, UT 84111 the receipt whereof they do hereby acknowledge, do hereby REMISE, RELEASE, BARGAIN, SELL and CONVEY and FOREVER QUITCLAIM unto Boyer Patagon Holdings, L.C. , its successors and assigns forever, the land and buildings in Portland, Cumberland County, Maine, more fully described on Exhibit A attached to this instrument.

TO HAVE AND TO HOLD the aforegranted and bargained premises, with all the privileges and appurtenances thereof, to Boyer Patagon Holdings, L.C., its successors and assigns, to its and their use and behoof forever.

AND THEY DO COVENANT with the Grantee, its successors and assigns, that they and their successors shall and will warrant and defend the same to Boyer Patagon Holdings, L.C., its successors and assigns forever, against the lawful claims and demands of all persons claiming by, through, or under us.

IN WITNESS WHEREOF, J Properties LP and Dover Development Corp. have hereunto caused this instrument to be signed and sealed this 15th day of May, 2018.

SIGNED, SEALED AND DELIVERED
IN PRESENCE OF:

(Witness)

(Witness)

J PROPERTIES LP

By: John E. Locke, its General Partner

DOVER DEVELOPMENT CORP.

By: John E. Locke, its President

COPY

STATE OF MAINE
CUMBERLAND, ss.

May 18, 2016

Then personally appeared John E. Locke, General Partner of J Properties LP and President of Dover Development Corp., and acknowledged the foregoing instrument to be his free act and deed and the free act and deed of said J Properties LP and Dover Development Corp.

Before me: _____
Notary Public/Attorney at Law

NOTARY PRINT NAME: _____

COPY

EXHIBIT A

PARCEL 1:

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

Beginning at a stake on the westerly sideline of relocated Riverside Street marking the point of tangency of a curve whose radius is seven hundred seventy-six and twenty hundredths feet (776.20') at station 43+85.28 as shown on plan of Brighton Avenue Interchange made by the Maine Turnpike Authority and recorded in the Cumberland County Registry of Deeds in Plan Book 41, Page 70, which stake is located forty and four hundredths feet (40.04') southeasterly of the southeasterly corner of the General Motors Building so-called; thence running southerly by said relocated Riverside Street as shown on said plan on a curve to the left whose radius is seven hundred seventy-six and twenty hundredths feet (776.20'), a distance of ninety-nine and fifty-five hundredths feet (99.55') when measured on the arc thereof to a point which is the northeasterly corner of Parcel 2 hereof; thence running along the northerly sideline of said Parcel 2 North sixty-three degrees forty-one and one-half minutes West (N 63° 41-½ W) three hundred fifty-six and ninety-seven hundredths feet (356.97') to a point, which is situated fifty feet (50') easterly when measured at right angles from the center line of Central Maine Power Company pole line and which point is the northwest corner of said Parcel 2; thence running by land now or formerly of Guy E. Knowles parallel with and fifty feet (50') distant from said pole line, North twenty-seven degrees fifty-eight and one-half minutes West (N 27° 58-½' W) thirty-six and seventy-four hundredths feet (36.74') to a point; thence running by land now or formerly of Whitney Real Estate, Inc. on the following described courses; North thirty-five degrees eight minutes East (N 35° 08' E) one hundred forty-seven and eighty-eight hundredths feet (147.88') to a point; thence South fifty-four degrees fifty-two minutes East (S 54° 52' E) three hundred seventy-nine and thirteen hundredths feet (379.13') to the westerly sideline of said relocated Riverside Street; thence by said relocated Riverside Street South thirty-five degrees eight minutes West (S 35° 08' W) ten and forty-five hundredths feet (10.45') to the point of beginning.

Also a certain lot or parcel of land situated on the westerly side of relocated Riverside

COPY

Street in the City of Portland, County of Cumberland and State of Maine, and bounded and described as follows:

Beginning at a point on the westerly sideline of relocated Riverside Street which point is ninety-nine and fifty- five hundredths feet (99.55') southwesterly on a curve to the left from a stake on said westerly sideline which marks the point of tangency of a curve whose radius is seven hundred seventy-six and twenty hundredths feet (776.20') at station 43+85.28 as shown on plan of Brighton Avenue Interchange made by the Maine Turnpike Authority and recorded in the Cumberland County Registry of Deeds in Plan Book 41, Page 70 and which point marks the southeasterly corner of Parcel 1 hereof; thence running along said westerly sideline of Riverside Street twenty feet (20') to a point; thence running by land now or formerly of Guy E. Knowles North sixty-three degrees forty-one and one-half minutes West (N 63°41-½' W) three hundred twenty-eight and eighty-nine hundredths feet (328.89') to a point which is situated fifty feet (50') easterly when measured at right angles from the center line of a Central Maine Power Company pole line; thence running by other land of said Knowles parallel with and fifty feet (50') distant from said pole line, North twenty-seven degrees fifty-eight and one-half minutes West (N 27° 58-½' W) thirty-four and twenty-six hundredths feet (34.26') to a point; thence running by the southerly sideline of Parcel 1 hereof South sixty-three degrees forty-one and one-half minutes East (S 63°41-½' E) three hundred fifty-six and ninety-seven hundredths (356.97') feet to the point of beginning.

The above described courses are true North and the above describe parcels or lots of land are subject to the following encumbrances;

1. Pipeline easement from Dennis D. Decormier to Portland Pipe Line Company dated October 10, 1941, recorded in said Registry of Deeds in Book 1646, Page 289.

2. Pole easement from Whitney Real Estate, Inc. to Central Maine Power Company and New England Telephone and Telegraph Company dated September 22, 1964, recorded in said Registry of Deeds in Book 2860, Page 60.

The above described parcels of land being part of the property conveyed by Fred J. Foley, Jr. to Locke Properties by warranty deed dated October 1, 1981, recorded in said Registry in Book 4863, Page 123.

COPY

PARCEL 2:

A certain lot or parcel of land situated on the westerly side of Riverside Street in the City of Portland, County of Cumberland and State of Maine, and bounded and described as follows:

Beginning at a stake on the westerly sideline of Riverside Street marking the point of tangency of a curve whose radius is seven hundred seventy-six and twenty hundredths (776.20) feet at station 43+85.28 as shown on Plan of Brighton Avenue Interchange made by the Maine Turnpike Authority and recorded in the Cumberland County Registry of Deeds in Plan Book 41, Page 70; thence southerly by said Riverside Street as shown on said Plan on a curve to the left whose radius is seven hundred seventy-six and twenty hundredths (776.20) feet, one hundred nineteen and fifty-five hundredths (119.55) feet when measured on the arc thereof to an iron; thence by land now or formerly of one Knowles N 63°41½' W three hundred twenty-eight and eighty-nine hundredths (328.89) feet to an iron situated fifty (50) feet easterly when measured at right angles from the center line of a Central Maine Power Company pole line; thence by land now or formerly of said Knowles and keeping fifty (50) feet from and running parallel with said pole line N 27° 58-½' W five hundred ninety-one and twenty hundredths (591.20) feet to an iron; thence by land now or formerly of Knowles S 54° 52' E eight hundred forty-three and seven hundredths (843.07) feet to an iron and the westerly sideline of Riverside Street; thence by said Riverside Street S 35° 08' W ninety-seven and eighty-eight hundredths (97.88) feet to the point of beginning. Said above described courses are true North.

Being the same premises conveyed to Dover Development Corp. by J Properties by deed dated March 10, 2000 and recorded in the Cumberland County Registry of Deeds in Book 15365, Page 278.

Excepting from the premises above described so much thereof as was conveyed by Whitney Real Estate, Inc. to Fred J. Foley, Jr. by deed dated January 23, 1965 and recorded in said Registry of Deeds in Book 2877, Page 214, which excepted parcel was subsequently conveyed by Warranty Deed of Fred J. Foley, Jr. to Locke Properties.

And further conveying to Dover Development Corp. whatever rights or interests J Properties gained or was granted by deed of Portland Pipe Line Company to J Properties dated December 5, 1984, and recorded in said Registry of Deeds in Book 6636, Page 3.

COPY

This conveyance is made subject to two easements given by Whitney Real Estate, Inc. to Central Maine Power Company and New England Telephone and Telegraph Company dated August 19,1964 and September 22,1964 and recorded in said Registry of Deeds in Book 2877, Page 312 and Book 2860, Page 60, respectively.

This conveyance is further made subject to a pipeline easement from Dennis D. Decormier et al, to Portland Pipe Line Company dated October 10, 1941 and recorded in said Registry of Deeds in Book 1646, Page 289, as further delineated and/or modified by said deed from the Portland Pipe Line Company to the Grantor herein dated December 5, 1984 and recorded in said Registry of Deeds as above set forth.

PARCEL 3:

The real estate situated in the City of Portland, County of Cumberland, and State of Maine and more specifically described as follows:

Beginning at an iron pin marking the northerly most point of a parcel of land now or formerly of J Properties which parcel was formerly of Ameri-Cana Transport, Inc. (described in Book 3175 at Page 471 in the Cumberland County Registry of Deeds);

Thence: proceeding on a heading of S 27° 58.5' E a distance of approximately 192.9 feet to a point (hereinafter called the "Point of Beginning");

Thence: proceeding on a heading of S 62° 1.5' W a distance of approximately 25 feet to a point the sideline of land now or formerly of Central Maine Power Co. of Augusta;

Thence: proceeding on a heading of S 27° 58.5' E a distance of approximately 364 feet to a point at the intersection of the lands now or formerly of Bounty Realty, William A. Berger and Central Maine Power Co. of Augusta;

Thence: proceeding on a heading of S 63° 41.5' E a distance of approximately 42.82 feet along the land now or formerly of William A. Berger;

Thence: proceeding on a heading of N 27° 58.5' W a distance of approximately 327.3 feet to the Point of Beginning.

Being the same premises conveyed from Bounty Realty by Quitclaim Deed to J Properties and dated December 11, 1986 and recorded in the Cumberland County Registry of Deeds in Book 7619, Page 120;

Also hereby conveying the right in common with the Grantor herein and its successors

COPY

and assigns, to drain and impound water from land of the Grantee herein and for land adjacent thereto of Locke Properties and from the premises herein conveyed (Collectively called Locke Land) in a detention basin on land of the Grantor herein (The Detention Basin), being located partially on the Northwesterly portion of property conveyed to the Grantor herein by William Sexton et al by deed dated January 3D, 1986 and recorded in the Cumberland County Registry of Deeds in Book 7056, Page 115, and partially on the easement and use of the triangular piece of land conveyed by Grantee to Grantor, (provided that the additional surface water drained into the Detention Basin from the Locke Land shall not, after satisfying the Grantor's drainage needs, exceed the capacity of The Detention Basin) and further conveying to the Grantee and Locke Properties, their respective successors and assigns, the right to expand the Detention Basin onto the remaining land of the Grantee herein and use in connection therewith the Grantors piping and underground drainage system to Riverside Street. The Grantee agrees that any work to be done to increase the capacity of the Detention Basin shall first be approved as to reasonable engineering matters by Sebago Technics, Inc. or such successor engineering firm as the Grantee shall previously in writing have designated to the Grantor, with all costs for such expansion being borne by Grantee.

Easements

The proposed development site includes two parcels and the record deed and available survey information indicates the following:

A. Existing Easements and other encumberances:

1. Access easement and right of way over land of an abutter as described in an easement from Mitchco Properties, Inc. to J Properties LP dated January 1, 2017 and recorded in Book 33778, Page 151.

B. New Easements

No new easements are proposed as part of the site development.

Note: Formal deed research was not performed as part of this easement compilation statement.

ZONING ANALYSIS Relevant Zone(s) B4

All Projects:

	Required	Proposed
Lot Size	10,000 sf	3.6 acres total
Area Per Dwelling Unit	n/a	n/a
Minimum Street Frontage	60 feet	~200 feet
Front Yard Minimum	20 feet	20 feet
Front Yard Maximum	n/a	n/a
Rear Yard	20 feet	20 feet
Yard Right	12 feet	12 feet
Yard Left	12 feet	12 feet
Side Street Setback	12 feet	n/a
Step Back	n/a	n/a
Maximum Lot Coverage	80%	56.4%
Minimum Lot Coverage	n/a	n/a
Maximum Height	65 feet	31.33 feet
Open Space	n/a	n/a
Maximum Impervious Area	80%	56.4%
Pavement Setback	12 feet	12 feet
Floor Area Ratio	65%	22%
Off Street Parking Spaces	34	116
Loading Bays	n/a	n/a
Other 1		
Other 2		
Other 3		

BOK FINANCIAL
Commercial Real Estate Banking

Chad S. Neubecker
Senior Vice President
BOK Financial
1600 Broadway, Suite 1510
Denver, CO 80202
cneubecker@bokf.com

August 8, 2018

City of Portland
389 Congress Street
Portland, ME 04101

RE: Reference Letter for The Boyer Company

To Whom it May Concern:

I am sending this reference letter on behalf of BOK Financial (Bank), which is the construction lender for the proposed self-storage project in Portland, Maine, for the capabilities of The Boyer Company and Patagon. The Boyer Company and Patagon are the project sponsors for the proposed Portland self storage project along with the related entity; Boyer Patagon Holdings, LLC.

The Boyer Company has been a valued client of the Bank since 2013 and I have been personally banking Boyer since 1998. The Boyer Company is one of the largest and financially strongest developers in the West and since being a client of the Bank, we have lent over $200 Million to The Boyer Company and all loans have performed as agreed. In addition, as previously stated, I have personally been The Boyer Company's commercial real estate banker since 1998 and have lent well over $400 Million over the 20 years with all loans being paid as agreed.

On the project side, the self-storage project in Portland, Maine is fully committed by the Bank for construction financing. In addition, the equity for the loan and project is in-place. Thus, the funding for the project is available for immediate funding. In addition to the funding for the project, the sponsorship has a strong record of delivery. Since first personally banking The Boyer Company in 1998 and with BOK Financial since 2013, all projects have been completed on time and within budget.

Please reach out to me with any questions on this valued client at 602-808-5356 and I would be happy to answer any other questions you may need.

Sincerely,

Chad S. Neubecker
SVP, Western Market Manager
BOK Financial

Technical Capacity

Technical Capacity:

Patagon has assembled a team of highly qualified contractors, consultants, and engineers for this proposed project. The project team includes:

Sebago Technics, Inc. (STI) is a multi-disciplinary engineering firm with over 35 years of experience, that offers a wide range of services specializing in land development, planning, permitting and engineering design services. We maintain a staff of multi-disciplinary professionals to provide services in the areas of general civil engineering, road and utility infrastructure design, construction management, permitting, landscape architecture, soil science, wetlands science, geotechnical services, land surveying, and environmental engineering.

James Seymour, PE, is a Registered Professional Engineer in the State of Maine. Maine License #9984.

Di'velept Design is an architecture firm that specializes in Self Storage facilities. The firm principals are Jarod Hall and Jeremy Larsen. In the last couple of years they have designed over a half million square feet of storage space, ranging from Washington state to Massachusetts and many locations in between. Many of the storage projects they have worked on have been with this same client, so they have developed a strong understanding of how to achieve the owner's goals while keeping the building compliant with local restrictions. They strive to bring design minded thinking to a project type where this is often lacking.

Please see the following pages for additional information on Patagon.

PATAGŌN™

Patagon is a new venture founded in 2017 by Benjamin Q. Bradley and Daniel A. Lyman. They are the founders behind the Get Space storage project based in the Portland, Oregon. See more at www.getspace.com. Patagon is the focus beyond Portland, OR. As part of that strategy Patagon formed a new long-term partnership with the Boyer Company to develop the portfolio of self-storage facilities all across the United States.

To date, they're building or have built over 1,500,000 SF of storage; over 12,000 self storage units. Currently nine facilities are open for business, three are under construction, with four more breaking ground very soon. Nine of the Portland, OR facilities have a joint venture partnership with Extra Space Storage; they are one of only a few groups across the whole country with such arrangement.

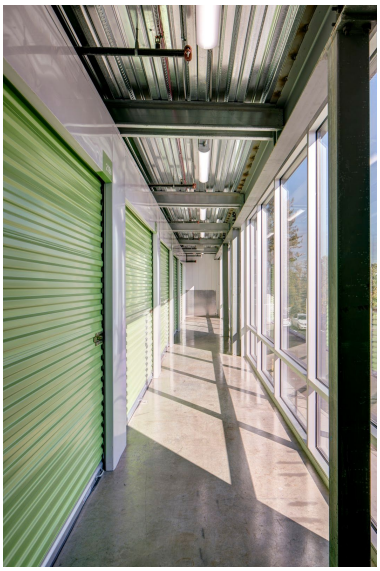
T: (801) 510-1178

1700 Main St., #208
Washougal, WA 98671

www.patagon.net

Projects Completed (2014-Current)



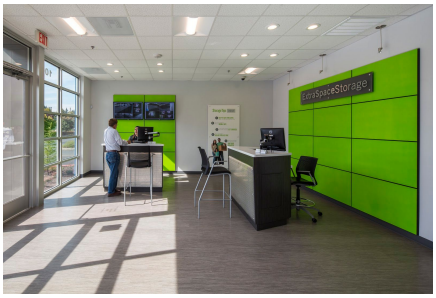


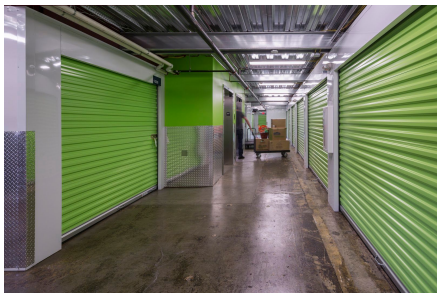















STORAGE
EXIT






ExtraSpace Storage
OFFICE


ExtraSpace Storage


CLIMATE CONTROL


C392
C330





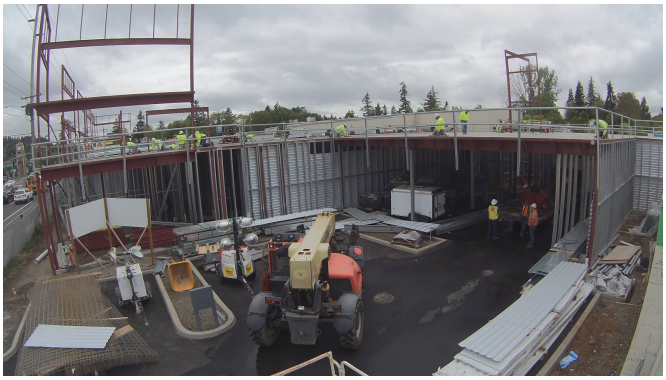
Projects Under Construction





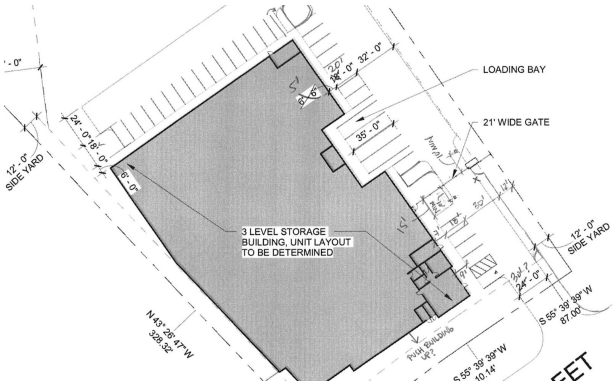


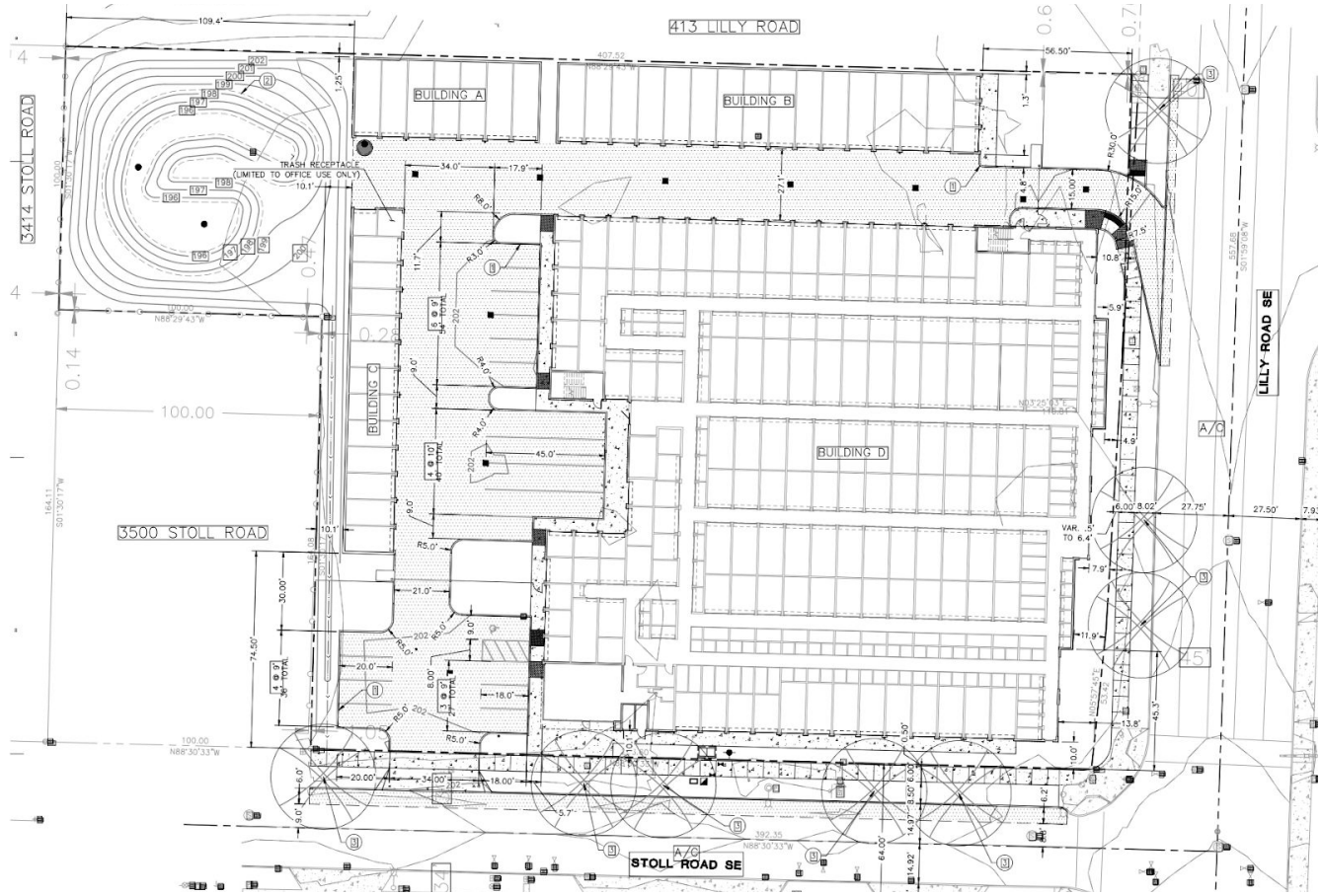




Projects Forthcoming





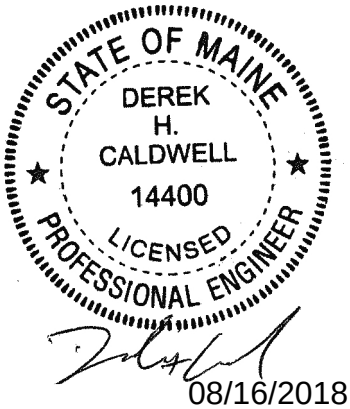




SEBAGO TECHNICS

CIVIL ENGINEERING • SURVEYING • LANDSCAPE ARCHITECTURE

Memorandum



17500

To: **Jim Seymour, P.E.**

From: **Derek Caldwell, P.E., PTOE**

Date: **August 15th,2018**

Subject: **Traffic Impact Statement**
Patagon Storage
Portland, Maine

We have completed a trip generation analysis for the proposed Patagon Self Storage facility to be located at 150 Riverside Street in Portland. It is our understanding that this development is to include a 3-story 100,000 square foot self-storage facility. Presently, the site has two curb cuts on Riverside Street. This project will reconstruct the northerly entrance and close the southerly entrance. The site was formerly occupied by the Upscale Furniture and Consignment store, which closed in July of 2018. This former use contained an approximately 19,000 square foot building.

Trip generation for both the proposed development as well as the former use was calculated using the *ITE Trip Generation Manual, 10th Edition.* Land Use Code (LUC) 151 – Mini-Warehouse was used for the future self-storage facility and LUC 890 – Furniture Store for the former furniture store. Tables 1 and 2 below summarize the calculated trip generation.

Table 1 - Trip Generation
LUC – 151 – Mini-Warehouse
(100,000 SF)

Time Period	Average Rate/1,000 SF	Total Trips	Entering Trips	Exiting Trips
Weekday	1.51	151	75	76
AM Peak Hour Adjacent Street	0.10	10	6	4
PM Peak Hour Adjacent Street	0.17	17	8	9
AM Peak Hour Generator	0.20	20	10	10
PM Peak Hour Generator	0.20	20	10	10
Saturday	1.95	195	97	98
Saturday Peak Hour*	0.31	31	18	13

** Saturday Peak Hour data is based on one Study Site.*

Table 2 - Trip Generation
LUC – 890 – Furniture Store
(19,000 SF)

Time Period	Average Rate/1,000 SF	Total Trips	Entering Trips	Exiting Trips
Weekday	6.30	120	60	60
AM Peak Hour Adjacent Street	0.26	5	4	1
PM Peak Hour Adjacent Street	0.52	10	5	5
AM Peak Hour Generator	0.52	10	6	4
PM Peak Hour Generator	0.70	13	6	7
Saturday	7.15	136	68	68
Saturday Peak Hour	1.10	21	11	10

Table 3 shows the resultant net trip generation of the new development, found by the difference in values from Tables 1 and 2.

Table 3 - Net Trip Generation

Time Period	Total Trips	Entering Trips	Exiting Trips
Weekday	31	15	16
AM Peak Hour Adjacent Street	5	2	3
PM Peak Hour Adjacent Street	7	3	4
AM Peak Hour Generator	10	4	6
PM Peak Hour Generator	7	4	3
Saturday	59	29	30
Saturday Peak Hour	10	7	3

Based on the expected net trip generation of less than 25 passenger car equivalents during all peak hour periods, it is not anticipated that a scoping meeting or additional traffic analysis will be required by the City of Portland.

75 John Roberts Road – Suite 4A, South Portland, ME 04106-6963 • 207.200.2100 • Fax: 207.856.2206

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
Patagon Self Storage, LLC, 1700 Main st. suite 70 Washaugal, Washington. 801-550-6109

3. Name address, telephone number of architect
Jarod Hall, 454 N 600W Salt Lake City, Utah. 801-680-4485

4. Proposed uses of any structures [NFPA and IBC classification] :
Group S- Climate Controlled Self Storage

6. Square footage of all structures [total and per story]
Total: 101,782 SF Per Story: 33,344 SF, 33,961 SF, 34,477 SF

7. Elevation of all structures: **TBD**

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: **See Plan set**

10. Water main[s] size and location: **See Existing Conditions Plan**

11. Access to all structures [min. 2 sides]: **See Site Plan**

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

Portland Water District

FROM SEBAGO LAKE TO CASCO BAY

July 13, 2018

Dylan Stuart
Sebago Technics
75 John Roberts Road Suite 4A
South Portland, ME 04106

Re: 150 Riverside Street, PO
Ability to Serve with PWD Water

Dear Mr. Stuart:

The Portland Water District has received your request for an Ability to Serve Determination for the noted site submitted on April 10, 2018. 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 service lines 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.Our records show that the property is currently served with a 2-inch domestic water service and a 6-inch fire service. 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 which includes shutting the corporation valve and cutting the pipe from the water main (for the 2-inch service) or removing the 6-inch gate valve and capping the tapping sleeve (for the 6-inch service).

- An approved backflow prevention device must be installed on the service line directly after the meter prior to service activation. Please refer to the PWD website for more information on cross-connection control policies.

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 2-inch diameter copper domestic service line and a 6-inch fire service line provide water service to the site. Please refer to the "Conditions of Service" section of this letter for requirements related to the use of these services.

Water System Characteristics

According to District records, there is an 12-inch diameter ductile iron water main in Riverside Street and a public fire hydrant located approximately 200 feet from the site. The most recent static pressure reading was 79 psi on June 19, 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 not indicated whether 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.

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

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: 3/19/2018

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

Site Address:142 & 150 Riverside street Portland Maine

Chart Block Lot Number: 267 / A / 4 & 6

Proposed Use: Climate Controlled Self Storage
Previous Use: Furniture sales and Car Storage
Existing Sanitary Flows: _____GPD
Existing Process Flows: _____GPD
Description and location of City sewer that is to receive the proposed building sewer lateral.

Use and improve as necessary the existing sewer lateral on Riversite Dr.

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: _____ Phone: _____
Owner/Developer Name: Daniel Lyman, Patagon Storage, LLC
Owner/Developer Address: 1700 Main Street. Washaugal Washington
Phone: 801-855-6109 Fax: _____ E-mail: dl@patagon.co
Engineering Consultant Name: James Seymour, Sebago Technics, LLC
Engineering Consultant Address: 75 John Roberts Rd. South Portland ME, 04106
Phone: 207-200-2083 Fax: _____ E-mail: jseymour@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: 100 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.

ACF Environmental
2831 Cardwell Rd
Richmond, VA 23234

Dylan Stuart
Civil Engineer
Sebago Technics
75 John Roberts Rd., Suite 4A
South Portland, ME 04106

July 20, 2018

SUBJECT: Plan Review and Construction Oversight Commitment

Dear Dylan,

Thank you for forwarding the preliminary plans and drainage calculations for the proposed Self-Storage Building on Riverside Street in Portland, Maine to ACF environmental for review of the proposed FocalPoint biofiltration system.

Our team has reviewed the plans and calculations and take no exceptions to the location and application of the FocalPoint system for this project.

It appears that the system has been designed in accordance with the design criteria set forth by Maine DEP in the May 16, 2016 FocalPoint system approval letter and meets the system's specifications etc.

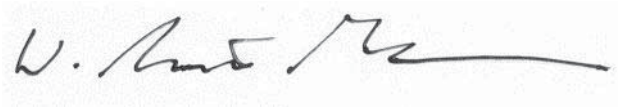
Upon completion of your detail sheets we would be happy to review the elevation data of each system.

With regard to the installation, ACF Environmental will host a preconstruction meeting with the site contractor and will be on-site during the entire installation to ensure that the installation is being conducted in accordance with our standard installation procedures.

ACF Environmental will also provide the first year's maintenance on the FocalPoint bed area.

Thank you for choosing to utilize the FocalPoint system and we look forward to a successful completion of your project.

Sincerely,



W. Scott Gorneau, P.E.
National Stormwater Manager
ACF Environmental

Patagon Storage
150 Riverside Street
Portland, ME

Introduction

This Stormwater Management Plan has been prepared to address the potential impacts associated with this project due to the proposed modification in stormwater runoff characteristics. The stormwater management controls that are outlined in this plan have been incorporated to best suit the proposed development and to comply with applicable regulatory requirements.

The project consists of redevelopment of a 1.37 acre parcel at 142 Riverside Street and a 2.23 acre parcel at 150 Riverside Street. At 150 Riverside Street, the existing building currently used for Upscale Furniture will be removed to allow for the construction of a multi-story self-storage facility while the remaining parcel and the parcel at 142 Riverside Street will be used to provide parking and roadway areas to service the self-storage building.

Based upon the anticipated development, the project is subject to the Chapter 500 Basic, General, and Urban Impaired Stream standards. The proposed erosion controls, inspection and maintenance criteria, and the stormwater management systems have been designed to meet MDEP and City of Portland requirements.

Existing Conditions

Both lots for the site are located in the City of Portland B4 Commercial Business District. The lot for 150 Riverside is developed with a building and parking area that currently services Upscale Furniture while the lot for 142 Riverside consists of a gravel parking area that was most recently used to store vehicles for a nearby car dealership. Stormwater is collected in a few on-site catch basins and an existing wet-pond. The existing wet pond is routed to the City's storm drainage infrastructure in Riverside Street through an existing 24" storm drain on the parcel that borders 150 Riverside Street to the north.

Proposed Development

The developer proposes to construct a multi-story self-storage facility with a parking area that will service the facility along with additional parking along the westerly side of the lot that will be used for extra parking and storage. The site is accessed via two existing driveway from Riverside Street. The existing entrance on the south side of the parcel that services Upscale Furniture will be closed up following the demolition of the existing building, and the site will be accessed via the north entrance on Riverside Street.

The proposed development will result in the following:

Total disturbed/developed area = 2.83 acres
Total impervious area = 2.03 acres

Regulatory Requirements

Maine Department of Environmental Protection (MDEP)

MDEP Rule Chapters 500 and 502 describe stormwater management requirements for new development projects. These rules describe performance standards divided into five major categories: Basic Standard, General Standard, Phosphorous Standard, Urban Impaired Stream Standard, and Flooding Standard. The following sections describe how this project will address these stormwater management performance standards.

Basic Standard: A project must meet basic standards if it disturbs an area greater than one (1) acre. As this development will disturb approximately 2.83 acres, it must meet the basic standard. The standard includes various erosion and sedimentation controls, inspection and maintenance procedures, and general housekeeping requirements.

General Standard: A project is subject to the general standard if it results in the creation of one (1) or more acres of impervious area or developed areas greater than five (5) acres. As this project will include approximately 2.03 acres of impervious area, it must meet the general standard. The standard requires that a minimum of 95% of all impervious areas and at least 80% of all developed areas are designed to be tributary to stormwater BMPs. However, for redevelopment projects, the required treatment is scaled based on the pollutant discharge that, if the stormwater was untreated, would result from the redevelopment project. Standard BMPs have been defined by the MDEP and are described thoroughly in their publication Stormwater Management for Maine: Best Management Practices manual, as revised May 2016.

Phosphorous Standard: A project must meet the phosphorous standards if located within a lake watershed. As this project is not tributary to a lake watershed, it is not subject to the phosphorus standard.

Urban Impaired Stream Standard: A project must meet the urban impaired stream standards if located within an urban impaired stream watershed. As this project is tributary to Capisic Brook which is an Urban Impaired Stream as defined by MDEP Chapter 502, this project is subject to the urban impaired stream standard. The standard requires that the applicant must either pay a compensation fee or mitigate project impacts by reducing or eliminating an off-site pre-development impervious stormwater source as described in 06—096 CMR 501.

Flooding Standard: A project must meet to the flooding standards if it creates impervious areas greater than three (3) acres, or developed areas greater than twenty (20) acres. As this project includes approximately 2.03 acres of impervious area, it is not subject to the flooding standard.

City of Portland:

In accordance with Section 5.II.D of the City of Portland Technical manual, all projects not subject to requirements of an existing Site Law or Stormwater Management Law Permit that include redevelopment of non-roof impervious area greater than 5,000 square-feet and are subject to City of Portland review shall provide stormwater quality treatment in accordance with the General Standards for no less than 50% of the redeveloped impervious area. The runoff from any up-gradient area must be either directed away from the stormwater treatment measure or that measure must be sized to treat the runoff from the up-gradient area.

Methodology

In order to evaluate drainage characteristics as a result of the proposed development activities, a quantitative analysis was performed to determine peak runoff rates in the pre-development and post-development conditions. The evaluation was performed using the methodology outlined in the USDA Soil Conservation Service's "Urban Hydrology for Small Watersheds - Technical Release #55 (TR-55)". HydroCAD computer software was utilized to perform the calculations.

The peak runoff rates were calculated using a 24-hour duration storm event with a Type III rainfall distribution. The rainfall amounts for Cumberland County have recently been updated and the following 24-hour duration rainfall amounts were used for this report:

Storm Frequency	24-hr Duration Rainfall (in.)
2-yr	3.1
10-yr	4.6
25-yr	5.8

The model incorporates design assumptions including the following:

- The minimum time of concentration (T_c) is six minutes, based upon limitations of the TR-55 model.

Quality Treatment

Stormwater runoff from the building and parking area will be routed to three proposed focal point treatment units located in landscaped islands adjacent to parking areas onsite. The Water Quality Volume and any bypass flow will be routed to the City's infrastructure on Riverside Street.

The treatment volume of the focal point required is based upon water quality/channel protection volume which is equal to 1.0-inch times the subcatchment's impervious area and 0.4–inch times the subcatchment's tributary landscaped areas. The system is designed to drain completely within 24 to 72 hours after the storm.

Redevelopment standards apply because the proposed building will replace existing buildings and pavement areas. After completing the calculations outlined in §4.C(2)(d) of Chapter 500, the ranked impact change due to redevelopment is calculated to be -0.387, requiring that 0.0% of developed area be treated. However, the minimum level of treatment required by the City of Portland Technical manual is 50% for redevelopment projects.

The attached treatment table summarizes the total impervious and developed areas for the proposed development indicates the BMP measures proposed for treating the impervious areas. The conclusion is a tabulation of the effective treatment percentages for the proposed development. The results of this tabulation indicate the following:

- The post-development area requiring treatment includes approximately 2.03 acres of impervious area and a total of approximately 2.83 acres of developed area.

- The redevelopment standard requires treatment for 50% of the new impervious areas. As such, the site is required to provide treatment for a minimum of 1.01 acres. The total area receiving treatment is approximately 1.14 acres or 56.30%.

- The redevelopment standard requires treatment for 50% of the new developed areas. As such, the site is required to provide treatment for a minimum of 1.42 acres. The total area receiving treatment is approximately 1.42 acres or 50.20%.

Peak Flow Analysis

The subcatchment areas and times of concentration of the post-development conditions vary from the pre-development conditions based on the proposed site development and grading. The following table summarizes the results of the hydrologic analysis of the project during pre-development and post-development conditions.

Stormwater Peak Discharge Summary Table

Study Point	2-Year Storm			10-Year Storm			25-Year Storm		
	Pre (cfs)	Post (cfs)	Diff. (cfs)	Pre (cfs)	Post (cfs)	Diff. (cfs)	Pre (cfs)	Post (cfs)	Diff. (cfs)
SP1	5.26	4.56	-0.70	9.04	7.75	-1.29	12.09	10.42	-1.67

The results of the stormwater modeling at Study Point SP1 indicate that the peak rates of runoff in the post-developed condition will be less than the pre-developed condition for the 2-year, 10-year, and 25-year storm events.

Conclusions

Erosion and sedimentation controls, inspection and maintenance procedures and general housekeeping requirements have been outlined to prevent unreasonable impacts on the site and to the surrounding environment.

By utilizing Best Management practices, stormwater quality treatment has been provided for at least 50% of the total impervious area and at least 50% of the total developed area. Based on the modeling data, the post-development peak rates of runoff for the 2-year, 10-year, and 25-year storm events demonstrate decreases in the peak rates of runoff when compared to the pre-development peak rates of runoff.

With the incorporation of the above referenced erosion control, treatment and detention measures, the project has been designed in conformance with the Maine Department of Environmental Protection Chapter 500 Stormwater Law and City of Portland Stormwater Management Standards. Accordingly, it is anticipated that stormwater runoff from the proposed development will not cause a significant adverse effect to off-site receiving channels or downstream properties.

Prepared by,

SEBAGO TECHNICS, INC.



Richard L. Meek
Sr. Project Engineer

July 20, 2018

Attachment A

STORWATER QUALITY CALCULATIONS

Table 1: MDEP GENERAL STANDARD CALCULATIONS

Job #17500

AREA ID	WATERSHED SIZE (S.F.)	EXISTING ONSITE IMPERVIOUS AREA (S.F.)	NEW ONSITE IMPERVIOUS AREA (S.F.)	EXISTING ONSITE LANDSCAPED AREA (S.F.)	NEW ONSITE LANDSCAPED AREA (S.F.)	NET NEW DEVELOPED AREA (S.F.)	NET EXISTING DEVELOPED AREAS (S.F.)	TREATMENT PROVIDED?	IMPERVIOUS AREA TREATED (S.F.)	LANDSCAPED AREA TREATED* (S.F.)	DEVELOPED AREA TREATED (S.F.)	TREATMENT BMP
1	3,235	0	467	1,092	1,676	2,143	1,092	NO	0	0	0	NONE
2	17,839	0	16,389	0	1,450	17,839	0	YES	16,389	1,450	17,839	FP-3
3	13,820	0	12,315	0	1,505	13,820	0	YES	12,315	1,505	13,820	FP-2
4	28,093	0	19,240	0	8,853	28,093	0	YES	19,240	8,853	28,093	WB-1
5	2,078	0	1,731	0	347	2,078	0	YES	1,731	347	2,078	FP-1
6	58,372	0	38,089	0	9,828	47,917	0	NO	0	0	0	NONE
7	27,710	0	0	0	5,726	5,726	0	NO	0	0	0	NONE
8	5,560	0	0	0	5,560	5,560	0	NO	0	0	0	NONE
TOTAL (S.F.)	**156,707**	**0**	**88,231**	**1,092**	**34,945**	**123,176**	**1,092**		**49,675**	**12,155**	**61,830**	

TOTAL NEW IMPERVIOUS AREA (S.F.)	**88,231**	**TOTAL DEVELOPED AREA (S.F.)**	**123,176**
TOTAL IMPERVIOUS AREA RECEIVING TREATMENT (S.F.)	**49,675**	**TOTAL DEV. AREA RECEIVING TREATMENT (S.F.)**	**61,830**
% OF IMPERVIOUS AREA RECEIVING TREATMENT	**56.30%**	**% OF DEV. AREA RECEIVING TREATMENT**	**50.20%**

SEBAGO TECHNICS, INC.
75 John Roberts Road, Suite 4A
South Portland, ME 04106
(207) 856-0277 FAX (207) 856-2206

JOB	17500		
SHEET NO.	1	OF	4
CALCULATED BY	DJS	DATE	7/11/2018
CHECKED BY	JRS		
FILE NAME	17500_WQC 2018-3-16.xlsx	PRINT DATE	7/19/2018

Note: Buffers are sized in accordance with Chapter 5 of the Maine Department of Environmental Protection BMPs Technical Design Manual, latest revision.

Wooded Buffer 1 (WB-1)								
Type of Buffer :		Buffer with Stone Bermed Level Spreader						
Existing Cover :		Gravel						
Soils :		Swanton						
Buffer Slope :		1.6%						
Buffer Length :		100	feet					
Tributary Area								
Impervious :		19,240	sf					
Landscaped :		371	sf					
Per Table 5-4 of Manual for Soil Group A Fine Sandy Loam:								
Berm Length per acre of impervious :				200	ft			
Berm Length per acre of landscaped :				60	ft			
Required Level Spreader Berm Length :				88.8	ft	(BMP_{ST})		
Provided Level Spreader Berm Length :				82.0	ft	(BMP_{TF})		
Treatment Factor Calculation								
TF=0.4 * (BMP_{ST}/BMP_{TF})=	**0.43**							

SEBAGO TECHNICS, INC.
75 John Roberts Road Suite 4A
South Portland, Maine 04106
Tel. (207) 200-2100

JOB	17500		
SHEET NO.	2	OF	4
CALCULATED BY	DJS	DATE	7/11/2018
FILE NAME	17500_WQC 2018-3-16.xlsx	PRNT DATE	7/19/2018

FOCALPOINT, ACF ENVIRONMENTAL

Task: Size Focal Point treatment system pursuant to the General Standards, Section 4.C of Chapter 500.

References 1. Letter from Maine Department of Environmental Protection, Director-Bureau of Land Resources to Stormwater Systems ACF-Convergent Water Technologies Alliance, Dated May 16, 2016 indicating FocalPoint biofiltration meets requirements of the General Standards for Treatment.

Per Reference 1 above, the system must be sized to meet:

a. "entire volume of a 0.96 inch Type III 24-hour storm is treated prior to activation of the bypass/overflow"

b. "surface area….must be a minimum of 174 s.f. per 1 acres of impervious area treated (26s.f. per 0.15 acres)"

c. "treatment flow rate for the Stormtech Isolator Row is the projected one year peak flow rate for the drainage area feeding the Isolator Row"

Flow rates:

Stormtech SC-310	0.10	cfs/chamber
Stormtech SC-740	0.20	cfs/chamber
Stormtech DC-780	0.20	cfs/chamber
Stormtech MC-3500	0.30	cfs/chamber
Cultech 150XLHD	0.185	cfs/chamber
Cultech 330XLHD	0.227	cfs/chamber

Tributary to FocalPoint System: FP-1

Landscaped Area	347.00	SF	
Impervious Area	1,731.00	SF	

Minimum Surface Area of FocalPoint:

Required: 26 s.f. per 0.15 acres of impervious area

Total Impervious Area	1,731.00	SF		0.04	AC
			X	174.00	SF/ACRE
Required Minimum Surface Area				6.9	SF
Provided Surface Area				20.0	SF

Treatment Volume

Required: (0.4" X Landscaped + 1.0" X Impervious)

Landscaped Area	347.00	SF	Volume	11.6	
Impervious Area	1,731.00	SF	Volume	144.3	
Treatment Volume Required				155.8	CF

0.004 AF

must discharge in 24-48 hours

Sediment Pre-Treatment

Per Reference "C" above

One year flow rate out put from Hydrocad:		0.10	cfs
Treatment Row sizing for:	**Cultech 150XLHD**	**0.185**	cfs
Total number of Isolator Row Chambers required:		1	

SEBAGO TECHNICS, INC.
75 John Roberts Road Suite 4A
South Portland, Maine 04106
Tel. (207) 200-2100

JOB
SHEET NO. 3 OF 4
CALCULATED BY DJS DATE 7/11/2018
FILE NAME 17500_WQC 2018-3-16.xlsx PRNT DATE 7/19/2018

FOCALPOINT, ACF ENVIRONMENTAL

Task: Size Focal Point treatment system pursuant to the General Standards, Section 4.C of Chapter 500.

References 1. Letter from Maine Department of Environmental Protection, Director-Bureau of Land Resources to Stormwater Systems ACF-Convergent Water Technologies Alliance, Dated May 16, 2016 indicating FocalPoint biofiltration meets requirements of the General Standards for Treatment.

Per Reference 1 above, the system must be sized to meet:

a. "entire volume of a 0.96 inch Type III 24-hour storm is treated prior to activation of the bypass/overflow"

b. "surface area….must be a minimum of 174 s.f. per 1 acres of impervious area treated (26s.f. per 0.15 acres)"

c. "treatment flow rate for the Stormtech Isolator Row is the projected one year peak flow rate for the drainage area feeding the Isolator Row"

Flow rates:

Stormtech SC-310	0.10	cfs/chamber
Stormtech SC-740	0.20	cfs/chamber
Stormtech DC-780	0.20	cfs/chamber
Stormtech MC-3500	0.30	cfs/chamber
Cultech 150XLHD	0.185	cfs/chamber
Cultech 330XLHD	0.227	cfs/chamber

Tributary to FocalPoint System: FP-2

Landscaped Area	1,505.00	SF
Impervious Area	12,315.00	SF

Minimum Surface Area of FocalPoint:

Required: 26 s.f. per 0.15 acres of impervious area

Total Impervious Area	12,315.00	SF	0.28	AC
		X	174.00	SF/ACRE
Required Minimum Surface Area			49.2	SF
Provided Surface Area			50.0	SF

Treatment Volume

Required: (0.4" X Landscaped + 1.0" X Impervious)

Landscaped Area	1,505.00	SF	Volume	50.2	
Impervious Area	12,315.00	SF	Volume	1,026.3	
Treatment Volume Required				1,076.4	CF
				must discharge in 24-48 hours	

0.025 AF

Sediment Pre-Treatment

Per Reference "C" above

One year flow rate out put from Hydrocad:	0.67	cfs
Treatment Row sizing for: **Cultech 150XLHD**	**0.185**	cfs
Total number of Isolator Row Chambers required:	4	

SEBAGO TECHNICS, INC.
75 John Roberts Road Suite 4A
South Portland, Maine 04106
Tel. (207) 200-2100

JOB	17500		
SHEET NO.	4	OF	4
CALCULATED BY	DJS	DATE	7/11/2018
FILE NAME	17500_WQC 2018-3-16.xlsx	PRNT DATE	7/19/2018

FOCALPOINT, ACF ENVIRONMENTAL

Task: Size Focal Point treatment system pursuant to the General Standards, Section 4.C of Chapter 500.

References 1. Letter from Maine Department of Environmental Protection, Director-Bureau of Land Resources to Stormwater Systems ACF-Convergent Water Technologies Alliance, Dated May 16, 2016 indicating FocalPoint biofiltration meets requirements of the General Standards for Treatment.

Per Reference 1 above, the system must be sized to meet:

a. "entire volume of a 0.96 inch Type III 24-hour storm is treated prior to activation of the bypass/overflow"

b. "surface area….must be a minimum of 174 s.f. per 1 acres of impervious area treated (26s.f. per 0.15 acres)"

c. "treatment flow rate for the Stormtech Isolator Row is the projected one year peak flow rate for the drainage area feeding the Isolator Row"

Flow rates:

Stormtech SC-310	0.10	cfs/chamber
Stormtech SC-740	0.20	cfs/chamber
Stormtech DC-780	0.20	cfs/chamber
Stormtech MC-3500	0.30	cfs/chamber
Cultech 150XLHD	0.185	cfs/chamber
Cultech 330XLHD	0.227	cfs/chamber

Tributary to FocalPoint System: FP-3

Landscaped Area	1,450.00	SF
Impervious Area	16,389.00	SF

Minimum Surface Area of FocalPoint:

Required: 26 s.f. per 0.15 acres of impervious area

Total Impervious Area	16,389.00	SF	0.38	AC
		X	174.00	SF/ACRE
Required Minimum Surface Area			65.5	SF
Provided Surface Area			70.0	SF

Treatment Volume

Required: (0.4" X Landscaped + 1.0" X Impervious)

Landscaped Area	1,450.00	SF	Volume	48.3	
Impervious Area	16,389.00	SF	Volume	1,365.8	
Treatment Volume Required				1,414.1	CF 0.032 AF
				must discharge in 24-48 hours	

Sediment Pre-Treatment

Per Reference "C" above

One year flow rate out put from Hydrocad:		0.86	cfs
Treatment Row sizing for:	**Cultech 150XLHD**	**0.185**	cfs
Total number of Isolator Row Chambers required:		5	

Table 2: MDEP REDEVELOPMENT STANDARD CALCULATIONS: Patagon Self Storage, LLC., Portland, Maine

Existing Areas by Pollutant Ranking (S.F.)							Proposed Areas by Pollutant Ranking (S.F.)						
0	1	2	3	4	5	SUM	0	1	2	3	4	5	SUM
19,861	7,091	16,320	18,726	94,709	0	156,707	16,051	7,091	46,837	33,611	53,117	0	156,707

Existing Areas by Pollutant Ranking (acres)							Proposed Areas by Pollutant Ranking (acres)						
0	1	2	3	4	5	SUM	0	1	2	3	4	5	SUM
0.456	0.163	0.375	0.430	2.174	0.000	3.597	0.368	0.163	1.075	0.772	1.219	0.000	3.597

Existing Weighted Average (Item A)	Proposed Weighted Average (Item B)
10.899	**9.506**

Total Development Acres (Item C)	Total Redevelopment Acres (Item D)
3.030	**2.642**

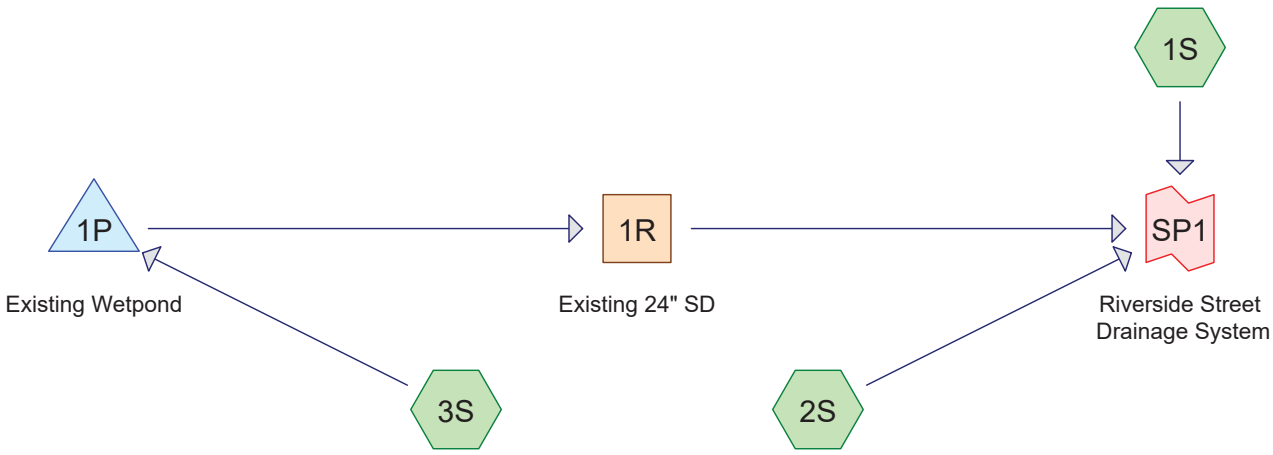
Ranked Impact Change Due to Redevelopment (Item E)
-0.387

Treatment Levels for Redevelopment Projects

Ranked Impact Change Due to Redevelopment (Item E)	Percentage of Developed Area that Must be Treated
0.0 or less	**0% (Stormwater projects)** **50% (Site projects)**
≤ 0.0 to ≥ 1.0	**60%**
> 1.0 to ≥ 2.0	**70%**
> 2.0 to ≥ 3.0	**80%**
> 3.0	**Same treatment level as for new development**

Attachment B

HYDROCAD OUTPUT



Subcat Reach Pond Link

Routing Diagram for 17500_Predevelopment 2018-3-16
Prepared by Sebago Technics, Inc., Printed 7/19/2018
HydroCAD® 10.00-15 s/n 01856 © 2015 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.427	39	>75% Grass cover, Good, HSG A (1S, 2S)
0.258	74	>75% Grass cover, Good, HSG C (2S, 3S)
2.176	98	Parking (1S, 2S, 3S)
0.430	98	Roofs (1S, 2S)
0.307	70	Woods, Good, HSG C (2S, 3S)
3.597	**87**	**TOTAL AREA**

Summary for Subcatchment 1S:

Runoff = 0.67 cfs @ 12.09 hrs, Volume= 0.049 af, Depth= 2.83"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YEAR Rainfall=5.80"

	Area (sf)	CN	Description
*	1,947	98	Parking
*	3,125	98	Roofs
	3,886	39	>75% Grass cover, Good, HSG A
	8,958	72	Weighted Average
	3,886		43.38% Pervious Area
	5,072		56.62% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	32	0.0266	1.19		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 3.00"
0.1	20	0.1250	2.47		**Shallow Concentrated Flow, B to C** Short Grass Pasture Kv= 7.0 fps
0.6	38	0.0221	1.04		**Shallow Concentrated Flow, C to D** Short Grass Pasture Kv= 7.0 fps
4.9					**Direct Entry, Direct Entry**
6.0	90	Total			

Summary for Subcatchment 2S:

Runoff = 11.42 cfs @ 12.09 hrs, Volume= 0.858 af, Depth= 4.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YEAR Rainfall=5.80"

	Area (sf)	CN	Description
*	15,601	98	Roofs
*	63,120	98	Parking
	14,709	39	>75% Grass cover, Good, HSG A
	6,850	74	>75% Grass cover, Good, HSG C
	879	70	Woods, Good, HSG C
	101,159	88	Weighted Average
	22,438		22.18% Pervious Area
	78,721		77.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.6	150	0.0070	0.95		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 3.00"
1.2	143	0.0102	2.05		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
1.0	171	0.0050	2.84	1.55	**Pipe Channel, C to D** 10.0" Round Area= 0.5 sf Perim= 2.6' r= 0.21' n= 0.013
1.0	195	0.0050	3.21	2.52	**Pipe Channel, D to E** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
0.2					**Direct Entry, Direct Entry**
6.0	659	Total			

Summary for Subcatchment 3S:

Runoff = 2.93 cfs @ 12.44 hrs, Volume= 0.395 af, Depth= 4.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YEAR Rainfall=5.80"

	Area (sf)	CN	Description
*	29,730	98	Parking
	4,381	74	>75% Grass cover, Good, HSG C
	12,479	70	Woods, Good, HSG C
	46,590	88	Weighted Average
	16,860		36.19% Pervious Area
	29,730		63.81% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
31.2	150	0.0069	0.08		**Sheet Flow, A to B** Grass: Dense n= 0.240 P2= 3.00"
1.8	120	0.0050	1.14		**Shallow Concentrated Flow, B to C** Unpaved Kv= 16.1 fps
33.0	270	Total			

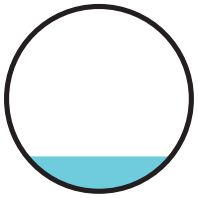
Summary for Reach 1R: Existing 24" SD

Inflow Area = 1.070 ac, 63.81% Impervious, Inflow Depth > 3.62" for 25-YEAR event
Inflow = 0.65 cfs @ 13.27 hrs, Volume= 0.323 af
Outflow = 0.64 cfs @ 13.38 hrs, Volume= 0.322 af, Atten= 0%, Lag= 6.6 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.57 fps, Min. Travel Time= 7.7 min
Avg. Velocity = 0.74 fps, Avg. Travel Time= 16.4 min

Peak Storage= 299 cf @ 13.38 hrs
Average Depth at Peak Storage= 0.38'
Bank-Full Depth= 2.00' Flow Area= 3.1 sf, Capacity= 8.33 cfs

24.0" Round Pipe
n= 0.013
Length= 730.0' Slope= 0.0014 '/'
Inlet Invert= 68.26', Outlet Invert= 67.27'



Summary for Pond 1P: Existing Wetpond

Inflow Area = 1.070 ac, 63.81% Impervious, Inflow Depth = 4.43" for 25-YEAR event
Inflow = 2.93 cfs @ 12.44 hrs, Volume= 0.395 af
Outflow = 0.65 cfs @ 13.27 hrs, Volume= 0.323 af, Atten= 78%, Lag= 49.4 min
Primary = 0.65 cfs @ 13.27 hrs, Volume= 0.323 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 68.97' @ 13.31 hrs Surf.Area= 19,315 sf Storage= 9,622 cf

Plug-Flow detention time= 343.8 min calculated for 0.322 af (82% of inflow)
Center-of-Mass det. time= 273.6 min (1,091.3 - 817.7)

Volume	Invert	Avail.Storage	Storage Description
#1	68.00'	32,251 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
68.00	511	0.0	0	0
69.00	19,883	100.0	10,197	10,197
70.00	24,224	100.0	22,054	32,251

Device	Routing	Invert	Outlet Devices
#1	Primary	68.50'	**24.0" Round Culvert** L= 150.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 68.50' / 68.26' S= 0.0016 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=0.65 cfs @ 13.27 hrs HW=68.97' TW=68.64' (Dynamic Tailwater)
1=Culvert (Outlet Controls 0.65 cfs @ 1.73 fps)

Summary for Link SP1: Riverside Street Drainage System

Inflow Area = 3.597 ac, 72.44% Impervious, Inflow Depth > 4.10" for 25-YEAR event
Inflow = 12.09 cfs @ 12.09 hrs, Volume= 1.229 af
Primary = 12.09 cfs @ 12.09 hrs, Volume= 1.229 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 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

Subcatchment 1S: Runoff Area=8,958 sf 56.62% Impervious Runoff Depth=0.87"
Flow Length=90' Tc=6.0 min CN=72 Runoff=0.19 cfs 0.015 af

Subcatchment 2S: Runoff Area=101,159 sf 77.82% Impervious Runoff Depth=1.91"
Flow Length=659' Tc=6.0 min CN=88 Runoff=5.07 cfs 0.369 af

Subcatchment 3S: Runoff Area=46,590 sf 63.81% Impervious Runoff Depth=1.91"
Flow Length=270' Tc=33.0 min CN=88 Runoff=1.29 cfs 0.170 af

Reach 1R: Existing 24" SD Avg. Flow Depth=0.16' Max Vel=0.91 fps Inflow=0.10 cfs 0.098 af
24.0" Round Pipe n=0.013 L=730.0' S=0.0014 '/' Capacity=8.33 cfs Outflow=0.10 cfs 0.098 af

Pond 1P: Existing Wetpond Peak Elev=68.70' Storage=5,055 cf Inflow=1.29 cfs 0.170 af
24.0" Round Culvert n=0.013 L=150.0' S=0.0016 '/' Outflow=0.10 cfs 0.098 af

Link SP1: Riverside Street Drainage System Inflow=5.26 cfs 0.482 af
Primary=5.26 cfs 0.482 af

Total Runoff Area = 3.597 ac Runoff Volume = 0.554 af Average Runoff Depth = 1.85"
27.56% Pervious = 0.991 ac 72.44% Impervious = 2.606 ac

Summary for Subcatchment 1S:

Runoff = 0.19 cfs @ 12.10 hrs, Volume= 0.015 af, Depth= 0.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YEAR Rainfall=3.10"

	Area (sf)	CN	Description
*	1,947	98	Parking
*	3,125	98	Roofs
	3,886	39	>75% Grass cover, Good, HSG A
	8,958	72	Weighted Average
	3,886		43.38% Pervious Area
	5,072		56.62% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	32	0.0266	1.19		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 3.00"
0.1	20	0.1250	2.47		**Shallow Concentrated Flow, B to C** Short Grass Pasture Kv= 7.0 fps
0.6	38	0.0221	1.04		**Shallow Concentrated Flow, C to D** Short Grass Pasture Kv= 7.0 fps
4.9					**Direct Entry, Direct Entry**
6.0	90	Total			

Summary for Subcatchment 2S:

Runoff = 5.07 cfs @ 12.09 hrs, Volume= 0.369 af, Depth= 1.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YEAR Rainfall=3.10"

	Area (sf)	CN	Description
*	15,601	98	Roofs
*	63,120	98	Parking
	14,709	39	>75% Grass cover, Good, HSG A
	6,850	74	>75% Grass cover, Good, HSG C
	879	70	Woods, Good, HSG C
	101,159	88	Weighted Average
	22,438		22.18% Pervious Area
	78,721		77.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.6	150	0.0070	0.95		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 3.00"
1.2	143	0.0102	2.05		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
1.0	171	0.0050	2.84	1.55	**Pipe Channel, C to D** 10.0" Round Area= 0.5 sf Perim= 2.6' r= 0.21' n= 0.013
1.0	195	0.0050	3.21	2.52	**Pipe Channel, D to E** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
0.2					**Direct Entry, Direct Entry**
6.0	659	Total			

Summary for Subcatchment 3S:

Runoff = 1.29 cfs @ 12.46 hrs, Volume= 0.170 af, Depth= 1.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YEAR Rainfall=3.10"

	Area (sf)	CN	Description
*	29,730	98	Parking
	4,381	74	>75% Grass cover, Good, HSG C
	12,479	70	Woods, Good, HSG C
	46,590	88	Weighted Average
	16,860		36.19% Pervious Area
	29,730		63.81% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
31.2	150	0.0069	0.08		**Sheet Flow, A to B** Grass: Dense n= 0.240 P2= 3.00"
1.8	120	0.0050	1.14		**Shallow Concentrated Flow, B to C** Unpaved Kv= 16.1 fps
33.0	270	Total			

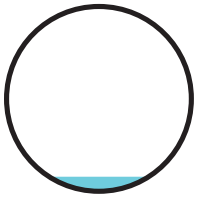
Summary for Reach 1R: Existing 24" SD

Inflow Area = 1.070 ac, 63.81% Impervious, Inflow Depth > 1.10" for 2-YEAR event
Inflow = 0.10 cfs @ 15.67 hrs, Volume= 0.098 af
Outflow = 0.10 cfs @ 15.83 hrs, Volume= 0.098 af, Atten= 0%, Lag= 9.8 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.91 fps, Min. Travel Time= 13.4 min
Avg. Velocity = 0.58 fps, Avg. Travel Time= 20.9 min

Peak Storage= 83 cf @ 15.83 hrs
Average Depth at Peak Storage= 0.16'
Bank-Full Depth= 2.00' Flow Area= 3.1 sf, Capacity= 8.33 cfs

24.0" Round Pipe
n= 0.013
Length= 730.0' Slope= 0.0014 '/'
Inlet Invert= 68.26', Outlet Invert= 67.27'



Summary for Pond 1P: Existing Wetpond

Inflow Area = 1.070 ac, 63.81% Impervious, Inflow Depth = 1.91" for 2-YEAR event
Inflow = 1.29 cfs @ 12.46 hrs, Volume= 0.170 af
Outflow = 0.10 cfs @ 15.67 hrs, Volume= 0.098 af, Atten= 92%, Lag= 192.6 min
Primary = 0.10 cfs @ 15.67 hrs, Volume= 0.098 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 68.70' @ 15.69 hrs Surf.Area= 14,004 sf Storage= 5,055 cf

Plug-Flow detention time= 562.3 min calculated for 0.098 af (58% of inflow)
Center-of-Mass det. time= 453.7 min (1,295.1 - 841.4)

Volume	Invert	Avail.Storage	Storage Description
#1	68.00'	32,251 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
68.00	511	0.0	0	0
69.00	19,883	100.0	10,197	10,197
70.00	24,224	100.0	22,054	32,251

Device	Routing	Invert	Outlet Devices
#1	Primary	68.50'	**24.0" Round Culvert** L= 150.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 68.50' / 68.26' S= 0.0016 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=0.10 cfs @ 15.67 hrs HW=68.70' TW=68.42' (Dynamic Tailwater)
1=Culvert (Outlet Controls 0.10 cfs @ 0.99 fps)

Summary for Link SP1: Riverside Street Drainage System

Inflow Area = 3.597 ac, 72.44% Impervious, Inflow Depth > 1.61" for 2-YEAR event
Inflow = 5.26 cfs @ 12.09 hrs, Volume= 0.482 af
Primary = 5.26 cfs @ 12.09 hrs, Volume= 0.482 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 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

Subcatchment 1S: Runoff Area=8,958 sf 56.62% Impervious Runoff Depth=1.89"
Flow Length=90' Tc=6.0 min CN=72 Runoff=0.44 cfs 0.032 af

Subcatchment 2S: Runoff Area=101,159 sf 77.82% Impervious Runoff Depth=3.29"
Flow Length=659' Tc=6.0 min CN=88 Runoff=8.60 cfs 0.637 af

Subcatchment 3S: Runoff Area=46,590 sf 63.81% Impervious Runoff Depth=3.29"
Flow Length=270' Tc=33.0 min CN=88 Runoff=2.20 cfs 0.293 af

Reach 1R: Existing 24" SD Avg. Flow Depth=0.28' Max Vel=1.32 fps Inflow=0.36 cfs 0.221 af
24.0" Round Pipe n=0.013 L=730.0' S=0.0014 '/' Capacity=8.33 cfs Outflow=0.36 cfs 0.221 af

Pond 1P: Existing Wetpond Peak Elev=68.85' Storage=7,516 cf Inflow=2.20 cfs 0.293 af
24.0" Round Culvert n=0.013 L=150.0' S=0.0016 '/' Outflow=0.36 cfs 0.221 af

Link SP1: Riverside Street Drainage System Inflow=9.04 cfs 0.890 af
Primary=9.04 cfs 0.890 af

Total Runoff Area = 3.597 ac Runoff Volume = 0.963 af Average Runoff Depth = 3.21"
27.56% Pervious = 0.991 ac 72.44% Impervious = 2.606 ac

Summary for Subcatchment 1S:

Runoff = 0.44 cfs @ 12.10 hrs, Volume= 0.032 af, Depth= 1.89"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YEAR Rainfall=4.60"

	Area (sf)	CN	Description
*	1,947	98	Parking
*	3,125	98	Roofs
	3,886	39	>75% Grass cover, Good, HSG A
	8,958	72	Weighted Average
	3,886		43.38% Pervious Area
	5,072		56.62% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	32	0.0266	1.19		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 3.00"
0.1	20	0.1250	2.47		**Shallow Concentrated Flow, B to C** Short Grass Pasture Kv= 7.0 fps
0.6	38	0.0221	1.04		**Shallow Concentrated Flow, C to D** Short Grass Pasture Kv= 7.0 fps
4.9					**Direct Entry, Direct Entry**
6.0	90	Total			

Summary for Subcatchment 2S:

Runoff = 8.60 cfs @ 12.09 hrs, Volume= 0.637 af, Depth= 3.29"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YEAR Rainfall=4.60"

	Area (sf)	CN	Description
*	15,601	98	Roofs
*	63,120	98	Parking
	14,709	39	>75% Grass cover, Good, HSG A
	6,850	74	>75% Grass cover, Good, HSG C
	879	70	Woods, Good, HSG C
	101,159	88	Weighted Average
	22,438		22.18% Pervious Area
	78,721		77.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.6	150	0.0070	0.95		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 3.00"
1.2	143	0.0102	2.05		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
1.0	171	0.0050	2.84	1.55	**Pipe Channel, C to D** 10.0" Round Area= 0.5 sf Perim= 2.6' r= 0.21' n= 0.013
1.0	195	0.0050	3.21	2.52	**Pipe Channel, D to E** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
0.2					**Direct Entry, Direct Entry**
6.0	659	Total			

Summary for Subcatchment 3S:

Runoff = 2.20 cfs @ 12.45 hrs, Volume= 0.293 af, Depth= 3.29"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YEAR Rainfall=4.60"

	Area (sf)	CN	Description
*	29,730	98	Parking
	4,381	74	>75% Grass cover, Good, HSG C
	12,479	70	Woods, Good, HSG C
	46,590	88	Weighted Average
	16,860		36.19% Pervious Area
	29,730		63.81% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
31.2	150	0.0069	0.08		**Sheet Flow, A to B** Grass: Dense n= 0.240 P2= 3.00"
1.8	120	0.0050	1.14		**Shallow Concentrated Flow, B to C** Unpaved Kv= 16.1 fps
33.0	270	Total			

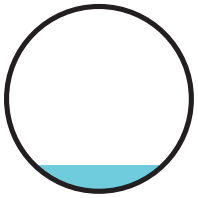
Summary for Reach 1R: Existing 24" SD

Inflow Area = 1.070 ac, 63.81% Impervious, Inflow Depth > 2.48" for 10-YEAR event
Inflow = 0.36 cfs @ 13.56 hrs, Volume= 0.221 af
Outflow = 0.36 cfs @ 13.69 hrs, Volume= 0.221 af, Atten= 0%, Lag= 7.9 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.32 fps, Min. Travel Time= 9.2 min
Avg. Velocity = 0.69 fps, Avg. Travel Time= 17.7 min

Peak Storage= 198 cf @ 13.69 hrs
Average Depth at Peak Storage= 0.28'
Bank-Full Depth= 2.00' Flow Area= 3.1 sf, Capacity= 8.33 cfs

24.0" Round Pipe
n= 0.013
Length= 730.0' Slope= 0.0014 '/'
Inlet Invert= 68.26', Outlet Invert= 67.27'



Summary for Pond 1P: Existing Wetpond

Inflow Area = 1.070 ac, 63.81% Impervious, Inflow Depth = 3.29" for 10-YEAR event
Inflow = 2.20 cfs @ 12.45 hrs, Volume= 0.293 af
Outflow = 0.36 cfs @ 13.56 hrs, Volume= 0.221 af, Atten= 84%, Lag= 66.9 min
Primary = 0.36 cfs @ 13.56 hrs, Volume= 0.221 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 68.85' @ 13.60 hrs Surf.Area= 17,073 sf Storage= 7,516 cf

Plug-Flow detention time= 402.0 min calculated for 0.221 af (75% of inflow)
Center-of-Mass det. time= 318.9 min (1,144.9 - 826.0)

Volume	Invert	Avail.Storage	Storage Description
#1	68.00'	32,251 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
68.00	511	0.0	0	0
69.00	19,883	100.0	10,197	10,197
70.00	24,224	100.0	22,054	32,251

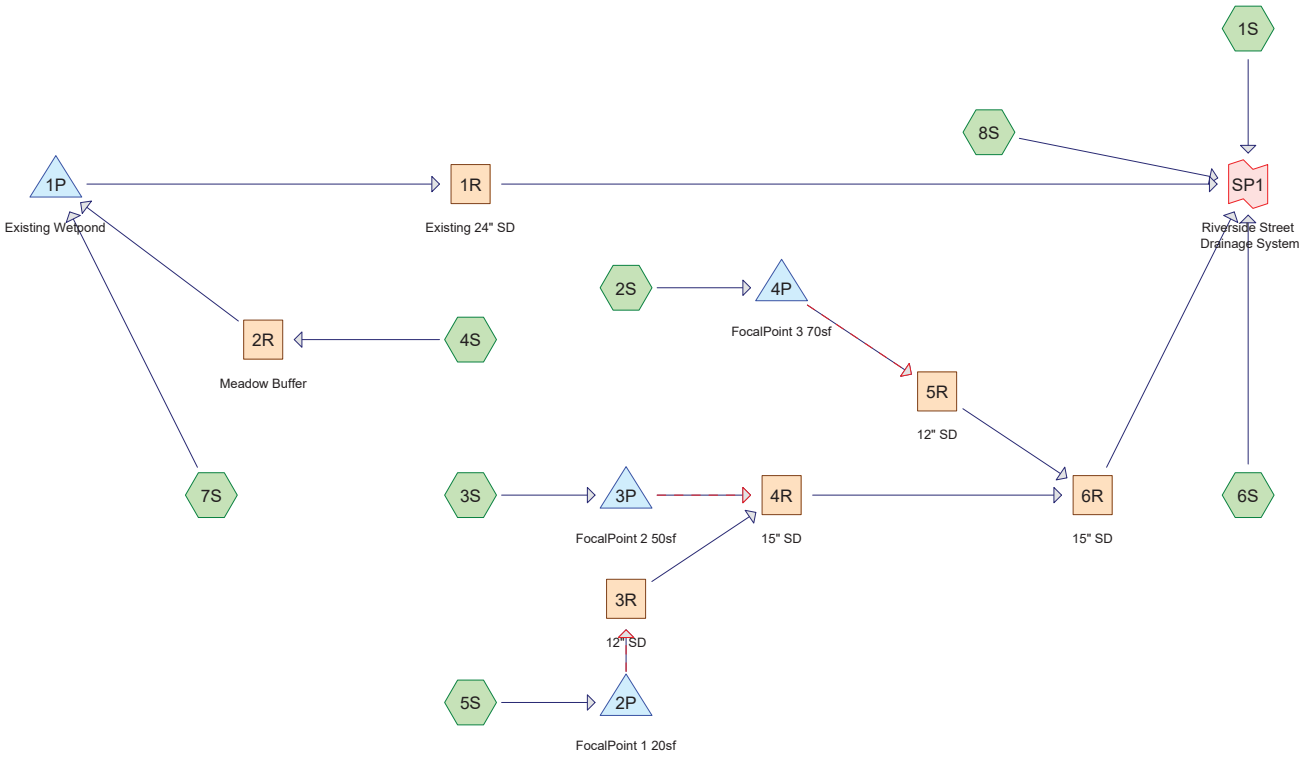
Device	Routing	Invert	Outlet Devices
#1	Primary	68.50'	**24.0" Round Culvert** L= 150.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 68.50' / 68.26' S= 0.0016 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=0.36 cfs @ 13.56 hrs HW=68.85' TW=68.54' (Dynamic Tailwater)
1=Culvert (Outlet Controls 0.36 cfs @ 1.45 fps)

Summary for Link SP1: Riverside Street Drainage System

Inflow Area = 3.597 ac, 72.44% Impervious, Inflow Depth > 2.97" for 10-YEAR event
Inflow = 9.04 cfs @ 12.09 hrs, Volume= 0.890 af
Primary = 9.04 cfs @ 12.09 hrs, Volume= 0.890 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs



Subcat Reach Pond Link

Routing Diagram for 17500_Postdevelopment 2018-3-26
Prepared by Sebago Technics, Inc., Printed 7/19/2018
HydroCAD® 10.00-15 s/n 01856 © 2015 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.356	39	>75% Grass cover, Good, HSG A (1S, 2S, 3S, 6S, 8S)
0.471	74	>75% Grass cover, Good, HSG C (3S, 4S, 5S, 6S, 7S, 8S)
0.440	71	Meadow, non-grazed, HSG C (6S, 7S)
1.254	98	Parking (1S, 2S, 3S, 4S, 5S, 6S)
0.772	98	Roofs (6S)
0.305	70	Woods, Good, HSG C (6S, 7S)
3.597	**83**	**TOTAL AREA**

Summary for Subcatchment 1S:

Runoff = 0.06 cfs @ 12.12 hrs, Volume= 0.006 af, Depth= 0.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-YEAR Rainfall=5.80"

	Area (sf)	CN	Description
*	467	98	Parking
	2,768	39	>75% Grass cover, Good, HSG A
	3,235	48	Weighted Average
	2,768		85.56% Pervious Area
	467		14.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.1	17	0.0294	0.13		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 3.00"
0.1	20	0.1250	2.47		**Shallow Concentrated Flow, B to C** Short Grass Pasture Kv= 7.0 fps
0.6	38	0.0221	1.04		**Shallow Concentrated Flow, C to D** Short Grass Pasture Kv= 7.0 fps
3.2					**Direct Entry, Direct Entry**
6.0	75	Total			

Summary for Subcatchment 2S:

Runoff = 2.22 cfs @ 12.08 hrs, Volume= 0.170 af, Depth= 4.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-YEAR Rainfall=5.80"

	Area (sf)	CN	Description
*	16,389	98	Parking
	1,450	39	>75% Grass cover, Good, HSG A
	17,839	93	Weighted Average
	1,450		8.13% Pervious Area
	16,389		91.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	78	0.0240	1.36		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 3.00"
1.0	86	0.0050	1.44		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
0.4	58	0.0133	2.34		**Shallow Concentrated Flow, C to D** Paved Kv= 20.3 fps
3.6					**Direct Entry, Direct Entry**
6.0	222	Total			

Summary for Subcatchment 3S:

Runoff = 1.72 cfs @ 12.08 hrs, Volume= 0.132 af, Depth= 4.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-YEAR Rainfall=5.80"

	Area (sf)	CN	Description
*	12,315	98	Parking
	840	39	>75% Grass cover, Good, HSG A
	665	74	>75% Grass cover, Good, HSG C
	13,820	93	Weighted Average
	1,505		10.89% Pervious Area
	12,315		89.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.6	58	0.0350	1.49		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 3.00"
0.3	49	0.0204	2.90		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
0.2	21	0.0119	2.21		**Shallow Concentrated Flow, C to D** Paved Kv= 20.3 fps
4.9					**Direct Entry, Direct Entry**
6.0	128	Total			

Summary for Subcatchment 4S:

Runoff = 3.35 cfs @ 12.08 hrs, Volume= 0.250 af, Depth= 4.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-YEAR Rainfall=5.80"

	Area (sf)	CN	Description
*	19,240	98	Parking
	8,853	74	>75% Grass cover, Good, HSG C
	28,093	90	Weighted Average
	8,853		31.51% Pervious Area
	19,240		68.49% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.9	150	0.0150	1.29		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 3.00"
0.5	19	0.0100	0.70		**Shallow Concentrated Flow, B to C** Short Grass Pasture Kv= 7.0 fps
3.6					**Direct Entry, Direct Entry**
6.0	169	Total			

Summary for Subcatchment 5S:

Runoff = 0.26 cfs @ 12.08 hrs, Volume= 0.020 af, Depth= 5.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-YEAR Rainfall=5.80"

	Area (sf)	CN	Description
*	1,731	98	Parking
	347	74	>75% Grass cover, Good, HSG C
	2,078	94	Weighted Average
	347		16.70% Pervious Area
	1,731		83.30% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	36	0.0280	1.24		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 3.00"
0.1	13	0.0070	1.70		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
5.4					**Direct Entry, Direct Entry**
6.0	49	Total			

Summary for Subcatchment 6S:

Runoff = 6.34 cfs @ 12.09 hrs, Volume= 0.459 af, Depth= 4.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-YEAR Rainfall=5.80"

	Area (sf)	CN	Description
*	33,611	98	Roofs
*	4,478	98	Parking
	6,650	39	>75% Grass cover, Good, HSG A
	3,178	74	>75% Grass cover, Good, HSG C
	879	70	Woods, Good, HSG C
	9,576	71	Meadow, non-grazed, HSG C
	58,372	85	Weighted Average
	20,283		34.75% Pervious Area
	38,089		65.25% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.6	12	0.3333	0.33		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 3.00"
2.2	177	0.0070	1.35		**Shallow Concentrated Flow, B to C** Unpaved Kv= 16.1 fps
0.3	95	0.0178	6.05	4.75	**Pipe Channel, CMP_Round 12"** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
1.0	196	0.0050	3.21	2.52	**Pipe Channel, RCP_Round 12"** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
1.9					**Direct Entry, Direct Entry**
6.0	480	Total			

Summary for Subcatchment 7S:

Runoff = 1.10 cfs @ 12.47 hrs, Volume= 0.145 af, Depth= 2.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-YEAR Rainfall=5.80"

Area (sf)	CN	Description
5,726	74	>75% Grass cover, Good, HSG C
12,408	70	Woods, Good, HSG C
9,576	71	Meadow, non-grazed, HSG C
27,710	71	Weighted Average
27,710		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
31.2	150	0.0069	0.08		**Sheet Flow, A to B** Grass: Dense n= 0.240 P2= 3.00"
1.8	120	0.0050	1.14		**Shallow Concentrated Flow, B to C** Unpaved Kv= 16.1 fps
33.0	270	Total			

Summary for Subcatchment 8S:

Runoff = 0.12 cfs @ 12.11 hrs, Volume= 0.011 af, Depth= 1.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-YEAR Rainfall=5.80"

Area (sf)	CN	Description
3,791	39	>75% Grass cover, Good, HSG A
1,769	74	>75% Grass cover, Good, HSG C
5,560	50	Weighted Average
5,560		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Direct Entry**

Summary for Reach 1R: Meadow Buffer

Inflow Area = 0.645 ac, 68.49% Impervious, Inflow Depth = 4.65" for 25-YEAR event
Inflow = 3.35 cfs @ 12.08 hrs, Volume= 0.250 af
Outflow = 2.70 cfs @ 12.14 hrs, Volume= 0.250 af, Atten= 20%, Lag= 3.6 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs / 2
Max. Velocity= 0.23 fps, Min. Travel Time= 7.4 min
Avg. Velocity = 0.06 fps, Avg. Travel Time= 29.4 min

Peak Storage= 1,194 cf @ 12.14 hrs
Average Depth at Peak Storage= 0.19'
Bank-Full Depth= 1.00' Flow Area= 105.0 sf, Capacity= 61.41 cfs

55.00' x 1.00' deep channel, n= 0.240 Sheet flow over Dense Grass
Side Slope Z-value= 50.0 '/' Top Width= 155.00'
Length= 100.0' Slope= 0.0150 '/'
Inlet Invert= 71.50', Outlet Invert= 70.00'



‡

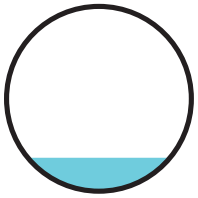
Summary for Reach 2R: Existing 24" SD

Inflow Area = 1.281 ac, 34.48% Impervious, Inflow Depth > 3.02" for 25-YEAR event
Inflow = 0.59 cfs @ 13.22 hrs, Volume= 0.322 af
Outflow = 0.59 cfs @ 13.33 hrs, Volume= 0.322 af, Atten= 0%, Lag= 7.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs / 2
Max. Velocity= 1.53 fps, Min. Travel Time= 7.9 min
Avg. Velocity = 0.75 fps, Avg. Travel Time= 16.3 min

Peak Storage= 281 cf @ 13.33 hrs
Average Depth at Peak Storage= 0.36'
Bank-Full Depth= 2.00' Flow Area= 3.1 sf, Capacity= 8.33 cfs

24.0" Round Pipe
n= 0.013
Length= 730.0' Slope= 0.0014 '/'
Inlet Invert= 68.26', Outlet Invert= 67.27'



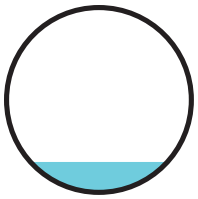
Summary for Reach 3R: 12" SD

Inflow Area = 0.048 ac, 83.30% Impervious, Inflow Depth = 5.10" for 25-YEAR event
Inflow = 0.15 cfs @ 12.21 hrs, Volume= 0.020 af
Outflow = 0.14 cfs @ 12.22 hrs, Volume= 0.020 af, Atten= 3%, Lag= 1.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs / 2
Max. Velocity= 1.73 fps, Min. Travel Time= 0.8 min
Avg. Velocity = 0.68 fps, Avg. Travel Time= 2.0 min

Peak Storage= 7 cf @ 12.22 hrs
Average Depth at Peak Storage= 0.16'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.50 cfs

12.0" Round Pipe
n= 0.013
Length= 81.0' Slope= 0.0049 '/'
Inlet Invert= 68.25', Outlet Invert= 67.85'



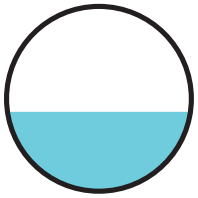
Summary for Reach 4R: 15" SD

Inflow Area = 0.365 ac, 88.35% Impervious, Inflow Depth = 5.00" for 25-YEAR event
Inflow = 1.77 cfs @ 12.09 hrs, Volume= 0.152 af
Outflow = 1.74 cfs @ 12.10 hrs, Volume= 0.152 af, Atten= 1%, Lag= 0.9 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs / 2
Max. Velocity= 3.47 fps, Min. Travel Time= 1.1 min
Avg. Velocity = 1.17 fps, Avg. Travel Time= 3.3 min

Peak Storage= 117 cf @ 12.10 hrs
Average Depth at Peak Storage= 0.54'
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 4.57 cfs

15.0" Round Pipe
n= 0.013
Length= 234.0' Slope= 0.0050 '/'
Inlet Invert= 67.75', Outlet Invert= 66.58'



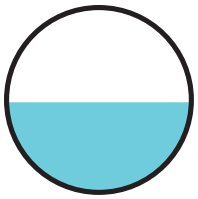
Summary for Reach 5R: 12" SD

Inflow Area = 0.410 ac, 91.87% Impervious, Inflow Depth = 4.99" for 25-YEAR event
Inflow = 2.22 cfs @ 12.09 hrs, Volume= 0.170 af
Outflow = 2.22 cfs @ 12.09 hrs, Volume= 0.170 af, Atten= 0%, Lag= 0.1 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs / 2
Max. Velocity= 5.85 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 1.95 fps, Avg. Travel Time= 0.4 min

Peak Storage= 19 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.49'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 4.65 cfs

12.0" Round Pipe
n= 0.013
Length= 51.0' Slope= 0.0171 '/'
Inlet Invert= 66.95', Outlet Invert= 66.08'



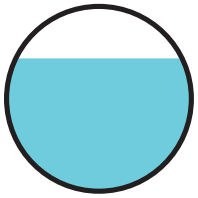
Summary for Reach 6R: 15" SD

Inflow Area = 0.774 ac, 90.21% Impervious, Inflow Depth = 4.99" for 25-YEAR event
Inflow = 3.95 cfs @ 12.10 hrs, Volume= 0.322 af
Outflow = 3.95 cfs @ 12.10 hrs, Volume= 0.322 af, Atten= 0%, Lag= 0.2 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs / 2
Max. Velocity= 4.19 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 1.46 fps, Avg. Travel Time= 0.7 min

Peak Storage= 58 cf @ 12.10 hrs
Average Depth at Peak Storage= 0.90'
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 4.57 cfs

15.0" Round Pipe
n= 0.013
Length= 62.0' Slope= 0.0050 '/'
Inlet Invert= 65.98', Outlet Invert= 65.67'



Summary for Pond 1P: Existing Wetpond

Inflow Area = 1.281 ac, 34.48% Impervious, Inflow Depth = 3.70" for 25-YEAR event
Inflow = 3.20 cfs @ 12.16 hrs, Volume= 0.395 af
Outflow = 0.59 cfs @ 13.22 hrs, Volume= 0.322 af, Atten= 82%, Lag= 63.6 min
Primary = 0.59 cfs @ 13.22 hrs, Volume= 0.322 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 68.95' @ 13.25 hrs Surf.Area= 18,929 sf Storage= 9,242 cf

Plug-Flow detention time= 349.7 min calculated for 0.322 af (82% of inflow)
Center-of-Mass det. time= 274.0 min (1,098.9 - 824.9)

Volume	Invert	Avail.Storage	Storage Description
#1	68.00'	33,213 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
68.00	511	0.0	0	0
69.00	19,883	100.0	10,197	10,197
70.00	26,149	100.0	23,016	33,213

Device	Routing	Invert	Outlet Devices
#1	Primary	68.50'	**24.0" Round Culvert** L= 150.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 68.50' / 68.26' S= 0.0016 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=0.59 cfs @ 13.22 hrs HW=68.95' TW=68.62' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 0.59 cfs @ 1.68 fps)

Summary for Pond 2P: FocalPoint 1 20sf

Inflow Area = 0.048 ac, 83.30% Impervious, Inflow Depth = 5.10" for 25-YEAR event
Inflow = 0.26 cfs @ 12.08 hrs, Volume= 0.020 af
Outflow = 0.15 cfs @ 12.21 hrs, Volume= 0.020 af, Atten= 43%, Lag= 7.5 min
Primary = 0.05 cfs @ 11.68 hrs, Volume= 0.019 af
Secondary = 0.10 cfs @ 12.21 hrs, Volume= 0.002 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 70.54' @ 12.21 hrs Surf.Area= 20 sf Storage= 166 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 16.2 min (785.6 - 769.4)

Volume	Invert	Avail.Storage	Storage Description
#1	68.25'	10 cf	**4.00'W x 5.00'L x 2.50'H FocalPoint** 50 cf Overall x 20.0% Voids
#2	69.75'	200 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) -Impervious
		210 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
69.75	200	0	0
70.25	200	100	100
70.75	200	100	200

Device	Routing	Invert	Outlet Devices
#1	Primary	68.25'	**100.000 in/hr Exfiltration over Surface area** Phase-In= 0.10'
#2	Secondary	70.50'	**18.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.05 cfs @ 11.68 hrs HW=68.40' TW=68.34' (Dynamic Tailwater)
↑**1=Exfiltration** (Exfiltration Controls 0.05 cfs)

Secondary OutFlow Max=0.10 cfs @ 12.21 hrs HW=70.53' TW=68.41' (Dynamic Tailwater)
↑**2=Orifice/Grate** (Weir Controls 0.10 cfs @ 0.61 fps)

Summary for Pond 3P: FocalPoint 2 50sf

Inflow Area = 0.317 ac, 89.11% Impervious, Inflow Depth = 4.99" for 25-YEAR event
Inflow = 1.72 cfs @ 12.08 hrs, Volume= 0.132 af
Outflow = 1.72 cfs @ 12.09 hrs, Volume= 0.132 af, Atten= 0%, Lag= 0.3 min
Primary = 0.12 cfs @ 11.10 hrs, Volume= 0.083 af
Secondary = 1.60 cfs @ 12.09 hrs, Volume= 0.049 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 70.68' @ 12.09 hrs Surf.Area= 50 sf Storage= 236 cf

Plug-Flow detention time= 6.6 min calculated for 0.132 af (100% of inflow)
Center-of-Mass det. time= 6.5 min (780.5 - 774.0)

Volume	Invert	Avail.Storage	Storage Description
#1	67.72'	29 cf	**5.00'W x 10.00'L x 2.93'H FocalPoint** 147 cf Overall x 20.0% Voids
#2	69.65'	222 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) -Impervious
		252 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
69.65	200	0	0
70.15	200	100	100
70.65	200	100	200
70.75	250	22	222

Device	Routing	Invert	Outlet Devices
#1	Primary	67.72'	**100.000 in/hr Exfiltration over Surface area** Phase-In= 0.10'
#2	Secondary	70.50'	**24.0" Horiz. Orifice/Grate** C= 0.600
			Limited to weir flow at low heads

Primary OutFlow Max=0.12 cfs @ 11.10 hrs HW=67.85' TW=67.90' (Dynamic Tailwater)
↑—**1=Exfiltration** (Exfiltration Controls 0.12 cfs)

Secondary OutFlow Max=1.59 cfs @ 12.09 hrs HW=70.68' TW=68.28' (Dynamic Tailwater)
↑—**2=Orifice/Grate** (Weir Controls 1.59 cfs @ 1.39 fps)

Summary for Pond 4P: FocalPoint 3 70sf

Inflow Area = 0.410 ac, 91.87% Impervious, Inflow Depth = 4.99" for 25-YEAR event
Inflow = 2.22 cfs @ 12.08 hrs, Volume= 0.170 af
Outflow = 2.22 cfs @ 12.09 hrs, Volume= 0.170 af, Atten= 0%, Lag= 0.3 min
Primary = 0.16 cfs @ 11.18 hrs, Volume= 0.106 af
Secondary = 2.06 cfs @ 12.09 hrs, Volume= 0.064 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 69.28' @ 12.09 hrs Surf.Area= 70 sf Storage= 184 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 2.9 min (776.8 - 774.0)

Volume	Invert	Avail.Storage	Storage Description
#1	67.02'	35 cf	**7.00'W x 10.00'L x 2.50'H FocalPoint**
			175 cf Overall x 20.0% Voids
#2	68.52'	561 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) -Impervious
		596 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
68.52	200	0	0
69.02	200	100	100
69.52	200	100	200
69.90	1,700	361	561

Device	Routing	Invert	Outlet Devices
#1	Primary	67.02'	**100.000 in/hr Exfiltration over Surface area** Phase-In= 0.10'
#2	Secondary	69.02'	**18.0" Horiz. Orifice/Grate** C= 0.600
			Limited to weir flow at low heads

Primary OutFlow Max=0.16 cfs @ 11.18 hrs HW=67.16' TW=67.08' (Dynamic Tailwater)
↑—**1=Exfiltration** (Exfiltration Controls 0.16 cfs)

Secondary OutFlow Max=2.04 cfs @ 12.09 hrs HW=69.28' TW=67.43' (Dynamic Tailwater)
↑—**2=Orifice/Grate** (Weir Controls 2.04 cfs @ 1.67 fps)

Summary for Link SP1: Riverside Street Drainage System

Inflow Area = 3.597 ac, 56.30% Impervious, Inflow Depth > 3.74" for 25-YEAR event
Inflow = 10.42 cfs @ 12.09 hrs, Volume= 1.121 af
Primary = 10.42 cfs @ 12.09 hrs, Volume= 1.121 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs

Time span=0.00-48.00 hrs, dt=0.02 hrs, 2401 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: Runoff Area=3,235 sf 14.44% Impervious Runoff Depth=0.07"
Flow Length=75' Tc=6.0 min CN=48 Runoff=0.00 cfs 0.000 af

Subcatchment 2S: Runoff Area=17,839 sf 91.87% Impervious Runoff Depth=2.35"
Flow Length=222' Tc=6.0 min CN=93 Runoff=1.09 cfs 0.080 af

Subcatchment 3S: Runoff Area=13,820 sf 89.11% Impervious Runoff Depth=2.35"
Flow Length=128' Tc=6.0 min CN=93 Runoff=0.85 cfs 0.062 af

Subcatchment 4S: Runoff Area=28,093 sf 68.49% Impervious Runoff Depth=2.08"
Flow Length=169' Tc=6.0 min CN=90 Runoff=1.55 cfs 0.112 af

Subcatchment 5S: Runoff Area=2,078 sf 83.30% Impervious Runoff Depth=2.45"
Flow Length=49' Tc=6.0 min CN=94 Runoff=0.13 cfs 0.010 af

Subcatchment 6S: Runoff Area=58,372 sf 65.25% Impervious Runoff Depth=1.67"
Flow Length=480' Tc=6.0 min CN=85 Runoff=2.62 cfs 0.187 af

Subcatchment 7S: Runoff Area=27,710 sf 0.00% Impervious Runoff Depth=0.82"
Flow Length=270' Tc=33.0 min CN=71 Runoff=0.30 cfs 0.043 af

Subcatchment 8S: Runoff Area=5,560 sf 0.00% Impervious Runoff Depth=0.11"
Tc=6.0 min CN=50 Runoff=0.00 cfs 0.001 af

Reach 1R: Meadow Buffer Avg. Flow Depth=0.11' Max Vel=0.17 fps Inflow=1.55 cfs 0.112 af
n=0.240 L=100.0' S=0.0150 '/' Capacity=61.41 cfs Outflow=1.14 cfs 0.112 af

Reach 2R: Existing 24" SD Avg. Flow Depth=0.14' Max Vel=0.83 fps Inflow=0.08 cfs 0.083 af
24.0" Round Pipe n=0.013 L=730.0' S=0.0014 '/' Capacity=8.33 cfs Outflow=0.08 cfs 0.083 af

Reach 3R: 12" SD Avg. Flow Depth=0.09' Max Vel=1.23 fps Inflow=0.05 cfs 0.010 af
12.0" Round Pipe n=0.013 L=81.0' S=0.0049 '/' Capacity=2.50 cfs Outflow=0.05 cfs 0.010 af

Reach 4R: 15" SD Avg. Flow Depth=0.37' Max Vel=2.86 fps Inflow=0.89 cfs 0.072 af
15.0" Round Pipe n=0.013 L=234.0' S=0.0050 '/' Capacity=4.57 cfs Outflow=0.87 cfs 0.072 af

Reach 5R: 12" SD Avg. Flow Depth=0.33' Max Vel=4.83 fps Inflow=1.09 cfs 0.080 af
12.0" Round Pipe n=0.013 L=51.0' S=0.0171 '/' Capacity=4.65 cfs Outflow=1.09 cfs 0.080 af

Reach 6R: 15" SD Avg. Flow Depth=0.57' Max Vel=3.58 fps Inflow=1.95 cfs 0.152 af
15.0" Round Pipe n=0.013 L=62.0' S=0.0050 '/' Capacity=4.57 cfs Outflow=1.95 cfs 0.152 af

Pond 1P: Existing Wetpond Peak Elev=68.67' Storage=4,725 cf Inflow=1.25 cfs 0.155 af
24.0" Round Culvert n=0.013 L=150.0' S=0.0016 '/' Outflow=0.08 cfs 0.083 af

Pond 2P: FocalPoint 1 20sf Peak Elev=70.00' Storage=56 cf Inflow=0.13 cfs 0.010 af
Primary=0.05 cfs 0.010 af Secondary=0.00 cfs 0.000 af Outflow=0.05 cfs 0.010 af

Pond 3P: FocalPoint 2 50sf Peak Elev=70.61' Storage=220 cf Inflow=0.85 cfs 0.062 af
Primary=0.12 cfs 0.048 af Secondary=0.73 cfs 0.015 af Outflow=0.84 cfs 0.062 af

Pond 4P: FocalPoint 3 70sf Peak Elev=69.17' Storage=161 cf Inflow=1.09 cfs 0.080 af
Primary=0.16 cfs 0.060 af Secondary=0.93 cfs 0.021 af Outflow=1.09 cfs 0.080 af

Link SP1: Riverside Street Drainage System Inflow=4.56 cfs 0.424 af
Primary=4.56 cfs 0.424 af

Total Runoff Area = 3.597 ac Runoff Volume = 0.495 af Average Runoff Depth = 1.65"
43.70% Pervious = 1.572 ac 56.30% Impervious = 2.026 ac

Time span=0.00-48.00 hrs, dt=0.02 hrs, 2401 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: Runoff Area=3,235 sf 14.44% Impervious Runoff Depth=0.45"
Flow Length=75' Tc=6.0 min CN=48 Runoff=0.02 cfs 0.003 af

Subcatchment 2S: Runoff Area=17,839 sf 91.87% Impervious Runoff Depth=3.81"
Flow Length=222' Tc=6.0 min CN=93 Runoff=1.72 cfs 0.130 af

Subcatchment 3S: Runoff Area=13,820 sf 89.11% Impervious Runoff Depth=3.81"
Flow Length=128' Tc=6.0 min CN=93 Runoff=1.34 cfs 0.101 af

Subcatchment 4S: Runoff Area=28,093 sf 68.49% Impervious Runoff Depth=3.49"
Flow Length=169' Tc=6.0 min CN=90 Runoff=2.56 cfs 0.188 af

Subcatchment 5S: Runoff Area=2,078 sf 83.30% Impervious Runoff Depth=3.91"
Flow Length=49' Tc=6.0 min CN=94 Runoff=0.20 cfs 0.016 af

Subcatchment 6S: Runoff Area=58,372 sf 65.25% Impervious Runoff Depth=3.00"
Flow Length=480' Tc=6.0 min CN=85 Runoff=4.68 cfs 0.335 af

Subcatchment 7S: Runoff Area=27,710 sf 0.00% Impervious Runoff Depth=1.82"
Flow Length=270' Tc=33.0 min CN=71 Runoff=0.72 cfs 0.096 af

Subcatchment 8S: Runoff Area=5,560 sf 0.00% Impervious Runoff Depth=0.54"
Tc=6.0 min CN=50 Runoff=0.04 cfs 0.006 af

Reach 1R: Meadow Buffer Avg. Flow Depth=0.16' Max Vel=0.20 fps Inflow=2.56 cfs 0.188 af
n=0.240 L=100.0' S=0.0150 '/' Capacity=61.41 cfs Outflow=2.00 cfs 0.188 af

Reach 2R: Existing 24" SD Avg. Flow Depth=0.26' Max Vel=1.26 fps Inflow=0.31 cfs 0.212 af
24.0" Round Pipe n=0.013 L=730.0' S=0.0014 '/' Capacity=8.33 cfs Outflow=0.30 cfs 0.211 af

Reach 3R: 12" SD Avg. Flow Depth=0.09' Max Vel=1.23 fps Inflow=0.05 cfs 0.016 af
12.0" Round Pipe n=0.013 L=81.0' S=0.0049 '/' Capacity=2.50 cfs Outflow=0.05 cfs 0.016 af

Reach 4R: 15" SD Avg. Flow Depth=0.47' Max Vel=3.24 fps Inflow=1.38 cfs 0.116 af
15.0" Round Pipe n=0.013 L=234.0' S=0.0050 '/' Capacity=4.57 cfs Outflow=1.36 cfs 0.116 af

Reach 5R: 12" SD Avg. Flow Depth=0.42' Max Vel=5.47 fps Inflow=1.72 cfs 0.130 af
12.0" Round Pipe n=0.013 L=51.0' S=0.0171 '/' Capacity=4.65 cfs Outflow=1.72 cfs 0.130 af

Reach 6R: 15" SD Avg. Flow Depth=0.75' Max Vel=3.99 fps Inflow=3.07 cfs 0.246 af
15.0" Round Pipe n=0.013 L=62.0' S=0.0050 '/' Capacity=4.57 cfs Outflow=3.07 cfs 0.246 af

Pond 1P: Existing Wetpond Peak Elev=68.83' Storage=7,068 cf Inflow=2.31 cfs 0.284 af
24.0" Round Culvert n=0.013 L=150.0' S=0.0016 '/' Outflow=0.31 cfs 0.212 af

Pond 2P: FocalPoint 1 20sf Peak Elev=70.43' Storage=145 cf Inflow=0.20 cfs 0.016 af
Primary=0.05 cfs 0.016 af Secondary=0.00 cfs 0.000 af Outflow=0.05 cfs 0.016 af

Pond 3P: FocalPoint 2 50sf Peak Elev=70.65' Storage=230 cf Inflow=1.34 cfs 0.101 af
Primary=0.12 cfs 0.068 af Secondary=1.22 cfs 0.033 af Outflow=1.33 cfs 0.101 af

Pond 4P: FocalPoint 3 70sf Peak Elev=69.24' Storage=174 cf Inflow=1.72 cfs 0.130 af
Primary=0.16 cfs 0.087 af Secondary=1.56 cfs 0.043 af Outflow=1.72 cfs 0.130 af

Link SP1: Riverside Street Drainage System Inflow=7.75 cfs 0.801 af
Primary=7.75 cfs 0.801 af

Total Runoff Area = 3.597 ac Runoff Volume = 0.874 af Average Runoff Depth = 2.91"
43.70% Pervious = 1.572 ac 56.30% Impervious = 2.026 ac

Attachment C

INSPECTION, MAINTENANCE, AND HOUSEKEEPING

INSPECTION, MAINTENANCE, AND HOUSEKEEPING PLAN

Patagon Storage
Portland, Maine

Introduction

The developer responsible for the proposed project is Patagon Storage, LLC. The developer's address is 1700 Main Street, Suite 70 Washaugal, Washington. After construction, the driveway area will be maintained by the developer. The owner of the proposed project will be responsible for the maintenance of all stormwater management structures, and the keeping of records and maintenance logbook. Records of all inspections and maintenance work accomplished must be kept on file and retained for a minimum 5-year time span. The maintenance logbook will be made available to the Maine Department of Environmental Protection (MDEP) upon request. At a minimum, the appropriate and relevant activities for each of the stormwater management systems will be performed on the prescribed schedule.

The following plan outlines the anticipated inspection, maintenance, and housekeeping procedures for the erosion and sedimentation controls as well as stormwater management devices for the project site. Also, this plan outlines several housekeeping requirements that shall be followed during and after construction. These procedures should be followed in order to ensure the intended function of the designed measures and to prevent unreasonable adverse impacts to the surrounding environment.

The procedures outlined in this Inspection, Maintenance, and Housekeeping Plan are provided as an overview of the anticipated practices to be used on this site. In some instances, additional measures may be required due to unexpected conditions. For additional details on any of the erosion and sedimentation control measures or stormwater management devices to be utilized on this project, refer to the most recently revised edition of the "Maine Erosion and Sedimentation Control BMP" manual and/or the "Stormwater Management for Maine: Best Management Practices" manual as published by the MDEP.

During Construction

1. **Inspection:** During the construction process, it is the Contractor's responsibility to comply with the inspection and maintenance procedures outlined in this section. These responsibilities include inspecting disturbed and impervious areas, erosion control measures, materials storage areas that are exposed to precipitation, and locations where vehicles enter or exit the site. These areas shall be inspected at least once a week as well as before and after a storm event, and prior to completing permanent stabilization measures. A person with knowledge of erosion and stormwater control, including the standards and conditions in any applicable permits, shall conduct the inspections.

2. **Maintenance:** All measures shall be maintained in an effective operating condition until areas are permanently stabilized. If Best Management Practices (BMPs) need to be maintained or modified, additional BMPs are necessary, or other corrective action is needed, implementation must be completed within seven (7) calendar days and prior to any storm event (rainfall).

3. **Documentation:** A log summarizing the inspections and any corrective action taken must be maintained on-site. The log must include the name(s) and qualifications of the person making the inspections, the date(s) of the inspections, and major observations about the operation and maintenance of erosion and sedimentation controls, material storage areas, and vehicle access points to the site. Major observations must include BMPs that need maintenance, BMPs that failed to operate as designed or proved inadequate for a particular location, and locations where additional BMPs are needed. For each BMP requiring maintenance, BMP needing replacement, and location needing additional BMPs, note in the log the corrective action taken and when it was taken. The log must be made accessible to the appropriate regulatory agency upon request. The permittee shall retain a copy of the log for a period of at least three (3) years from the completion of permanent stabilization.

4. **Specific Inspection and Maintenance Tasks:** The following is a list of erosion control and stormwater management measures and the specific inspection and maintenance tasks to be performed during construction.

   A. <u>Sediment Barriers:</u>

   - Hay bale barriers, silt fences, and filter berms shall be inspected immediately after each rainfall and at least daily during prolonged rainfall.
   - If the fabric on the silt fence or filter barrier should decompose or become ineffective prior to the end of the expected usable life and the barrier is still necessary, it shall be replaced.
   - Sediment deposits should be removed after each storm event. They must be removed before deposits reach approximately one-half the height of the barrier.
   - Filter berms shall 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.

   B. <u>Riprap Materials:</u>

   - Once a riprap installation has been completed, it should require very little maintenance. It shall, however, be inspected periodically to determine if high flows have caused scour beneath the riprap or dislodged any of the stone.

C. Stabilized Construction Entrances/Exits:

- 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. The entrance should then be reconstructed.

- Areas that have received mud-tracking or sediment deposits shall be swept or washed. Washing shall be done on an area stabilized with aggregate, which drains into an approved sediment-trapping device (not into storm drains, ditches, or waterways).

D. Temporary Seed and Mulch:

- Mulched areas should be inspected after rain events to check for rill erosion.

- If less than 90% of the soil surface is covered by mulch, additional mulch shall be applied in bare areas.

- In applications where seeding and mulch have been applied in conjunction with erosion control blankets, the blankets must be inspected after rain events for dislocation or undercutting.

- Mulch shall continue to be reapplied until 95% of the soil surface has established temporary vegetative cover.

E. Level Lip Spreaders and Ditch Turnouts:

- The level spreader pool should be inspected after rainfall events for sediment accumulation and debris that may reduce its capacity. Sediment and debris buildup should be removed once the volume of the pool has been reduced by 25%.

- The level lip must be constructed so that runoff flows slowly over the lip to a sheet flow through the receiving buffer. Repair or reconstruction of the level lip is required when flow from the spreader becomes channelized.

- Do not store snow removed from the street and/or parking lot within the area of a level spreader.

F. Stabilized Temporary Drainage Swales:

- Sediment accumulation in the swale shall be removed once the cross section of the swale is reduced by 25%.

- The swales shall be inspected after rainfall events. Any evidence of sloughing of the side slopes or channel erosion shall be repaired and corrective action should be taken to prevent reoccurrence of the problem.

- In addition to the stabilized lining of the channel (i.e. erosion control blankets), stone check dams may be needed to further reduce channel velocity.

5. **Housekeeping:** The following general performance standards apply to the proposed project.

A. Spill Prevention: Controls must be used to prevent pollutants from being discharged from materials on-site, including storage practices to minimize exposure of the materials to stormwater, and appropriate spill prevention, containment, and response planning and implementation.

B. Groundwater Protection: During construction, liquid petroleum products and other hazardous materials with the potential to contaminate groundwater may not be stored or handled in areas of the site draining to an infiltration area. An "infiltration area" is any area of the site that by design or as a result of soils, topography and other relevant factors, accumulates runoff that infiltrates into the soil. Dikes, berms, sumps, and other forms of secondary containment that prevent discharge to groundwater may be used to isolate portions of the site for the purposes of storage and handling of these materials.

C. Fugitive Sediment and Dust: Actions must be taken to insure that activities do not result in noticeable erosion of soils or fugitive dust emissions during or after construction. Oil may not be used for dust control.

D. Debris and Other Materials: Litter, construction debris, and chemicals exposed to stormwater must be prevented from becoming a pollutant source.

E. Trench Dewatering: Trench dewatering is the removal of water from trenches, foundations, cofferdams, ponds, and other areas within the construction area that retain water after excavation. In most cases, the collected water is heavily silted and hinders correct and safe construction practices. The collected water must be removed from the ponded area, either through gravity or pumping, and must be spread through natural wooded buffers or removed to areas that are specifically designed to collect the maximum amount of sediment possible, like a cofferdam sedimentation basin. Avoid allowing the water to flow over disturbed areas of the site. Equivalent measures may be taken if approved.

After Construction

1. **Inspection:** After construction, it is the responsibility of the owner or assigned heirs to comply with the inspection, maintenance, and housekeeping procedures outlined in this section. All measures must be maintained in effective operating condition. A person with knowledge of erosion and stormwater control, including the standards and conditions in all applicable permits, shall conduct the inspections.

2. **Specific Inspection, Maintenance, and Housekeeping Tasks:** The following is a list of permanent erosion control and stormwater management measures and the inspection, maintenance, and housekeeping tasks to be performed after construction.

   A. Vegetated Areas:

   - Inspect vegetated areas, particularly slopes and embankments, early in the growing season or after heavy rains to identify active or potential erosion problems.

   - Replant bare areas or areas with sparse growth. Where rill erosion is evident, armor the area with an appropriate lining or divert the erosive flows to on-site areas able to withstand the concentrated flows.

   B. Ditches, Swales, and Other Open Channels:

   - Inspect ditches, swales and other open stormwater channels in the spring, in the late fall, and after heavy rains to remove any obstructions to flow. Remove accumulated sediments and debris, remove woody vegetative growth that could obstruct flow, and repair any erosion of the ditch lining.

   - Vegetated ditches must be mowed at least annually or otherwise maintained to control the growth of woody vegetation and maintain flow capacity.

   - Any woody vegetation growing through riprap linings must also be removed. Repair any slumping side slopes as soon as practicable.

   - If the ditch has a riprap lining, replace riprap in areas where any underlying filter fabric or underdrain gravel is showing through the stone or where stones have dislodged.

   C. Culverts:

   - Inspect culverts in the spring, in the late fall, and after heavy rains to remove any obstructions to flow.

   - Remove accumulated sediments and debris at the inlet, at the outlet, and

within the conduit.

- Inspect and repair any erosion damage at the culvert's inlet and outlet.

D. Catch Basins/Outlet Control Structures:

- Inspect and, if required, clean-out basins at least once a year, preferably in early spring.

- Clean out must include the removal and legal disposal of accumulated sediments and debris at the bottom of the basin, at any inlet grates, at any inflow channels to the basin, and at any pipes between basins.

E. Level Lip Spreaders, Rip-Rap Outfalls and Ditch Turnouts:

- The level spreader pool should be inspected after significant rainfall events for sediment accumulation and debris that may reduce its capacity. Sediment and debris buildup should be removed once the volume of the pool has been reduced by 25%.

- The level lip must be constructed so that runoff flows slowly over the lip to a sheet flow through the receiving buffer. Repair or reconstruction of the level lip is required when flow from the spreader becomes channelized.

- Do not store snow removed from the street and/or parking lot within the area of a level spreader.

F. Winter Sanding

- Clear accumulation of winter sand along roadways at least once a year, preferably in the spring.

- Accumulations on pavement may be removed by pavement sweeping.

- Accumulations of sand along road shoulders may be removed by grading excess sand to the pavement edge and removing it manually or by a front-end loader or other acceptable method.

G. Focal Point Treatment Systems

- The focal point should be inspected after every major storm in the first few months to ensure proper function. Thereafter, the filter should be inspected at least once every six months to ensure that it is draining in no less than 24 hours and no more than 48 hours.

- The top several inches of the filter shall be replaced with fresh material when water ponds on the surface of the bed for more than 72 hours.

- The filter bed vegetations shall be mowed once or twice per year to a grass height no less than six (6) inches.

- Fertilization of the focal point filter area should be avoided unless absolutely necessary to establish vegetation.

- Harvesting and pruning of excessive growth will need to be done occasionally. Weeding to control unwanted or invasive plants may also be necessary.

- Inspect embankment for erosion, settling, and structural failure.

3. **Documentation:** A log summarizing the inspections and any corrective action taken must be maintained. The log must include the name(s) and qualifications of the person making the inspections, the date(s) of the inspections, and major observations about the operation and maintenance of controls. Major observations must include BMPs that need maintenance, BMPs that failed to operate as designed or proved inadequate for a particular location, and locations where additional BMPs are needed. For each BMP requiring maintenance, BMP needing replacement, and location needing additional BMPs, note in the log the corrective action taken and when it was taken. The log must be made accessible to the appropriate regulatory agency upon request. A sample "Stormwater Inspection and Maintenance Form" has been included as Attachment 1 of this Inspection, Maintenance, and Housekeeping Plan.

4. **Recertification:** A certification of the following shall be submitted to the Maine Department of Environmental Protection (MDEP) within three months of the expiration of each five year interval from the date of issuance of MDEP permits.

   A. Identification and repair of erosion problems. All areas of the project site have been inspected for areas of erosion, and appropriate steps have been taken to permanently stabilize these areas.

   B. Inspection and repair of stormwater control system. All aspects of the stormwater control system have been inspected for damage, wear, and malfunction, and appropriate steps have been taken to repair or replace the system, or portions of the system.

C. The Inspection, Maintenance, and Housekeeping Plan for the site is being implemented as written, or modifications to the plan have been submitted to and approved by the MDEP, and the maintenance log is being maintained.

5. **Duration of Maintenance:** Perform maintenance as described and required for any associated permits unless and until the system is formally accepted by a municipality or quasi-municipal district, or is placed under the jurisdiction of a legally created association that will be responsible for the maintenance of the system. If a municipality or quasi-municipal district chooses to accept a stormwater management system, or a component of a stormwater system, it must provide a letter to the MDEP stating that it assumes responsibility for the system. The letter must specify the components of the system for which the municipality or district will assume responsibility, and that the municipality or district agrees to maintain those components of the system in compliance with MDEP standards. Upon such assumption of responsibility, and approval by the MDEP, the municipality, quasi-municipal district, or association becomes a co-permittee for this purpose only and must comply with all terms and conditions of the permit.

Attachments

Attachment 1 – Sample Stormwater Inspection and Maintenance Form

MAINTENANCE LOG

Patagon Storage
Portland, Maine
Attachment 1

This log is intended to accompany the stormwater Inspection, Maintenance and Housekeeping Plan for Patagon Storage. The following items shall be checked, cleaned and maintained on a regular basis as specified in the Maintenance Plan and as described in the table below. This log shall be kept on file for a minimum of five (5) years and shall be available for review by the MDEP. Qualified personnel familiar with drainage systems and soils shall perform all inspections. Attached is a copy of the construction and post-construction maintenance logs.

Item	Maintenance Required & Frequency	Date Completed	Maintenance Personnel	Comments
Vegetated Areas	Inspect Slopes			
	Replant Bare Areas			
	Check after Major Storms			
Ditches and Swales	Inspect after major rainfall event producing greater than 3" of rain in 2 hours.			
	Repair erosion or damage immediately.			
Culverts	Inspect culverts monthly or after rainfall of >1"			
	Clean culverts when sediment occupies more than 20% of pipe diameter			
	Repair any erosion at inlet and outlet pipes			
	Replace displaced riprap at least once a year			
	Remove vegetation growing through riprap at least once a year			
Catch Basins/ Outlet Control Structures	Inspect and cleanout basins at least annually, (Spring)			
Level Spreader, Rip-Rap Outfalls and Ditch Turnouts	Inspect after significant rainfall events for sediment accumulation			
	If volume of pool is reduced by 25%, must remove sediment and debris			
Level Spreader and Ditch Turnouts	Repair or reconstruct the riprap if flow from the spreader becomes channelized			

Item	Maintenance Required & Frequency	Date Completed	Maintenance Personnel	Comments
	No snow storage is allowed in the level lip spreader			
Winter Sanding	Clean annually (Spring)			
	Remove sand and sediment from roadway shoulders			
Focal Point Treatment Systems	Inspect filter every 6 months to ensure drain times between 24-48 hours.			
	Replace top several inches of the filter if drain time is more than 72 hours.			
	Inspect inlet and outlet control structure for blockage.			
	Mow filter bed vegetation no more than twice a year to a height no less than 6 inches.			
	Remove or prune unwanted vegetation as necessary.			
	Inspect embankment for erosion settling and structural failure			

Submitted by Swaney Lighting			
	Job Name: Messalonskee Track and Turf Field Distributor: NEEDHAM BR51 (BANGOR)	**Catalog Number:** LNC2-12L-4K-070-3-U-BL Notes:	**Type:** B SLA18-38148

LNC2 SERIES

Cat.#

Job | Type

HUBBELL Outdoor Lighting

Approvals

SPECIFICATIONS

The small sized LNC2 is designed for perimeter illumination for safety, security and identification. No uplight and prismatic lenses offer neighbor friendly lighting at typical mounting heights of 8-15'. Units have protective polyester finish for long lasting appearance. Ideal for schools, factories, hospitals, warehouses and retail applications. Energy efficient LEDs provide up to 85% energy savings when compared to traditional light sources with little to no maintenance.

Construction:
Rugged die-cast aluminum housing protects components and provides an architectural appearance. Casting thermally conducts LED heat to optimize performance and long life. Powder paint finish provides durability in outdoor environments.

Electrical:
- 120V-277V universal voltage 50/60Hz 0-10V dimming drivers
- 347V and 480V dimmable driver option in 12L-070 configuration
- Minimum operating temperature is -40°C/-40°F (excludes 12L-035 and P15 configurations)
- Drivers have greater than .90 power factor and less than 20% Total Harmonic Distortion
- Driver RoHS and IP66
- 10kA surge protector

LED(s) CCT:
- 3000K CCT nominal , 4000K CCT nominal, 5000K CCT nominal (70 CRI)
- 9, 12 and 18 LED configurations available see pages 2 and 3 for electrical and photometric details

Optical:
Zero uplight distributions using individual acrylic LED optics provide IES type II, III and IV distributions. Optional (CS) acrylic diffuser available for reduced glare. Prismatic refractor lens provides ~10% uplight for increased vertical FC and forward light projection ideal for security lighting.

Lumen Maintenance:
L96 at 60,000hrs (Projected per IESNA TM-21-11), see table on page 2 for all values

Installation:
Quick-mount adapter provides easy installation to wall or to recessed junction boxes (4" square junction box). Designed for direct j-box mount. Optional 1/2" conduit hubs available (standard for sensor, SiteSync and battery versions).

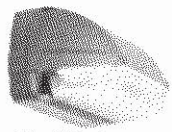
Options/Controls:
- Universal button photocontrol
- Occupancy sensor options available for complete on/off and dimming control
- SiteSync pre-commissioned wireless controls (with or without sensor)
- Integral Battery Backup provides emergency lighting for the required 90 minute path of egress
- Dual Driver and Dual Power Feed option for 18L-070 versions

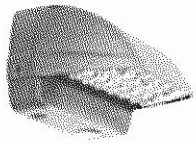
Listings:
- Listed to UL1598 and CSAC22.2#250.0-24 for wet locations
- DesignLights Consortium® (DLC) qualified. Please refer to the DLC website for specific product qualifications at www.designlights.org
- Made-to-order versions are IP-65 rated

Warranty:
Five year limited warranty (for more information visit: https://www.hubbell.com/hubbelllighting/en/warranty

PRODUCT IMAGE(S)


Standard 9, 12, and 18L Version*

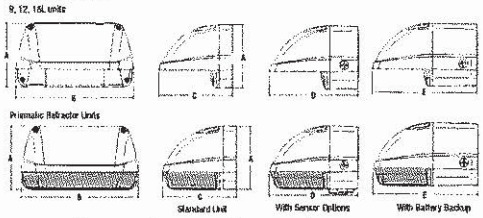

Prismatic Version


Surface Conduit Hubs, Sensor & SiteSync Version


Battery Backup Version

*Shown with CS acrylic diffuser

DIMENSIONS



A	B	C	D	E
5.54"	10.16"	6.33"	7.64"	9.10"
40.7 mm	258 mm	160.7 mm	194 mm	231 mm

BASE MODEL 7.0 lbs / 3.2 kg
PC SENSOR 7.5 lbs / 3.4 kg • **BBU MODELS** 9.5 lbs / 4.3 kg

SHIPPING INFORMATION (Stock)

Catalog Number	G.W.(kg)/ CTN	Carton Dimensions			Carton Qty. per Master Pack
		Length Inch (cm)	Width Inch (cm)	Height Inch (cm)	
LNC2-12LU	14.3 (6.5)	14.5 (37)	11.4 (29)	8.4 (21.5)	2
LNC2-18LU	14.8 (6.7)	14.9 (38)	11.4 (29)	8.4 (21.5)	2

CERTIFICATIONS/LISTINGS

C US | Turtle Friendly | *3000K and warmer CCTs only | DLC LISTED

ORDERING INFORMATION – ORDERING EXAMPLE: LNC2-12L-4K-070-3-U-DB-PCU-EH-CS

LNC2 - [ ] - [ ] - [ ] - [ ] - [ ] - [ ] - [ ] - [ ] - [ ]

SERIES
- LNC2 Small LitePak LNC2

LED SELECTION
- 9L 9 LEDs
- 12L 12 LEDs
- 18L 18 LEDs
- P15 15w Prismatic Refractor
- P25 25w Prismatic Refractor
- P35 35w Prismatic Refractor

CCT/CRI
- 3K 3000K, 70 CRI
- 4K 4000K, 70 CRI
- 5K 5000K, 70 CRI
- AM Amber (350mA only)

DRIVE CURRENT
- 070 700mA
- 035 350mA (12L & 18L only)

IES DISTRIBUTION
- 2[1] IES Type II
- 3[1] IES Type III
- 4[1] IES Type IV
- FT Forward Throw (Prismatic Refractor only)

VOLTAGE
- U 120V-277V
- 1 120V
- 2 208V
- 3 240V
- 4 277V
- 5[8] 480V
- F[8] 347V

MOUNTING
- Leave Blank for down position
- NV[2] Inverted

FINISH
- DB Dark Bronze Textured
- BL Black Textured
- GYS Gray Smooth
- PS Platinum Silver Smooth
- WH White Textured
- CC Custom Color

CONTROL OPTIONS
- SCP[4,5] Occupancy Sensor Programmable (Dim)
- PCU Universal Button Photocontrol
- SWP[6] SiteSync Pre-Commision
- SWPM SiteSync Pre-Commision w/ OCC Sensor[6,7]

SPECIFY SCP HEIGHT
- 8F Up to 8ft mount height
- 20F Up to 20ft mount height

OPTIONS
- EH[3] Battery Backup Unit with Heater (-30°C)
- E[3] Battery Backup Unit (0°C)
- F[3] Fuse & Fuse-holder (not available with Battery Backup)
- CS Comfort Shield (N/A with Prismatic Refractor)
- 2DR Dual Driver (18L - 700mA only)
- 2PF Dual Power Feed (18L - 700mA only)
- CH Surface Conduit Hubs

1 IES distributions only available with 9L, 12L, and 18L versions
2 Not available when occupancy sensor, battery backup or prismatic refractor options
3 Must specify voltage (120 or 277 only for E & EH)
4 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
5 PCU option not applicable, included in sensor
6 18L - 700mA versions only. Not available with 2DR or 2PF options. Must specify group and zone information at time of order
7 Specify time delay, dimming level and mounting height
8 12L - 700mA version only

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Submitted by Swaney Lighting			
	Job Name: Messalonskee Track and Turf Field Distributor: NEEDHAM BR51 (BANGOR)	**Catalog Number:** LNC2-12L-4K-070-3-U-BL Notes:	**Type:** **B** SLA18-38148

STOCK ORDERING INFORMATION

Catalog Number	System Watts	Delivered Lumens	Distribution	Voltage	CCT	# Drivers/ Current	Weight lbs. (kg)	Finish	Options
LNC2-12LU-4K-3-1	29w	2,662	3	120-277V	4000K	1@700mA	7.0 (13.3)	Dark Bronze	*
LNC2-12LU-5K-3-1	29w	2,868	3	120-277V	5000K	1@700mA	7.0 (13.3)	Dark Bronze	*
LNC2-12LU-5K-3-1-PC-U	29w	2,868	3	120-277V	5000K	1@700mA	7.0 (13.3)	Dark Bronze	Photocell*
LNC2-18LU-4K-3-1	42w	3,806	3	120-277V	4000K	2@700mA	7.0 (13.3)	Dark Bronze	*
LNC2-18LU-5K-3-1	42w	4,106	3	120-277V	5000K	2@700mA	7.0 (13.3)	Dark Bronze	*
LNC2-18LU-5K-3-1-PC-U	42w	4,106	3	120-277V	5000K	2@700mA	7.0 (13.3)	Dark Bronze	Photocell*
LNC2-P35-4K-PCU	37w	4,025	FT	120-277V	4000K	1@900mA	7.0 (13.3)	Dark Bronze	Photocell
LNC2-P35-PCU	37w	4,108	FT	120-277V	5000K	1@900mA	7.0 (13.3)	Dark Bronze	Photocell

*Frosted acrylic comfort shield/lens included with unit

REPLACEMENT PART/ACCESSORIES

CATALOG NUMBER	DESCRIPTION
LNC2-CS	Frosted acrylic comfort shield/lens, reduces glare and improves uniformity with only 15% lumen reduction
SCP-REMOTE*	Remote control for SCP option. Order at least one per project to program and control fixtures

*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 or 277V only

PERFORMANCE DATA
Standard 9, 12 and 18L Versions

# OF LEDS	DRIVE CURRENT	SYSTEM WATTS	DIST. TYPE	5K (5000K nominal, 70 CRI)					4K (4000K nominal, 70 CRI)					3K (3000K nominal, 80 CRI)				
				LUMENS	LPW¹	B	U	G	LUMENS	LPW¹	B	U	G	LUMENS	LPW¹	B	U	G
9	700mA	21W	2	2,083	97	1	0	1	2,072	97	1	0	1	1,927	90	1	0	1
			3	1,972	92	0	0	1	1,962	92	0	0	1	1,825	85	0	0	1
			4	2,097	98	0	0	1	2,087	98	0	0	1	1,941	91	0	0	1
12	350mA	14W	2	1,513	110	0	0	1	1,506	109	0	0	1	1,440	104	0	0	1
			3	1,433	104	0	0	1	1,426	103	0	0	1	1,364	99	0	0	1
			4	1,524	110	0	0	1	1,543	112	0	0	1	1,476	107	0	0	1
	700mA	29W	2	2,777	97	1	0	1	2,763	97	1	0	1	2,570	90	1	0	1
			3	2,629	92	1	0	1	2,616	91	1	0	1	2,433	85	1	0	1
			4	2,797	98	1	0	1	2,783	97	1	0	1	2,588	90	1	0	1
18	350mA	21W	2	2,270	107	1	0	1	2,259	106	1	0	1	2,074	97	1	0	1
			3	2,149	101	0	0	1	2,138	100	0	0	1	1,963	92	0	0	1
			4	2,286	107	0	0	1	2,275	107	0	0	1	2,125	100	0	0	1
	700mA	43W	2	4,261	99	1	0	1	4,240	98	1	0	1	3,943	91	1	0	1
			3	4,033	93	1	0	1	4,014	93	1	0	1	3,733	86	1	0	1
			4	4,290	99	1	0	1	4,270	99	1	0	1	3,971	92	1	0	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. LNC2-12L battery mode produces 1,546 initial lumens. Meets UL924 90 minute discharge pattern.

PERFORMANCE DATA
Prismatic Refractor

# OF LEDS	DRIVE CURRENT	SYSTEM WATTS	DIST. TYPE	5K (5000K nominal, 70 CRI)					4K (4000K nominal, 70 CRI)					3K (3000K nominal, 80 CRI)				
				LUMENS	LPW¹	B	U	G	LUMENS	LPW¹	B	U	G	LUMENS	LPW¹	B	U	G
1	350mA	13W	FT	1,741	132	0	3	2	1,706	129	0	3	2	1,648	125	0	3	2
	600mA	25W		2,929	117	1	3	2	2,806	112	1	3	2	2,773	111	1	3	2
	900mA	37W		4,108	112	1	3	3	4,025	110	1	3	3	3,889	106	1	3	3

PROJECTED LUMEN MAINTENANCE

Standard 9, 12 and 18L Versions

Ambient Temp.	OPERATING HOURS 0	25,000	50,000	TM-21-11¹ L96 60,000	100,000	L70 (hours)
25°C / 77°F	1.00	0.98	0.97	0.96	0.95	>791,000
40°C / 104°F	0.99	0.98	0.96	0.96	0.95	>635,000

1. Projected per IESNA TM-21-11 * (Nichia 219B, 700mA, 85°C Ts, 10,000hrs)
Data references the extrapolated performance projections for the LNC-12LU-5K base model in a 40°C ambient, based on 10,000 hours of LED testing per IESNA LM-80-08.

Prismatic Refractor

Ambient Temp.	OPERATING HOURS 0	25,000	50,000	TM-21-11¹ L96 60,000	100,000	L70 (hours)
25°C / 77°F	1.00	0.94	0.89	0.87	0.80	>160,000
40°C / 104°F	0.99	0.93	0.88	0.86	0.78	>150,000

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ELECTRICAL DATA

Standard 9, 12 and 18L Versions

# OF LEDS	DRIVE CURRENT (mA)	INPUT VOLTAGE (V)	CURRENT (Amps)	SYSTEM POWER (w)
9	700mA	120	0.18	21
		277	0.08	21
12	350mA	120	0.12	14
		277	0.05	14
	700mA	120	0.24	29
		277	0.10	29
		347	0.08	29
		480	0.06	29
18	350mA	120	0.18	21
		277	0.08	21
	700mA	120	0.36	43
		277	0.16	43

Prismatic Refractor

# OF LEDS	DRIVE CURRENT (mA)	INPUT VOLTAGE (V)	CURRENT (Amps)	SYSTEM POWER (w)
1	350mA	120	0.11	13
		277	0.05	13
	600mA	120	0.21	25
		277	0.09	25
	900mA	120	0.31	37
		277	0.13	37

LUMINAIRE AMBIENT TEMPERATURE FACTOR (LATF)

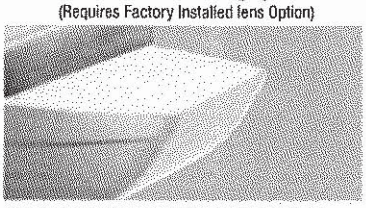
Standard 9, 12, 18L and Prismatic Versions

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).

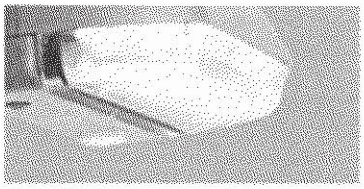
NV - Inverted Mounting Options

(Requires Factory Installed lens Option)



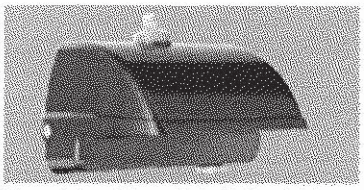
Inverted mounting capabilities for uplighting applications. Specially designed frosted acrylic diffuser option softens output, improves uniformity and protects LED lenses.

SCP - Programmable Occupancy Sensor



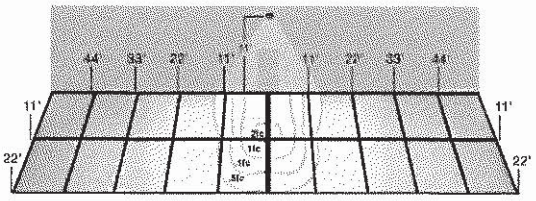
Sensor offers greater control and energy savings with SCP programmable sensor with adjustable delay and dimming levels (Factory default is 10%) Visit: http://www.hubbelllighting.com/solutions/controls/ for control application information

SWP & SWPM - SiteSync™



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 locations Group information, and Operating schedules. For more detailed information please visit www.HubbellLighting.com/proudcts/sitesync or contact Hubbell Lighting tech support at (800) 345-4928.

LNC2 – BATTERY BACK UP



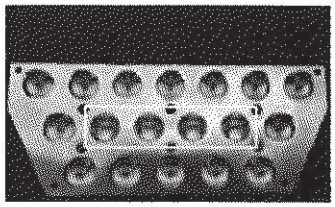
11' Mounting Height

Provides Life Safety Code average illuminance of 1.0 fc. Assumes open space with no obstructions and mounting height of 11'.

Diagrams for illustration purposes only, please consult factory for application layout.

Battery backup units consume 6 watts when charging a dead battery and 2 watts during maintenance charging. FH (units with a heater) consume up to an additional 8 watts when charging if the battery temp is lower than 10°C

E & EH EMERGENCY BATTERY BACKUP



Standard versions utilize 9, 12 or 18 High Power LEDs to generate 1,600 - 4,200 lumens in Normal Mode and use 4 LEDs for up to 700 lumens in Emergency Mode. Prismatic refractor versions utilize 1 COB LED to generate approximatly 900 lumens in emergency mode.

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Submitted by Swaney Lighting			
	**Job Name:** Messalonskee Track and Turf Field Distributor: NEEDHAM BR51 (BANGOR)	**Catalog Number:** LNC2-12L-4K-070-3-U-BL Notes:	**Type:** **B** SLA18-38148

Submitted by Swaney Lighting		Catalog Number:	Type:
	Job Name: Messalonskee Track and Turf Field Distributor: NEEDHAM BR51 (BANGOR)	CL1-A-60LU-4K-3-BL Notes:	**D SGL** SLA18-38148

CIMARRON LED

Cat.#		HUBBELL Outdoor Lighting
Job	Type	Approvals

SPECIFICATIONS

Construction:
- Stylish vertically finned die-cast solid top housing for maximum heat dissipation; Stops collection of unsightly debris from gathering on top of the housing
- Rugged lower die-cast aluminum heat sink accelerates thermal management and optimizes PCB and optical performance
- Separate optical and electrical compartment for optimum component operation
- One piece die cut silicone gasket ensures weather proof seal around each individual LED for IP65 rating
- Backlight Control (BC) option available for 85% spill light reduction, doesn't change fixture appearance or EPA, recommended for Type III and Type IV distributions
- Stamped bezel provides mechanical compression to seal the optical assembly
- Complements the Hubbell Southwest series of outdoor fixtures
- Weight - 45.0 pounds, EPA - 1.3 ft²
- Suitable for applications requiring 3G testing prescribed by ANSI C136.31

Optics:
- Choice of 72 high brightness LED configurations with individual acrylic lenses specially designed for IES Type II, III, IV and V distributions
- Auto optics designed for front row 1A and interior rows 2A (see distribution under ordering and page 2)
- CCT: 3000K (80 CRI), 4000K (70 CRI), 5000K (70 CRI), and turtle friendly Amber LED options

Electrical:
- Universal input voltage 120-277 VAC, 50/60 Hz
- Integral step-down transformer for 347V & 480V
- Ambient operating temperature -40° C to 40° C
- Automatic thermal self-protection
- Drivers have greater than 90% power factor and less than 10% THD
- Optional continuous dimming to 10% or dual circuitry available
- LED drivers have output power over-voltage, over-current protection and short circuit protection with auto recovery
- 1050 mA driver available with 90L configuration for increased lumen output
- LED electrical assembly, including PR devices, consumes no power in the 'off' state
- Surge protection – 20KA; Turns fixture off at end of life; Includes LED for end of life indication (see surge suppressor page 4)

Controls:
- Drivers are 0-10V dimming standard. Photocell, occupancy sensor and wireless controls available for complete on/off and dimming control

Lumen maintenance:
- L90 at 60,000 hours (Projected per IESNA TM-21-11)

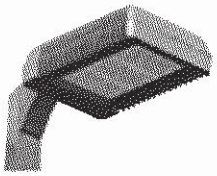
Installation:
- Two die-cast aluminum arm designs: The decorative arm offers a sleek upswept look while the straight arm follows the housing's contoured lines for continuity of style
- Fixture ships with arm installed for ease of installation and mounts to #2 drill pattern
- Wall bracket, mast arm fitter and pole accessories are also available allowing easy mounting for virtually any application

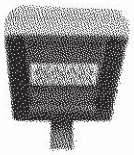
Finish:
- TGIC thermoset polyester powder paint finish applied at nominal 2.5 mil thickness

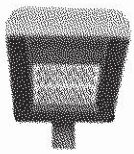
Warranty:
Five year limited warranty (for more information visit: http://www.hubbelloutdoor.com/resources/warranty/

Listings:
- Listed to UL1598 and CSA C22.2#250.0-24 for wet locations
- Models meet DesignLights Consortium (DLC) qualifications, consult DLC website for more details: http://www.designlights.org/QPL
- IDA approved • IP65

PRODUCT IMAGE(S)

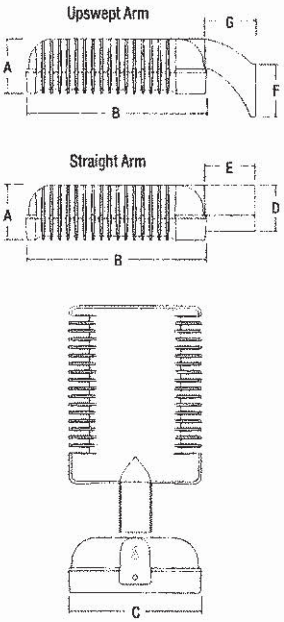

90 LED 3/4 VIEW


30 LED


60 LED


90 LED

DIMENSIONS



A	B	C	D	E	F	G
6 3/4" 171mm	21 3/4" 552mm	16" 406mm	6 5/8" 168mm	6 5/16" 160mm	5 5/8" 143mm	6 1/8" 155mm

CERTIFICATIONS/LISTINGS

c SP us DLC Turtle Friendly idа *3000K and warmer CCTs only

ORDERING INFORMATION SEE NEXT PAGE

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ORDERING INFORMATION ORDERING EXAMPLE: CL1-A-90LU-5K-3-DB-RPA3

CL1 - [ ] - [ ] [ ] - [ ] - [ ] - [ ] - [ ] - [ ] - [ ]

SERIES
- CL1 Cimarron LED

NO. OF LEDS
- 90L 90 High brightness LEDs
- 60L 60 High brightness LEDs
- 30L 30 High brightness LEDs

VOLTAGE
- U[1] Universal 120V-277V, 50/60 Hz
- 1 120V
- 2 208V
- 3 240V
- 4 277V
- 5 480V, 60 Hz
- F 347V, 60 Hz
- E[4] 220V, 50 Hz

CCT
- 3K 3000K
- 4K 4000K
- 5K 5000K
- AM[4] Amber (590 nm available for "Turtle Friendly" applications (consult factory)

DRIVE CURRENT
- Leave blank for 700mA (standard)
- 035 350mA Amber CCT only
- 105 1050 mA (Not for use with 30L)

OPTIONS
- BC[2] Backlight control
- CD Continuous dimming
- WB Wall bracket
- RPA3 3" Round pole adapter
- RPA4 4" Round pole adapter
- RPA5 5" Round pole adapter
- RPA6 6" Round pole adapter
- F(X)[3] Fusing (replace X with voltage: 1-120V, 2-208V, 3-240V, 4-277V, 5-480V, F-347V)
- VG Vandal guard
- 7PR Photocell receptacle (7-pin ANSI C136.41—2013 receptacle for use with standard Twist-Lock® photo controls, shorting caps, and ANSI C136.41 external wireless control devices. Select SCL option to add occupancy sensing capability when using with compatible external wireless devices.

MOUNTING
- A Arm mount construction (6" straight rigid arm included & acceptable for 90° configurations)
- AD Decorative arm mount const. (6" decorative upswept arm incl. & acceptable for 90° configurations)
- MAF Mast arm fitter for mounting to standard 2 3/8" mast arm bracket, includes 6" straight rigid arm

COLOR
- DB Dark Bronze
- BL Black
- WH White
- GR Gray
- PS Platinum Silver
- CC Custom Color

DISTRIBUTION
- 2 Type II
- 3 Type III
- 4 Type IV
- 5M Type V Medium
- 5S Type V Short
- 5W Type V Wide
- 2L Type II Rotated 90° left
- 3L Type III Rotated 90° left
- 4L Type IV Rotated 90° left
- 2R Type II Rotated 90° right
- 3R Type III Rotated 90° right
- 4R Type IV Rotated 90° right
- 1A Auto Front Row Type I
- 1AR Auto Front Row Type I Rotated 90° right
- 1AL Auto Front Row Type I Rotated 90° left
- 2A Auto Front Row Type II
- 2AR Auto Front Row Type II Rotated 90° right
- 2AL Auto Front Row Type II Rotated 90° left

Notes:
1 - Fuse option not available with universal voltage
2 - Select F3 fusing option for 220V
3 - Recommended for Type III and IV distributions only
4 - Available in 350mA drive current only Type IV, 5M
5 - 0-10V fully adjustable dimming with automatic daylight calibration and different time delay settings, must order minimum of one SCP-REMOTE control to program dimming settings (see accessories)
6 - Not available with AD arm
7 - Not available with WIR or WIRSC
8 - Not available with SCO, SCL, or SCP
9 - Specify mounting height. 8 = 8' or less, 40 = 9' to 40'
10 - Specify group and zone. See SiteSync product page www.hubbelllighting.com/controls/SiteSync for more details
11 - Not available in 90L-700mA or 1050mA versions

PIR MOTION/OCCUPANCY CONTROL OPTIONS
- SCO_F[5,7,8] On/Off control (line voltage device not for use with 7PR receptacle option and external wireless control devices)
- SCL_F[5,7,9] Add-on occupancy sensor for use with ext. wireless control device connected thru 7PR receptacle. Consult control manufacturer for compatibility.
- SCP_F[5,6,7,9] Programmable dimming control (line voltage device not for use with 7PR receptacle option and external wireless control devices). A minimum of one SCP-REMOTE accessory remote control required for configuration; (Standard lens with greater sensitivity; motion detection radius equal to .75 X luminaire mounting height (approx. distance)
- SWP[10,11] SiteSync Pre-Commission
- SWPM[6,10,11] SiteSync Pre-Commission w/ Sensor

WIRELESS CONTROL OPTIONS
- WIR[8] wiSCAPE Fixture Module, in-fixture relay for wireless lighting control
- WIRSC[6,8] wiSCAPE Fixture Module, in-fixture relay for wireless lighting control and motion/occupancy control

Accessories and Services (Ordered Separately)

Catalog Number	Description
SCP-REMOTE	Remote Control for SCP/_F option. Order at least one per project to program and control the occupancy sensor
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 pre-loaded 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.
SW7PR+	SiteSync 7 Pin on fixture module On/Off/Dim, Daylight Sensor 120-480VAC

* When ordering SiteSync at least one of these two interface options must be ordered per project.
+ Available as a SiteSync retrofit solution for fixtures with an existing 7pin receptacle.

Hubbell Control Solutions - Accessories (sold separately)

Catalog Number	Description	HCS System
NXDFM-1R1D-UNV	On-fixture Module (7-pin), On / Off / Dim, Daylight Sensor with HubbNET Radio and Bluetooth® Radio, 120-480VAC	NX Distributed Intelligence™
WIR-RME-L	On-fixture Module (7-pin or 5-pin), On / Off / Dim, Daylight Sensor with wiSCAPE Radio, 110-480VAC	wiSCAPE® Lighting Control

For additional information related to these accessories please visit www.hubbellcontrolsolutions.com. Options provided for use with integrated sensor, please view specification sheet ordering information table for details.

SiteSync 7-Pin Module



SW7PR

- SiteSync Features in a new form
- Available as an accessory for new construction or retrofit applications (with existing 7-Pin receptacle)
- Available on all products that have a 7-Pin receptacl
- Does not interface with occupancy sensors

SiteSync

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HUBBELL Lighting

Submitted by Swaney Lighting			
	**Job Name:** Messalonskee Track and Turf Field Distributor: NEEDHAM BR51 (BANGOR)	**Catalog Number:** CL1-A-60LU-4K-3-BL Notes:	**Type:** **D SGL** SLA18-38148

ENERGY SAVING DATA

#LEDS	DRIVE CURRENT	SYSTEM WATTS 120-277V	SYSTEM WATTS 347-480V	DIST. TYPE	5K (5000K nominal, 70 CRI) LUMENS	LPW¹	B	U	G	4K (4000K nominal, 70 CRI) LUMENS	LPW¹	B	U	G	3K (3000K nominal, 70 CRI) LUMENS	LPW¹	B	U	G
30	700 mA	70W	80W	1A	8244	118	1	0	1	8162	117	1	0	1	6775	97	1	0	1
				2A	8202	117	1	0	1	8121	116	1	0	1	6740	96	1	0	1
				2	7715	110	2	0	3	7639	109	2	0	2	6340	91	2	0	2
				3	7712	110	2	0	2	7635	109	2	0	2	6371	91	1	0	2
				4	7803	111	1	0	2	7726	110	1	0	2	6412	92	1	0	2
				5S	8374	120	3	0	0	8291	118	3	0	0	6882	98	3	0	0
				5M	7940	113	3	0	1	7862	112	3	0	1	6525	93	3	0	1
				5W	7667	110	3	0	2	7591	108	3	0	2	6301	90	3	0	2
60	700 mA	135W	150W	1A	16171	120	1	0	2	16011	119	1	0	1	13289	98	1	0	1
				2A	16088	119	1	0	2	15929	118	1	0	2	13221	98	1	0	2
				2	15134	112	3	0	3	14984	111	3	0	3	12437	92	3	0	3
				3	15127	112	3	0	3	14977	111	3	0	3	12498	93	2	0	3
				4	15306	113	2	0	3	15154	112	2	0	3	12578	93	2	0	3
				5S	16426	122	4	0	0	16263	120	4	0	0	13498	100	4	0	0
				5M	15575	115	4	0	2	15421	114	4	0	2	12799	95	3	0	2
				5W	15040	111	4	0	3	14891	110	4	0	3	12360	92	4	0	3
60	1050 mA	220W	235W	1A	21139	96	2	0	2	20929	95	2	0	2	17371	79	2	0	2
				2A	21030	96	2	0	2	20822	95	2	0	2	17282	79	2	0	2
				2	19783	90	4	0	5	19587	89	3	0	5	16257	74	3	0	5
				3	19774	90	3	0	4	19578	89	3	0	4	16250	74	3	0	4
				4	20007	91	3	0	5	19809	90	3	0	5	16442	75	3	0	5
				5S	21471	98	5	0	0	21259	97	5	0	0	17645	80	5	0	0
				5M	20359	93	5	0	3	20158	92	5	0	3	16731	76	5	0	3
				5W	19660	89	5	0	4	19465	88	5	0	4	16156	73	5	0	4
90	700 mA	205W	225W	1A	23781	116	2	0	2	23546	115	2	0	2	19543	95	2	0	2
				2A	23659	115	2	0	2	23425	114	2	0	2	19443	95	2	0	2
				2	22255	109	3	0	4	22035	107	3	0	4	18289	89	3	0	4
				3	22248	109	3	0	4	22026	107	3	0	4	18379	90	3	0	3
				4	22509	110	3	0	4	22286	109	3	0	4	18497	90	2	0	4
				5S	24156	118	5	0	0	23916	117	5	0	0	19851	97	4	0	0
				5M	22905	112	4	0	2	22678	111	4	0	2	18823	92	4	0	2
				5W	22117	108	5	0	3	21899	107	5	0	3	18176	89	5	0	3
90	1050 mA	325W	350W	1A	31708	98	2	0	2	31394	97	2	0	2	26057	80	2	0	2
				2A	31545	97	2	0	2	31233	96	2	0	2	25923	80	2	0	2
				2	29674	91	4	0	5	29380	90	3	0	5	24385	75	3	0	4
				3	29661	91	3	0	4	29367	90	3	0	4	24505	75	3	0	4
				4	30011	92	3	0	5	29714	91	3	0	5	24663	76	3	0	4
				5S	32207	99	5	0	0	31888	98	5	0	0	25467	81	5	0	0
				5M	30539	94	5	0	3	30237	93	5	0	3	25097	77	4	0	2
				5W	29490	91	5	0	4	29198	90	5	0	4	24234	75	5	0	4

Amber LUMENS	Amber LPW¹	Amber B	Amber U	Amber G	Drive Current	SYSTEM WATTS 120-277V	#LEDs

Submitted by Swaney Lighting		Catalog Number:	Type:
	**Job Name:** Messalonskee Track and Turf Field Distributor: NEEDHAM BR51 (BANGOR)	CL1-A-60LU-4K-3-BL Notes:	**D SGL** SLA18-38148

MOUNTING ACCESSORIES

Catalog Number	Description
ARM-CL-K-TA-XX[1]	Adjustable mounting arm for single fixture (2-3/8 tenon) – 5 lbs. 2.3 kgs.
ARM-CL-TK-TA-XX[1]	Adjustable mounting arm for two fixtures at 180° (2-3/8 tenon) – 7 lbs. 3.2 kgs.
ARM-CL-K-S-XX[1]	10" adjustable arm – .5 lbs. .05 kgs. – 5.75 lbs. 2.6 kgs.

1 Replace XX with color choice, eg.: DB for Dark Bronze
2 Fixture must include standard 6" straight arm

ARM-CL-K-TA-XX
ARM-CL-TK-TA-XX



ARM-CL-K-S-XX



TENON TOP POLE BRACKET ACCESSORIES

(2 3/8" OD tenon) (RSS version requires 4" round pole adapter)

Catalog Number	Description
SETA2-XX[1]	Square pole tenon adapter (4 at 90 degrees)
RETA2-XX[1]	Round pole tenon adapter (4 at 90 degrees)
TETA-XX[1]	Hexagonal pole tenon adapter (3 at 120 degrees)

1 Replace XX with color choice, eg.: DB for Dark Bronze

PHOTOCONTROL EQUIPMENT

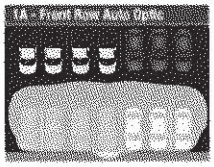
Catalog Number	Description
PTL-1	Photocontrol - twist-lock cell (120V)
PTL-8	Photocontrol - twist-lock cell (120-277V)
PTL-5	Photocontrol - twist-lock cell (480V)
PTL-6	Photocontrol - twist-lock cell (347V)
PSC	Shorting cap - twist-lock

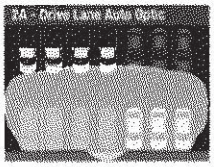
AUTOMOTIVE DEALERSHIP OPTICS

For Automotive Dealership applications Spaulding Lighting has developed two optics designed for enhanced and proper lighting of the auto dealership merchandise and the front row 1A and interior rows 2A (See CL1 distribution information for details)

Optic 1A
- Maximum illumination on front row display
- Maximum pole spacing

Optic 2A
- Excellent front row illumination and drive lane
- Optimal uniformity for drive lane and interior rows

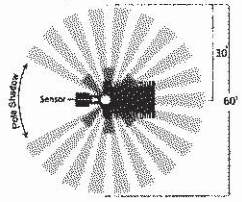


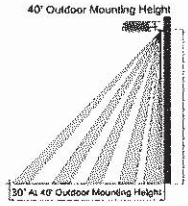


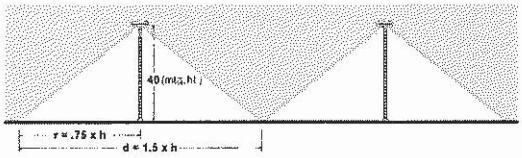
MOTION CONTROLS

- Start up delay from initial motion detection to fixture illumination is approximately 1-2 seconds
- Vehicle detection is possible however less reliable than human detection; Vehicle detection is dependent upon the following: rate of speed, mounting height of luminaire and vehicle temperature

SCP - Designed for intermediate coverage area

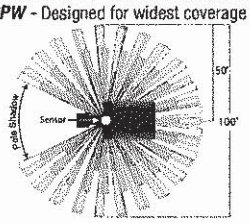


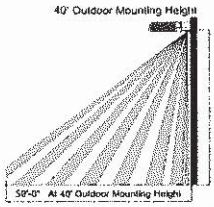


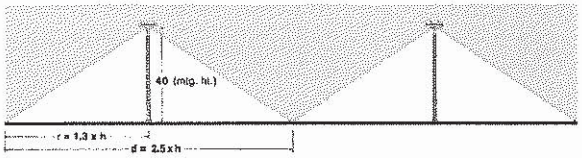


Note: Extreme heat or cold temperatures may limit detection.

SCPW - Designed for widest coverage area







Note: Extreme heat or cold temperatures may limit detection.

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

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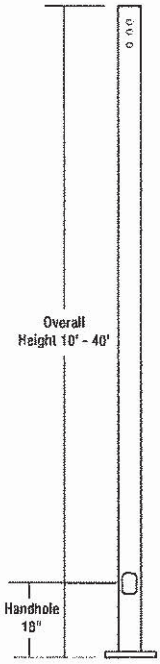
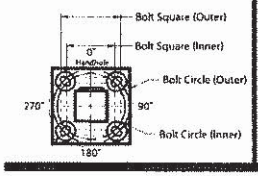
Submitted by Swaney Lighting	Job Name: Messalonskee Track and Turf Field Distributor: NEEDHAM BR51 (BANGOR)	Catalog Number: SSSH20-40A-1-S2-BL Notes:	Type: D SGL SLA18-38148

SSS-H SERIES POLES
SQUARE STRAIGHT STEEL

Cat.#		HUBBELL Outdoor Lighting
Job	Type	Approvals





APPLICATIONS

- Lighting installations for side and top mounting of luminaires with effective projected area (EPA) not exceeding maximum allowable loading of the specified pole in its installed geographic location

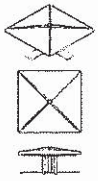
CONSTRUCTION

- SHAFT: One-piece straight steel with square cross section, flat sides and minimum 0.23" radius on all corners; Minimum yield of 46,000 psi (ASTM-A500, Grade B); Longitudinal weld seam to appear flush with shaft side wall; Steel base plate with axial bolt circle slots welded to pole shaft having minimum yield of 36,000 psi (ASTM A36)
- BASE COVER: Two-piece square aluminum base cover included standard
- POLE CAP: Pole shaft supplied with removable cover when applicable; Tenon and post-top configurations also available
- HAND HOLE: Rectangular 3x5 steel hand hole frame (2.38" x 4.38" opening); Mounting provisions for grounding lug located behind gasketed cover
- ANCHOR BOLTS: Four galvanized anchor bolts provided per pole with minimum yield of 55,000 psi (ASTM F1554). Galvanized hardware with two washers and two nuts per bolt for leveling

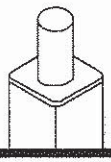
FINISH

- Durable thermoset polyester powder coat paint finish with nominal 3.0 mil thickness
- Powder paint prime applied over "white metal" steel substrate cleaned via mechanical shot blast method
- Decorative finish coat available in seven standard colors; Custom colors available; RAL number preferable; Internal protective coating available

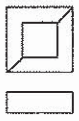
POLE CAP



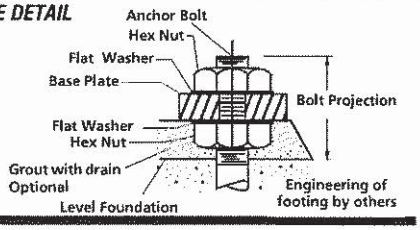
TENON



BASE COVER



BASE DETAIL



ORDERING INFORMATION

Reference page 2 for available configurations

ORDERING EXAMPLE:

SSS-H - 25 - 40 - A/B/C - 2L - S2 - DB - UL

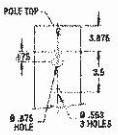
SERIES	HEIGHT	SHAFT	THICKNESS
SSS-H Square Straight Steel Pole Hubbell Outdoor	Reference page 2 Ordering matrix	Reference page 2 Ordering matrix	Reference page 2 Ordering matrix
	20'	40	A

MOUNTING

- 1 Single arm mount
- 2 Two fixtures at 180°
- 2L Two fixtures at 90°
- 3T Three fixtures at 90°
- 4 Four fixtures at 90°
- TA Tenon (2.38" OD x 4" Tall)
- TB Tenon (2.88" OD x 4" Tall)
- TC Tenon (3.5" OD x 6" Tall)
- TR[1] Removable Tenon (2.375 x 4.25)
- OT Open Top (includes pole cap)

DRILL PATTERN

- S2 #2 2 bolt 3.5" pattern



#2 DRILL PATTERN

FINISH

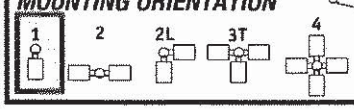
- DB Dark Bronze Textured
- BL Black Textured
- WH White Textured
- GR Gray Textured
- PS Platinum Silver Smooth
- CC Custom Color

OPTIONS

- HSC Internal Coating (Hubbell Seal)
- GFI[2] 20 Amp GFCI Receptacle and Cover
- EHH[2] Extra Handhole
- C05[2] .5" Coupling
- C07[2] .75" Coupling
- C20[2] 2" Coupling
- MPB[2] Mid-pole Luminaire Bracket
- VM2 2nd mode vibration damper
- LAB Less Anchor Bolts
- UL UL Certified

MOUNTING ORIENTATION

Denotes handhole location



***ACCESSORIES*- Order Separately**

Catalog Number	Description
VM1[3]	1st mode vibration damper
VM2SXX	2nd mode vibration damper

1 Removable tenon used in conjunction with side arm mounting. First specify desired arm configuration followed by the "TR" notation. Example: **SSS-H-25-40-A-1-S2-TR-DB**
2 Specify option location using logic found on page 2 **(Option Orientation)**
3 VM1 recommended on poles 20' and taller with EPA of less than 1.

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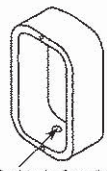
ORDERING INFORMATION Cont.

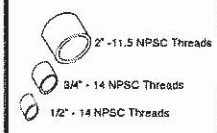
Catalog Number	Height		Nominal Shaft Dimensions	Wall Thickness	Bolt Circle (suggested)	Bolt Circle (range)	Bolt Square (range)	Base Plate Square	Anchor bolt size	Bolt Projection	Pole weight
	Feet	Meters									
SSS-H-10-40-A-XX-XX	10	3.0	4" square	0.125"	9"	8" - 10"	5.66" - 7.07"	9"	3/4" x 30" x 3"	3.5	77
SSS-H-12-40-A-XX-XX	12	3.7	4" square	0.125"	9"	8" - 10"	5.66" - 7.07"	9"	3/4" x 30" x 3"	3.5	90
SSS-H-14-40-A-XX-XX	14	4.3	4" square	0.125"	9"	8" - 10"	5.66" - 7.07"	9"	3/4" x 30" x 3"	3.5	103
SSS-H-16-40-A-XX-XX	16	4.9	4" square	0.125"	9"	8" - 10"	5.66" - 7.07"	9"	3/4" x 30" x 3"	3.5	116
SSS-H-18-40-A-XX-XX	18	5.5	4" square	0.125"	9"	8" - 10"	5.66" - 7.07"	9"	3/4" x 30" x 3"	3.5	129
SSS-H-20-40-A-XX-XX	20	6.1	4" square	0.125"	9"	8" - 10"	5.66" - 7.07"	9"	3/4" x 30" x 3"	3.5	142
SSS-H-25-40-A-XX-XX	25	7.6	4" square	0.125"	9"	8" - 10"	5.66" - 7.07"	9"	3/4" x 30" x 3"	3.5	175
SSS-H-14-40-B-XX-XX	14	4.3	4" square	.188"	11"	10" - 12"	7.07" - 8.48"	10.50"	3/4" x 30" x 3"	3.5	152
SSS-H-16-40-B-XX-XX	16	4.9	4" square	.188"	11"	10" - 12"	7.07" - 8.48"	10.50"	3/4" x 30" x 3"	3.5	171
SSS-H-18-40-B-XX-XX	18	5.5	4" square	.188"	11"	10" - 12"	7.07" - 8.48"	10.50"	3/4" x 30" x 3"	3.5	190
SSS-H-20-40-B-XX-XX	20	6.1	4" square	.188"	11"	10" - 12"	7.07" - 8.48"	10.50"	3/4" x 30" x 3"	3.5	209
SSS-H-25-40-B-XX-XX	25	7.6	4" square	.188"	11"	10" - 12"	7.07" - 8.48"	10.50"	3/4" x 30" x 3"	3.5	257
SSS-H-30-40-B-XX-XX	30	9.1	4" square	.188"	11"	10" - 12"	7.07" - 8.48"	10.50"	3/4" x 30" x 3"	3.5	304
SSS-H-16-50-B-XX-XX	16	4.9	5" square	.188"	11"	10.25" - 13.25"	7.25" - 9.37"	11.50"	1" x 36" x 4"	4.5	219
SSS-H-18-50-B-XX-XX	18	5.5	5" square	.188"	11"	10.25" - 13.25"	7.25" - 9.37"	11.50"	1" x 36" x 4"	4.5	243
SSS-H-20-50-B-XX-XX	20	6.1	5" square	.188"	11"	10.25" - 13.25"	7.25" - 9.37"	11.50"	1" x 36" x 4"	4.5	267
SSS-H-25-50-B-XX-XX	25	7.6	5" square	.188"	11"	10.25" - 13.25"	7.25" - 9.37"	11.50"	1" x 36" x 4"	4.5	327
SSS-H-30-50-B-XX-XX	30	9.1	5" square	.188"	11"	10.25" - 13.25"	7.25" - 9.37"	11.50"	1" x 36" x 4"	4.5	387
SSS-H-25-50-C-XX-XX	25	7.6	5" square	.25"	11"	10.25" - 13.25"	7.25" - 9.37"	11.50"	1" x 36" x 4"	4.5	427
SSS-H-30-50-C-XX-XX	30	9.1	5" square	.25"	11"	10.25" - 13.25"	7.25" - 9.37"	11.50"	1" x 36" x 4"	4.5	507
SSS-H-20-60-B-XX-XX	20	6.1	6" square	.188"	12"	11.00" - 13.25"	7.81" - 9.37"	12.25"	1-1/4" x 42" x 6"	5.0	329
SSS-H-25-60-B-XX-XX	25	7.6	6" square	.188"	12"	11.00" - 13.25"	7.81" - 9.37"	12.25"	1-1/4" x 42" x 6"	5.0	404
SSS-H-30-60-B-XX-XX	30	9.1	6" square	.188"	12"	11.00" - 13.25"	7.81" - 9.37"	12.25"	1-1/4" x 42" x 6"	5.0	479
SSS-H-35-60-B-XX-XX	35	10.7	6" square	.188"	12"	11.00" - 13.25"	7.81" - 9.37"	12.25"	1-1/4" x 42" x 6"	5.0	554
SSS-H-40-60-B-XX-XX	40	12.2	6" square	.188"	12"	11.00" - 13.25"	7.81" - 9.37"	12.25"	1-1/4" x 42" x 6"	5.0	629
SSS-H-30-60-C-XX-XX	30	9.1	6" square	.25"	12"	11.00" - 13.25"	7.81" - 9.37"	12.25"	1-1/4" x 42" x 6"	5.0	614
SSS-H-35-60-C-XX-XX	35	10.7	6" square	.25"	12"	11.00" - 13.25"	7.81" - 9.37"	12.25"	1-1/4" x 42" x 6"	5.0	712
SSS-H-40-60-C-XX-XX	40	12.2	6" square	.25"	12"	11.00" - 13.25"	7.81" - 9.37"	12.25"	1-1/4" x 42" x 6"	5.0	809

NOTE Factory supplied template must be used when setting anchor bolts. Hubbell Lighting will deny any claim for incorrect anchorage placement resulting from failure to use factory supplied template and anchor bolts.

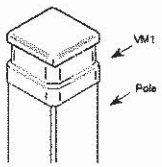
EHH - EXTRA HANDHOLE



C05 - C07 - C20 - COUPLING



VM1 - VIBRATION DAMPER 1ST MODE



Field installed Pole Top damper designed to reduce pole top deflection or sway. VM1 is recommended for pole systems 25' and taller with a total EPA of 1.0 or less.

VM2 - VIBRATION DAMPER 2ND MODE



Factory installed, internal damper designed to alter pole resonance to reduce movement and material fatigue caused by 2nd mode vibration.

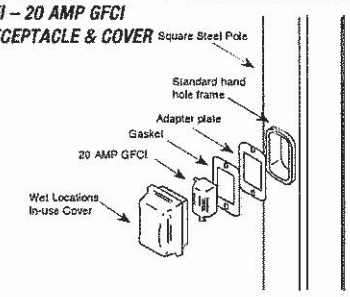
VM2SXX - VIBRATION DAMPER 2ND MODE



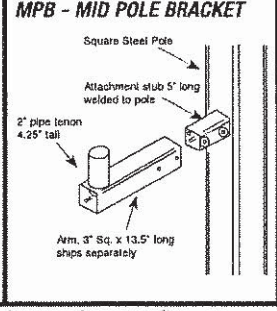
VM2S08 – 8'
VM2S12 – 12'
VM2S16 – 16'
VM2S20 – 20'
VM2S24 – 24'

Field installed, internal damper designed to alter pole resonance to reduce movement and material fatigue caused by 2nd mode vibration.

GFI – 20 AMP GFCI RECEPTACLE & COVER

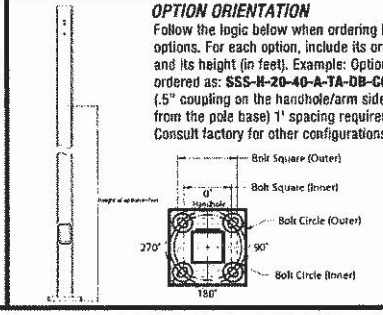


MPB - MID POLE BRACKET



OPTION ORIENTATION

Follow the logic below when ordering location specific options. For each option, include its orientation (in degrees) and its height (in feet). Example: Option C07 should be ordered as: **SSS-H-20-40-A-TA-DB-C07-0-15** (.5" coupling on the handhole/arm side of pole, 15 feet up from the pole base) 1' spacing required between option. Consult factory for other configurations.



For more information about pole vibration and vibration dampers, please consult http://cdn.hubbelloutdoor.com/content/products/literature/literature_files/Pole_Wind_Induced_Flyer_HLO0022.pdf
Due to our continued efforts to improve our products, product specifications are subject to change without notice.

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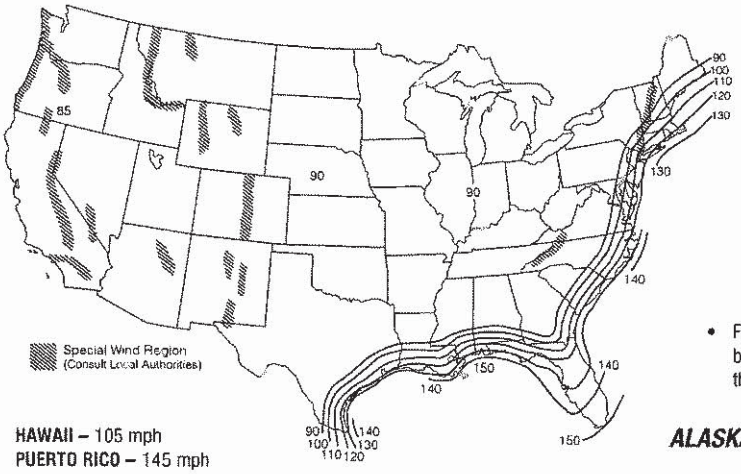
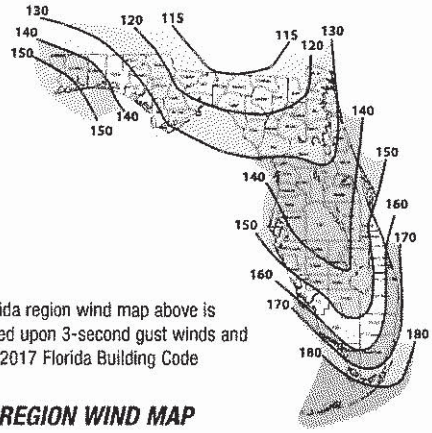
Submitted by Swaney Lighting		Catalog Number:	Type:
	Job Name: Messalonskee Track and Turf Field Distributor: NEEDHAM BR51 (BANGOR)	SSSH20-40A-1-S2-BL Notes:	**D SGL** SLA18-38148

ASCE7-05 WIND MAP



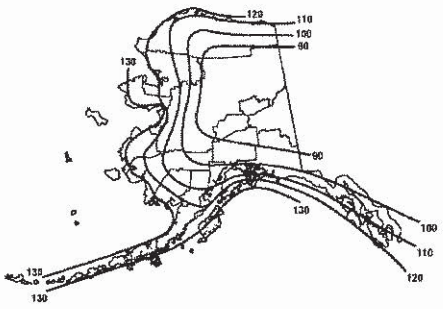
HAWAII – 105 mph
PUERTO RICO – 145 mph

FLORIDA REGION WIND MAP



- Florida region wind map above is based upon 3-second gust winds and the 2017 Florida Building Code

ALASKA REGION WIND MAP



ASCE 7-05 wind map EPA Load Rating - 3 second gust wind speeds (Use for all locations except Florida)										
Catalog Number	85	90	100	105	110	120	130	140	145	150
SSS-H-10-40-A	25.0	25.0	25.0	22.8	20.6	17.0	14.2	11.9	11.0	10.1
SSS-H-12-40-A	25.0	25.0	20.0	18.0	16.1	13.2	10.8	8.9	8.1	7.4
SSS-H-14-40-A	23.1	20.4	16.1	14.3	12.8	10.2	8.2	6.6	5.9	5.3
SSS-H-16-40-A	19.0	16.7	13.0	11.5	10.1	7.9	6.2	4.7	4.1	3.6
SSS-H-18-40-A	15.6	13.6	10.0	9.0	7.8	5.9	4.4	3.1	2.6	2.1
SSS-H-20-40-A	12.7	10.9	7.9	6.9	5.9	4.2	2.8	1.7	1.3	0.9
SSS-H-25-40-A	7.3	5.9	3.8	2.9	2.1	0.8	NR	NR	NR	NR
SSS-H-14-40-B	25.0	25.0	23.3	20.8	18.6	15.1	12.3	10.2	9.2	8.4
SSS-H-16-40-B	25.0	24.9	19.4	17.3	15.4	12.3	9.9	8.0	7.2	6.4
SSS-H-18-40-B	24.0	20.8	16.1	14.2	12.5	9.8	7.7	6.1	5.3	4.7
SSS-H-20-40-B	20.2	17.5	13.2	11.6	10.1	7.7	5.9	4.4	3.8	3.2
SSS-H-25-40-B	12.8	11.0	7.9	6.7	5.5	3.7	2.3	1.2	0.7	NR
SSS-H-30-40-B	8.0	6.6	4.1	3.1	2.2	0.6	NR	NR	NR	NR
SSS-H-16-50-B	25.0	25.0	25.0	25.0	24.8	20.1	16.5	13.6	12.3	11.2
SSS-H-18-50-B	25.0	25.0	25.0	22.9	20.4	16.4	13.2	10.7	9.6	8.6
SSS-H-20-50-B	25.0	25.0	21.3	18.9	16.7	13.2	10.4	8.1	7.2	6.3
SSS-H-25-50-B	20.7	17.8	13.3	11.5	9.8	7.2	5.0	3.3	2.6	1.9
SSS-H-30-50-B	13.5	11.3	7.7	6.2	4.9	2.8	1.1	NR	NR	NR
SSS-H-25-50-C	25.0	25.0	19.4	17.1	15.1	11.7	9.0	6.9	6.0	5.1
SSS-H-30-50-C	20.1	17.3	12.7	10.9	9.3	6.6	4.5	2.8	2.1	1.4
SSS-H-20-60-B	25.0	25.0	25.0	25.0	25.0	20.2	16.1	12.9	11.5	10.3
SSS-H-25-60-B	25.0	25.0	20.6	18.0	15.6	11.8	8.7	6.2	5.2	4.2
SSS-H-30-60-B	21.4	18.1	12.9	10.7	8.8	5.7	3.3	1.3	NR	NR
SSS-H-35-60-B	14.0	11.3	6.9	5.2	3.6	1.0	NR	NR	NR	NR
SSS-H-40-60-B	8.1	5.8	2.2	nr	NR	NR	NR	NR	NR	NR
SSS-H-30-60-C	24.3	20.5	14.6	12.2	10.2	6.8	4.2	2.2	1.3	0.5
SSS-H-35-60-C	16.6	13.5	8.6	6.6	4.9	2.1	NR	NR	NR	NR
SSS-H-40-60-C	10.6	7.9	3.7	2.1	0.6	NR	NR	NR	NR	NR

Florida Building Code 2017 EPA Load Rating - 3 second gust wind speeds (Use for Florida only)								
Catalog Number	115	120	130	140	150	160	170	180
SSS-H-10-40-A	25.0	25.0	25.0	25.0	21.4	18.4	15.9	13.9
SSS-H-12-40-A	25.0	25.0	23.6	19.8	16.7	14.2	12.1	10.4
SSS-H-14-40-A	25.0	23.1	19.0	15.7	13.1	10.9	99.1	7.6
SSS-H-16-40-A	20.8	18.7	15.2	12.3	10.1	8.2	6.7	5.4
SSS-H-18-40-A	16.6	15.0	11.9	9.4	7.5	5.9	4.5	3.4
SSS-H-20-40-A	13.6	11.9	9.2	7.1	5.3	3.9	2.7	1.7
SSS-H-25-40-A	7.4	6.2	4.1	2.5	1.1	NR	NR	NR
SSS-H-14-40-B	25.0	23.6	19.4	16.1	13.4	11.2	9.4	7.8
SSS-H-16-40-B	21.4	19.2	15.5	12.7	10.4	8.5	6.9	5.6
SSS-H-18-40-B	17.2	15.4	12.2	9.7	7.7	6.1	4.7	3.6
SSS-H-20-40-B	13.9	12.3	9.5	7.3	5.5	4.1	2.9	1.9
SSS-H-25-40-B	7.7	6.4	4.3	2.6	1.3	NR	NR	NR
SSS-H-30-40-B	3.2	2.1	NR	NR	NR	NR	NR	NR
SSS-H-16-50-B	25.0	25.0	25.0	25.0	25.0	21.4	18.2	15.5
SSS-H-18-50-B	25.0	25.0	25.0	24.4	20.4	17.0	14.2	11.9
SSS-H-20-50-B	25.0	25.0	24.4	19.9	16.3	13.4	11.0	8.9
SSS-H-25-50-B	21.8	19.3	15.0	11.5	8.8	6.5	4.7	3.1
SSS-H-30-50-B	13.7	11.7	8.2	5.5	3.3	1.5	NR	NR
SSS-H-25-50-C	21.8	19.3	15.0	11.5	8.8	6.5	4.7	3.1
SSS-H-30-50-C	13.7	11.7	8.2	5.5	3.3	1.5	NR	NR
SSS-H-20-60-B	25.0	25.0	25.0	21.9	17.8	14.5	11.7	9.4
SSS-H-25-60-B	23.8	20.9	16.1	12.3	9.2	6.6	4.5	2.8
SSS-H-30-60-B	14.6	12.3	8.4	5.3	2.8	0.8	NR	NR
SSS-H-35-60-B	7.5	5.6	2.4	NR	NR	NR	NR	NR
SSS-H-40-60-B	1.8	NR	NR	NR	NR	NR	NR	NR
SSS-H-30-60-C	14.6	12.3	8.4	5.3	2.8	0.8	NR	NR
SSS-H-35-60-C	7.5	5.6	2.4	NR	NR	NR	NR	NR
SSS-H-40-60-C	1.8	NR	NR	NR	NR	NR	NR	NR

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NOTES

- Allowable EPA, to determine max pole loading weight, multiply allowable EPA by 30 lbs.
- The tables for allowable pole EPA are based on the ASCE 7-05 Wind Map or the Florida Region Wind Map for the 2010 Florida Building Code. The Wind Maps are intended only as a general guide and cannot be used in conjunction with other maps. Always consult local authorities to determine maximum wind velocities, gusting and unique wind conditions for each specific application
- Allowable pole EPA for jobsite wind conditions must be equal to or greater than the total EPA for fixtures, arms, and accessories to be assembled to the pole. Responsibility lies with the specifier for correct pole selection. Installation of poles without luminaires or attachment of any unauthorized accessories to poles is discouraged and shall void the manufacturer's warranty
- Wind speeds and listed EPAs are for ground mounted installations. Poles mounted on structures (such as bridges and buildings) must consider vibration and coefficient of height factors beyond this general guide; Consult local and federal standards
- Wind Induced Vibration brought on by steady, unidirectional winds and other unpredictable aerodynamic forces are not included in wind velocity ratings. Consult Hubbell Lighting's Pole Vibration Application Guide for environmental risk factors and design considerations. http://cm.hubbelllighting.com/content/dam/hubbell/en/documents/literature_library/Pole_Wind_Induced_Fiber_HLO0022.pdf
- Extreme Wind Events like, Hurricanes, Typhoons, Cyclones, or Tornadoes may expose poles to flying debris, wind shear or other detrimental effects not included in wind velocity ratings

Due to our continued efforts to improve our products, product specifications are subject to change without notice.

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Submitted by Swaney Lighting			
	Job Name: Messalonskee Track and Turf Field Distributor: NEEDHAM BR51 (BANGOR)	**Catalog Number:** CL1-A-60LU-4K-3-BL Notes:	**Type:** **D DBL** SLA18-38148

CIMARRON LED

Cat.#

Job

Type

HUBBELL Outdoor Lighting

Approvals

SPECIFICATIONS

Construction:
- Stylish vertically finned die-cast solid top housing for maximum heat dissipation; Stops collection of unsightly debris from gathering on top of the housing
- Rugged lower die-cast aluminum heat sink accelerates thermal management and optimizes PCB and optical performance
- Separate optical and electrical compartment for optimum component operation
- One piece die cut silicone gasket ensures weather proof seal around each individual LED for IP65 rating
- Backlight Control (BC) option available for 85% spill light reduction, doesn't change fixture appearance or EPA, recommended for Type III and Type IV distributions
- Stamped bezel provides mechanical compression to seal the optical assembly
- Complements the Hubbell Southwest series of outdoor fixtures
- Weight - 45.0 pounds, EPA - 1.3 ft²
- Suitable for applications requiring 3G testing prescribed by ANSI C136.31

Optics:
- Choice of 72 high brightness LED configurations with individual acrylic lenses specially designed for IES Type II, III, IV and V distributions
- Auto optics designed for front row 1A and interior rows 2A (see distribution under ordering and page 2)
- CCT: 3000K (80 CRI), 4000K (70 CRI), 5000K (70 CRI), and turtle friendly Amber LED options

Electrical:
- Universal input voltage 120-277 VAC, 50/60 Hz
- Integral step-down transformer for 347V & 480V
- Ambient operating temperature -40° C to 40° C
- Automatic thermal self-protection
- Drivers have greater than 90% power factor and less than 10% THD
- Optional continuous dimming to 10% or dual circuitry available
- LED drivers have output power over-voltage, over-current protection and short circuit protection with auto recovery
- 1050 mA driver available with 90L configuration for increased lumen output
- LED electrical assembly, including PR devices, consumes no power in the 'off' state
- Surge protection – 20KA; Turns fixture off at end of life; Includes LED for end of life indication (see surge suppressor page 4)

Controls:
- Drivers are 0-10V dimming standard. Photocell, occupancy sensor and wireless controls available for complete on/off and dimming control

Lumen maintenance:
- L90 at 60,000 hours (Projected per IESNA TM-21-11)

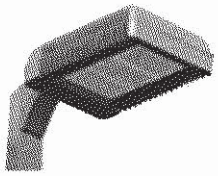
Installation:
- Two die-cast aluminum arm designs: The decorative arm offers a sleek upswept look while the straight arm follows the housing's contoured lines for continuity of style
- Fixture ships with arm installed for ease of installation and mounts to #2 drill pattern
- Wall bracket, mast arm fitter and pole accessories are also available allowing easy mounting for virtually any application

Finish:
- TGIC thermoset polyester powder paint finish applied at nominal 2.5 mil thickness

Warranty:
Five year limited warranty (for more information visit: http://www.hubbelloutdoor.com/resources/warranty/

Listings:
- Listed to UL1598 and CSA C22.2#250.0-24 for wet locations
- Models meet DesignLights Consortium (DLC) qualifications, consult DLC website for more details: http://www.designlights.org/QPL
- IDA approved • IP65

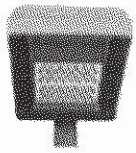
PRODUCT IMAGE(S)



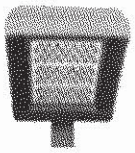
90 LED 3/4 VIEW



30 LED

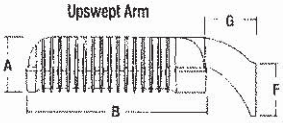


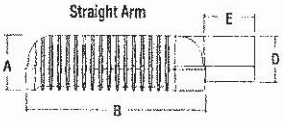
60 LED

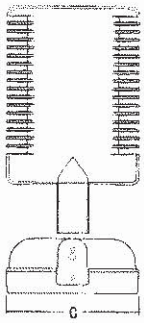


90 LED

DIMENSIONS







A	B	C	D	E	F	G
6 3/4" 171mm	21 3/4" 552mm	16" 406mm	6 5/8" 168mm	6 5/16" 160mm	5 5/8" 143mm	6 1/8" 155mm

CERTIFICATIONS/LISTINGS

*3000K and warmer CCTs only

ORDERING INFORMATION SEE NEXT PAGE

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ORDERING INFORMATION

ORDERING EXAMPLE: CL1-A-90LU-5K-3-DB-RPA3

CL1 - ____ - ____ ____ - ____ - ____ - ____ - ____ - ____

SERIES
- CL1 Cimarron LED

NO. OF LEDS
- 90L 90 High brightness LEDs
- 60L 60 High brightness LEDs
- 30L 30 High brightness LEDs

MOUNTING
- A Arm mount construction (6" straight rigid arm included & acceptable for 90° configurations)
- AD Decorative arm mount const. (6" decorative upswept arm incl. & acceptable for 90° configurations)
- MAF Mast arm fitter for mounting to standard 2 3/8" mast arm bracket, includes 6" straight rigid arm

VOLTAGE
- U[1] Universal 120V-277V, 50/60 Hz
- 1 120V
- 2 208V
- 3 240V
- 4 277V
- 5 480V, 60 Hz
- F 347V, 60 Hz
- E[4] 220V, 50 Hz

CCT
- 3K 3000K
- 4K 4000K
- 5K 5000K
- AM[4] Amber (590 nm available for "Turtle Friendly" applications (consult factory)

DRIVE CURRENT
- Leave blank for 700mA (standard)
- 035 350mA Amber CCT only
- 105 1050 mA (Not for use with 30L)

COLOR
- DB Dark Bronze
- BL Black
- WH White
- GR Gray
- PS Platinum Silver
- CC Custom Color

DISTRIBUTION
- 2 Type II
- 3 Type III
- 4 Type IV
- 5M Type V Medium
- 5S Type V Short
- 5W Type V Wide
- 2L Type II Rotated 90° left
- 3L Type III Rotated 90° left
- 4L Type IV Rotated 90° left
- 2R Type II Rotated 90° right
- 3R Type III Rotated 90° right
- 4R Type IV Rotated 90° right
- 1A Auto Front Row Type I
- 1AR Auto Front Row Type I Rotated 90° right
- 1AL Auto Front Row Type I Rotated 90° left
- 2A Auto Front Row Type II
- 2AR Auto Front Row Type II Rotated 90° right
- 2AL Auto Front Row Type II Rotated 90° left

OPTIONS
- BC[3] Backlight control
- CD Continuous dimming
- WB Wall bracket
- RPA3 3" Round pole adapter
- RPA4 4" Round pole adapter
- RPA5 5" Round pole adapter
- RPA6 6" Round pole adapter
- F(X)[2] Fusing (replace X with voltage: 1-120V, 2-208V, 3-240V, 4-277V, 5-480V, F-347V)
- VG Vandal guard
- 7PR Photocell receptacle (7-pin ANSI C136.41—2013 receptacle for use with standard Twist-Lock® photo controls, shorting caps, and ANSI C136.41 external wireless control devices. Select SCL option to add occupancy sensing capability when using with compatible external wireless devices.

PIR MOTION/OCCUPANCY CONTROL OPTIONS
- SCO_F[5,7,9] On/Off control (line voltage device not for use with 7PR receptacle option and external wireless control devices)
- SCL_F[5,7,9] Add-on occupancy sensor for use with ext. wireless control device connected thru 7PR receptacle. Consult control manufacturer for compatibility.
- SCP_F[5,6,7,9] Programmable dimming control (line voltage device not for use with 7PR receptacle option and external wireless control devices). A minimum of one SCP-REMOTE accessory remote control required for configuration; (Standard lens with greater sensitivity; motion detection radius equal to .75 X luminaire mounting height (approx. distance)
- SWP[10,11] SiteSync Pre-Commission
- SWPM[9,10,11] SiteSync Pre-Commission w/ Sensor

WIRELESS CONTROL OPTIONS
- WIR[8] wiSCAPE Fixture Module, in-fixture relay for wireless lighting control
- WIRSC[8,9] wiSCAPE Fixture Module, in-fixture relay for wireless lighting control and motion/occupancy control

Notes:
1 - Fuse option not available with universal voltage
2 - Select F3 fusing option for 220V
3 - Recommended for Type III and IV distributions only
4 - Available in 350mA drive current only Type IV, 5M
5 - 0-10V fully adjustable dimming with automatic daylight calibration and different time delay settings, must order minimum of one SCP-REMOTE control to program dimming settings (see accessories)
6 - Not available with AD arm
7 - Not available with WIR or WIRSC
8 - Not available with SCO, SCL, or SCP
9 - Specify mounting height, 8 = 8' or less, 40 = 9' to 40'
10 - Specify group and zone. See SiteSync product page www.hubbelllighting.com/controls/SiteSync for more details
11 - Not available in 90L-700mA or 1050mA versions

Accessories and Services (Ordered Separately)

Catalog Number	Description
SCP-REMOTE	Remote Control for SCP/_F option. Order at least one per project to program and control the occupancy sensor
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 pre-loaded 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.
SW7PR+	SiteSync 7 Pin on fixture module On/Off/Dim, Daylight Sensor 120-480VAC

* When ordering SiteSync at least one of these two interface options must be ordered per project.
+ Available as a SiteSync retrofit solution for fixtures with an existing 7pin receptacle.

Hubbell Control Solutions - Accessories (sold separately)

Catalog Number	Description	HCS System
NXOFM-1R1D-UNV	On-fixture Module (7-pin), On / Off / Dim, Daylight Sensor with HubbNET Radio and Bluetooth® Radio, 120-480VAC	NX Distributed Intelligence™
WIR-RME-L	On-fixture Module (7-pin or 5-pin), On / Off / Dim, Daylight Sensor with wiSCAPE Radio, 110-480VAC	wiSCAPE® Lighting Control

For additional information related to these accessories please visit www.hubbellcontrols.com. Options provided for use with integrated sensor, please view specification sheet ordering information table for details.

SiteSync 7-Pin Module



SW7PR

- SiteSync Features in a new form
- Available as an accessory for new construction or retrofit applications (with existing 7-Pin receptacle)
- Available on all products that have a 7-Pin receptacl
- Does not interface with occupancy sensors

SiteSync

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HUBBELL Lighting

Submitted by Swaney Lighting			
	**Job Name:** Messalonskee Track and Turf Field Distributor: NEEDHAM BR51 (BANGOR)	**Catalog Number:** CL1-A-60LU-4K-3-BL Notes:	**Type:** **D DBL** SLA18-38148

ENERGY SAVING DATA

#LEDS	DRIVE CURRENT	SYSTEM WATTS 120-277V	SYSTEM WATTS 347-480V	DIST. TYPE	5K (5000K nominal, 70 CRI) LUMENS	5K LPW¹	5K B	5K U	5K G	4K (4000K nominal, 70 CRI) LUMENS	4K LPW¹	4K B	4K U	4K G	3K (3000K nominal, 70 CRI) LUMENS	3K LPW¹	3K B	3K U	3K G
30	700 mA	70W	80W	1A	8244	118	1	0	1	8162	117	1	0	1	6775	97	1	0	1
				2A	8202	117	1	0	1	8121	116	1	0	1	6740	96	1	0	1
				2	7715	110	2	0	3	7639	109	2	0	2	6340	91	2	0	2
				3	7712	110	2	0	2	7635	109	2	0	2	6371	91	1	0	2
				4	7803	111	1	0	2	7726	110	1	0	2	6412	92	1	0	2
				5S	8374	120	3	0	0	8291	118	3	0	0	6882	98	3	0	0
				5M	7940	113	3	0	1	7862	112	3	0	1	6525	93	3	0	1
				5W	7667	110	3	0	2	7591	108	3	0	2	6301	90	3	0	2
60	700 mA	135W	150W	1A	16171	120	1	0	2	16011	119	1	0	1	13289	98	1	0	1
				2A	16068	119	1	0	2	15829	118	1	0	2	13221	98	1	0	2
				2	15134	112	3	0	3	14984	111	3	0	3	12437	92	3	0	3
				3	15127	112	3	0	3	14977	111	3	0	3	12498	93	2	0	3
				4	15306	113	2	0	3	15154	112	2	0	3	12578	93	2	0	3
				5S	16426	122	4	0	0	16263	120	4	0	0	13498	100	4	0	0
				5M	15575	115	4	0	2	15421	114	4	0	2	12799	95	3	0	2
				5W	15040	111	4	0	3	14891	110	4	0	3	12360	92	4	0	3
60	1050 mA	220W	235W	1A	21139	96	2	0	2	20929	95	2	0	2	17371	79	2	0	2
				2A	21030	96	2	0	2	20822	95	2	0	2	17282	79	2	0	2
				2	19783	90	4	0	5	19587	89	3	0	5	16257	74	3	0	5
				3	19774	90	3	0	4	19578	89	3	0	4	16250	74	3	0	4
				4	20007	91	3	0	5	19809	90	3	0	5	16442	75	3	0	5
				5S	21471	98	5	0	0	21259	97	5	0	0	17645	80	5	0	0
				5M	20359	93	5	0	3	20158	92	5	0	3	16731	76	5	0	3
				5W	19660	89	5	0	4	19465	88	5	0	4	16156	73	5	0	4
90	700 mA	205W	225W	1A	23781	116	2	0	2	23546	115	2	0	2	19543	95	2	0	2
				2A	23659	115	2	0	2	23425	114	2	0	2	19443	95	2	0	2
				2	22255	109	3	0	4	22035	107	3	0	4	18289	89	3	0	4
				3	22246	109	3	0	4	22026	107	3	0	4	18379	90	3	0	3
				4	22509	110	3	0	4	22286	109	3	0	4	18497	90	2	0	4
				5S	24156	118	5	0	0	23916	117	5	0	0	19851	97	4	0	0
				5M	22905	112	4	0	2	22678	111	4	0	2	18823	92	4	0	2
				5W	22117	108	5	0	3	21899	107	5	0	3	18176	89	5	0	3
90	1050 mA	325W	350W	1A	31708	98	2	0	2	31394	97	2	0	2	26057	80	2	0	2
				2A	31545	97	2	0	2	31233	96	2	0	2	25923	80	2	0	2
				2	29674	91	4	0	5	29380	90	3	0	5	24385	75	3	0	4
				3	29661	91	3	0	4	29367	90	3	0	4	24505	75	3	0	4
				4	30011	92	3	0	5	29714	91	3	0	5	24663	76	3	0	4
				5S	32207	99	5	0	0	31888	98	5	0	0	26467	81	5	0	0
				5M	30539	94	5	0	3	30237	93	5	0	3	25097	77	4	0	2
				5W	29490	91	5	0	4	29198	90	5	0	4	24234	75	5	0	4

Amber LUMENS	Amber LPW¹	Amber B	Amber U	Amber G	Drive Current	SYSTEM WATTS 120-277V	#LEDs
					350 mA	135W	60
2488		0	0	1			
2533		2	0	1			
					350 mA	205W	90
3558		1	0	1			
3596		2	0	1			

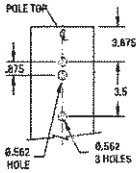
ACCESSORIES/REPLACEMENT PARTS - Order Separately

Catalog Number	Description
CR-RPA3-XX¹	Round pole adapter for straight arm (3¼ - 3¾")
CR-RPA4-XX¹	Round pole adapter for straight arm (3⅞ - 4½")
CR-RPA5-XX¹	Round pole adapter for straight arm (5")
CR-RPA6-XX¹	Round pole adapter for straight arm (6")
CRD-RPA2-XX¹	Round pole adapter for upswept arm (2¾ - 3⅛")
CRD-RPA3-XX¹	Round pole adapter for upswept arm (3¼ - 3¾")
CRD-RPA4-XX¹	Round pole adapter for upswept arm (3⅞ - 4½")
CRD-RPA5-XX¹	Round pole adapter for upswept arm (5")
CRD-RPA6-XX¹	Round pole adapter for upswept arm (6")
WB-AREA-XX¹	Wall bracket
TPLB-XX¹	Twin parallel luminaire bracket
MAF-CL-XX³	Horizontal mast arm fitter for 2 3/8" OD arm. Mounts to standard 6" arm (ordered with fixture)

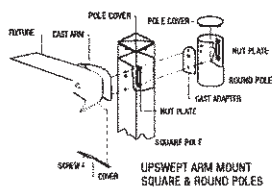
Catalog Number	Description
SCP-REMOTE*	Remote control for SCP option. Order at least one per project to program and control.
SWUSB*	SiteSync interface software loaded on USB flash drive for use with owner supplied PC (Windows based only). Includes SiteSync license, software and USB radio bridge node.
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

1 - Replace XX with color choice, eg.: DB for Dark Bronze
2 - When ordering poles, specify Pole Drill Pattern #2
3 - Fixture must include standard 6" arm

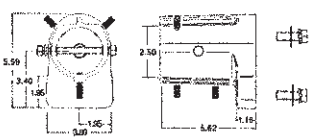
* When ordering SiteSync at least one of these two interface options must be ordered per project.
+ If needed, an additional Bridge Node can be ordered.



#2 DRILL PATTERN FOR POLES



UPSWEPT ARM MOUNT
SQUARE & ROUND POLES



MAF – HORIZONTAL MAST ARM FITTER

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MOUNTING ACCESSORIES

Catalog Number	Description
ARM-CL-K-TA-XX[1]	Adjustable mounting arm for single fixture (2-3/8 tenon) – 5 lbs. 2.3 kgs.
ARM-CL-TK-TA-XX[1]	Adjustable mounting arm for two fixtures at 180˚ (2-3/8 tenon) – 7 lbs. 3.2 kgs.
ARM-CL-K-S-XX[1]	10" adjustable arm – .5 lbs. .05 kgs. – 5.75 lbs. 2.6 kgs.

1 Replace XX with color choice, eg.: DB for Dark Bronze
2 Fixture must include standard 6" straight arm

ARM-CL-K-TA-XX
ARM-CL-TK-TA-XX



ARM-CL-K-S-XX



TENON TOP POLE BRACKET ACCESSORIES

(2 3/8" OD tenon) (RSS version requires 4" round pole adapter)

Catalog Number	Description
SETA2-XX[1]	Square pole tenon adapter (4 at 90 degrees)
RETA2-XX[1]	Round pole tenon adapter (4 at 90 degrees)
TETA-XX[1]	Hexagonal pole tenon adapter (3 at 120 degrees)

1 Replace XX with color choice, eg.: DB for Dark Bronze

PHOTOCONTROL EQUIPMENT

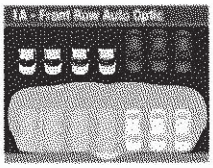
Catalog Number	Description
PTL-1	Photocontrol - twist-lock cell (120V)
PTL-8	Photocontrol - twist-lock cell (120-277V)
PTL-5	Photocontrol - twist-lock cell (480V)
PTL-6	Photocontrol - twist-lock cell (347V)
PSC	Shorting cap - twist-lock

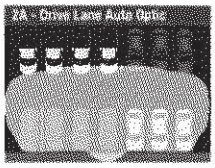
AUTOMOTIVE DEALERSHIP OPTICS

For Automotive Dealership applications Spaulding Lighting has developed two optics designed for enhanced and proper lighting of the auto dealership merchandise and the front row 1A and interior rows 2A (See CL1 distribution information for details)

Optic 1A
- Maximum illumination on front row display
- Maximum pole spacing

Optic 2A
- Excellent front row illumination and drive lane
- Optimal uniformity for drive lane and interior rows

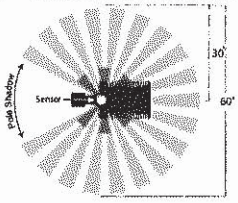


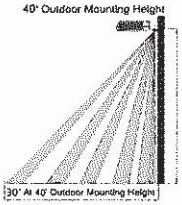


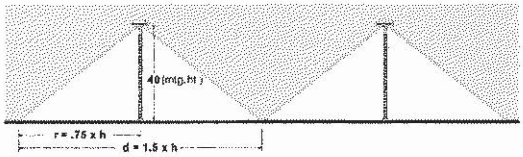
MOTION CONTROLS

- Start up delay from initial motion detection to fixture illumination is approximately 1-2 seconds
- Vehicle detection is possible however less reliable than human detection; Vehicle detection is dependent upon the following: rate of speed, mounting height of luminaire and vehicle temperature

SCP - Designed for intermediate coverage area

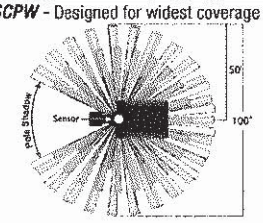


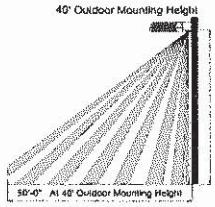


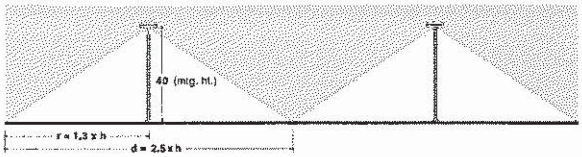


Note: Extreme heat or cold temperatures may limit detection.

SCPW - Designed for widest coverage area







Note: Extreme heat or cold temperatures may limit detection.

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

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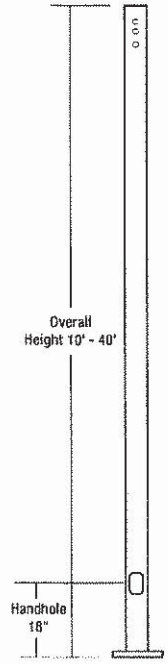
HUBBELL Lighting

Submitted by Swaney Lighting		Catalog Number:	Type:
	Job Name: Messalonskee Track and Turf Field Distributor: NEEDHAM BR51 (BANGOR)	SSSH20-40A-2-S2-BL Notes:	**D DBL** SLA16-38148

SSS-H SERIES POLES
SQUARE STRAIGHT STEEL

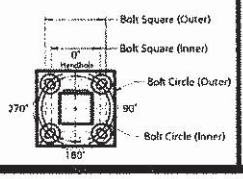
Cat.#		HUBBELL Outdoor Lighting
Job	Type	Approvals



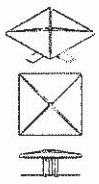
APPLICATIONS
- Lighting installations for side and top mounting of luminaires with effective projected area (EPA) not exceeding maximum allowable loading of the specified pole in its installed geographic location

CONSTRUCTION
- SHAFT: One-piece straight steel with square cross section, flat sides and minimum 0.23" radius on all corners; Minimum yield of 46,000 psi (ASTM-A500, Grade B); Longitudinal weld seam to appear flush with shaft side wall; Steel base plate with axial bolt circle slots welded to pole shaft having minimum yield of 36,000 psi (ASTM A36)
- BASE COVER: Two-piece square aluminum base cover included standard
- POLE CAP: Pole shaft supplied with removable cover when applicable; Tenon and post-top configurations also available
- HAND HOLE: Rectangular 3x5 steel hand hole frame (2.38" x 4.38" opening); Mounting provisions for grounding lug located behind gasketed cover
- ANCHOR BOLTS: Four galvanized anchor bolts provided per pole with minimum yield of 55,000 psi (ASTM F1554). Galvanized hardware with two washers and two nuts per bolt for leveling

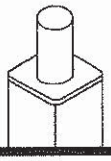
FINISH
- Durable thermoset polyester powder coat paint finish with nominal 3.0 mil thickness
- Powder paint prime applied over "white metal" steel substrate cleaned via mechanical shot blast method
- Decorative finish coat available in seven standard colors; Custom colors available; RAL number preferable; Internal protective coating available



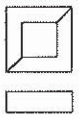
POLE CAP



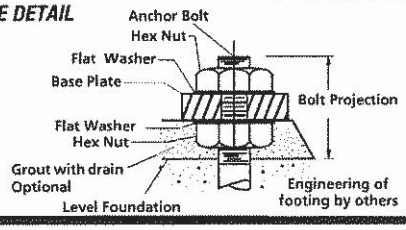
TENON



BASE COVER



BASE DETAIL



ORDERING INFORMATION

Reference page 2 for available configurations

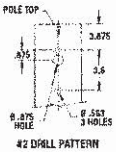
ORDERING EXAMPLE:

SSS-H - 25 - 40 - A/B/C - 2L - S2 - DB - UL

SERIES	HEIGHT	SHAFT	THICKNESS
SSS-H Square Straight Steel Pole Hubbell Outdoor	Reference page 2 Ordering matrix	Reference page 2 Ordering matrix	Reference page 2 Ordering matrix
	20'	40	A

MOUNTING
- 1 Single arm mount
- 2 Two fixtures at 180°
- 2L Two fixtures at 90°
- 3T Three fixtures at 90°
- 4 Four fixtures at 90°
- TA Tenon (2.38" OD x 4" Tall)
- TB Tenon (2.88" OD x 4" Tall)
- TC Tenon (3.5" OD x 6" Tall)
- TR[1] Removable Tenon (2.375 x 4.25)
- OT Open Top (includes pole cap)

DRILL PATTERN
- S2 #2 2 bolt 3.5" pattern



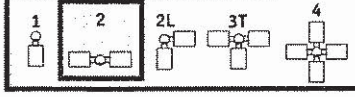
#2 DRILL PATTERN

FINISH
- DB Dark Bronze Textured
- BL Black Textured
- WH White Textured
- GR Gray Textured
- PS Platinum Silver Smooth
- CC Custom Color

OPTIONS
- HSC Internal Coating (Hubbell Seal)
- GFI[2] 20 Amp GFCI Receptacle and Cover
- EHH[2] Extra Handhole
- C05[2] .5" Coupling
- C07[2] .75" Coupling
- C20[2] 2" Coupling
- MPB[3] Mid-pole Luminaire Bracket
- VM2 2nd mode vibration damper
- LAB Less Anchor Bolts
- UL UL Certified

MOUNTING ORIENTATION

Denotes handhole location



***ACCESSORIES*- Order Separately**

Catalog Number	Description
VM1[3]	1st mode vibration damper
VM2SXX	2nd mode vibration damper

1 Removable tenon used in conjunction with side arm mounting. First specify desired arm configuration followed by the "TR" notation. Example: **SSS-H-25-40-A-1-S2-TR-DB**
2 Specify option location using logic found on page 2 **(Option Orientation)**
3 VM1 recommended on poles 20' and taller with EPA of less than 1.

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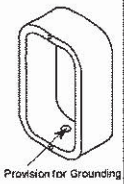
HUBBELL Lighting

ORDERING INFORMATION Cont.

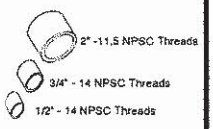
Catalog Number	Height		Nominal Shaft Dimensions	Wall Thickness	Bolt Circle (suggested)	Bolt Circle (range)	Bolt Square (range)	Base Plate Square	Anchor bolt size	Bolt Projection	Pole weight
	Feet	Meters									
SSS-H-10-40-A-XX-XX	10	3.0	4" square	0.125"	9"	8" - 10"	5.66" - 7.07"	9"	3/4" x 30" x 3"	3.5	77
SSS-H-12-40-A-XX-XX	12	3.7	4" square	0.125"	9"	8" - 10"	5.66" - 7.07"	9"	3/4" x 30" x 3"	3.5	90
SSS-H-14-40-A-XX-XX	14	4.3	4" square	0.125"	9"	8" - 10"	5.66" - 7.07"	9"	3/4" x 30" x 3"	3.5	103
SSS-H-16-40-A-XX-XX	16	4.9	4" square	0.125"	9"	8" - 10"	5.66" - 7.07"	9"	3/4" x 30" x 3"	3.5	116
SSS-H-18-40-A-XX-XX	18	5.5	4" square	0.125"	9"	8" - 10"	5.66" - 7.07"	9"	3/4" x 30" x 3"	3.5	129
SSS-H-20-40-A-XX-XX	20	6.1	4" square	0.125"	9"	8" - 10"	5.66" - 7.07"	9"	3/4" x 30" x 3"	3.5	142
SSS-H-25-40-A-XX-XX	25	7.6	4" square	0.125"	9"	8" - 10"	5.66" - 7.07"	9"	3/4" x 30" x 3"	3.5	175
SSS-H-14-40-B-XX-XX	14	4.3	4" square	.188"	11"	10" - 12"	7.07" - 8.48"	10.50"	3/4" x 30" x 3"	3.5	152
SSS-H-16-40-B-XX-XX	16	4.9	4" square	.188"	11"	10" - 12"	7.07" - 8.48"	10.50"	3/4" x 30" x 3"	3.5	171
SSS-H-18-40-B-XX-XX	18	5.5	4" square	.188"	11"	10" - 12"	7.07" - 8.48"	10.50"	3/4" x 30" x 3"	3.5	190
SSS-H-20-40-B-XX-XX	20	6.1	4" square	.188"	11"	10" - 12"	7.07" - 8.48"	10.50"	3/4" x 30" x 3"	3.5	209
SSS-H-25-40-B-XX-XX	25	7.6	4" square	.188"	11"	10" - 12"	7.07" - 8.48"	10.50"	3/4" x 30" x 3"	3.5	257
SSS-H-30-40-B-XX-XX	30	9.1	4" square	.188"	11"	10" - 12"	7.07" - 8.48"	10.50"	3/4" x 30" x 3"	3.5	304
SSS-H-16-50-B-XX-XX	16	4.9	5" square	.188"	11"	10.25" - 13.25"	7.25" - 9.37"	11.50"	1" x 36" x 4"	4.5	219
SSS-H-18-50-B-XX-XX	18	5.5	5" square	.188"	11"	10.25" - 13.25"	7.25" - 9.37"	11.50"	1" x 36" x 4"	4.5	243
SSS-H-20-50-B-XX-XX	20	6.1	5" square	.188"	11"	10.25" - 13.25"	7.25" - 9.37"	11.50"	1" x 36" x 4"	4.5	267
SSS-H-25-50-B-XX-XX	25	7.6	5" square	.188"	11"	10.25" - 13.25"	7.25" - 9.37"	11.50"	1" x 36" x 4"	4.5	327
SSS-H-30-50-B-XX-XX	30	9.1	5" square	.188"	11"	10.25" - 13.25"	7.25" - 9.37"	11.50"	1" x 36" x 4"	4.5	387
SSS-H-25-50-C-XX-XX	25	7.6	5" square	.25"	11"	10.25" - 13.25"	7.25" - 9.37"	11.50"	1" x 36" x 4"	4.5	427
SSS-H-30-50-C-XX-XX	30	9.1	5" square	.25"	11"	10.25" - 13.25"	7.25" - 9.37"	11.50"	1" x 36" x 4"	4.5	507
SSS-H-20-60-B-XX-XX	20	6.1	6" square	.188"	12"	11.00" - 13.25"	7.81" - 9.37"	12.25"	1-1/4" x 42" x 6"	5.0	329
SSS-H-25-60-B-XX-XX	25	7.6	6" square	.188"	12"	11.00" - 13.25"	7.81" - 9.37"	12.25"	1-1/4" x 42" x 6"	5.0	404
SSS-H-30-60-B-XX-XX	30	9.1	6" square	.188"	12"	11.00" - 13.25"	7.81" - 9.37"	12.25"	1-1/4" x 42" x 6"	5.0	479
SSS-H-35-60-B-XX-XX	35	10.7	6" square	.188"	12"	11.00" - 13.25"	7.81" - 9.37"	12.25"	1-1/4" x 42" x 6"	5.0	554
SSS-H-40-60-B-XX-XX	40	12.2	6" square	.188"	12"	11.00" - 13.25"	7.81" - 9.37"	12.25"	1-1/4" x 42" x 6"	5.0	629
SSS-H-30-60-C-XX-XX	30	9.1	6" square	.25"	12"	11.00" - 13.25"	7.81" - 9.37"	12.25"	1-1/4" x 42" x 6"	5.0	614
SSS-H-35-60-C-XX-XX	35	10.7	6" square	.25"	12"	11.00" - 13.25"	7.81" - 9.37"	12.25"	1-1/4" x 42" x 6"	5.0	712
SSS-H-40-60-C-XX-XX	40	12.2	6" square	.25"	12"	11.00" - 13.25"	7.81" - 9.37"	12.25"	1-1/4" x 42" x 6"	5.0	809

NOTE Factory supplied template must be used when setting anchor bolts. Hubbell Lighting will deny any claim for incorrect anchorage placement resulting from failure to use factory supplied template and anchor bolts.

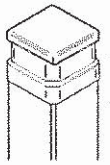
EHH - EXTRA HANDHOLE



C05 - C07 - C20 - COUPLING



VM1 - VIBRATION DAMPER 1ST MODE



Field installed Pole Top damper designed to reduce pole top deflection or sway. VM1 is recommended for pole systems 25' and taller with a total EPA of 1.0 or less.

VM2 - VIBRATION DAMPER 2ND MODE



Factory installed, internal damper designed to alter pole resonance to reduce movement and material fatigue caused by 2nd mode vibration.

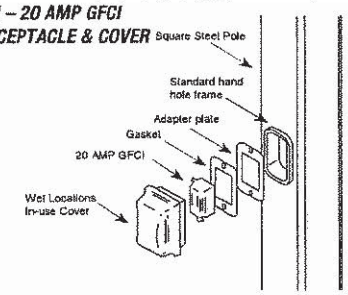
VM2SXX - VIBRATION DAMPER 2ND MODE



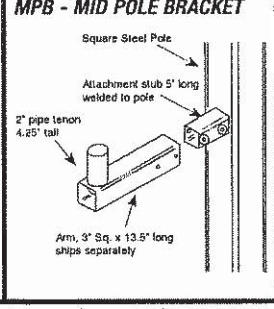
VM2S08 – 8'
VM2S12 – 12'
VM2S16 – 16'
VM2S20 – 20'
VM2S24 – 24'

Field installed, internal damper designed to alter pole resonance to reduce movement and material fatigue caused by 2nd mode vibration.

GFI – 20 AMP GFCI RECEPTACLE & COVER

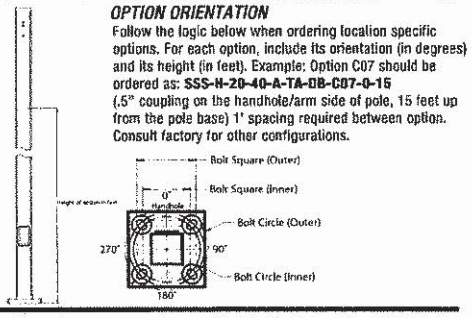


MPB - MID POLE BRACKET



OPTION ORIENTATION

Follow the logic below when ordering location specific options. For each option, include its orientation (in degrees) and its height (in feet). Example: Option C07 should be ordered as: **SSS-H-20-40-A-TA-DB-C07-0-15** (.5" coupling on the handhole/arm side of pole, 15 feet up from the pole base) 1' spacing required between option. Consult factory for other configurations.



For more information about pole vibration and vibration dampers, please consult http://cdn.hubbelloutdoor.com/content/products/literature/literature_files/Pole_Wind_Induced_Flyer_HLOB022.pdf
Due to our continued efforts to improve our products, product specifications are subject to change without notice.

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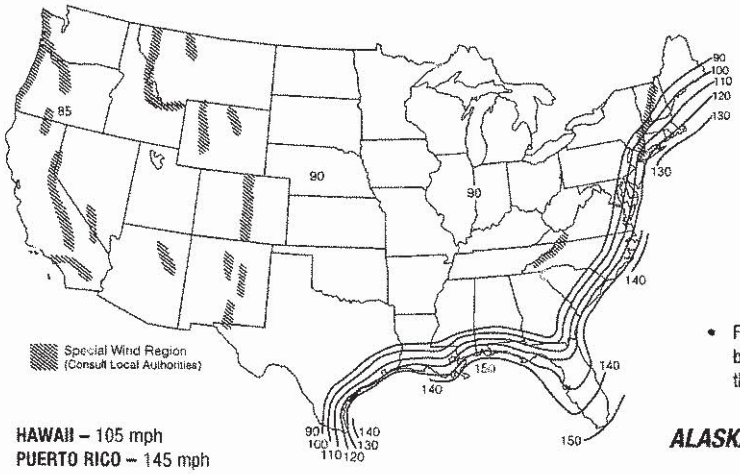
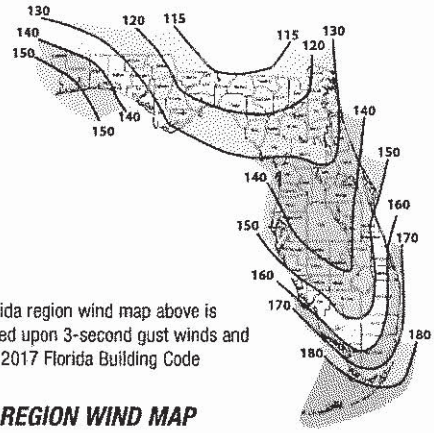
Submitted by Swaney Lighting		Catalog Number:	Type:
	Job Name: Messalonskee Track and Turf Field Distributor: NEEDHAM BR51 (BANGOR)	SSSH20-40A-2-S2-BL Notes:	**D DBL** SLA18-38148

ASCE7-05 WIND MAP



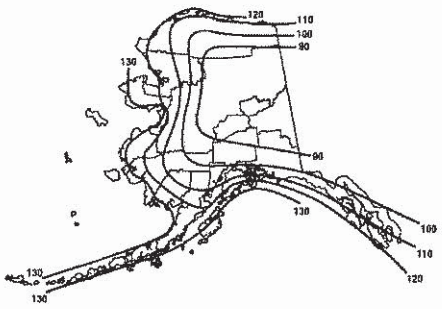
HAWAII – 105 mph
PUERTO RICO – 145 mph

FLORIDA REGION WIND MAP



- Florida region wind map above is based upon 3-second gust winds and the 2017 Florida Building Code

ALASKA REGION WIND MAP



ASCE 7-05 wind map EPA Load Rating - 3 second gust wind speeds (Use for all locations except Florida)										
Catalog Number	85	90	100	105	110	120	130	140	145	150
SSS-H-10-40-A	25.0	25.0	25.0	22.8	20.6	17.0	14.2	11.9	11.0	10.1
SSS-H-12-40-A	25.0	25.0	20.0	18.0	16.1	13.2	10.8	8.9	8.1	7.4
SSS-H-14-40-A	23.1	20.4	16.1	14.3	12.8	10.2	8.2	6.6	5.9	5.3
SSS-H-16-40-A	19.0	16.7	13.0	11.5	10.1	7.9	6.2	4.7	4.1	3.6
SSS-H-18-40-A	15.6	13.6	10.0	9.0	7.8	5.9	4.4	3.1	2.6	2.1
SSS-H-20-40-A	12.7	10.9	7.9	6.9	5.9	4.2	2.8	1.7	1.3	0.9
SSS-H-25-40-A	7.3	5.9	3.8	2.9	2.1	0.8	NR	NR	NR	NR
SSS-H-14-40-B	25.0	25.0	23.3	20.8	18.6	15.1	12.3	10.2	9.2	8.4
SSS-H-16-40-B	25.0	24.9	19.4	17.3	15.4	12.3	9.9	8.0	7.2	6.4
SSS-H-18-40-B	24.0	20.8	16.1	14.2	12.5	9.8	7.7	6.1	5.3	4.7
SSS-H-20-40-B	20.2	17.5	13.2	11.8	10.1	7.7	5.9	4.4	3.8	3.2
SSS-H-25-40-B	12.8	11.0	7.9	6.7	5.5	3.7	2.3	1.2	0.7	NR
SSS-H-30-40-B	8.0	6.6	4.1	3.1	2.2	0.8	NR	NR	NR	NR
SSS-H-16-50-B	25.0	25.0	25.0	25.0	24.6	20.1	16.5	13.6	12.3	11.2
SSS-H-18-50-B	25.0	25.0	25.0	22.9	20.4	16.4	13.2	10.7	9.6	8.6
SSS-H-20-50-B	25.0	25.0	21.3	18.9	16.7	13.2	10.4	8.1	7.2	6.3
SSS-H-25-50-B	20.7	17.8	13.3	11.5	9.8	7.2	5.0	3.3	2.6	1.9
SSS-H-30-50-B	13.5	11.3	7.7	6.2	4.9	2.8	1.1	NR	NR	NR
SSS-H-25-50-C	25.0	25.0	19.4	17.1	15.1	11.7	9.0	6.9	6.0	5.1
SSS-H-30-50-C	20.1	17.3	12.7	10.9	9.3	6.5	4.5	2.8	2.1	1.4
SSS-H-20-60-B	25.0	25.0	25.0	25.0	25.0	20.2	16.1	12.9	11.5	10.3
SSS-H-25-60-B	25.0	25.0	20.6	18.0	15.6	11.8	8.7	6.2	5.2	4.2
SSS-H-30-60-B	21.4	18.1	12.9	10.7	8.8	5.7	3.3	1.3	NR	NR
SSS-H-35-60-B	14.0	11.3	6.9	5.2	3.6	1.0	NR	NR	NR	NR
SSS-H-40-60-B	8.1	5.8	2.2	nr	NR	NR	NR	NR	NR	NR
SSS-H-30-60-C	24.3	20.5	14.6	12.2	10.2	6.8	4.2	2.2	1.3	0.5
SSS-H-35-60-C	16.6	13.5	8.6	6.6	4.9	2.1	NR	NR	NR	NR
SSS-H-40-60-C	10.6	7.9	3.7	2.1	0.6	NR	NR	NR	NR	NR

Florida Building Code 2017 EPA Load Rating - 3 second gust wind speeds (Use for Florida only)								
Catalog Number	115	120	130	140	150	160	170	180
SSS-H-10-40-A	25.0	25.0	25.0	25.0	21.4	18.4	15.9	13.9
SSS-H-12-40-A	25.0	25.0	23.6	19.8	16.7	14.2	12.1	10.4
SSS-H-14-40-A	25.0	23.1	19.0	15.7	13.1	10.9	99.1	7.6
SSS-H-16-40-A	20.8	18.7	15.2	12.3	10.1	8.2	6.7	5.4
SSS-H-18-40-A	16.8	15.0	11.9	9.4	7.5	5.9	4.5	3.4
SSS-H-20-40-A	13.6	11.9	9.2	7.1	5.3	3.9	2.7	1.7
SSS-H-25-40-A	7.4	6.2	4.1	2.5	1.1	NR	NR	NR
SSS-H-14-40-B	25.0	23.6	18.4	16.1	13.4	11.2	9.4	7.8
SSS-H-16-40-B	21.4	19.2	15.6	12.7	10.4	8.5	6.9	5.6
SSS-H-18-40-B	17.2	15.4	12.2	9.7	7.7	6.1	4.7	3.6
SSS-H-20-40-B	13.9	12.3	9.5	7.3	5.5	4.1	2.9	1.9
SSS-H-25-40-B	7.7	6.4	4.3	2.6	1.3	NR	NR	NR
SSS-H-30-40-B	3.2	2.1	NR	NR	NR	NR	NR	NR
SSS-H-16-50-B	25.0	25.0	25.0	25.0	25.0	21.4	18.2	15.5
SSS-H-18-50-B	25.0	25.0	25.0	24.4	20.4	17.0	14.2	11.9
SSS-H-20-50-B	25.0	25.0	24.4	19.9	16.3	13.4	11.0	8.9
SSS-H-25-50-B	21.8	19.3	15.0	11.5	8.8	6.5	4.7	3.1
SSS-H-30-50-B	13.7	11.7	8.2	5.5	3.3	1.5	NR	NR
SSS-H-25-50-C	21.8	19.3	15.0	11.5	8.8	6.5	4.7	3.1
SSS-H-30-50-C	13.7	11.7	8.2	5.5	3.3	1.5	NR	NR
SSS-H-20-60-B	25.0	25.0	25.0	21.9	17.8	14.5	11.7	9.4
SSS-H-25-60-B	23.8	20.9	16.1	12.3	9.2	6.6	4.5	2.8
SSS-H-30-60-B	14.6	12.3	8.4	5.3	2.8	0.8	NR	NR
SSS-H-35-60-B	7.5	5.6	2.4	NR	NR	NR	NR	NR
SSS-H-40-60-B	1.8	NR	NR	NR	NR	NR	NR	NR
SSS-H-30-60-C	14.6	12.3	8.4	5.3	2.8	0.8	NR	NR
SSS-H-35-60-C	7.5	5.6	2.4	NR	NR	NR	NR	NR
SSS-H-40-60-C	1.8	NR	NR	NR	NR	NR	NR	NR

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NOTES

- Allowable EPA, to determine max pole loading weight, multiply allowable EPA by 30 lbs.
- The tables for allowable pole EPA are based on the ASCE 7-05 Wind Map or the Florida Region Wind Map for the 2010 Florida Building Code. The Wind Maps are intended only as a general guide and cannot be used in conjunction with other maps. Always consult local authorities to determine maximum wind velocities, gusting and unique wind conditions for each specific application
- Allowable pole EPA for jobsite wind conditions must be equal to or greater than the total EPA for fixtures, arms, and accessories to be assembled to the pole. Responsibility lies with the specifier for correct pole selection. Installation of poles without luminaires or attachment of any unauthorized accessories to poles is discouraged and shall void the manufacturer's warranty
- Wind speeds and listed EPAs are for ground mounted installations. Poles mounted on structures (such as bridges and buildings) must consider vibration and coefficient of height factors beyond this general guide; Consult local and federal standards
- Wind Induced Vibration brought on by steady, unidirectional winds and other unpredictable aerodynamic forces are not included in wind velocity ratings. Consult Hubbell Lighting's Pole Vibration Application Guide for environmental risk factors and design considerations. http://cdn.hubbelloutdoor.com/content/products/literature/literature_files/Pole_Wind_Induced_Flyer_HLOW522.pdf
- Extreme Wind Events like, Hurricanes, Typhoons, Cyclones, or Tornadoes may expose poles to flying debris, wind shear or other detrimental effects not included in wind velocity ratings

Due to our continued efforts to improve our products, product specifications are subject to change without notice.

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Transportation Analysis – Traffic Impact (14-526 (a) 1)

Provisions have been made at the site to allow for the safe circulation of vehicles and pedestrians within the site. Please see the site plan for additional information.

A trip generation analysis of the existing and proposed use was competed for the site. Please see the traffic memo by Sebago Technics dated August 15, 2018.

Access and Circulation (14-526 (a) 2 a)

(i) The development provides safe and reasonable access and internal circulation for the entire site for all users of the site and complies with the standards set forth in Section 1 of the Technical Manual. Please see the site plan.

(ii) The points of access and egress have been located to avoid conflicts with the existing turning movements and traffic flows. Please see the site plan.

(iii) Not applicable. There are no drive-up features associated with this project.

Loading and Servicing (14-526 (a) 2 b)

(i) It is not anticipated that the site will be serviced by delivery or other service vehicles, however the development has been designed for vehicles typically associated with the use of self-storage facilities.

Sidewalks (14-526 (a) 2 c)

(i) The development has been designed with the appropriate sidewalk and curb layout. Please see the site plan.

(ii) Not applicable. There is no existing sidewalk to be utilized for this project.

(iii) Not applicable. The internal sidewalk is not directly connected to the existing public sidewalk. The proposed project involves the construction of a self-storage facility and it is anticipated that the site will be access by motor vehicle or bicycle, not pedestrians.

Public Transit (14-526 (a) 3)

There is no public transportation that services the subject site. The closest bus routes run on Brighton Avenue and to Shaw's Supermarket, south of the subject site.

Off-Street Parking: Vehicle & Motorcycle/Scooter (14-526 (a) 4 a and c)

a. The proposed project exceeds the parking requirements for the zone and development size. The parking spaces have been designed in accordance with City Regulations and the parking surface will be a paved surface. Please see the site plan.
c. The proposed parking lot has been designed to accommodate motorcycle and scooter parking. Please see the site plan.

Bicycle Parking (14-526 (a) 4 b)

The proposed design provides for adequate bicycle parking for the site. Please see the site plan.

Snow Storage (14-526 (a) 4 d)

(i) Snow storage areas are delineated on the site plan.

(ii) The proposed snow storage areas will not encroach on areas designated to meet minimum parking requirements or pedestrian walkways. They are not located in areas that will interfere with the storm water management plan of the site.

Traffic Demand Management (TDM) (14-526 (a) 5)

Not applicable.

Environmental and Landscape Features

Preservation of significant Natural Features (14-526 (b) 1)

Not Applicable. The proposed project site is a previously developed lot in a highly developed area. The site does not contain any significant natural features, there is minimal tree cover, and no wetlands.

Landscaping and Landscape Preservation (14-526 (b) 2 a)

(i) There is limited tree cove on the proposed project site. Existing trees have been incorporated into the landscape plan when possible. Please see the Landscape plan.

(ii) No trees with a 10-inch DBH or greater within the setback are to be impacted. Please see the Landscape plan.

(iii) Vegetation will be protected during construction in accordance with tree preservation standards listed in Section 4 of the Technical Manual.

(iv) No waivers for vegetation are sought.

(v) Not Applicable. The proposed project site is not located in the Shoreland Zone.

Site Landscaping (14-526 (b) 2 b)

The proposed project has been designed in accordance to the requirements of the City Ordinance. Please see the Landscape Plan for specific information on the planting plan.

Parking Lot Landscaping (14-526 (b) 2 b ii)

Landscaped islands in the parking lots have been provided. Please see the Landscape Plan for more detailed information.

Street Trees (14-526 (b) 2 b iii)

The proposed planting plan was designed in accordance to the specifications of Section 4 of the City's Technical Manual. Please see the Landscape Plan for more detailed information.

Environmental and Stormwater

Water Quality, Stormwater Management and Erosion Control (14-526 (b) 3 a)

The proposed site has been designed in accordance to City and Chapter 500 requirements to minimize the amount of stormwater leaving the site. Please see the Stormwater Management report and plan included in this submittal.

Consistency with City Master Plans (14-526 (c) 1)

The proposed development is consistent with the City Master Plan. The proposed development is located on a previously developed parcel in an area with existing services. The development will not result in any additional burdens to the City's resources, nor the unnecessary decrease of undeveloped parcels. The proposed use is consistent with the surrounding area.

Public Safety and Fire Prevention (14-526 (c) 2)

a. Crime Prevention - The proposed facility has been designed with planting that will complement the site but will not provide concealment for illegal activities. The parking area is well lit and the access drive is gated. Please see the plan set.

b. There is adequate access to the site for emergency vehicles. Please see the plan set.

c. The site has been designed to be consistent with the standards of the City of Portland Technical Manual. Please see the plan set.

Please see the attached Fire Checklist.

Availability and Adequacy of Public Utilities (14-526 (c) 3) (Technical Manual, Sections 2 & 9)

a. The development will no overburden sanitary sewers and storm drains, water lines, or other public infrastructure and utilities. Please see the attached capacity letters.

b. Electrical service has been designed to be underground.

c. All proposed sanitary sewers, storm drains, water lines or other utilities meet the provisions of the City Technical manual.

d. The proposed development will connect to an existing sewer line.

e. All proposed sanitary sewer and stormwater utilities are designed to City standards.

f. Given the nature of the facility no on-site dumpsters or solid waste removal is provided. Any required waste removal will be the responsibility of those persons renting storage units and will be part of their lease agreement. There is a small office proposed, any waste generated will be minimal and will be hauled off site by a private service.

Massing, Ventilations and Wind Impact (14-526 (d) 1)

a. The bulk and height of the proposed building will not result in health or safety problems from a reduction in ventilation to abutting structures. Please see the site plan.
b. The bulk, location, and height of the proposed building will not minimize the value or utility of the neighboring buildings. The proposed develop is in keeping with the neighborhood. Please see the plan set.
c. The HVAC venting mechanisms have not been sited on the plan as the appropriately sized system has not yet been determined. The building will be constructed with the all venting systems directed away from public spaces and residential properties.

Shadows (14-526 (d) 2)

Not applicable. There are no open public spaces surrounding the property.

Snow and Ice Loading (14-526 (d) 3)

The building will be designed to prevent significant amounts of accumulated snow and ice from loading or falling onto adjacent properties or public ways.

View Corridors (14-526 (d) 4)

Not applicable. The proposed development is not in a view corridor.

Historic Resources (14-526 (d) 5)

The proposed development will not impact nor is it in close proximity of any historic resources.

Exterior Lighting (14-526 (d) 6)

Included with this section please find the lighting product cutsheets. Please see the plan set for the lighting plan.

Noise and Vibration (14-526 (d) 7)

Not Applicable. There is no equipment associated with the proposed use that would result in the generation of noise or vibrations.

Signage and Wayfinding (14-526 (d) 8)

Please see the plan set for signage information.

Zone Related Design Standards (14-526 (d) 5)

Not Applicable. There are no specific design standards associated with the zone of the subject site.

PATAGON STORAGE

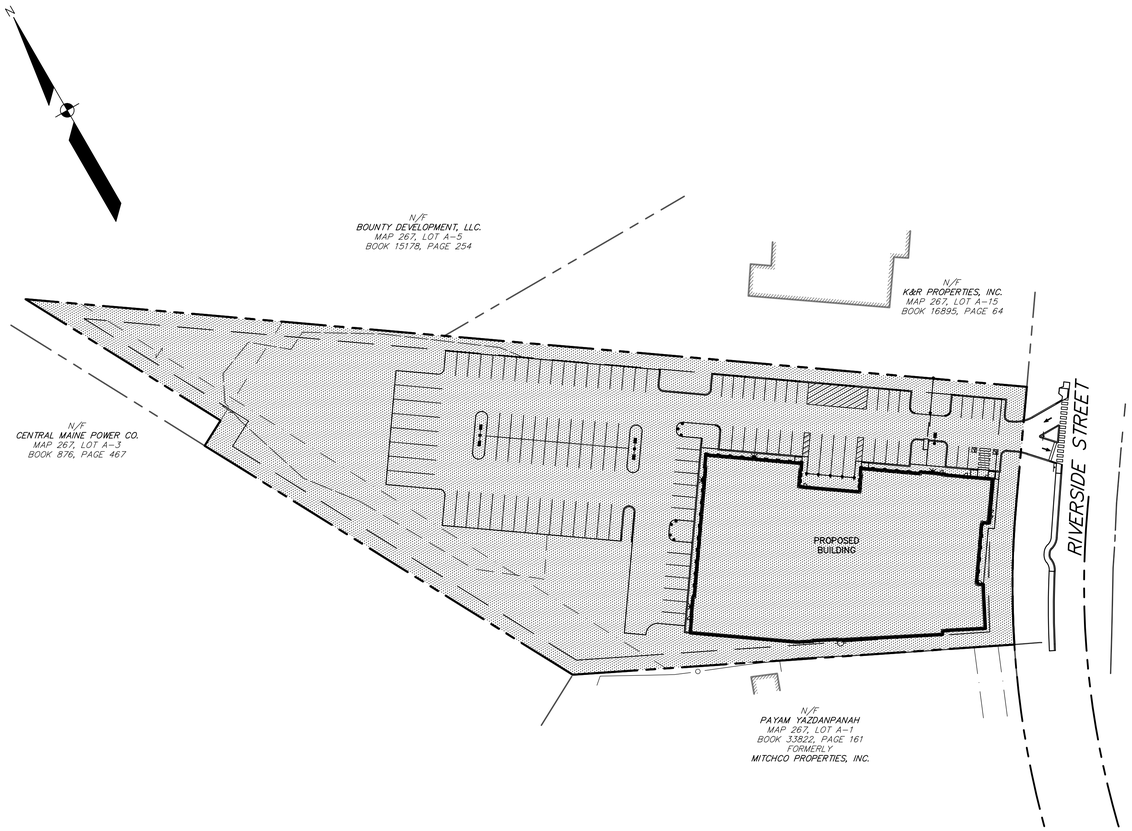
150 RIVERSIDE ST
PORTLAND, MAINE

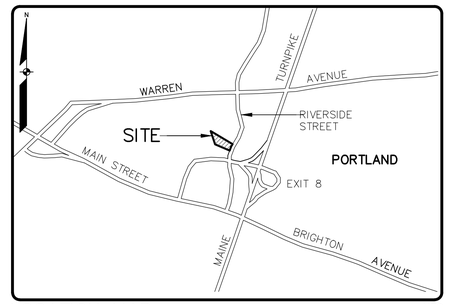
APPLICANT:

PATAGON STORAGE, LLC
1700 MAIN STREET, SUITE 70
WASHAUGAL, WASHINGTON

ENGINEER/SURVEYOR/
LANDSCAPE ARCHITECT:

SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd.
Suite 4A
South Portland, ME 04106
Tel. 207-200-2100





LOCATION MAP NTS

SCALE: 1" = 60'

SHEET LIST TABLE

SHEET NUMBER	SHEET TITLE
1	COVER SHEET
2	EXISTING CONDITIONS SURVEY
3	SITE PLAN
4	GRADING AND UTILITY PLAN
5	LANDSCAPE PLAN
6	DETAILS
7	DETAILS

REVISED THROUGH 09-18-18

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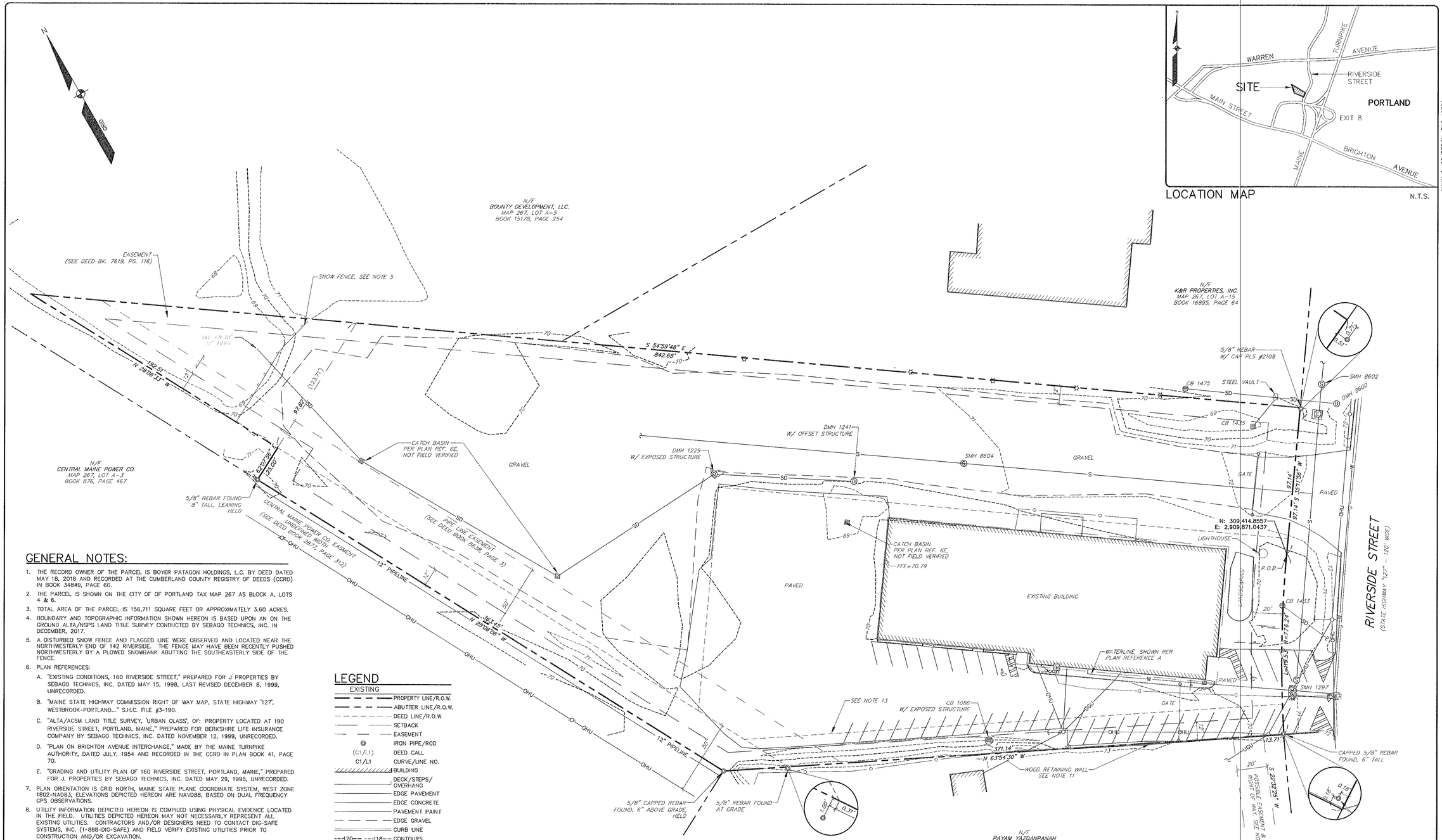

GENERAL NOTES:

1. THE RECORD OWNER OF THE PARCEL IS BOYER PATAGON HOLDINGS, L.C. BY DEED DATED MAY 18, 2018 AND RECORDED AT THE CUMBERLAND COUNTY REGISTRY OF DEEDS (CCRD) IN BOOK 34849, PAGE 60.
2. THE PARCEL IS SHOWN ON THE CITY OF OF PORTLAND TAX MAP 267 AS BLOCK A, LOTS 4 & 6.
3. TOTAL AREA OF THE PARCEL IS 156,711 SQUARE FEET OR APPROXIMATELY 3.60 ACRES.
4. BOUNDARY AND TOPOGRAPHIC INFORMATION SHOWN HEREON IS BASED UPON AN ON THE GROUND ALTA/NSPS LAND TITLE SURVEY CONDUCTED BY SEBAGO TECHNICS, INC. IN DECEMBER, 2017.
5. A DISTURBED SNOW FENCE AND FLAGGED LINE WERE OBSERVED AND LOCATED NEAR THE NORTHWESTERLY END OF 142 RIVERSIDE. THE FENCE MAY HAVE BEEN RECENTLY PUSHED NORTHWESTERLY BY A PLOWED SNOWBANK ABUTTING THE SOUTHEASTERLY SIDE OF THE FENCE.
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LEGEND

EXISTING

- PROPERTY LINE/R.O.W.
- ABUTTER LINE/R.O.W.
- DEED LINE/R.O.W.
- SETBACK
- EASEMENT
- IRON PIPE/ROD
- (C1/L1) DEED CALL
- C1/L1 CURVE/LINE NO.
- BUILDING
- DECK/STEPS/ OVERHANG
- EDGE PAVEMENT
- EDGE CONCRETE
- PAVEMENT PAINT
- EDGE GRAVEL
- CURB LINE
- 120 118 CONTOURS
- CHAIN LINK FENCE
- RETAINING WALL
- BOLLARD
- SIGN
- GAS
- GAS GATE VALVE
- WATER METER
- WATER GATE VALVE
- SANITARY MANHOLE
- DRAINAGE MANHOLE
- CATCH BASIN
- OHU OVERHEAD UTILITY
- UGU UNDERGROUND UTILITY
- TRANSFORMER PAD
- LIGHT POLE
- UTILITY POLE
- GUY WIRE

SURVEYOR'S STATEMENT

THIS SURVEY WAS PERFORMED UNDER MY DIRECT SUPERVISION AND TO THE BEST OF MY KNOWLEDGE AND BELIEF, IT WAS DONE IN ACCORDANCE WITH CHAPTER 90, PART 1 (PROFESSIONAL STANDARDS OF PRACTICE) AND PART 2 (TECHNICAL STANDARDS OF PRACTICE) OF THE MAINE BOARD OF LICENSURE FOR PROFESSIONAL LAND SURVEYORS.

JIMMY C. COURBRON, PLS 2532 — SEPTEMBER 10, 2018

LOCATION MAP N.T.S.

JIMMY C. COURBRON, PLS #2532

STATE OF MAINE — JIMMY C. COURBRON — 2532 — PROFESSIONAL LAND SURVEYOR

DRAWN	CHECKED
JCC	MWE

REV.:	BY:	DATE:	STATUS:
A	JCC	9/10/18	LEVEL III SITE PLAN SUBMISSION TO THE CITY

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SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd.
Suite 4A
South Portland, ME 04106
Tel. 207-200-2100

EXISTING CONDITIONS SURVEY
OF:
PATAGON STORAGE
150 RIVERSIDE ST
PORTLAND, MAINE
FOR:
PATAGON STORAGE, LLC
1700 MAIN STREET, SUITE 70
WASHAUGAL, WASHINGTON

PROJECT NO.	SCALE
17500	1" = 30'

SHEET 2 OF 8

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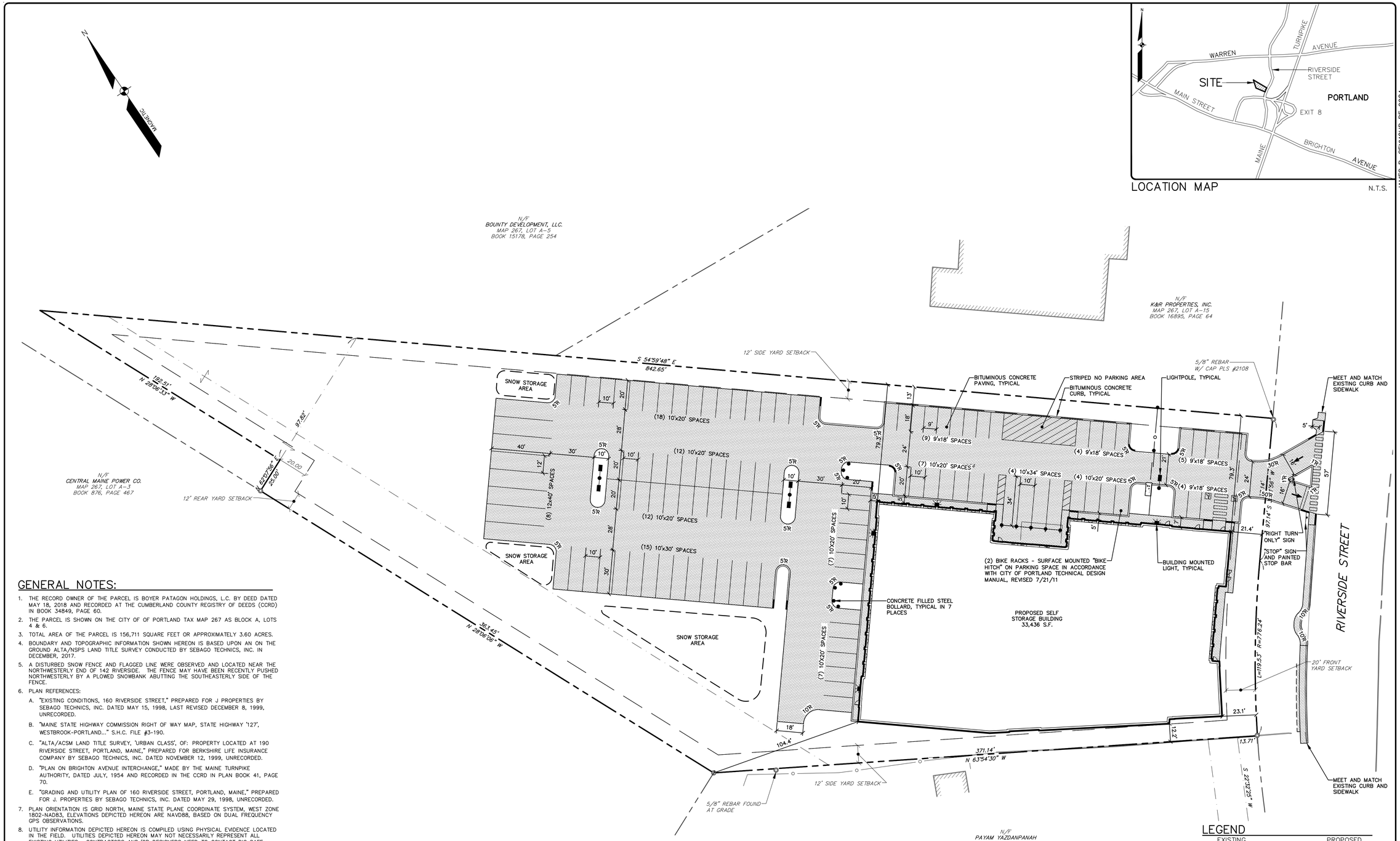

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GRAPHIC SCALE
30 0 15 30 60
(IN FEET)
1 INCH = 30 FT.

LEGEND

EXISTING		PROPOSED
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	ABUTTER LINE/R.O.W.	
	DEED LINE/R.O.W.	
	SETBACK	
	EASEMENT	
⊗	IRON PIPE/ROD	
	BUILDING	
	EDGE PAVEMENT	
	PAVEMENT SAWCUT	
	PAVEMENT PAINT	
	EDGE GRAVEL	
	CURB LINE	
o	CHAIN LINK FENCE	o
	SIGN	
Ⓔ	ELECTRICAL MANHOLE	
☼	LIGHT POLE	
⊙	UTILITY POLE	

JAMES R. SEYMOUR PE 9984
STATE OF MAINE — JAMES R. SEYMOUR No. 9984 — REGISTERED PROFESSIONAL ENGINEER
9-18-18

DESIGNED	CHECKED
JRS	JRS

REV.:	BY:	DATE:	STATUS:
A	JRS	09-18-18	LEVEL III SITE PLAN SUBMISSION TO THE CITY

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75 John Roberts Rd.
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Tel: 207-200-2100

SITE PLAN
OF:
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150 RIVERSIDE ST
PORTLAND, MAINE
FOR:
PATAGON STORAGE, LLC
1700 MAIN STREET, SUITE 70
WASHOUGAL, WASHINGTON

PROJECT NO.	SCALE
17500	1" = 30'

SHEET 3 OF 8

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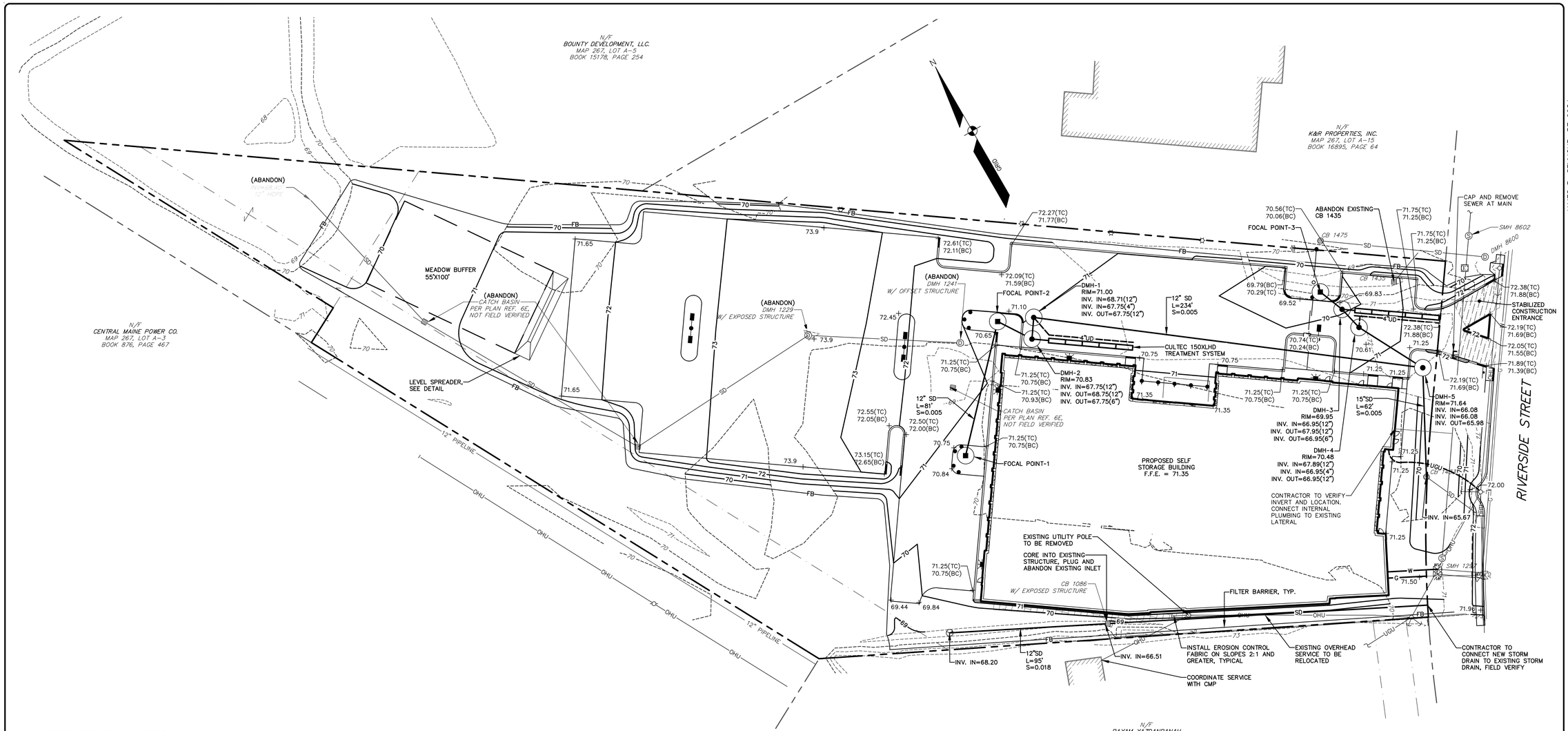


CONSTRUCTION NOTES

1. ALL WORK SHALL CONFORM TO THE APPLICABLE CODES AND ORDINANCES.

2. CONTRACTOR SHALL VISIT THE SITE AND FAMILIARIZE HIM OR HERSELF WITH ALL CONDITIONS AFFECTING THE PROPOSED WORK AND SHALL MAKE PROVISIONS AS TO THE COST THEREOF. CONTRACTOR SHALL BE RESPONSIBLE FOR FAMILIARIZING HIM OR HERSELF WITH ALL CONTRACT DOCUMENTS, FIELD CONDITIONS AND DIMENSIONS AND CONFIRMING THAT THE WORK MAY BE ACCOMPLISHED AS SHOWN PRIOR TO PROCEEDING WITH CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO THE COMMENCEMENT OF WORK.

3. CONTRACTOR SHALL NOTIFY ENGINEER OF ALL PRODUCTS OR ITEMS NOTED AS "EXISTING" WHICH ARE NOT FOUND IN THE FIELD.

4. INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND OWNER'S REQUIREMENTS UNLESS SPECIFICALLY OTHERWISE INDICATED OR WHERE LOCAL CODES OR REGULATIONS TAKE PRECEDENCE.

5. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO FABRICATION AND ERECTION OF ANY MATERIAL. ANY UNUSUAL CONDITIONS SHALL BE REPORTED TO THE ATTENTION OF THE ENGINEER.

6. CONTRACTOR SHALL CLEAN AND REMOVE DEBRIS AND SEDIMENT DEPOSITED ON PUBLIC STREETS, SIDEWALKS, ADJACENT AREAS, OR OTHER PUBLIC WAYS DUE TO CONSTRUCTION.

7. CONTRACTOR SHALL INCORPORATE PROVISIONS AS NECESSARY IN CONSTRUCTION TO PROTECT EXISTING STRUCTURES, PHYSICAL FEATURES, AND MAINTAIN SITE STABILITY DURING CONSTRUCTION. CONTRACTOR SHALL RESTORE ALL AREAS TO ORIGINAL CONDITION AND AS DIRECTED BY DESIGN DRAWINGS.

8. SITE CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS PRIOR TO CONSTRUCTION.

9. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH "MAINE EROSION AND SEDIMENT CONTROL BMPS" PUBLISHED BY THE BUREAU OF LAND AND WATER QUALITY OF THE MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION, LATEST EDITION. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO POSSESS A COPY OF THE EROSION CONTROL PLAN AT ALL TIMES.

10. THE CONTRACTOR IS HEREBY CAUTIONED THAT ALL SITE FEATURES SHOWN HEREON ARE BASED ON FIELD OBSERVATIONS BY THE SURVEYOR AND BY INFORMATION PROVIDED BY UTILITY COMPANIES. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR SHALL CONTACT DIG SAFE (811) AT LEAST THREE (3) BUT NOT MORE THAN THIRTY (30) DAYS PRIOR TO COMMENCEMENT OF EXCAVATION OR DEMOLITION TO VERIFY HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITIES.

11. CONTRACTOR SHALL BE AWARE THAT DIG SAFE ONLY NOTIFIES ITS "MEMBER" UTILITIES ABOUT THE DIG. WHEN NOTIFIED, DIG SAFE WILL ADVISE CONTRACTOR OF MEMBER UTILITIES IN THE AREA. CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING AND CONTACTING NON-MEMBER UTILITIES DIRECTLY. NON-MEMBER UTILITIES MAY INCLUDE TOWN OR CITY WATER AND SEWER DISTRICTS AND SMALL LOCAL UTILITIES, AS WELL AS USG PUBLIC WORKS SYSTEMS.

12. CONTRACTORS SHALL BE RESPONSIBLE FOR COMPLIANCE WITH THE REQUIREMENTS OF 23 MRSA 3360-A. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH THE APPROPRIATE UTILITIES TO OBTAIN AUTHORIZATION PRIOR TO RELOCATION OF ANY EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THESE PLANS. IF A UTILITY CONFLICT ARISES, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER, THE MUNICIPALITY AND APPROPRIATE UTILITY COMPANY PRIOR TO PROCEEDING WITH ANY RELOCATION.

13. ALL PAVEMENT MARKINGS AND DIRECTIONAL SIGNAGE SHOWN ON THE PLAN SHALL CONFORM TO THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) STANDARDS.

14. ALL PAVEMENT JOINTS SHALL BE SAWCUT PRIOR TO PAVING TO PROVIDE A DURABLE AND UNIFORM JOINT.

15. NO HOLES, TRENCHES OR STRUCTURES SHALL BE LEFT OPEN OVERNIGHT IN ANY EXCAVATION ACCESSIBLE TO THE PUBLIC OR IN PUBLIC RIGHTS-OF-WAY.

16. ALL WORK WITHIN THE PUBLIC RIGHT-OF-WAY SHALL REQUIRE A M.D.O.T. PERMIT AS WELL AS PERMITS FROM THE CITY AS APPLICABLE.

17. THE PROPOSED LIMITS OF CLEARING SHOWN HEREON ARE APPROXIMATE BASED UPON THE PROPOSED LIMITS OF SITE GRADING. THE APPLICANT RESERVES THE RIGHT TO PERFORM NORMAL FOREST MANAGEMENT ACTIVITIES OUTSIDE OF THE CLEARING LIMIT AS SHOWN. TREE REMOVAL OUTSIDE OF THE LIMITS OF CLEARING MAY BE NECESSARY TO REMOVE DEAD OR DYING TREES OR TREE LIMBS. THIS REMOVAL IS DUE TO POTENTIAL SAFETY HAZARDS AND TO PROMOTE PROPER FOREST GROWTH.

18. IMMEDIATELY UPON COMPLETION OF CUTS/FILLS, THE CONTRACTOR SHALL STABILIZE DISTURBED AREAS IN ACCORDANCE WITH EROSION CONTROL NOTES AND AS SPECIFIED ON PLANS.

19. THE CONTRACTOR SHALL BE FULLY AND SOLELY RESPONSIBLE FOR THE REMOVAL, REPLACEMENT AND RECTIFICATION OF ALL DAMAGED AND DEFECTIVE MATERIAL AND WORKMANSHIP IN CONNECTION WITH THE CONTRACT WORK. THE CONTRACTOR SHALL REPLACE OR REPAIR AS DIRECTED BY THE OWNER ALL SUCH DAMAGED OR DEFECTIVE MATERIALS WHICH APPEAR WITHIN A PERIOD OF ONE YEAR FROM THE DATE OF SUBSTANTIAL COMPLETION.

20. ALL WORK PERFORMED BY THE GENERAL CONTRACTOR AND/OR TRADE SUBCONTRACTOR SHALL CONFORM TO THE REQUIREMENTS OF LOCAL, STATE OR FEDERAL LAWS, AS WELL AS ANY OTHER GOVERNING REQUIREMENTS, WHETHER OR NOT SPECIFIED ON THE DRAWINGS.

21. WHERE THE TERMS "APPROVED EQUAL", "OTHER APPROVED", "EQUAL TO", "ACCEPTABLE" OR OTHER GENERAL QUALIFYING TERMS ARE USED IN THESE NOTES, IT SHALL BE UNDERSTOOD THAT REFERENCE IS MADE TO THE RULING AND JUDGMENT OF SEBAGO TECHNICS, INC.

22. THE GENERAL CONTRACTOR SHALL PROVIDE ALL NECESSARY PROTECTION FOR THE WORK UNTIL TURNED OVER TO THE OWNER.

23. THE GENERAL CONTRACTOR SHALL MAINTAIN A CURRENT AND COMPLETE SET OF CONSTRUCTION DRAWINGS ON SITE DURING ALL PHASES OF CONSTRUCTION FOR USE OF ALL TRADES.

24. THE CONTRACTOR SHALL TAKE FULL RESPONSIBILITY FOR ANY CHANGES AND DEVIATION OF APPROVED PLANS NOT AUTHORIZED BY THE ARCHITECT/ENGINEER AND/OR CLIENT/OWNER.

25. DETAILS ARE INTENDED TO SHOW END RESULT OF DESIGN. ANY MODIFICATION TO SUIT FIELD DIMENSION AND CONDITION SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO ANY WORK.

26. BEFORE THE FINAL ACCEPTANCE OF THE PROJECT, THE CONTRACTOR SHALL REMOVE ALL EQUIPMENT AND MATERIALS, REPAIR OR REPLACE PRIVATE OR PUBLIC PROPERTY WHICH MAY HAVE BEEN DAMAGED OR DESTROYED DURING CONSTRUCTION, CLEAN THE AREAS WITHIN AND ADJACENT TO THE PROJECT WHICH HAVE BEEN OBSTRUCTED BY HIS/HER OPERATIONS, AND LEAVE THE PROJECT AREA NEAT AND PRESENTABLE.

27. ALL SUBSURFACE UTILITY LINES SHOWN HEREON ARE BASED SOLELY ON THE FIELD LOCATION OF VISIBLE STRUCTURES, SMH'S, CB'S, HYDRANTS, ETC., IN CONJUNCTION WITH DESIGN AND OR AS-BUILT PLANS SUPPLIED TO SEBAGO TECHNICS INC. BY OTHERS. PRIOR TO ANY CONSTRUCTION, EXCAVATION, TEST BORINGS, DRILLING, ETC.. DIG SAFE MUST BE NOTIFIED AND A SITE IDENTIFICATION NUMBER ALONG WITH A SAFE TO DIG DATE OBTAINED. THE SITE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFYING THE LOCATION, DEPTH AND MATERIAL OF ALL SUBSURFACE UTILITY LINES SHOWN HEREON AND ANY AND ALL OTHERS LOCATED ON SITE WITHIN THE CONSTRUCTION AREA.

GRAPHIC SCALE
30 0 15 30 60
(IN FEET)
1 INCH = 30 FT.

LEGEND

EXISTING		PROPOSED
	PROPERTY LINE/R.O.W.	
	ABUTTER LINE/R.O.W.	
	DEED LINE/R.O.W.	
	SETBACK	
	EASEMENT	
⊙	IRON PIPE/ROD	
	BUILDING	
	EDGE PAVEMENT	
	PAVEMENT SAWCUT	
	EDGE GRAVEL	
	CURB LINE	
--120-- --118--	CONTOURS	120
×120.00	SPOT GRADE	+120.00
	SIGN	
G	GAS	G
	GAS GATE VALVE	
GM	GAS METER	
W	WATER	W
	WATER GATE VALVE	
S	SANITARY SEWER	S
Ⓢ	SANITARY MANHOLE	
SD	STORM DRAIN	SD
UD	UNDER DRAIN	UD
	DRAINAGE MANHOLE	
▤	CATCH BASIN	
OHU	OVERHEAD UTILITY	OHU
UGU	UNDERGROUND UTILITY	UGU
Ⓔ	ELECTRICAL MANHOLE	
EM	ELECTRIC METER	
	LIGHT POLE	
	UTILITY POLE	
	GUY WIRE	
	FILTER BARRIER	FB

JAMES R. SEYMOUR, PE 9984
STATE OF MAINE — JAMES R. SEYMOUR No. 9984 — REGISTERED PROFESSIONAL ENGINEER
9-18-18

DESIGNED	CHECKED
JRS	JRS

REV.:	BY:	DATE:	STATUS:
A	JRS	09-18-18	LEVEL III SITE PLAN SUBMISSION TO THE CITY

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.

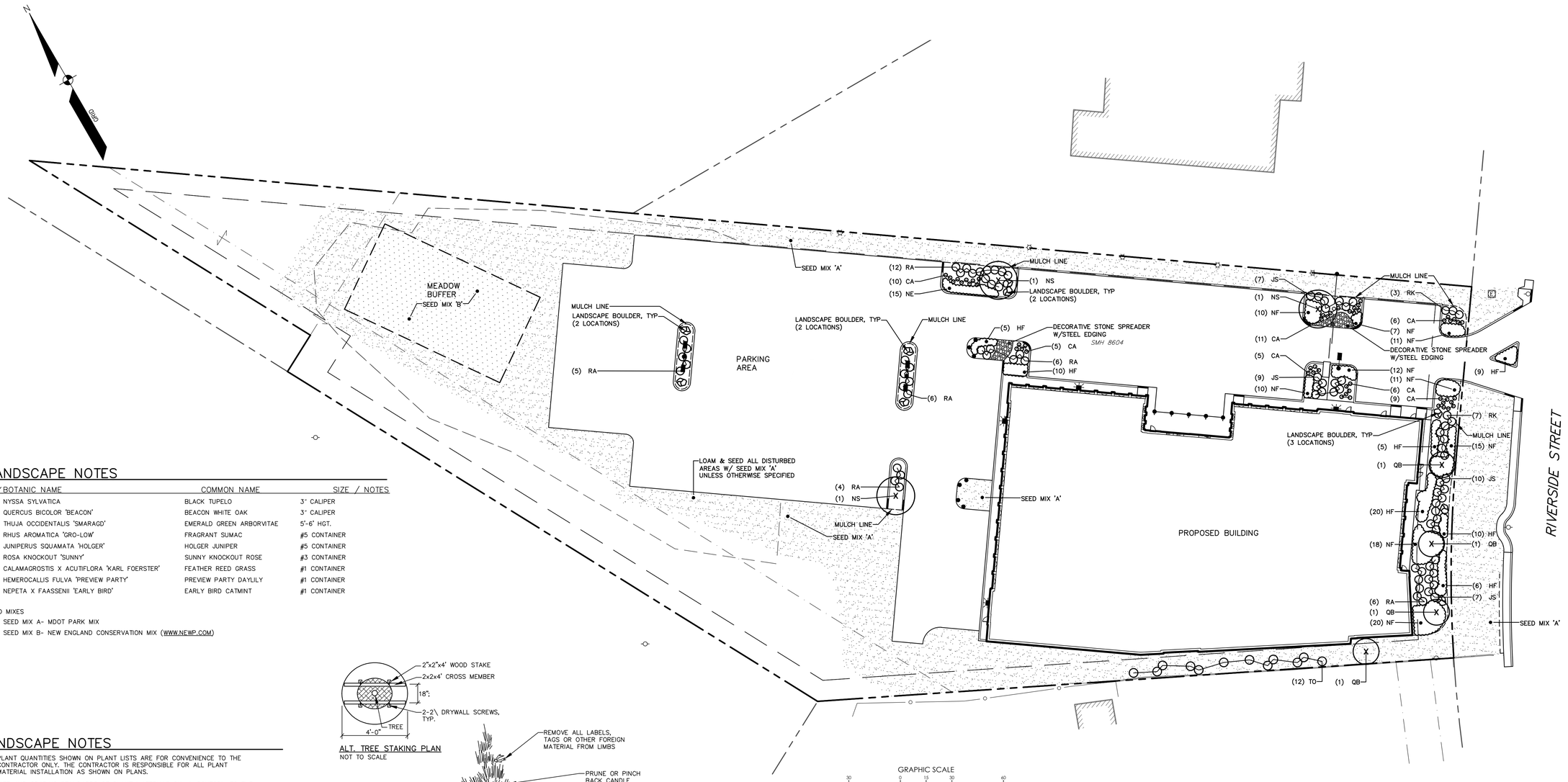
SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd.
Suite 4A
South Portland, ME 04106
Tel: 207-200-2100

GRADING AND UTILITY PLAN
OF:
PATAGON STORAGE
150 RIVERSIDE ST
PORTLAND, MAINE
FOR:
PATAGON STORAGE, LLC
1700 MAIN STREET, SUITE 70
WASHOUGAL, WASHINGTON

PROJECT NO.	SCALE
17500	1" = 30'

SHEET 4 OF 8

17500GU.dwg, TAB: GU



GRAPHIC SCALE

30 0 15 30 60

(IN FEET)
1 INCH = 30 FT.

LANDSCAPE NOTES

KEY	BOTANIC NAME	COMMON NAME	SIZE / NOTES
NS	NYSSA SYLVATICA	BLACK TUPELO	3" CALIPER
QB	QUERCUS BICOLOR 'BEACON'	BEACON WHITE OAK	3" CALIPER
TO	THUJA OCCIDENTALIS 'SMARAGD'	EMERALD GREEN ARBORVITAE	5'-6' HGT.
RA	RHUS AROMATICA 'GRO-LOW'	FRAGRANT SUMAC	#5 CONTAINER
JS	JUNIPERUS SQUAMATA 'HOLGER'	HOLGER JUNIPER	#5 CONTAINER
RK	ROSA KNOCKOUT 'SUNNY'	SUNNY KNOCKOUT ROSE	#3 CONTAINER
CA	CALAMAGROSTIS X ACUTIFLORA 'KARL FOERSTER'	FEATHER REED GRASS	#1 CONTAINER
HF	HEMEROCALLIS FULVA 'PREVIEW PARTY'	PREVIEW PARTY DAYLILY	#1 CONTAINER
NF	NEPETA X FAASSENII 'EARLY BIRD'	EARLY BIRD CATMINT	#1 CONTAINER

SEED MIXES

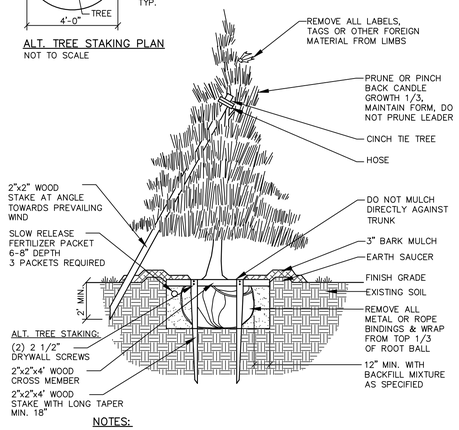
SEED MIX A- MDOT PARK MIX

SEED MIX B- NEW ENGLAND CONSERVATION MIX (WWW.NEWP.COM)

LANDSCAPE NOTES

1. PLANT QUANTITIES SHOWN ON PLANT LISTS ARE FOR CONVENIENCE TO THE CONTRACTOR ONLY. THE CONTRACTOR IS RESPONSIBLE FOR ALL PLANT MATERIAL INSTALLATION AS SHOWN ON PLANS.
2. SIZE AND GRADING STANDARDS OF PLANT MATERIALS SHALL CONFORM TO THE LATEST EDITION OF "U.S.A. STANDARD FOR NURSERY STOCK," BY THE AMERICAN ASSOCIATION OF NURSERYMEN, INC.
3. ALL PLANT MATERIAL SHALL BE FREE FROM INSECTS AND DISEASE.
4. ALL PLANTING SHALL BE DONE IN ACCORDANCE WITH ACCEPTABLE HORTICULTURAL PRACTICES. THIS IS TO INCLUDE PROPER PLANTING MIX, PLANT BED AND TREE PIT PREPARATION, PRUNING, STAKING OR GUYING, WRAPPING, SPRAYING, FERTILIZATION, PLANTING AND ADEQUATE MAINTENANCE UNTIL ACCEPTANCE BY THE OWNER.
5. PLANT MATERIAL SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR BY THE CONTRACTOR AND A PERIOD OF TWO YEARS THEREAFTER BY THE OWNER FROM DATE OF INSTALLATION. DURING THE ONE YEAR GUARANTEE PERIOD, DEAD PLANT MATERIAL SHALL BE REPLACED AT NO COST TO THE OWNER. AT THE END OF THE ONE YEAR PERIOD, THE CONTRACTOR SHALL OBTAIN FINAL ACCEPTANCE FROM THE OWNER.
6. ALL GRASS, OTHER VEGETATION AND DEBRIS SHALL BE REMOVED FROM ALL PLANTING AREAS PRIOR TO PLANTING.
7. EXISTING TREES TO BE PRESERVED WILL BE PROTECTED DURING CONSTRUCTION AND SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR.
8. THE LANDSCAPE CONTRACTOR IS ADVISED OF THE PRESENCE OF THE UNDERGROUND UTILITIES AND SHALL VERIFY THE EXISTENCE AND LOCATION OF SAME BEFORE COMMENCING AND DIGGING OPERATIONS. THE LANDSCAPE CONTRACTOR SHALL REPLACE OR REPAIR UTILITIES, PAVING, WALKS, CURBING, ETC. DAMAGED IN PERFORMANCE OF THIS JOB AT NO ADDITIONAL COST TO THE OWNER.
9. ALL SHRUB BEDS SHALL BE MULCHED WITH 3" CLEAN SHREDDED DARK BROWN BARK MULCH.
10. THE CONTRACTOR SHALL PROVIDE 4" LOAM FOR ALL AREAS TO BE SODDED OR SEEDED. PLANTING AREAS SHALL RECEIVE 12" ROLLED THICKNESS OF LOAM. THE LANDSCAPE CONTRACTOR SHALL COORDINATE SUBGRADE PREPARATION WITH THE GENERAL CONTRACTOR PRIOR TO PLACING LOAM.
11. ANY DEVIATION FROM THE LANDSCAPE PLAN, INCLUDING PLANT LOCATION, SELECTION, SIZE, QUANTITY OR CONDITION SHALL BE REVIEWED AND APPROVED BY THE OWNER AND LANDSCAPE ARCHITECT (AND MUNICIPAL AUTHORITY, IF APPLICABLE) PRIOR TO INSTALLATION ON SITE.
12. WHERE INDICATED ON PLAN, PLANTING SOIL MIXTURE FOR PERENNIAL AND ANNUAL FLOWER BED AREAS SHALL CONSIST OF FOUR PARTS TOPSOIL, TWO PARTS SPHAGNUM PEAT MOSS, AND ONE PART HORTICULTURAL PERLITE BY VOLUME. PEAT MOSS MAY BE SUBSTITUTED WITH WELL-ROTTED OR DEHYDRATED MANURE OR COMPOST. ROTOTILL BEDS TO A DEPTH OF 8 INCHES.

ALT. TREE STAKING PLAN
NOT TO SCALE

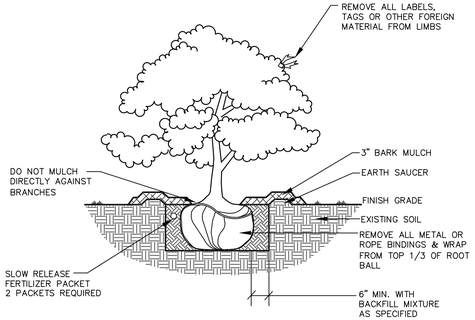


NOTES:

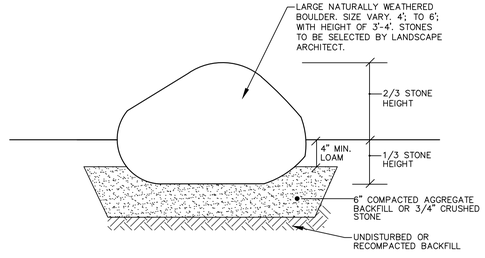
INSTALL STAKES AND GUYS TO TREES IF THE FOLLOWING APPLY:

1. THE TREE IS OF SUBSTANTIAL SIZE.
2. THE PLANTING LOCATION IS EXTREMELY WINDY, AS ON OPEN UNDEVELOPED SITES.
3. THE PLANTING LOCATION IS COMPRISED OF SAND OR OTHER LOOSE TEXTURED SOILS.
4. IF STAKES AND GUYS ARE REQUIRED, REMOVE AFTER ONE YEAR TIME.

DECIDUOUS TREES
EVERGREEN TREES 7'-0" IN HEIGHT & UNDER
NOT TO SCALE



DECIDUOUS & EVERGREEN SHRUB
NOT TO SCALE



BOULDER INSTALLATION
NOT TO SCALE

LEGEND

EXISTING		PROPOSED
	PROPERTY LINE/R.O.W.	
	ABUTTER LINE/R.O.W.	
	DEED LINE/R.O.W.	
	SETBACK	
	EASEMENT	
	BUILDING	
	EDGE PAVEMENT	
	PAVEMENT SAWCUT	
	PAVEMENT PAINT	
	EDGE GRAVEL	
	CURB LINE	
	CHAIN LINK FENCE	
	DECIDUOUS TREE	
	CONIFEROUS TREE	
	MULCH LINE	
	SIGN	
E	ELECTRICAL MANHOLE	
	UTILITY POLE	

REGISTERED LANDSCAPE ARCHITECT
STEPHEN G. DOE
No. 531
STATE OF MAINE

DESIGNED	CHECKED
DMD	SGD

REV.	BY:	DATE:	STATUS
A	DMD	09-18-18	LEVEL III SITE PLAN SUBMISSION OT THE CITY

REVISED PLANS ARE ISSUED 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
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75 John Roberts Rd.
Suite 4A
South Portland, ME 04106
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LANDSCAPE PLAN
OF:
PATAGON STORAGE
150 RIVERSIDE ST
PORTLAND, MAINE
FOR:
PATAGON STORAGE, LLC
1700 MAIN STREET, SUITE 70
WASHAUGAL, WASHINGTON

PROJECT NO.	SCALE
17500	1" = 30'

SHEET 5 OF 8

17500LD.dwg, TAB:1

EROSION CONTROL MEASURES

PRE-CONSTRUCTION PHASE

PRIOR TO THE BEGINNING OF ANY CONSTRUCTION, SEDIMENT BARRIERS (SILT FENCE) WILL BE STAKED/INSTALLED ACROSS THE SLOPE(S), ON THE CONTOUR AT OR JUST BELOW THE LIMITS OF CLEARING OR GRUBBING, AND/OR JUST ABOVE ANY ADJACENT PROPERTY LINE OR WATERCOURSE TO PROTECT AGAINST CONSTRUCTION RELATED EROSION. THE PLACEMENT OF SEDIMENT BARRIERS SHALL BE COMPLETED IN ACCORDANCE WITH GUIDELINES ESTABLISHED IN BEST MANAGEMENT PRACTICES AND IN ACCORDANCE WITH THIS EROSION CONTROL PLAN AND DETAILS IN THIS PLAN SET. THIS NETWORK IS TO BE MAINTAINED BY THE CONTRACTOR UNTIL ALL EXPOSED SLOPES HAVE AT LEAST 85%-90% VIGOROUS PERENNIAL VEGETATIVE COVER TO PREVENT EROSION. TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER PERMANENT STABILIZATION IS ATTAINED.

PRIOR TO ANY CLEARING OR GRUBBING, A CONSTRUCTION ENTRANCE/EXIT SHALL BE CONSTRUCTED AT THE INTERSECTION OF THE PROPOSED ENTRANCES AND EXISTING ROADWAY TO AVOID TRACKING OF MUD, DUST AND DEBRIS FROM THE SITE.

PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL PREPARE A DETAILED SCHEDULE AND MARKED UP PLAN INDICATING AREAS AND COMPONENTS OF THE WORK AND KEY DATES SHOWING DATE OF DISTURBANCE AND COMPLETION OF THE WORK. THE CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING WITH THE MUNICIPAL STAFF. THREE COPIES OF THE SCHEDULE AND MARKED UP PLAN SHALL BE PROVIDED TO THE MUNICIPALITY THREE DAYS PRIOR TO THE SCHEDULED PRE-CONSTRUCTION MEETING. SPECIAL ATTENTION SHALL BE GIVEN TO THE 14 DAY LIMIT OF DISTURBANCE IN THE SCHEDULE ADDRESSING TEMPORARY AND PERMANENT VEGETATION MEASURES.

CONSTRUCTION AND POST-CONSTRUCTION PHASE

AREAS UNDERGOING ACTUAL CONSTRUCTION SHALL ONLY EXPOSE THAT AMOUNT OF MINERAL SOIL NECESSARY FOR PROGRESSIVE AND EFFICIENT CONSTRUCTION . AN AREA CONSIDERED OPEN IS ANY AREA NOT STABILIZED WITH PAVEMENT, VEGETATION, MULCHING, EROSION CONTROL MATS, RIPRAP OR GRAVEL BASE ON A ROAD . OPEN AREAS SHALL BE ANCHORED WITH TEMPORARY EROSION CONTROL AS SHOWN ON THE DESIGN PLANS AND AS DESCRIBED WITHIN THIS EROSION CONTROL PLAN WITHIN 14-DAYS OF DISTURBANCE. AREAS LOCATED WITHIN 100' OF STREAMS SHALL BE ANCHORED WITH TEMPORARY EROSION CONTROL WITHIN SEVEN (7) DAYS. REFER TO WINTER EROSION CONTROL NOTES FOR THE TREATMENT OF OPEN AREAS AFTER OCTOBER 1ST OF THE CONSTRUCTION YEAR.

THE CONTRACTOR MUST INSTALL ANY ADDED MEASURES WHICH MAY BE NECESSARY TO CONTROL EROSION/SEDIMENTATION FROM THE SITE DEPENDENT UPON THE ACTUAL SITE AND WEATHER CONDITIONS. CONTINUATION OF EARTHWORK OPERATIONS ON ADDITIONAL AREAS SHALL NOT BEGIN UNTIL THE EXPOSED SOIL SURFACE ON THE AREA BEING WORKED HAS BEEN STABILIZED, IN ORDER TO MINIMIZE AREAS WITHOUT EROSION CONTROL PROTECTION.

EROSION CONTROL APPLICATIONS & MEASURES

THE PLACEMENT OF EROSION CONTROL MEASURES SHALL BE COMPLETED IN ACCORDANCE WITH GUIDELINES ESTABLISHED IN BEST MANAGEMENT PRACTICES AND IN ACCORDANCE WITH THE EROSION CONTROL PLAN AND DETAILS IN THE PLAN SET.

1. TEMPORARY MULCHING:

   ALL DISTURBED AREAS SHALL BE MULCHED WITH MATERIALS SPECIFIED BELOW PRIOR TO ANY STORM EVENT. ALL DISTURBED AREAS NOT FINAL GRADED WITHIN 14 DAYS SHALL BE MULCHED. ALSO, AREAS, WHICH HAVE BEEN TEMPORARILY OR PERMANENTLY SEEDED, SHALL BE MULCHED IMMEDIATELY FOLLOWING SEEDING. EROSION CONTROL BLANKETS ARE RECOMMENDED TO BE USED AT THE BASE OF GRASSED WATERWAYS AND ON SLOPES GREATER THAN 15%. MULCH ANCHORING SHOULD BE USED ON SLOPES GREATER THAN 5% AFTER SEPTEMBER 15TH OF THE CONSTRUCTION YEAR (SEE WINTER EROSION CONTROL NOTES).
   TYPES OF MULCH:
   HAY OR STRAW: SHALL BE APPLIED AT A RATE OF 75 LBS/1,000 S.F. (1.5 TONS PER ACRE).
   EROSION CONTROL MIX: SHALL BE PLACED EVENLY AND MUST PROVIDE 100% SOIL COVERAGE. EROSION CONTROL MIX SHALL BE APPLIED SUCH THAT THE THICKNESS ON SLOPES 3:1 OR LESS IS 2 INCHES PLUS 1/2 INCH PER 20 FEET OF SLOPE UP TO 100 FEET. THE THICKNESS ON SLOPES BETWEEN 3:1 AND 2:1 SHALL BE 4 INCHES PLUS 1/2 INCH PER 20 FEET OF SLOPE UP TO 100 FEET. THIS SHALL NOT BE USED ON SLOPES GREATER THAN 2:1.
   EROSION CONTROL BLANKET: SHALL BE INSTALLED SUCH THAT CONTINUOUS CONTACT BETWEEN THE MAT AND THE SOIL IS OBTAINED. INSTALL BLANKETS AND STAPLE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

2. SOIL STOCKPILES:

   STOCKPILES OF SOIL OR SUBSOIL SHALL BE MULCHED WITH HAY OR STRAW AT A RATE OF 75 LBS/1,000 S.F. (1.5 TONS PER ACRE) OR WITH A FOUR-INCH LAYER OF WOOD WASTE EROSION CONTROL MIX. THIS WILL BE DONE WITHIN 24 HOURS OF STOCKING AND RE-ESTABLISHED PRIOR TO ANY RAINFALL. ANY SOIL STOCKPILE WILL NOT BE PLACED (EVEN COVERED WITH HAY OR STRAW) WITHIN 100 FEET FROM ANY NATURAL RESOURCES.

3. NATURAL RESOURCES PROTECTION:

   ANY AREAS WITHIN 100 FEET FROM ANY NATURAL RESOURCES, IF NOT STABILIZED WITH A MINIMUM OF 75% MATURE VEGETATION CATCH, SHALL BE MULCHED USING TEMPORARY MULCHING (AS DESCRIBED IN PART 1. OF THIS SECTION) WITHIN 7 DAYS OF EXPOSURE OR PRIOR TO ANY STORM EVENT. SEDIMENT BARRIERS (AS DESCRIBED IN PART 4. OF THIS SECTION) SHALL BE PLACED BETWEEN ANY NATURAL RESOURCE AND THE DISTURBED AREA.
   PROJECTS CROSSING THE NATURAL RESOURCE SHALL BE PROTECTED A MINIMUM DISTANCE OF 100 FEET ON EITHER SIDE FROM THE RESOURCE.

4. SEDIMENT BARRIERS:

   PRIOR TO THE BEGINNING OF ANY CONSTRUCTION, SEDIMENT BARRIERS SHALL BE STAKED ACROSS THE SLOPE(S), ON THE CONTOUR AT OR JUST BELOW THE LIMITS OF CLEARING OR GRUBBING, AND/OR JUST ABOVE ANY ADJACENT PROPERTY LINE OR WATERCOURSE TO PROTECT AGAINST CONSTRUCTION RELATED EROSION. SEDIMENT BARRIERS SHALL BE MAINTAINED BY THE CONTRACTOR UNTIL ALL EXPOSED SLOPES HAVE AT LEAST 85%-90% VIGOROUS PERENNIAL VEGETATIVE COVER TO PREVENT EROSION.

   SILT FENCE: SHALL BE INSTALLED PER THE DETAIL ON THE PLANS. THE EFFECTIVE HEIGHT OF THE FENCE SHALL NOT EXCEED 36 INCHES. IT IS RECOMMENDED THAT SILT FENCE BE REMOVED BY CUTTING THE FENCE MATERIALS AT GROUND LEVEL SO AS TO AVOID ADDITIONAL SOIL DISTURBANCE.

   HAY BALES: SHALL BE INSTALLED PER THE DETAIL ON THE PLANS. BALES SHALL BE WIRE-BOUND OR STRING-TIED AND THESE BINDINGS MUST REMAIN PARALLEL WITH THE GROUND SURFACE DURING INSTALLATION TO PREVENT DETERIORATION OF THE BINDINGS. BALES SHALL BE INSTALLED WITHIN A MINIMUM 4 INCH DEEP TRENCH LINE WITH ENDS OF ADJACENT BALES TIGHTLY ABUTTING ONE ANOTHER.

   EROSION CONTROL MIX: SHALL BE INSTALLED PER THE DETAIL ON THE PLANS. THE MIX SHALL CONSIST PRIMARILY OF ORGANIC MATERIAL AND CONTAIN A WELL-GRADED MIXTURE OF PARTICLE SIZES AND MAY CONTAIN ROCKS LESS THAN 4 INCHES IN DIAMETER. THE MIX COMPOSITION SHALL MEET THE STANDARDS DESCRIBED WITHIN THE MDEP BEST MANAGEMENT PRACTICES. NO TRENCHING IS REQUIRED FOR INSTALLATION OF THIS BARRIER.

   CONTINUOUS CONTAINED BERM: SHALL BE INSTALLED PER THE DETAIL ON THE PLANS. THIS SEDIMENT BARRIER IS EROSION CONTROL MIX PLACED WITHIN A SYNTHETIC TUBULAR NETTING AND PERFORMS AS A STURDY SEDIMENT BARRIER THAT WORKS WELL ON HARD GROUND SUCH AS FROZEN CONDITIONS, TRAVELED AREAS OR PAVEMENT. NO TRENCHING IS REQUIRED FOR INSTALLATION OF THIS BARRIER.

5. TEMPORARY CHECK DAMS:

   SHALL BE INSTALLED PER THE DETAIL ON THE PLANS. CHECK DAMS ARE TO BE PLACED WITHIN DITCHES/ SWALES AS SPECIFIED ON THE DESIGN PLANS IMMEDIATELY AFTER FINAL GRADING. CHECK DAMS SHALL BE 2 FEET HIGH. TEMPORARY CHECK DAMS MAY BE REMOVED ONLY AFTER THE ROADWAYS ARE PAVED AND THE VEGETATED SWALE ARE ESTABLISHED WITH AT LEAST 85%-90% OF VIGOROUS PERENNIAL GROWTH. THE AREA BENEATH THE CHECK DAM MUST BE SEEDED AND MULCHED IMMEDIATELY AFTER REMOVAL OF THE CHECK DAM.

   STONE CHECK DAMS: SHOULD BE CONSTRUCTED OF 2 TO 3 INCH STONE AND PLACED SUCH THAT COMPLETE COVERAGE OF THE SWALE IS OBTAINED AND THAT THE CENTER OF THE DAM IS 6 INCHES LOWER THAT THE OUTER EDGES.

   HAY BALE CHECK DAMS: WE DO NOT RECOMMEND THE USE OF HAY BALES AS CHECK DAMS.

   MANUFACTURED CHECK DAMS: MANUFACTURED CHECK DAMS, AS SPECIFIED IN THE DETAIL ON THE PLANS, MAY BE USED IF AUTHORIZED BY THE PROPER LOCAL, STATE OR FEDERAL REGULATING AGENCIES. THESE UNITS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURE'S RECOMMENDATIONS.

6. STORMDRAIN INLET PROTECTION:

   INLET PROTECTION SHALL BE PLACED AROUND A STORMDRAIN DROP INLETOR CURB INLET PRIOR TO PERMANENT STABILIZATION OF THE IMMEDIATE AND UPSTREAM DISTURBED AREAS. THEY SHALL BE CONSTRUCTED IN A MANNER THAT WILL FACILITATE CLEAN-OUT AND DISPOSAL OF TRAPPED SEDIMENTS AND MINIMIZE INTERFERENCE WITH CONSTRUCTION ACTIVITIES. ANY RESULTANT PONDING OF WATER FROM THE PROTECTION METHOD MUST NOT CAUSE EXCESSIVE INCONVENIENCE OR DAMAGE TO ADJACENT AREAS OR STRUCTURES.

   HAY BALE DROP INLET PROTECTION: WE DO NOT RECOMMEND THE USE OF HAY BALES AS INLET PROTECTION.

   CONCRETE BLOCK AND STONE INLET SEDIMENT FILTER (DROP OR CURB INLET): SHALL BE INSTALLED PER THE DETAIL ON THE PLANS. THE HEIGHT OF THE CONCRETE BLOCK BARRIER CAN VARY BUT MUST BE BETWEEN 12 AND 24 INCHES TALL. A MINIMUM OF 1 INCH CRUSHED STONE SHALL BE USED.

   MANUFACTURED SEDIMENT BARRIERS AND FILTER (DROP OR CURB INLET): MANUFACTURED FILTERS, AS SPECIFIED IN THE DETAIL ON THE PLANS, MAY BE USED IF INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

7. STABILIZED CONSTRUCTION ENTRANCE/EXIT:

   PRIOR TO CLEARING AND/OR GRUBBING THE SITE A STABILIZED CONSTRUCTION ENTRANCE/EXIT SHALL BE CONSTRUCTED WHEREVER TRAFFIC WILL EXIT THE CONSTRUCTION SITE ONTO A PAVED ROADWAY IN ORDER TO MINIMIZE THE TRACKING OF SEDIMENT AND DEBRIS FROM THE CONSTRUCTION SITE ONTO PUBLIC ROADWAYS. THE ENTRANCES AND ADJACENT ROADWAY AREAS SHALL BE PERIODICALLY SWEPT OR WASHED TO FURTHER MINIMIZE THE TRACKING OF MUD, DUST OR DEBRIS FROM THE CONSTRUCTION AREA. STABILIZED CONSTRUCTION EXITS SHALL BE CONSTRUCTED IN AREAS SPECIFIED ON THE PLANS AND AS DETAILED ON THE PLANS.

8. DUST CONTROL:

   DUST CONTROL DURING CONSTRUCTION SHALL BE ACHIEVED BY THE USE OF A WATERING TRUCK TO PERIODICALLY SPRINKLE THE EXPOSED ROADWAY AREAS AS NECESSARY TO REDUCE DUST DURING THE DRY MONTHS. APPLYING OTHER DUST CONTROL PRODUCTS SUCH AS CALCIUM CHLORIDE OR OTHER MANUFACTURED PRODUCTS ARE ALLOWED IF AUTHORIZED BY THE PROPER LOCAL, STATE AND/OR FEDERAL REGULATING AGENCIES. HOWEVER, IT IS THE CONTRACTOR'S ULTIMATE RESPONSIBILITY TO MITIGATE DUST AND SOIL LOSS FROM THE SITE.

9. TEMPORARY VEGETATION:

   TEMPORARY VEGETATION SHALL BE APPLIED TO DISTURBED AREAS THAT WILL NOT RECEIVE FINAL GRADING FOR PERIODS UP TO 12 MONTHS. THIS PROCEDURE SHOULD BE USED EXTENSIVELY IN AREAS ADJACENT TO NATURAL RESOURCES. SEEDBED PREPARATION AND APPLICATION OF SEED SHALL BE CONDUCTED AS INDICATED IN THE PERMANENT VEGETATION SECTION OF THIS NARRATIVE. SPECIFIC SEEDS (FAST GROWING AND SHORT LIVING) SHALL BE SELECTED FROM THE MAINE EROSION AND SEDIMENT CONTROL BMP MANUAL DATED 3/2003 OR LATER. ALTERNATIVE EROSION CONTROL MEASURES SHOULD BE USED IF SEEDING CAN NOT BE DONE BEFORE SEPTEMBER 15TH OF THE CONSTRUCTION YEAR.

10. PERMANENT VEGETATION:

    REVEGETATION MEASURES SHALL COMMENCE IMMEDIATELY UPON COMPLETION OF FINAL GRADING OF AREAS TO BE LOAMED AND SEEDED. THE APPLICATION OF SEED SHALL BE CONDUCTED BETWEEN APRIL 1ST AND OCTOBER 1ST OF THE CONSTRUCTION YEAR, PLEASE REFER TO THE WINTER EROSION CONTROL NOTES FOR MORE DETAIL. REVEGETATION MEASURES SHALL CONSIST OF THE FOLLOWING:

SEEDBED PREPARATION:

A. FOUR (4) INCHES OF LOAM SHALL BE SPREAD OVER DISTURBED AREAS AND SMOOTHED TO A UNIFORM SURFACE. LOAM SHALL BE FREE OF SUBSOIL, CLAY LUMPS, STONES AND OTHER OBJECTS OVER 2 INCHES OR LARGER IN ANY DIMENSION, AND WITHOUT WEEDS, ROOTS OR OTHER OBJECTIONABLE MATERIAL.

B. SOILS TESTS SHALL BE TAKEN AT THE TIME OF SOIL STRIPPING TO DETERMINE FERTILIZATION REQUIREMENTS. SOILS TESTS SHALL BE TAKEN PROMPTLY AS TO NOT INTERFERE WITH THE 14-DAY LIMIT ON SOIL EXPOSURE. BASED UPON TEST RESULTS, SOIL AMENDMENTS SHALL BE INCORPORATED INTO THE SOIL PRIOR TO FINAL SEEDING. IN LIEU OF SOIL TESTS, SOIL AMENDMENTS MAY BE APPLIED AS FOLLOWS:

ITEM	APPLICATION RATE
10-20-20 FERTILIZER (N-P205-K20 OR EQUAL)	18.4 LBS./1,000 S.F.
GROUND LIMESTONE (50% CALCIUM & MAGNESIUM OXIDE)	138 LBS./1,000 S.F.

C. WORK LIME AND FERTILIZER INTO THE SOIL AS NEARLY AS PRACTICAL TO A DEPTH OF 4 INCHES WITH PROPER EQUIPMENT. ROLL THE AREA TO FIRM THE SEEDBED EXCEPT ON CLAY OR SILTY SOILS OR COARSE SAND.

APPLICATION OF SEED:

A. SEEDING: SHALL BE CONDUCTED BETWEEN APRIL 1ST AND OCTOBER 1ST OF THE CONSTRUCTION YEAR. GENERALLY A SEED MIXTURE MAY BE APPLIED AS FOLLOWS: (MDEP SEED MIX 2 IS DISPLAYED)

SEED TYPE	APPLICATION RATE
CREEPING RED FESCUE	0.46 LBS/1,000 S.F. (20 LBS/ACRE)
REDTOP	0.05 LBS/1,000 S.F. (2 LBS/ACRE)
TALL FESCUE	0.46 LBS/1,000 S.F. (20 LBS/ACRE)
TOTAL:	0.97 LBS/1,000 S.F. (42 LBS/ACRE)

NOTE: A SPECIFIC SEED MIXTURE SHOULD BE CHOSEN TO MATCH THE SOILS CONDITION OF THE SITE. VARIOUS AGENCIES CAN RECOMMEND SEED MIXTURES. MDEP RECOMMENDED SEED MIXTURES ARE IN THE EROSION AND SEDIMENT CONTROL BMP MANUAL DATED 3/2003 OR LATER.

B. HYDROSEEDING: SHALL BE CONDUCTED ON PREPARED AREAS WITH SLOPES LESS THAN 2:1. LIME AND FERTILIZER MAY BE APPLIED SIMULTANEOUSLY WITH THE SEED. RECOMMENDED SEEDING RATES MUST BE INCREASED BY 10% WHEN HYDROSEEDING.

C. MULCHING: SHALL COMMENCE IMMEDIATELY AFTER SEED IS APPLIED. REFER TO THE TEMPORARY MULCHING SECTION OF THIS NARRATIVE FOR DETAILS.

SODDING:

FOLLOWING SEEDBED PREPARATION, SOD CAN BE APPLIED IN LIEU OF SEEDING IN AREAS WHERE IMMEDIATE VEGETATION IS MOST BENEFICIAL SUCH AS DITCHES, AROUND STORMWATER DROP INLETS AND AREAS OF AESTHETIC VALUE. SOD SHOULD BE LAID AT RIGHT ANGLES TO THE DIRECTION OF FLOW, STARTING AT THE LOWEST ELEVATION. SOD SHOULD BE ROLLED OR TAMPED DOWN TO EVEN OUT THE JOINTS ONCE LAID DOWN. WHERE FLOW IS PREVALENT THE SOD MUST BE PROPERLY ANCHORED DOWN. IRRIGATE THE SOD IMMEDIATELY AFTER INSTALLATION. IN MOST CASES, SOD CAN BE ESTABLISHED BETWEEN APRIL 1ST AND NOVEMBER 15TH OF THE CONSTRUCTION YEAR, HOWEVER, REFER TO THE WINTER EROSION CONTROL NOTES FOR ANY ACTIVITIES AFTER OCTOBER 1ST.

TRENCH DEWATERING AND TEMPORARY STREAM DIVERSION:

WATER FROM CONSTRUCTION TRENCH DEWATERING OR TEMPORARY STREAM DIVERSION WILL PASS FIRST THROUGH A FILTER BAG OR SECONDARY CONTAINMENT STRUCTURE (E.G. HAY BALE LINED POOL) PRIOR TO DISCHARGE. THE DISCHARGE SITE SHALL BE SELECTED TO AVOID FLOODING AND SEDIMENT DISCHARGES TO A PROTECTED RESOURCE. IN NO CASE SHALL THE FILTER BAG OR CONTAINMENT STRUCTURE BE LOCATED WITHIN 100 FEET OF A PROTECTED NATURAL RESOURCE.

STANDARDS FOR TIMELY STABILIZATION:

STANDARD FOR THE TIMELY STABILIZATION OF DISTURBED SLOPES -- THE CONTRACTOR WILL CONSTRUCT AND STABILIZE STONE-COVERED SLOPES BY NOVEMBER 15. THE CONTRACTOR WILL SEED AND MULCH ALL SLOPES TO BE VEGETATED BY SEPTEMBER 15. THE MDEP WILL CONSIDER ANY AREA HAVING A GRADE GREATER THAN 15% (6.67H:1V) TO BE A SLOPE. IF THE CONTRACTOR FAILS TO STABILIZE ANY SLOPE TO BE VEGETATED BY SEPTEMBER 15, THEN THE CONTRACTOR WILL TAKE ONE OF THE FOLLOWING ACTIONS TO STABILIZE THE SLOPE FOR LATE FALL AND WINTER.

A. STABILIZE THE SOIL WITH TEMPORARY VEGETATION AND EROSION CONTROL MATS -- BY OCTOBER 1 THE CONTRACTOR WILL SEED THE DISTURBED SLOPE WITH WINTER RYE AT A SEEDING RATE OF 3 POUNDS PER 1,000 SQUARE FEET AND APPLY EROSION CONTROL MATS OVER THE MULCHED SLOPE. THE CONTRACTOR WILL MONITOR GROWTH OF THE RYE OVER THE NEXT 30 DAYS. IF THE RYE FAILS TO GROW AT LEAST THREE INCHES OR COVER AT LEAST 75% OF THE DISTURBED SLOPE BY NOVEMBER 1, THEN THE APPLICANT WILL COVER THE SLOPE WITH A LAYER OF WOOD WASTE COMPOST AS DESCRIBED IN ITEM 2(C.) OF THIS STANDARD OR WITH STONE RIPRAP AS DESCRIBED IN ITEM 2(D.) OF THIS STANDARD.
B. STABILIZE THE SLOPE WITH SOD -- THE CONTRACTOR WILL STABILIZE THE DISTURBED SLOPE WITH PROPERLY INSTALLED SOD BY NOVEMBER 15. PROPER INSTALLATION INCLUDES THE APPLICANT 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 APPLICANT WILL NOT USE LATE-SEASON SOD INSTALLATION TO STABILIZE SLOPES HAVING A GRADE GREATER THAN 33% (3H:1V).
C. STABILIZE THE SLOPE WITH WOOD WASTE COMPOST -- THE CONTRACTOR WILL PLACE A SIX-INCH LAYER OF WOOD WASTE COMPOST ON THE SLOPE BY NOVEMBER 15. PRIOR TO PLACING THE WOOD WASTE COMPOST, THE APPLICANT WILL REMOVE ANY SNOW ACCUMULATION ON THE DISTURBED SLOPE. THE APPLICANT WILL NOT USE WOOD WASTE COMPOST TO STABILIZE SLOPES HAVING GRADES GREATER THAN 50% (2H:1V) OR HAVING GROUNDWATER SEEPS ON THE SLOPE FACE.
D. STABILIZE THE SLOPE WITH STONE RIPRAP -- THE CONTRACTOR WILL PLACE A LAYER OF STONE RIPRAP ON THE SLOPE BY NOVEMBER 15. THE APPLICANT WILL HIRE A REGISTERED PROFESSIONAL ENGINEER TO DETERMINE THE STONE SIZE NEEDED FOR STABILITY AND TO DESIGN A FILTER LAYER FOR UNDERNEATH THE RIPRAP.

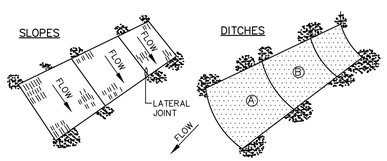
STANDARD FOR THE TIMELY STABILIZATION OF DISTURBED SOILS -- BY SEPTEMBER 15 THE CONTRACTOR WILL SEED AND MULCH ALL DISTURBED SOILS ON AREAS HAVING A SLOPE LESS THAN 15%. IF THE CONTRACTOR FAILS TO STABILIZE THESE SOILS BY THIS DATE, THEN THE CONTRACTOR WILL TAKE ONE OF THE FOLLOWING ACTIONS TO STABILIZE THE SOIL FOR LATE FALL AND WINTER.

A. STABILIZE THE SOIL WITH TEMPORARY VEGETATION -- BY OCTOBER 1 THE CONTRACTOR WILL SEED THE DISTURBED SOIL WITH WINTER RYE AT A SEEDING RATE OF 3 POUNDS PER 1000 SQUARE FEET, LIGHTLY MULCH THE SEEDED SOIL WITH HAY OR STRAW AT 75 POUNDS PER 1000 SQUARE FEET, AND ANCHOR THE MULCH WITH PLASTIC NETTING. THE APPLICANT WILL MONITOR GROWTH OF THE RYE OVER THE NEXT 30 DAYS. IF THE RYE FAILS TO GROW AT LEAST THREE INCHES OR COVER AT LEAST 75% OF THE DISTURBED SOIL BEFORE NOVEMBER 15, THEN THE APPLICANT WILL MULCH THE AREA FOR OVER-WINTER PROTECTION AS DESCRIBED IN ITEM 3(C.) OF THIS STANDARD.
B. STABILIZE THE SOIL WITH SOD -- THE APPLICANT WILL STABILIZE THE DISTURBED SOIL WITH PROPERLY INSTALLED SOD BY OCTOBER 1. PROPER INSTALLATION INCLUDES THE APPLICANT 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.
C. STABILIZE THE SOIL WITH MULCH -- BY NOVEMBER 15 THE APPLICANT WILL MULCH THE DISTURBED SOIL BY SPREADING HAY OR STRAW AT A RATE OF AT LEAST 150 POUNDS PER 1000 SQUARE FEET ON THE AREA SO THAT NO SOIL IS VISIBLE THROUGH THE MULCH. PRIOR TO APPLYING THE MULCH, THE APPLICANT WILL REMOVE ANY SNOW ACCUMULATION ON THE DISTURBED AREA. IMMEDIATELY AFTER APPLYING THE MULCH, THE APPLICANT WILL ANCHOR THE MULCH WITH PLASTIC NETTING TO PREVENT WIND FROM MOVING THE MULCH OFF THE DISTURBED SOIL.

INSPECTIONS/MONITORING:

1. MAINTENANCE MEASURES SHALL BE APPLIED AS NEEDED DURING THE ENTIRE CONSTRUCTION CYCLE. AFTER EACH RAINFALL, SNOW STORM OR PERIOD OF THAWING AND RUNOFF, OR AT LEAST EVERY SEVEN (7) DAYS, THE CONTRACTOR SHALL PERFORM A VISUAL INSPECTION OF ALL INSTALLED EROSION CONTROL MEASURES. THE CONTRACTOR SHALL PERFORM REPAIRS AS NEEDED TO ALLOW CONTINUED PROPER FUNCTIONING OF THE EROSION CONTROL MEASURE. THE CONTRACTOR SHALL PROVIDE THE NECESSARY REGULATING AGENCIES WITH WRITTEN DOCUMENTATION DESCRIBING DATES OF INSPECTIONS AND NECESSARY FOLLOW-UP WORK TO MAINTAIN EROSION CONTROL MEASURES MEETING THE REQUIREMENTS OF THIS PLAN.

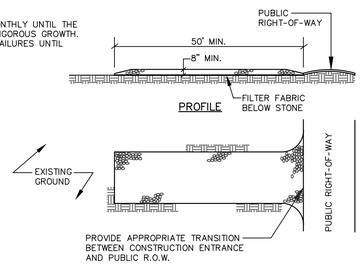
2. FOLLOWING THE TEMPORARY AND/OR FINAL SEEDINGS, THE CONTRACTOR SHALL INSPECT THE WORK AREA SEMIMONTHLY UNTIL THE SEEDINGS HAVE BEEN ESTABLISHED. ESTABLISHED MEANS A MINIMUM OF 85%-90% OF AREAS VEGETATED WITH VIGOROUS GROWTH. RESEEDING SHALL BE CARRIED OUT BY THE CONTRACTOR WITH FOLLOW-UP INSPECTIONS IN THE EVENT OF ANY FAILURES UNTIL VEGETATION IS ADEQUATELY ESTABLISHED.



NOTES:

1. BURY THE TOP END OF THE MESH MATERIAL IN A 6" TRENCH AND BACKFILL AND TAMP TRENCHING SECURE END WITH STAPLES AT 6" SPACING, 4" DOWN FROM EXPOSED END.
2. FLOW DIRECTION JOINTS TO HAVE UPPER END OF LOWER STRIP BURIED WITH UPPER LAYERS OVERLAPPED 4" AND STAPLED. OVERLAP B OVER A.
3. LATERAL JOINTS TO HAVE 4" OVERLAP OF STRIPS. STAPLE 18" ON CENTER.
4. STAPLE OUTSIDE LATERAL EDGE 2" ON CENTER.
5. WIRE STAPLES TO BE MIN OF #11 WIRE 6" LONG AND 1-1/2" WIDE.
6. USE NORTH AMERICAN GREEN DS 150 OR APPROVED EQUAL.

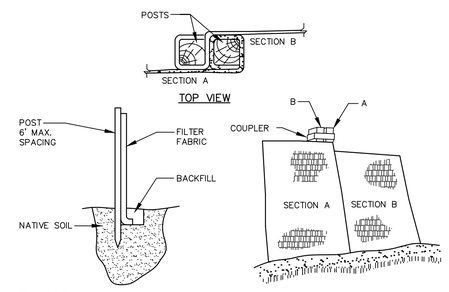
EROSION CONTROL BLANKET
NOT TO SCALE



NOTES:

1. STONE SIZE- AASHTO DESIGNATION M43, SIZE NO. 2 (2 1/2" TO 1 1/2"). USE CRUSHED STONE.
2. LENGTH- AS SHOWN ON PLANS, MIN. 50 FEET.
3. THICKNESS- NOT LESS THAN EIGHT (8) INCHES.
4. WIDTH- NOT LESS THAN FULL WIDTH OF ALL POINT OF INGRESS OR EGRESS.
5. MAINTENANCE- THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHT-OF-WAY MUST BE REMOVED IMMEDIATELY.

STABILIZED CONSTRUCTION ENTRANCE
NOT TO SCALE



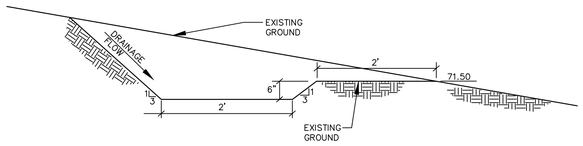
INSTALLATION:

1. EXCAVATE A 6"x 6" 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.
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 ACCOMPLISHED BY LAYING THE FABRIC FLAP ON UNDISTURBED GROUND AND PILING AND TAMPING FILL AT THE BASE, BUT MUST BE ACCOMPANIED BY AN INTERCEPTION DITCH.
5. JOIN SECTION AS SHOWN ABOVE.
6. BARRIER SHALL BE MIRAFI SILT FENCE OR EQUAL.

FILTER BARRIER
NOT TO SCALE

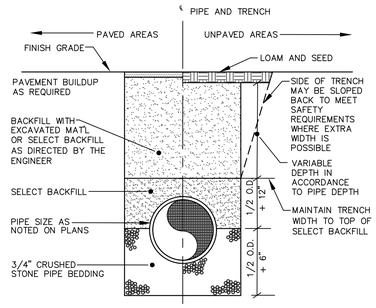
CONSTRUCTION NOTES

1. ALL WORK SHALL CONFORM TO THE APPLICABLE CODES AND ORDINANCES.
2. CONTRACTOR SHALL VISIT THE SITE AND FAMILIARIZE THEMSELVES WITH ALL CONDITIONS AFFECTING THE PROPOSED WORK AND SHALL MAKE PROVISIONS AS TO THE COST THEREOF. CONTRACTOR SHALL BE RESPONSIBLE FOR FAMILIARIZING THEMSELVES WITH ALL CONTRACT DOCUMENTS, FIELD CONDITIONS AND DIMENSIONS AND CONFIRMING THAT THE WORK MAY BE ACCOMPLISHED AS SHOWN PRIOR TO PROCEEDING WITH CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO THE COMMENCEMENT OF WORK.
3. CONTRACTOR SHALL NOTIFY ENGINEER OF ALL PRODUCTS OR ITEMS NOTED AS "EXISTING" WHICH ARE NOT FOUND IN THE FIELD.
4. INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND OWNER'S REQUIREMENTS UNLESS SPECIFICALLY OTHERWISE INDICATED OR WHERE LOCAL CODES OR REGULATIONS TAKE PRECEDENCE.
5. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO FABRICATION AND ERECTION OF ANY MATERIAL. ANY UNUSUAL CONDITIONS SHALL BE REPORTED TO THE ATTENTION OF THE ENGINEER.
6. CONTRACTOR SHALL CLEAN AND REMOVE DEBRIS AND SEDIMENT DEPOSITED ON PUBLIC STREETS, SIDEWALKS, ADJACENT AREAS, OR OTHER PUBLIC WAYS DUE TO CONSTRUCTION.
7. CONTRACTOR SHALL INCORPORATE PROVISIONS AS NECESSARY IN CONSTRUCTION TO PROTECT EXISTING STRUCTURES, PHYSICAL FEATURES, AND MAINTAIN SITE STABILITY DURING CONSTRUCTION. CONTRACTOR SHALL RESTORE ALL AREAS TO ORIGINAL CONDITION AND AS DIRECTED BY DESIGN DRAWINGS.
8. SITE CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS PRIOR TO CONSTRUCTION.
9. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH "MAINE EROSION AND SEDIMENTATION CONTROL HANDBOOK FOR CONSTRUCTION: BEST MANAGEMENT PRACTICES" PUBLISHED BY THE CUMBERLAND COUNTY SOIL AND WATER DISTRICT AND MAINE DEPARTMENT OF ENVIRONMENTAL PROT

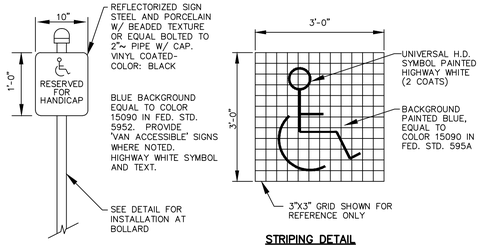


NOTES:
1. CONSTRUCT AN EARTHEN BERM A MINIMUM 6" ABOVE LEVEL LIP THAT EXTENDS AROUND BACK AND SIDES SO THAT STORMWATER RUNOFF IS DIRECTED OVER THE LEVEL LIP.
2. SEE GRADING PLANS FOR LEVEL SPREADER LENGTH.

GRASS BERMED LEVEL LIP SPREADER
NOT TO SCALE

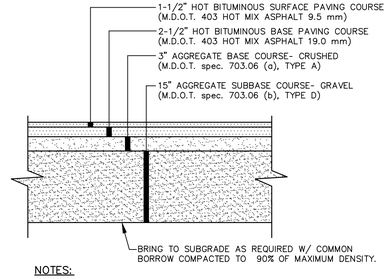


TYPICAL TRENCH SECTION
NOT TO SCALE



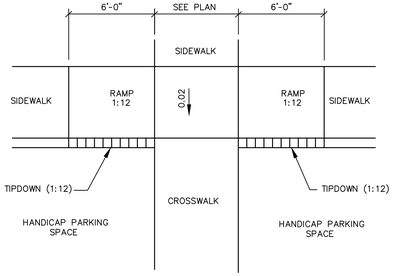
STRIPING DETAIL

HANDICAP SIGNS AND STRIPING
NOT TO SCALE

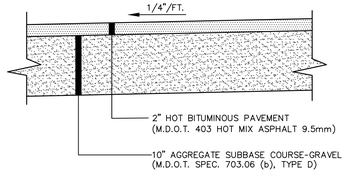


NOTES:
1. COMPACT GRAVEL SUBBASE, BASE COURSE TO 92% OF MAXIMUM DENSITY USING HEAVY ROLLER COMPACTION.
2. CONTRACTOR SHALL SET GRADE STAKES MARKING SUBBASE AND FINISH GRADE ELEVATIONS FOR CONSTRUCTION REFERENCE.
3. CONTRACTOR MAY REPLACE BITUMINOUS PAVING SECTION WITH TWO (2) 1-1/2" LIFTS OF 12.5mm SUPERPAVE MIX. SUBMIT PAVEMENT MIX DESIGN PRIOR TO CONSTRUCTION.

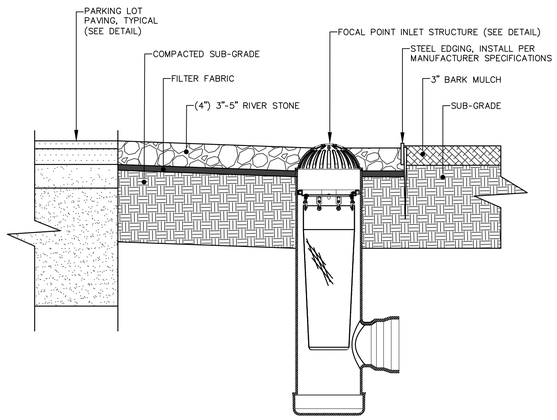
TYP. PAVED PARKING LOT SECTION
NOT TO SCALE



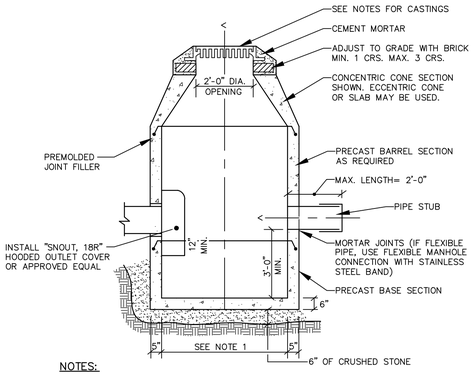
HANDICAP RAMP
NOT TO SCALE



BITUMINOUS SIDEWALK
NOT TO SCALE

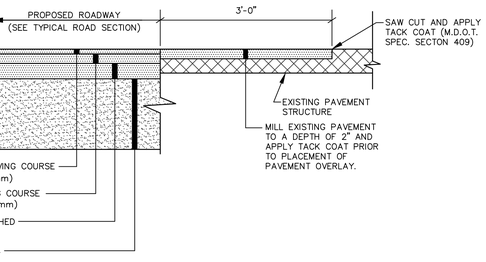


DECORATIVE STONE SPREADER
NOT TO SCALE

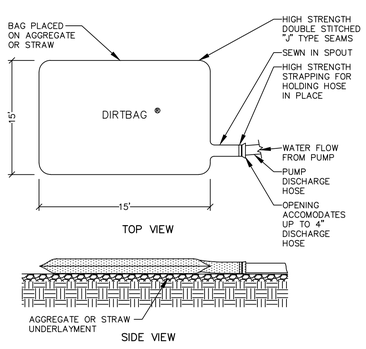


NOTES:
1. 4'-0" I.D. TYPICAL. SOME STRUCTURES MAY REQUIRE LARGER I.D. PROVIDE SHOP DRAWINGS.
2. DRAINAGE STRUCTURES TO BE DESIGNED FOR H-20 LOADING.
3. PIPE SIZES AND INVERTS AS NOTED ON PLANS.
4. CATCH BASIN FRAME AND GRATE TO BE EAST JORDAN FOUNDRY 5250, OR APPROVED EQUAL.
5. DRAIN MANHOLE FRAME AND GRATE TO BE EAST JORDAN FOUNDRY 1080, TYPE A OR APPROVED EQUAL, COVER SHALL BE MARKED "DRAIN".

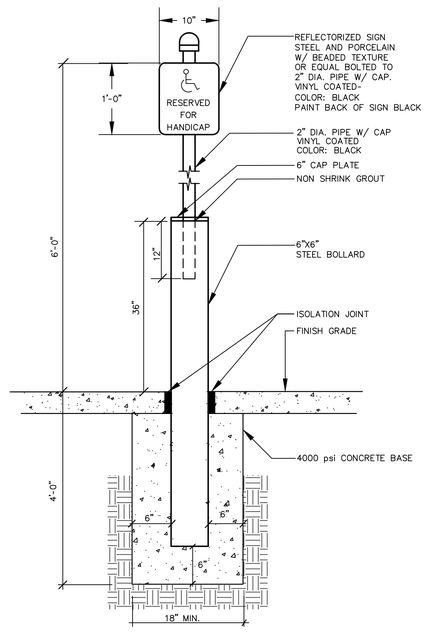
TYPICAL DRAINAGE MANHOLE/CATCH BASIN
NOT TO SCALE



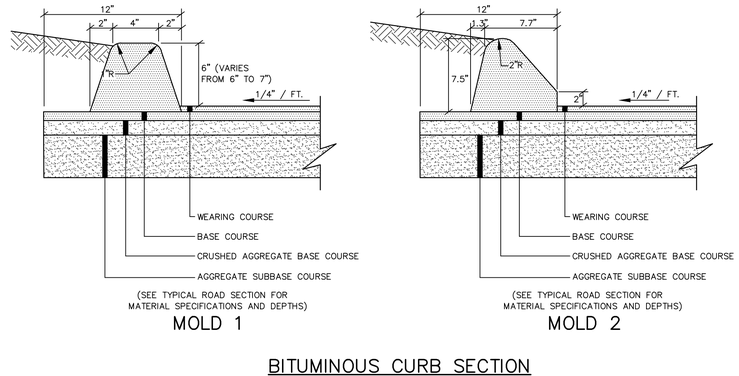
TYPICAL PAVEMENT JOINT
NOT TO SCALE



DIRTBAG PUMPED SILT CONTROL SYSTEM
NOT TO SCALE



STEEL BOLLARD MOUNTED SIGN
NOT TO SCALE



BITUMINOUS CURB SECTION
NOT TO SCALE

JAMES R. SEYMOUR PE 9984
STATE OF MAINE JAMES R. SEYMOUR No. 9984 REGISTERED PROFESSIONAL ENGINEER
9-18-18

DESIGNED	CHECKED
JRS	JRS

REV.	BY:	DATE:	STATUS:
A	JRS	09-18-18	LEVEL III SITE PLAN SUBMISSION TO THE CITY

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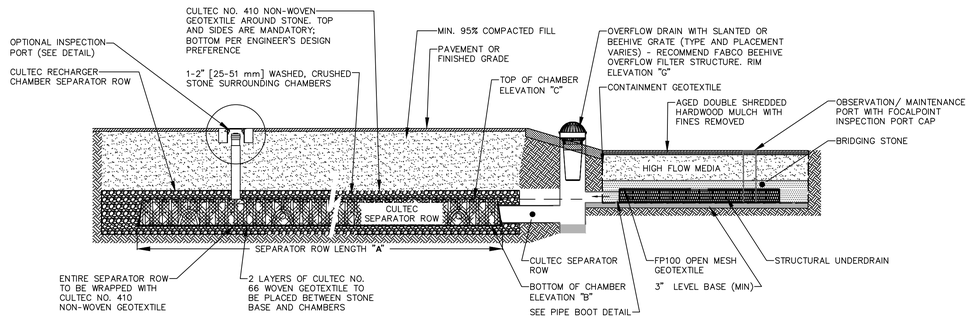
Tel: 207-200-2100

DETAILS
OF:
PATAGON STORAGE
150 RIVERSIDE ST
PORTLAND, MAINE
FOR:
PATAGON STORAGE, LLC
1700 MAIN STREET, SUITE 70
WASHAUGAL, WASHINGTON

PROJECT NO.	SCALE
17500	N.T.S.

SHEET 7 OF 8

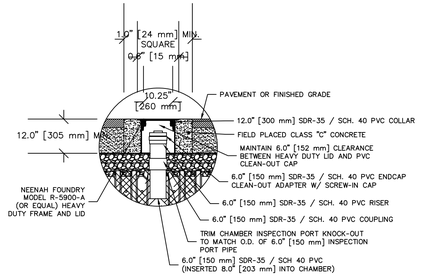
17500D.dwg, TAB:D2



SECTION X-X (NTS)

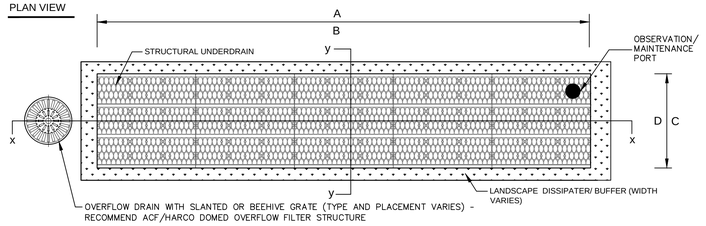
SEPARATOR ROW KEY DIMENSIONAL DATA				
FOCALPOINT I.D.		FP-1	FP-2	FP-3
	CULTEC CHAMBER	150XLHD	150XLHD	150XLHD
	# CULTEC CHAMBERS	1	4	5
A	SEPARATOR ROW LENGTH	51	51	51
B	BOTTOM OF CHAMBER ELEV	67.75	67.75	66.95
C	TOP OF CHAMBER ELEV	69.29	69.29	68.49

SEPARATOR ROW
NOT TO SCALE

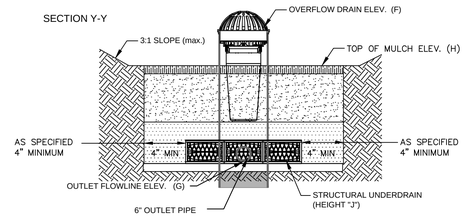


CULTEC SEPARATOR ROW INSPECTION PORT
NOT TO SCALE

PLAN VIEW



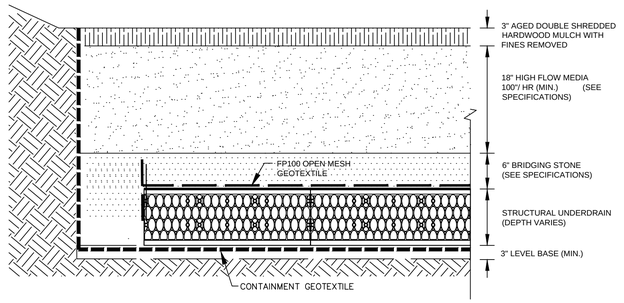
SECTION Y-Y



FOCALPOINT CONSTRUCTION GUIDE
NOT TO SCALE

FOCALPOINT KEY DIMENSIONAL DATA

FOCALPOINT I.D.		FP-1	FP-2	FP-3
A	FOCALPOINT LENGTH	4	5	7
B	# UNDERDRAIN LONG	TBD	TBD	TBD
C	FOCALPOINT WIDTH	5	10	10
D	# UNDERDRAIN WIDE	TBD	TBD	TBD
E	WATER QUALITY VOLUME	155.8	1,076.4	1,414.1
F	OVERFLOW ELEVATION	70.55	70.55	69.32
G	OUTLET FLOWLINE	68.25	67.85	67.02
H	TOP OF MULCH	70.50	70.10	69.27
J	UNDERDRAIN HEIGHT	MINI	MINI	MINI



FOCALPOINT HP PERFORMANCE SPECIFICATION:

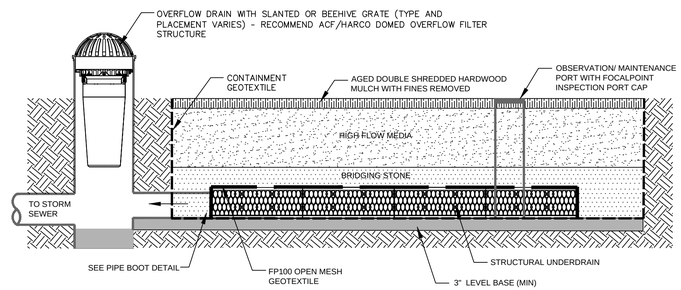
HIGH PERFORMANCE MEDIA

HIGH PERFORMANCE MEDIA MUST MEET A MINIMUM OF 100"PER HOUR INFILTRATION RATE.

HIGH PERFORMANCE STRUCTURAL UNDERDRAIN

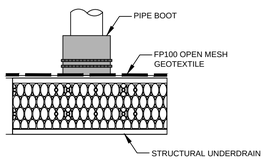
MUST HAVE A MINIMUM OF 19 SQUARE INCHES OF ORIFICE OPENING PER SQUARE FOOT.
MUST MEET H20 LOADING REQUIREMENTS.
MUST BE MODULAR IN NATURE AND ASSEMBLED ON SITE.
MUST HAVE MINIMUM 90% INTERIOR VOID SPACE.

FOCALPOINT DETAILED CROSS SECTION
NOT TO SCALE

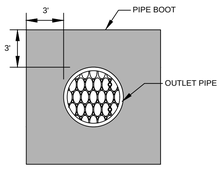


FOCALPOINT SECTION X-X
NOT TO SCALE

OBSERVATION/ MAINTENANCE PORT CONNECTION

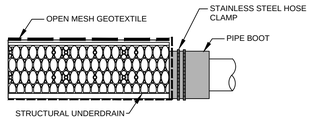


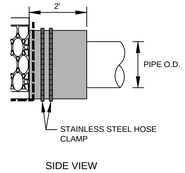
PIPE BOOT DETAIL



FRONT VIEW

OUTLET/ INLET PIPE CONNECTION



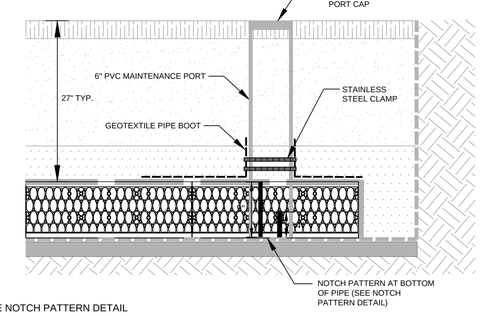


SIDE VIEW

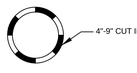
FOCALPOINT PIPE CONNECTION DETAIL
NOT TO SCALE

OBSERVATION/ MAINTENANCE PORT

PORT USED FOR INSPECTION PURPOSES AND FOR SYSTEM MAINTENANCE AS REQUIRED. WATER SHALL BE PUMPED INTO THE SYSTEM AND RESUSPEND ACCUMULATED SEDIMENT. MINIMUM REQUIRED MAINTENANCE INCLUDES A QUARTERLY INSPECTION FOR THE FIRST YEAR OF OPERATION AND A YEARLY INSPECTION THEREAFTER FLUSH AS NEEDED.



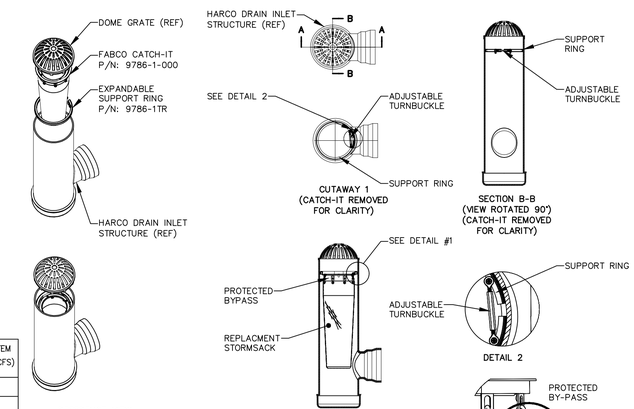
PIPE NOTCH PATTERN DETAIL



FOCALPOINT OBSERVATION PORT DETAIL
NOT TO SCALE

NOTES:
1. STORMSACK WEIGHT (EMPTY): 12 LB MAX
2. MATERIAL:
   A) SHROUD: HIGH DENSITY POLYETHYLENE (TYPICAL WALL THICKNESS .125")
   B) SUPPORT HUB: CRS, POWDER COATED
   C) STORMSACK: WOVEN POLYPROPYLENE GEOTEXTILE (GEOTEX 117F)
   D) HARDWARE: ALUMINUM POP-RIVETS
3. RECOMMENDED MINIMUM VAULT DEPTH: 2-IN BELOW CARTRIDGE
4. TYPICAL INSTALLATION: RAISE STORM GRATE, PUSH CATCH-IT SHROUD DOWN ON FRAME SUPPORT LEDGE UNTIL LOCKING-CLIPS CLICK IN PLACE, LOWER STORM GRATE.
5. USE ONLY WITH FABCO REPLACEABLE STORMSACK.

STRUCTURE DIAMETER (INCHES)	DEBRIS CAPACITY (CF)	FILTERED FLOWRATE (CFS)	BYPASS FLOWRATE (CFS)	TOTAL SYSTEM FLOWRATE (CFS)
12	0.77	2.2	1.2	3.4
18	1.65	2.5	1.0	3.5
24	3.60	4.9	2.4	7.3
30	6.20	4.9	2.4	7.3



ACF/HARCO DOMED OVERFLOW FILTER RISER
NOT TO SCALE

JAMES R. SEYMOUR PE 9984

STATE OF MAINE — JAMES R. SEYMOUR — No. 9984 — REGISTERED PROFESSIONAL ENGINEER — 9-18-18

DESIGNED	CHECKED
JRS	JRS

REV.	BY:	DATE:	STATUS:
A	JRS	09-18-18	LEVEL III SITE PLAN SUBMISSION TO THE CITY

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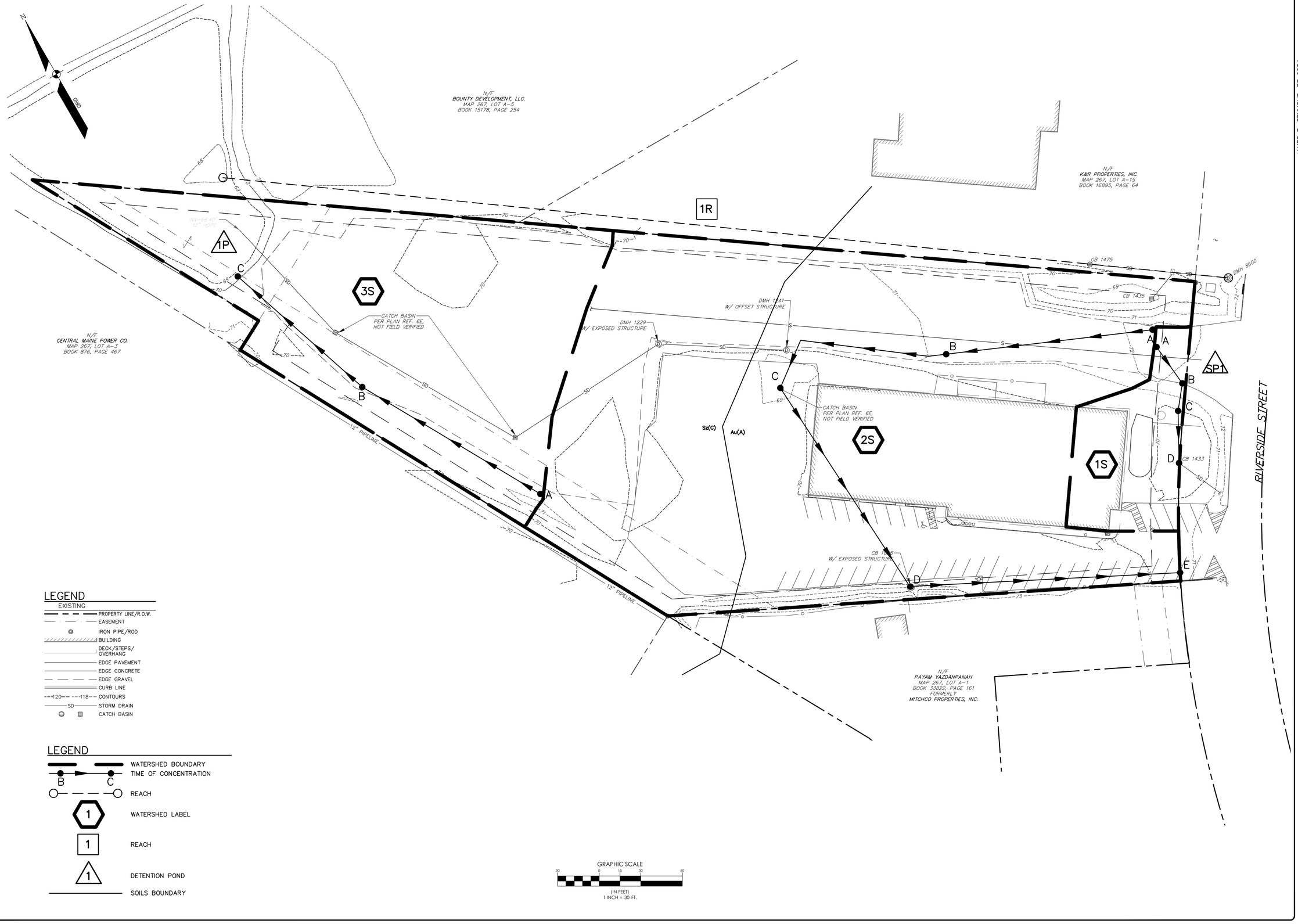
SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd.
Suite 4A
South Portland, ME 04106
Tel: 207-200-2100

DETAILS
OF:
PATAGON STORAGE
150 RIVERSIDE ST
PORTLAND, MAINE
FOR:
PATAGON STORAGE, LLC
1700 MAIN STREET, SUITE 70
WASHAUGAL, WASHINGTON

PROJECT NO.	SCALE
17500	N.T.S.

SHEET 8 OF 8

175000.dwg, TAB:D3



LEGEND

EXISTING

- PROPERTY LINE/R.O.W.
- EASEMENT
- IRON PIPE/ROD
- BUILDING
- DECK/STEPS/ OVERHANG
- EDGE PAVEMENT
- EDGE CONCRETE
- EDGE GRAVEL
- CURB LINE
- 120 118 CONTOURS
- SD STORM DRAIN
- CATCH BASIN

LEGEND

- WATERSHED BOUNDARY
- B C TIME OF CONCENTRATION
- REACH
- 1 WATERSHED LABEL
- 1 REACH
- 1 DETENTION POND
- SOILS BOUNDARY

GRAPHIC SCALE

30 0 15 30 60

(IN FEET)
1 INCH = 30 FT.

JAMES R. SEYMOUR, PE 9984

STATE OF MAINE
JAMES R. SEYMOUR
No. 9984
REGISTERED PROFESSIONAL ENGINEER
09-18-18

DESIGNED	CHECKED
DJS	JRS

REV.	BY:	DATE:	STATUS:
A	JRS	09-18-18	LEVEL III SITE PLAN SUBMISSION TO THE CITY

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SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd.
Suite 4A
South Portland, ME 04106
Tel: 207-200-2100

PRE-DEVELOPMENT WATERSHED MAP

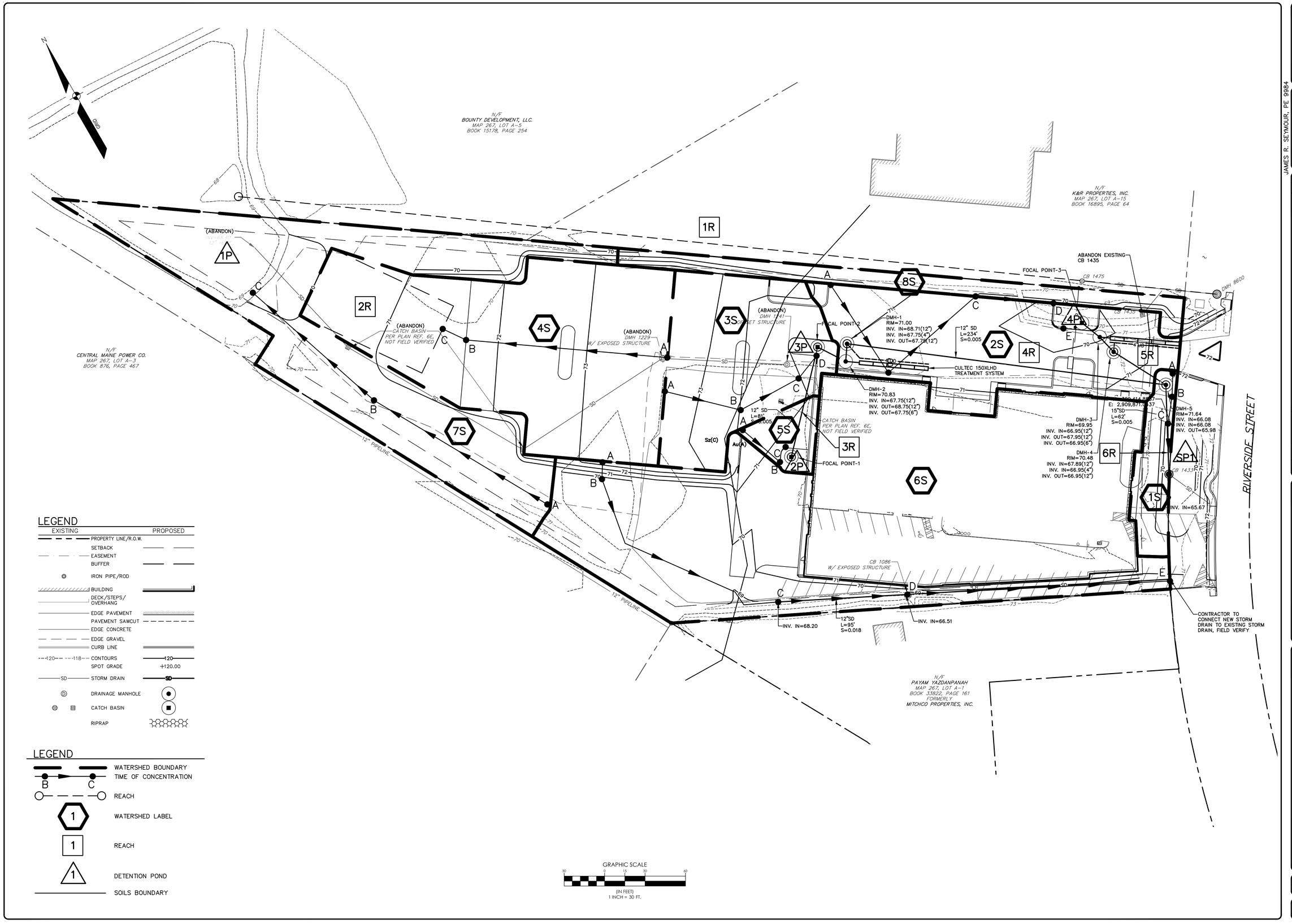
OF:
PATAGON STORAGE
140 & 150 RIVERSIDE STREET
PORTLAND, ME

FOR:
PATAGON STORAGE, LLC.
1700 MAIN ST. - SUITE 70
WASHOUGAL, WA 98671

PROJECT NO.	SCALE
17500	1" = 30'

SHEET 1 OF 2

17500SWP.dwg, TAB:PRE



JAMES R. SEYMOUR, PE 9984

STATE OF MAINE
JAMES R. SEYMOUR
No. 9984
PROFESSIONAL ENGINEER
09-18-18

DESIGNED	CHECKED
DJS	JRS

REV:	BY:	DATE:	STATUS:
A	JRS	09-18-18	LEVEL III SITE PLAN SUBMISSION TO THE CITY

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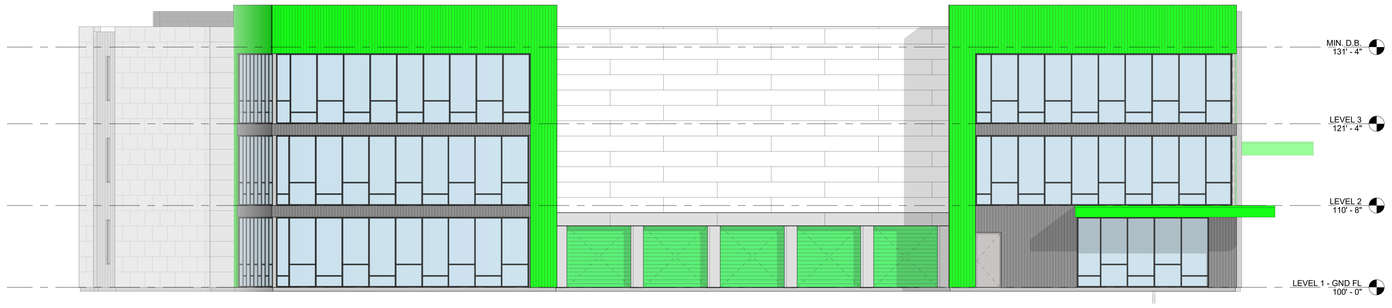
SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd.
Suite 4A
South Portland, ME 04106
Tel. 207-200-2100

POST-DEVELOPMENT WATERSHED MAP
OF:
PATAGON SELF STORAGE
142 & 150 RIVERSIDE STREET
PORTLAND, ME
FOR:
PATAGON STORAGE, LLC.
1700 MAIN ST. - SUITE 70
WASHAUGAL, WA 98671

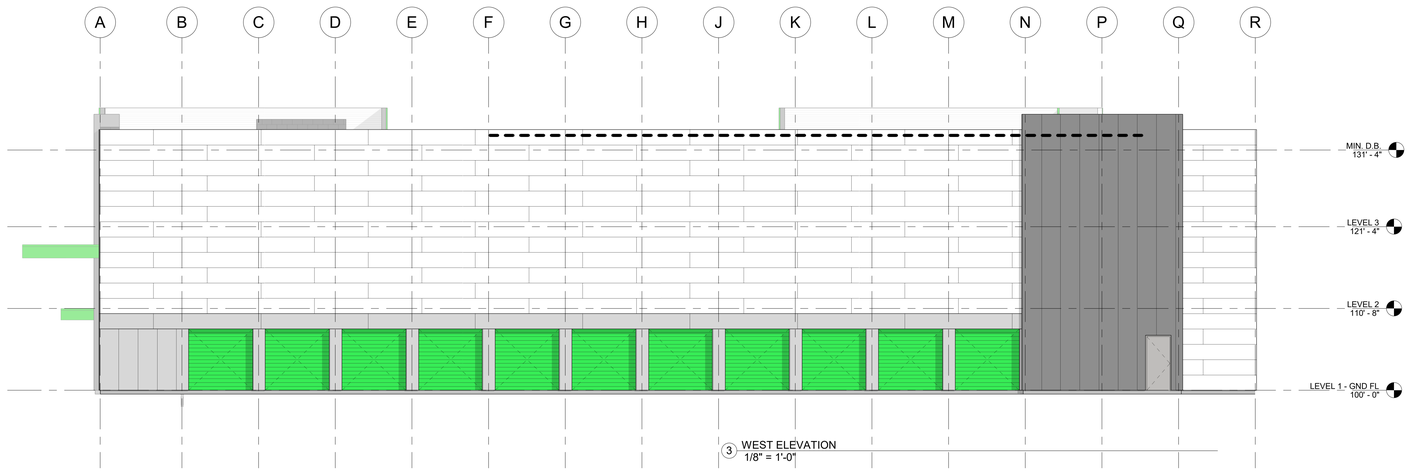
PROJECT NO.	SCALE
17500	1" = 30'

SHEET 2 OF 2

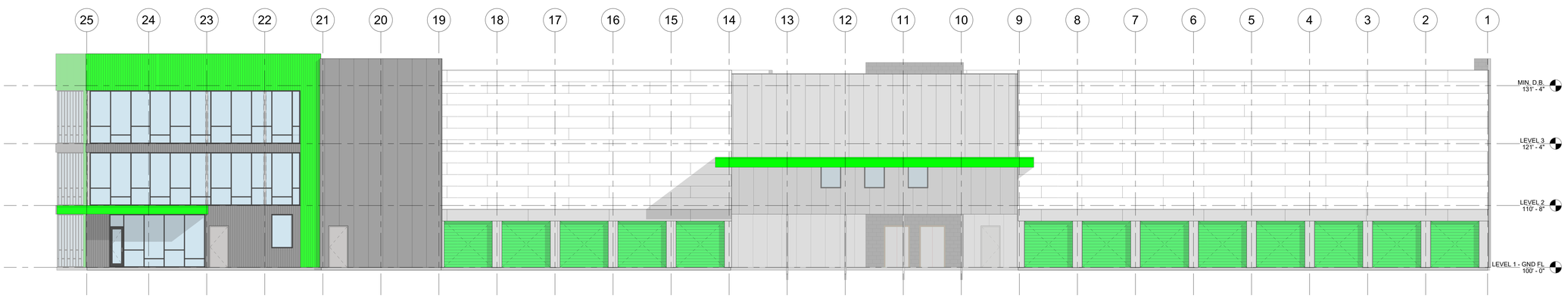
17500SWP.dwg, TAB:POST



1 FRONT (EAST) ELEVATION
1/8" = 1'-0"



3 WEST ELEVATION
1/8" = 1'-0"



2 NORTH ELEVATION
1/8" = 1'-0"

ELEVATION NOTES

1. ALL FIXTURES MOUNTED TO EXTERIOR WALL TO BE ALIGNED VERTICALLY WHERE APPLICABLE

ELEVATION LEGEND

INSULATED METAL PANEL

KEYNOTES

di'velept
454 N 600 W, SLC, UT 84116
e: howdy@divelept.com
p: 801-680-4485
w: www.divelept.com

PORT

REVISIONS:
No. Date Description

PROFESSIONAL SEAL:

OWNER:

PROJECT ADDRESS: PORTLAND, ME

ARCH PROJECT #: 17-31

A.D.R.: Checker

PHASE: BUILDING PERMIT SET

PUBLISH DATE: MARCH 12, 2016

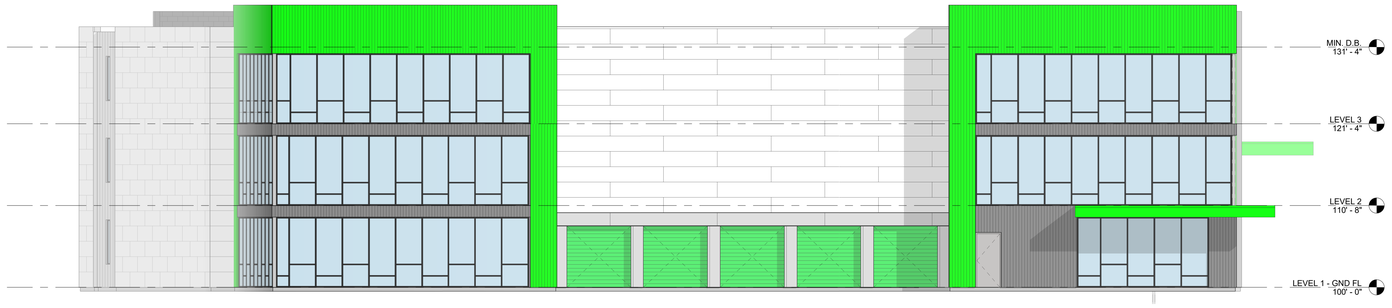
SHEET SCALE: 1/8" = 1'-0"

SHEET NAME:
EXTERIOR ELEVATIONS

SHEET NUMBER:
A200

5/18/2018 12:30:56 PM

DIVELEPT DESIGN LLC © 2017



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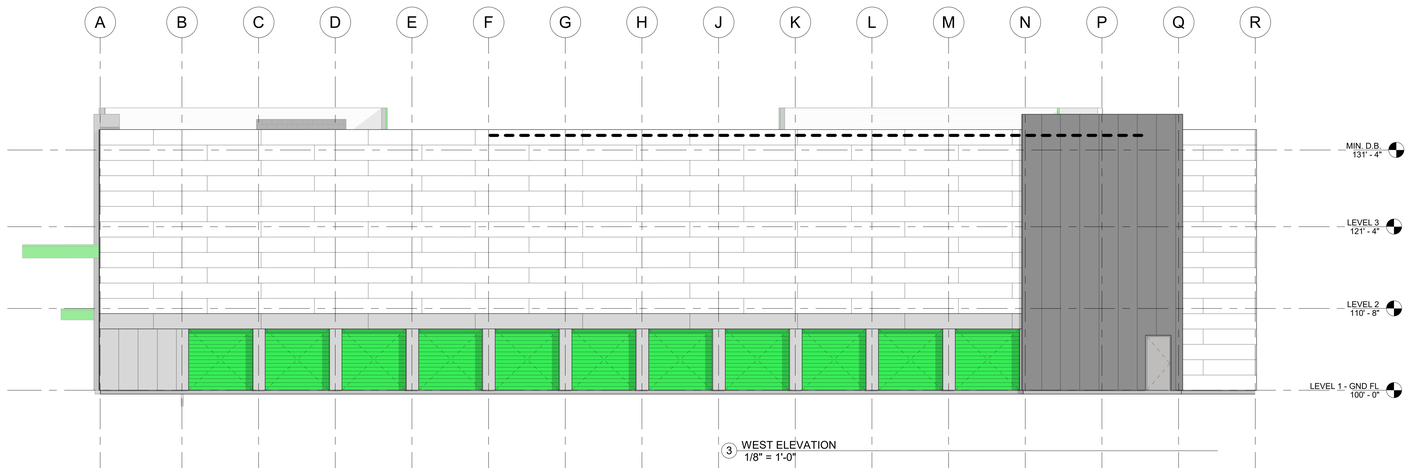

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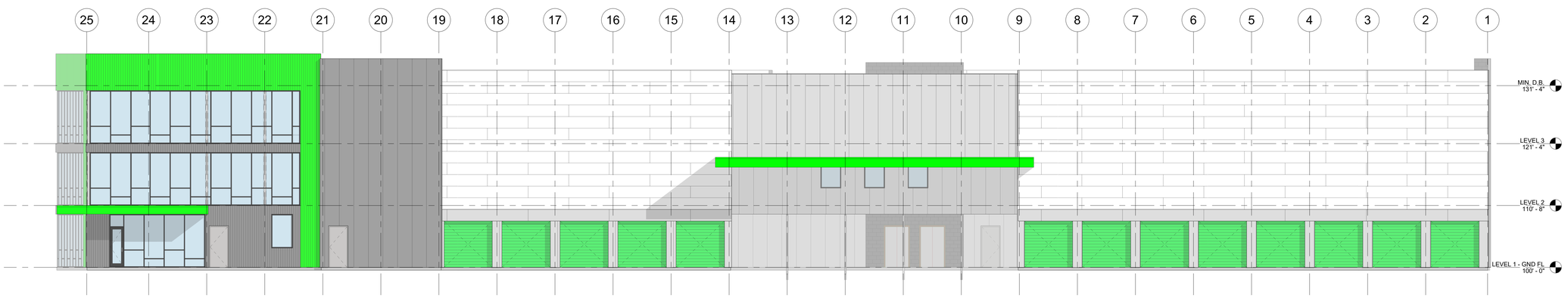

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INSULATED METAL PANEL

KEYNOTES

di'velept
454 N 600 W, SLC, UT 84116
e: howdy@divelept.com
p: 801-680-4485
w: www.divelept.com

PORT

REVISIONS:
No. Date Description

PROFESSIONAL SEAL:

OWNER:

PROJECT ADDRESS: PORTLAND, ME

ARCH PROJECT #: 17-31

A.D.R.: Checker

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EXTERIOR ELEVATIONS

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A200

5/18/2018 12:30:56 PM

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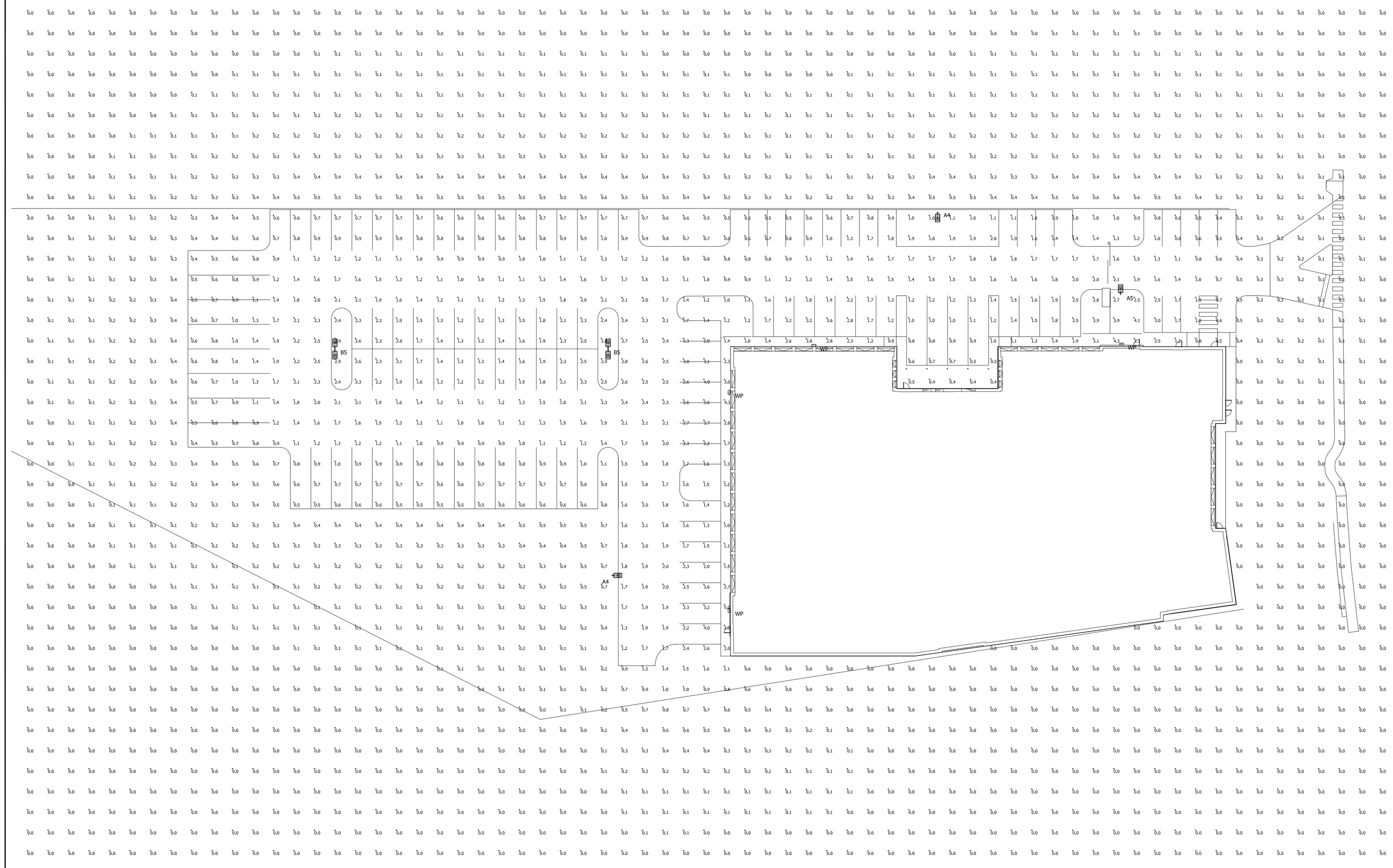


Luminaire Schedule							
Symbol	Label	Qty	Mounting Height	LLF	Watts	Lumens	Description
	A4	2	30' - 0" AFG	0.900	135	17163	VP-L-64L-135-4K7-4W
	A5	1	30' - 0" AFG	0.900	135	17009	VP-L-64L-135-4K7-5W
	B5	2	30' - 0" AFG	0.900	135	17009	VP-L-64L-135-4K7-5W
	WP	4	12' - 0" AFG	0.900	45	3998	LNC2-18LU-4K-4

Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
Overall Area	Illuminance	Fc	0.43	5.0	0.0	N.A.	N.A.
Parking Area	Illuminance	Fc	1.41	4.0	0.4	3.53	10.00

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)

1 inch = 30 - FT.

1. THIS LIGHTING DESIGN IS BASED ON LIMITED INFORMATION SUPPLIED BY OTHERS TO HUBBELL LIGHTING. SITE DETAILS PROVIDED HEREON ARE REPRODUCED ONLY AS A VISUALIZATION AID. FIELD DEVIATIONS MAY SIGNIFICANTLY AFFECT PREDICTED PERFORMANCE. PRIOR TO INSTALLATION, CRITICAL SITE INFORMATION (POLE LOCATIONS, ORIENTATION, MOUNTING HEIGHT, ETC.) SHOULD BE COORDINATED WITH THE CONTRACTOR AND/OR SPECIFIER RESPONSIBLE FOR THE PROJECT.
2. LUMINAIRE DATA IS TESTED TO INDUSTRY STANDARDS UNDER LABORATORY CONDITIONS. OPERATING VOLTAGE AND NORMAL MANUFACTURING TOLERANCES OF LAMP, BALLAST, AND LUMINAIRE MAY AFFECT FIELD RESULTS.
3. CONFORMANCE TO FACILITY CODE AND OTHER LOCAL REQUIREMENTS IS THE RESPONSIBILITY OF THE OWNER AND/OR THE OWNER'S REPRESENTATIVE.

TITLE:

PATAGON STORAGE
WASHAUGAL, WA
SITE LIGHTING PLAN

REVISED FROM DRAWING NUMBER(S):

HUBBELL®
Hubbell Lighting, Inc.
701 MILLENNIUM BLVD.
GREENVILLE, SC 29607

DN BY: DHK	DATE: 09/20/18	CHK BY: N/A
REV. BY:	DATE:	SCALE: AS NOTED
QUOTE: N/A	DRAWING / DESIGN NO.: 1822786	

Construction Management Plan
General Template
Patagon Storage, LLC
142 & 150 Riverside Street

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. Minimizing impacts to areas surrounding the building/construction site will be primary considerations in the process.

The Planning Authority and the Department of Public Works have the right to seek revisions to an approved Construction Management Plan or require a condition of approval that states an applicant shall coordinate a project's construction schedule with the timing of nearby construction activity, in order to avoid cumulative impacts on a neighborhood. Such a condition may involve a delay in commencement of construction, if necessary.

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.
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
    - 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. 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 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 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 some situations, flaggers may be required.
- Police details may be 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 of 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 sight 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. 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

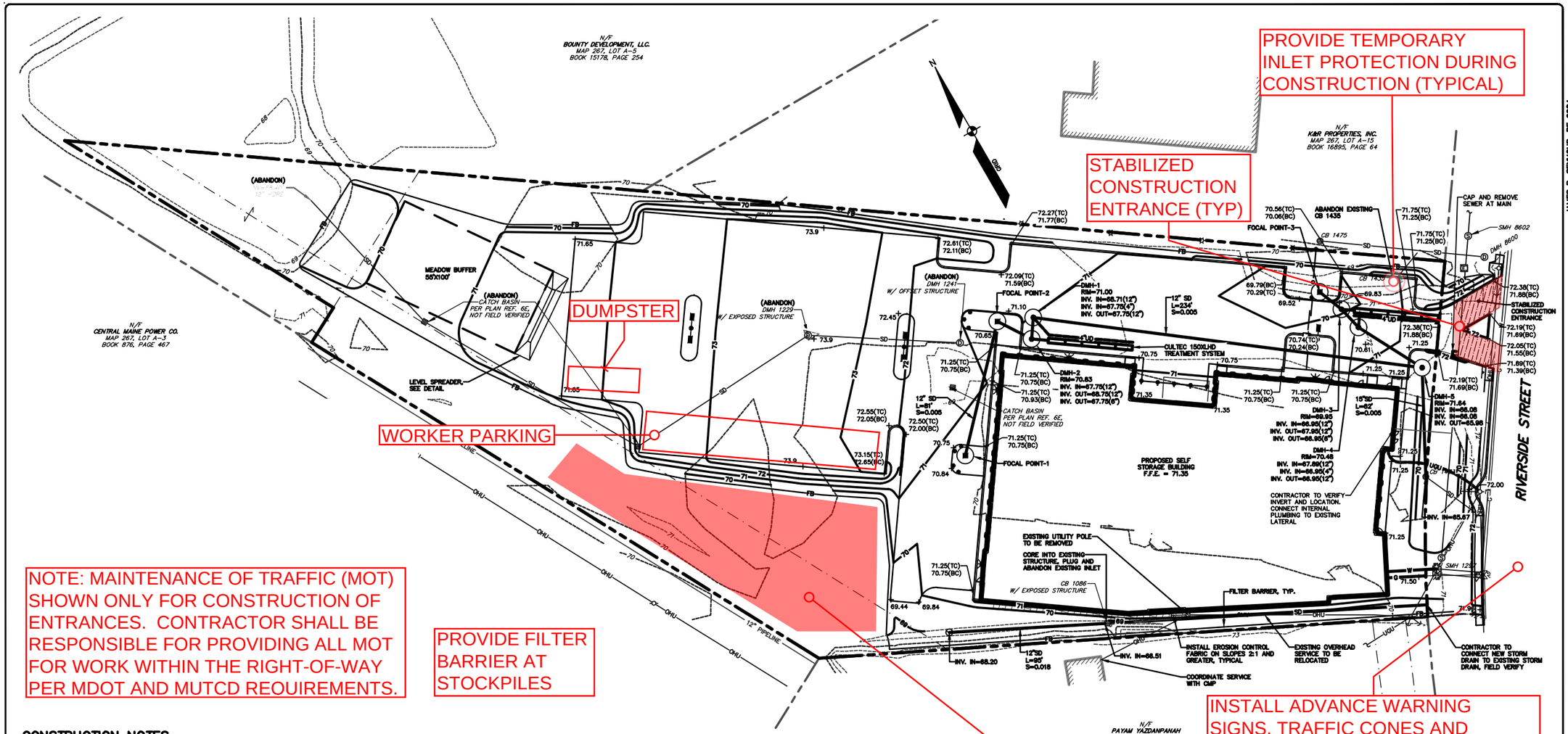
1. The Construction Management Plan shall depict location of the material staging areas, the location on onsite temporary construction trailers, the location on onsite truck delivery holding areas, the location onsite truck washing stations, masonry mixing stations, the general location of the construction security fence and the general location of temporary construction dumpsters. An open storage area 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 photograph the foundations of nearby properties upon consent of the owners, in order to assess any future impacts of vibration, noise, etc.



CONSTRUCTION NOTES

1. ALL WORK SHALL CONFORM TO THE APPLICABLE CODES AND ORDINANCES.
2. CONTRACTOR SHALL VISIT THE SITE AND FAMILIARIZE HIM OR HERSELF WITH ALL CONDITIONS AFFECTING THE PROPOSED WORK AND SHALL MAKE PROVISIONS AS TO THE COST THEREOF. CONTRACTOR SHALL BE RESPONSIBLE FOR FAMILIARIZING HIM OR HERSELF WITH ALL CONTRACT DOCUMENTS, FIELD CONDITIONS AND DIMENSIONS AND CONFIRMING THAT THE WORK MAY BE ACCOMPLISHED AS SHOWN PRIOR TO PROCEEDING WITH CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO THE COMMENCEMENT OF WORK.
3. CONTRACTOR SHALL NOTIFY ENGINEER OF ALL PRODUCTS OR ITEMS NOTED AS "EXISTING" WHICH ARE NOT FOUND IN THE FIELD.
4. INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND OWNER'S REQUIREMENTS UNLESS SPECIFICALLY OTHERWISE INDICATED OR WHERE LOCAL CODES OR REGULATIONS TAKE PRECEDENCE.
5. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO FABRICATION AND ERECTION OF ANY MATERIAL. ANY UNUSUAL CONDITIONS SHALL BE REPORTED TO THE ATTENTION OF THE ENGINEER.
6. CONTRACTOR SHALL CLEAN AND REMOVE DEBRIS AND SEDIMENT DEPOSITED ON PUBLIC STREETS, SIDEWALKS, ADJACENT AREAS, OR OTHER PUBLIC WAYS DUE TO CONSTRUCTION.
7. CONTRACTOR SHALL INCORPORATE PROVISIONS AS NECESSARY IN CONSTRUCTION TO PROTECT EXISTING STRUCTURES, PHYSICAL FEATURES, AND MAINTAIN SITE STABILITY DURING CONSTRUCTION. CONTRACTOR SHALL RESTORE ALL AREAS TO ORIGINAL CONDITION AND AS DIRECTED BY DESIGN DRAWINGS.
8. SITE CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS PRIOR TO CONSTRUCTION.
9. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH "MAINE EROSION AND SEDIMENT CONTROL BMPS" PUBLISHED BY THE BUREAU OF LAND AND WATER QUALITY OF THE MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION, LATEST EDITION. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO POSSESS A COPY OF THE EROSION CONTROL PLAN AT ALL TIMES.
10. THE CONTRACTOR IS HEREBY CAUTIONED THAT ALL SITE FEATURES SHOWN HEREON ARE BASED ON FIELD OBSERVATIONS BY THE SURVEYOR AND BY INFORMATION PROVIDED BY UTILITY COMPANIES. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR SHALL CONTACT DIG SAFE (811) AT LEAST THREE (3) BUT NOT MORE THAN THIRTY (30) DAYS PRIOR TO COMMENCEMENT OF EXCAVATION OR DEMOLITION TO VERIFY HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITIES.
11. CONTRACTOR SHALL BE AWARE THAT DIG SAFE ONLY NOTIFIES ITS "MEMBER" UTILITIES ABOUT THE DIG. WHEN NOTIFIED, DIG SAFE WILL ADVISE CONTRACTOR OF MEMBER UTILITIES IN THE AREA. CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING AND CONTACTING NON-MEMBER UTILITIES DIRECTLY. NON-MEMBER UTILITIES MAY INCLUDE TOWN OR CITY WATER AND SEWER DISTRICTS AND SMALL LOCAL UTILITIES, AS WELL AS USG PUBLIC WORKS SYSTEMS.
12. CONTRACTORS SHALL BE RESPONSIBLE FOR COMPLIANCE WITH THE REQUIREMENTS OF 23 MRSA 3360-A. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH THE APPROPRIATE UTILITIES TO OBTAIN AUTHORIZATION PRIOR TO RELOCATION OF ANY EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THESE PLANS. IF A UTILITY CONFLICT ARISES, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER, THE MUNICIPALITY AND APPROPRIATE UTILITY COMPANY PRIOR TO PROCEEDING WITH ANY RELOCATION.
13. ALL PAVEMENT MARKINGS AND DIRECTIONAL SIGNAGE SHOWN ON THE PLAN SHALL CONFORM TO THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) STANDARDS.
14. ALL PAVEMENT JOINTS SHALL BE SAWCUT PRIOR TO PAVING TO PROVIDE A DURABLE AND UNIFORM JOINT.
15. NO HOLES, TRENCHES OR STRUCTURES SHALL BE LEFT OPEN OVERNIGHT IN ANY EXCAVATION ACCESSIBLE TO THE PUBLIC OR IN PUBLIC RIGHTS-OF-WAY.
16. ALL WORK WITHIN THE PUBLIC RIGHT-OF-WAY SHALL REQUIRE A M.D.O.T. PERMIT AS WELL AS PERMITS FROM THE CITY AS APPLICABLE.
17. THE PROPOSED LIMITS OF CLEARING SHOWN HEREON ARE APPROXIMATE BASED UPON THE PROPOSED LIMITS OF SITE GRADING. THE APPLICANT RESERVES THE RIGHT TO PERFORM NORMAL FOREST MANAGEMENT ACTIVITIES OUTSIDE OF THE CLEARING LIMIT AS SHOWN. TREE REMOVAL OUTSIDE OF THE LIMITS OF CLEARING MAY BE NECESSARY TO REMOVE DEAD OR DYING TREES OR TREE LIMBS. THIS REMOVAL IS DUE TO POTENTIAL SAFETY HAZARDS AND TO PROMOTE PROPER FOREST GROWTH.
18. IMMEDIATELY UPON COMPLETION OF CUTS/FILLS, THE CONTRACTOR SHALL STABILIZE DISTURBED AREAS IN ACCORDANCE WITH EROSION CONTROL NOTES AND AS SPECIFIED ON PLANS.
19. THE CONTRACTOR SHALL BE FULLY AND SOLELY RESPONSIBLE FOR THE REMOVAL, REPLACEMENT AND RECTIFICATION OF ALL DAMAGED AND DEFECTIVE MATERIAL AND WORKMANSHIP IN CONNECTION WITH THE CONTRACT WORK. THE CONTRACTOR SHALL REPLACE OR REPAIR AS DIRECTED BY THE OWNER ALL SUCH DAMAGED OR DEFECTIVE MATERIALS WHICH APPEAR WITHIN A PERIOD OF ONE YEAR FROM THE DATE OF SUBSTANTIAL COMPLETION.
20. ALL WORK PERFORMED BY THE GENERAL CONTRACTOR AND/OR TRADE SUBCONTRACTOR SHALL CONFORM TO THE REQUIREMENTS OF LOCAL, STATE OR FEDERAL LAWS, AS WELL AS ANY OTHER GOVERNING REQUIREMENTS, WHETHER OR NOT SPECIFIED ON THE DRAWINGS.
21. WHERE THE TERMS "APPROVED EQUAL", "OTHER APPROVED", "EQUAL TO", "ACCEPTABLE" OR OTHER GENERAL QUALIFYING TERMS ARE USED IN THESE NOTES, IT SHALL BE UNDERSTOOD THAT REFERENCE IS MADE TO THE RULING AND JUDGMENT OF SEBAGO TECHNICS, INC.
22. THE GENERAL CONTRACTOR SHALL PROVIDE ALL NECESSARY PROTECTION FOR THE WORK UNTIL TURNED OVER TO THE OWNER.
23. THE GENERAL CONTRACTOR SHALL MAINTAIN A CURRENT AND COMPLETE SET OF CONSTRUCTION DRAWINGS ON SITE DURING ALL PHASES OF CONSTRUCTION FOR USE OF ALL TRADES.
24. THE CONTRACTOR SHALL TAKE FULL RESPONSIBILITY FOR ANY CHANGES AND DEVIATION OF APPROVED PLANS NOT AUTHORIZED BY THE ARCHITECT/ENGINEER AND/OR CLIENT/OWNER.
25. DETAILS ARE INTENDED TO SHOW END RESULT OF DESIGN. ANY MODIFICATION TO SUIT FIELD DIMENSION AND CONDITION SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO ANY WORK.
26. BEFORE THE FINAL ACCEPTANCE OF THE PROJECT, THE CONTRACTOR SHALL REMOVE ALL EQUIPMENT AND MATERIALS, REPAIR OR REPLACE PRIVATE OR PUBLIC PROPERTY WHICH MAY HAVE BEEN DAMAGED OR DESTROYED DURING CONSTRUCTION, CLEAN THE AREAS WITHIN AND ADJACENT TO THE PROJECT WHICH HAVE BEEN OBSTRUCTED BY HIS/HER OPERATIONS, AND LEAVE THE PROJECT AREA NEAT AND PRESENTABLE.
27. ALL SUBSURFACE UTILITY LINES SHOWN HEREON ARE BASED SOLELY ON THE FIELD LOCATION OF VISIBLE STRUCTURES, SMH'S, CB'S, HYDRANTS, ETC.. IN CONJUNCTION WITH DESIGN AND OR AS-BUILT PLANS SUPPLIED TO SEBAGO TECHNICS INC. BY OTHERS. PRIOR TO ANY CONSTRUCTION, EXCAVATION, TEST BORINGS, DRILLING, ETC.. DIG SAFE MUST BE NOTIFIED AND A SITE IDENTIFICATION NUMBER ALONG WITH A SAFE TO DIG DATE OBTAINED. THE SITE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFYING THE LOCATION, DEPTH AND MATERIAL OF ALL SUBSURFACE UTILITY LINES SHOWN HEREON AND ANY AND ALL OTHERS LOCATED ON SITE WITHIN THE CONSTRUCTION AREA.

CONSTRUCTION MANAGEMENT PLAN

SETBACK
EASEMENT
IRON PIPE/ROD
BUILDING
EDGE PAVEMENT
PAVEMENT SAWCUT
EDGE GRAVEL
CURB LINE
CONTOURS
SPOT GRADE
SIGN
GAS
GAS GATE VALVE
GAS METER
WATER
WATER GATE VALVE
SANITARY SEWER
SANITARY MANHOLE
STORM DRAIN
UNDER DRAIN
DRAINAGE MANHOLE
CATCH BASIN
OVERHEAD UTILITY
UNDERGROUND UTILITY
ELECTRICAL MANHOLE
ELECTRIC METER
LIGHT POLE
UTILITY POLE
GUY WIRE
FILTER BARRIER

JAMES R. SEYMOUR, PE 9984
STATE OF MAINE — JAMES R. SEYMOUR No. 9984 — REGISTERED PROFESSIONAL ENGINEER — 9-18-18

DESIGNED	CHECKED
JRS	JRS

REV.	BY:	DATE:	STATUS:
A	JRS	09-18-18	LEVEL III SITE PLAN SUBMISSION TO THE CITY

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 4A
South Portland, ME 04106
Tel: 207-200-2100

GRADING AND UTILITY PLAN
OF
PATAGON STORAGE
150 RIVERSIDE ST
PORTLAND, MAINE
FOR:
PATAGON STORAGE, LLC
1730 M STREET, SUITE 70
WASHINGTON, WASHINGTON

PROJECT NO.	SCALE
17500	1" = 30'

SHEET 4 OF 8

17500GU.dwg, TAB:GU

Memorandum
Planning and Urban Development Department
Planning Division

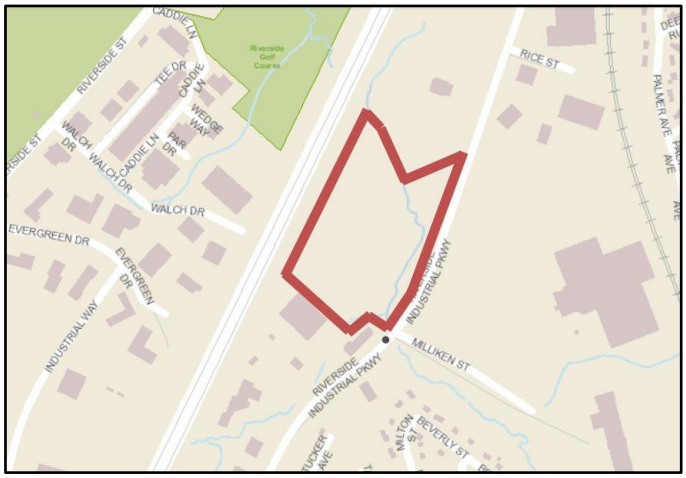
To: Chair Dundon and Members of the Portland Planning Board
From: Jean Fraser, Planner
Date: October 19, 2018
Re: **Level III Site Plan and Site Location of Development (SLODA):**
Seabreeze Property Services Facility
250 Riverside Industrial Parkway

Project: # PL000247-2018 CBL: 330A B004
Applicant: Two Eisenhower Drive, LLC
Meeting Date: October 23rd, 2018

I. INTRODUCTION

Sebago Technics Inc, on behalf of Two Eisenhower Drive, LLC, requests a Level III Site Plan and Site Location of Development (SLODA) review for a new two story building of 11,200 sq ft footprint (total of 14,770 sq ft floorspace) located on a 12.4 acre undeveloped site on the west side of Riverside Industrial Parkway. The project is for the new Seabreeze property services facility, which will replace their current facility on Presumpscot Street. The site is located in the IM (Moderate Impact Industrial) Zone.

The proposals include the construction of a new entry drive from Riverside Industrial Parkway of approximately300 linear feet in length, along with areas for employee parking, fleet vehicle parking, materials storage, and snow storage. Three underdrained soil filters are proposed to address stormwater management and quality.



The total disturbed area is approximately 5.15 acres, of which 3.36 acres is proposed to be paved or gravel for parking, circulation and outdoor material storage.

The proposals will impact about 7000 sq ft of fresh water wetland, and will include a bridge over the un-named stream running through the site that is a tributary of Dole Brook (Urban Impaired Stream).



A total of 56 notices were sent to property owners within 500 feet of the site, and a legal ad ran in the October 12th and 15th, 2018 editions of the *Portland Press Herald*. The applicant held a Neighborhood Meeting on October 18, 2018 attended by one neighbor; notes are included at Attachment 39.

Applicant: Two Eisenhower Drive, LLC
Consultants: Engineering: Sebago Technics, Inc
Building Design: PATCO

II. REQUIRED REVIEWS

Review	Applicable Standards
Site Plan	Section 14-526 City's land Use Code
Site Location of Development (delegated from State)	Section 14-Technical Manual and State Regulations
(the project also requires MDEP NRPA Permits for the wetland fill and stream crossing)	

III. REQUESTED WAIVERS (See submitted Waiver Table and justification in Attachment 06)

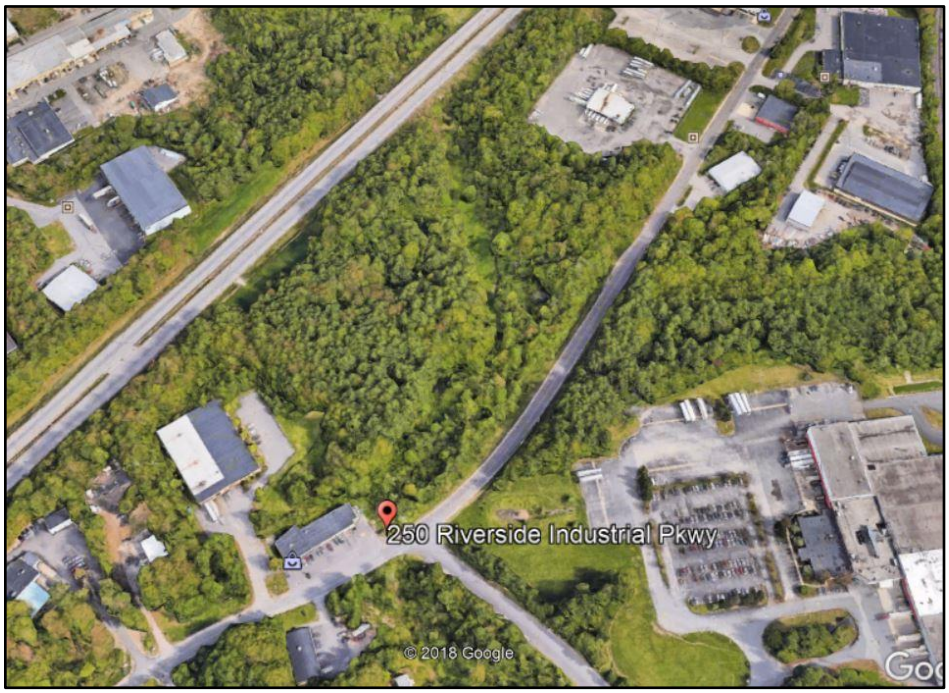
Waiver Request	Applicable Standards
Sidewalks: Waiver requested for the sidewalk along Riverside Industrial Parkway, based on the fact the location meets three of the sidewalk waiver criteria. Staff do not support this waiver- see discussion under VII C Site Plan Review.	Site Plan 14-526 (a)2ci *Sidewalks* requires that "*all developments shall provide sidewalks along all frontages*" and refers to waiver criteria for sidewalks and associated curbing in 14-498 and 14-499.
Curbing: Waiver requested for the curbing along Riverside Industrial Parkway, based on the fact that two of the curbing waiver criteria. This waiver depends on the final determination regarding the sidewalk waiver.	
Internal Walkway: Waiver requested in association with the sidewalk waiver, as there would be no sidewalk to for the internal walkway to connect to. Staff do not support this waiver- see discussion under VII C Site Plan Review.	Site Plan 14-526 (a) 2cii *Sidewalks* requires "*Continuous internal walkways shall be provided between existing or planned public sidewalks adjacent to the site…and primary building entrances on the site*".
Parking Lot Landscape Requirement: Waiver from all of the ordinance requirements as islands would impede access for vehicles with trailers. Staff do not support this waiver - see discussion under VII C Site Plan Review.	Site Plan 14-526 (b) 2 b *Site Landscaping* requires buffer planting, parking lot landscaping and street trees.
Street Trees: Waiver requested with treesaves along the Row proposed as a substitute. Staff generally support this waiver subject to the identification of treesaves and adequate protection and preservation measures.	
[Note: the applicant has also requested temporary submittal waivers regarding photometric plans and HVAC information; these are supported by staff.]	

IV PROJECT DATA

Existing Zoning	IM		
Existing Use	Vacant, with mature vegetation, wetlands and un-named stream		
Proposed Use	Property Services Facility (Seabreeze) (commercial/industrial/warehousing)		
Parcel Size	12.4 acres (includes small parking area for abutting building in same ownership) (site plan states 10.5 acres)		
Proposed building	11,200 sq ft footprint; 14,720 sq ft floorspace		
	Existing	*Proposed*	*Net Change*
Wetlands	2.03	0	(7,448 sq ft) (NRPA application states 6,849.5 sq ft)
Impervious Surface Area	tbc	tbc	3.36 acres
Parking Spaces (on site)	Approx. 24 in existing parking area serving abutting site	26 shown on site plan; 50 new spaces stated to be provided	tbc
Bicycle Parking Spaces	0	10	10
Estimated Cost of Project	$800,000		

V. EXISTING CONDITIONS

The proposed site is mostly wooded, with an existing paved parking lot just inside the south boundary that serves the abutting lot (in the same ownership as the applicant).

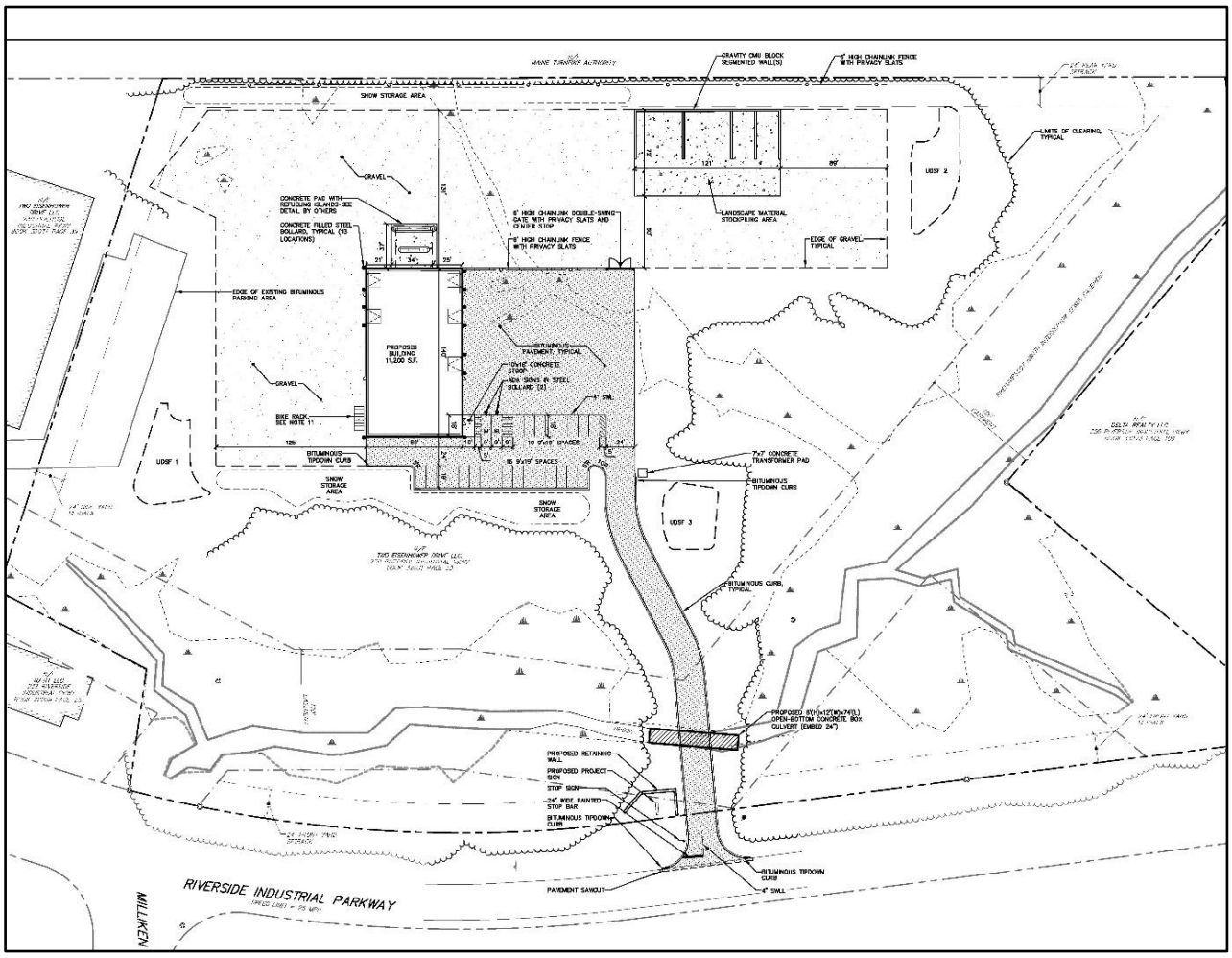


There is a stream running roughly from the northwest of the site to the southwest, and the majority of the wetlnds on the site are associated with this stream. The stream is a tributary of Dole Brook, an Urban Imparied Stream.

The site is bounded by the I-95 to the west and Riverside Industrial Parkway to the east, and surrounded by other large scale industrial / commercial premises.

The existing conditions along Riverside Industrial Parkway are described below in relation to the question of a sidewalk waiver along the 900 feet of street frontage.

VI. PROPOSED DEVELOPMENT - see site Plan below and at Plan 03)



The proposal includes:

- New 24 foot wide paved drive access from Riverside Industrial Parkway, with underground utilities alongside
- New 2-story building of 11,200 sq ft footprint and 14,720 sq ft floorspace (elevations/floor plans in Plans 13, 14 and 15)
- Large graveled area around the back and south side of the new building - part noted for storage of landscape material and it is understood that no salt would be stored
- Smaller bituminous paved area immediately to the north of the new building
- Parking for 26 cars shown abutting the bituminous area separated by striping
- Three underdrained soil filters
- Fueling area
- Small area of landscaping around sign location at entrance

The proposals involved the following impacts:

- Wetland fill of about 7000 sq ft- see NRPA Permit application (Att 37) and the fill areas are shown on the Grading and Erosion Control Plan (Plan 05)
- Culverting of the stream for access drive bridge over
- Areas of extensive regrading to create the three underdrained soil filters, to create level areas around the building and to minimize impacts on wetland

VII. STAFF REVIEW

A. ZONING ANALYSIS

The proposed use fits into the description of "*Building Contractors and Construction and Engineering Services*" as a permitted use in the IM zone. The proposals meet the dimensional standards, though the large extent of impervious surface meets the standard because of the size of the site.

The parking requirement under zoning would be 15 spaces and the applicant has provided 26 on the site plan and noted that 50 are intended. Staff have observed that parking demand is high at the existing facility at Presumpscot Street and support provision above the zoning requirement, but further information is needed to clarify where any parking over the 26 spaces is proposed to be located (see below under Site Plan- *Parking*).

B. SITE LOCATION OF DEVELOPMENT ACT (SLODA) REVIEW (Technical Manual Sec. 14.3. Standards

(Note- Please see submission in Attachment 38, which excludes material that is submitted for site plan to reduce size and duplication)

a. Financial and technical capacity.
Standard: That developer has the financial capacity and technical ability to develop the project in a manner consistent with state environmental standards and with the provisions of Portland's Code of Ordinances. The Planning Board may issue a permit that conditions any site alterations upon a developer providing the Planning Board with evidence that the developer has been granted a line of credit or a loan by a financial institution authorized to do business in this State or with evidence of any other form of financial assurance the Planning Board determines to be adequate. …

Proposal: The applicant has provided a letter dated June 21, 2018 from Biddeford Savings as evidence of financial capacity (Attachment 07).

b. Traffic movement – The applicant has submitted a Transportation Analysis (Attachment 09) that finds a peak hour trip generation of 75 trips based on the existing Seabreeze facility on Presumpscot Street. The analysis assumes that the new facility will generate a similar amount of traffic but the scale and location of the new facility suggests that trip generation could be greater than the existing facility and a TMP may be triggered. The City's Traffic engineering reviewer Tom Errico has commented (Attachment A):

> *The Applicant has conducted a trip generation estimate for the project and moderate traffic is expected to be generated by the project during peak hours. The estimate was based upon a count at the existing Presumpscot Street site. I continue to review the methods used and information provided. The Applicant shall provide information regarding future expansion of operations and possible increases in traffic (versus the Presumpscot Street site). I would note a Traffic Impact Study may be required. I will also be confirming the requirement for a Traffic Movement Permit.*

c. No adverse effect on the natural environment
Standard: That the developer has made adequate provision for fitting the development harmoniously into the existing natural environment and that the development will not adversely affect existing uses, scenic character, air quality, water quality or other natural resources in the municipality or in neighboring municipalities. In making a determination under this subsection, the Planning Board shall apply the standards set forth in Chapter 375 of the Maine Department of Environmental Protection Site Law Regulations, as may be amended from time to time.

Proposal: The proposal results in the following effects on the natural environment (see Summary, SLOD and NRPA applicant submissions in Attachments 18, 23, 37 and 38):

- Wetlands: the NRPA Permit application notes that 6849.5 sq ft of freshwater wetlands will be filled (earlier submissions refer to 7,448 sq ft, so this should be confirmed). These wetlands are largely associated with the unnamed stream running through the site and are shown on the Existing Conditions Plan (Plan 02) based on delineation in July 2018.

- Stream: the stream is a tributary of Dole Brook, an urban impaired stream. It is proposed that the stream will be placed in a culvert under the new access drive and this proposal is currently under review by both city staff and the MDEP. The Peer Engineer review (Attachment B) requests that the applicant should provide additional information on how the project will meet the Urban Impaired Stream Standard.

- Water Quality: the Planning staff is seeking the review of the plans by the DPW's Water Resource Division. In particular, we are seeking their comments regarding best management practices for the fueling station and maintenance of the open storage of landscape materials.

- Wooded areas: the proposal results in the loss of about 5.5 areas of existing woodland located on the western part of the site adjacent to the I95. A chain link fence surrounds the site immediately adjacent to the Turnpike Authority land. A revised treeline is shown but no tree preservation is called out on the plans. Staff recommend that the Landscape Plan identify areas of treesaves, including between the material storage area/graveled yard and I95, for protection during and after construction (currently shown with no treesaves and seed mix for 20 feet inside the chain link fence).

- Bats: The correspondence with the Maine Department of Inland Fisheries and Wildlife concludes there is one threatened species of bats on the project site. The applicant has stated that no tree removal will take place during the bat pup rearing season but this is not reflected in the construction management plan and schedule.

d. Soil types
Standard: – That the applicant to provide a map and analysis indicating the location of various soil types on-site, and suitability of such soils and ledge to support the proposed site improvements.

Proposal: The application has submitted this information.

e. Ground Water - In making a determination under this subsection, the Planning Board shall apply the standards set forth in Chapter 500 and 502 of the Maine Department of Environmental Stormwater Management and Direct Watersheds of Waterbodies Most at Risk from New Development Rules as may be amended from time to time. See g. below.

f. Infrastructure.
Standard: That the developer has made adequate provision of utilities, including water supplies, sewerage facilities, solid waste disposal and roadways required for the development and the development will not have an unreasonable adverse effect on the existing or proposed utilities and roadways in the municipality or area served by those services.

Proposal: The proposals as outlined in the site plan and SLOD submissions includes new infrastructure; details are still under review and preliminary comments are included below under the Site Plan review.

g. Flooding and Storm water management, erosion, and sedimentation control.
Standards:

- The activity will not unreasonably cause or increase the flooding of the alteration area or adjacent properties nor create an unreasonable flood hazard to any structure. In making a determination under this subsection, the Planning Board shall apply the standards set forth in Chapter 500 and 502 of the Maine Department of Environmental Stormwater Management and Direct Watersheds of Waterbodies Most at Risk from New Development Rules as may be amended from time to time.
- The proposed development meets the standards for storm water management in 38 MRSA §420-D as amended from time to time (See Exhibit 1) and the standard for erosion and sedimentation control in 38 MRSA §420-C as amended from time to time. In making a determination under this subsection, the Planning Board shall apply the standards set forth in Chapter 500 and 502 of the Maine Department of Environmental Stormwater Management and Direct Watersheds of Waterbodies Most at Risk from New Development Rules, as may be amended from time to time.

Proposals: the applicant has submitted a Stormwater Report (Attachment 23) and associated plans (Plans 05,06,07,08,09,11 and 12) which detail the three underdrained soil filters and associated grading for these and to minimize impacts on the wetland. The City's Peer Engineer Reviewer Lauren Swett of Woodard & Curran has reviewed the Stormwater proposals and report and provided detailed comments that include the following (Attachment B):

- *The standard maximum filter area size for underdrain soil filters, per the Maine DEP BMP standard is 3,000 SF. Two of the proposed filters exceed this area.*
- *It appears based on site grades that there will be some offsite runoff onto the project site, including into Underdrained Soil Filter 2. The plans do not show offsite areas. Please clarify.*
- *Verify that adequate cover is provided, both for frost protection, and installation of pipes into catch basins. It appears that there is 2.3' of cover at CB-4 and 1.34' of cover at CB-6.*
- *Please provide additional information on stabilization fabrics and rip rap sizing, in particular for the area identified with 1.5:1 sizing. Verify that the materials selected for stabilization in these steep areas are adequate for the proposed slopes. The landscape plan should also be reconciled with the grading plan, as it appears that seeding is identified in areas of riprap.*

C. SITE PLAN REVIEW

The proposals were reviewed by staff for conformance with the relevant review standards of the City of Portland's site plan ordinance.

1. Transportation Standards

a. Impact on Surrounding Street Systems (see above under SLOD Review, ***b***)

b. Access and Circulation and c. Loading and Servicing

Staff have not identified any broad concerns, although the parking lot layout warrants further consideration to delineate it from the bituminous apron and incorporate lighting and pedestrian links, and identify the location of the other 24 spaces noted on the site plan but not graphically defined.

The Peer Engineer (Attachment B) has noted that the proposals show bituminous curbing where driveways enter onto an existing street, and that the City's Technical Manual requires the full radius of the driveway to be designed and constructed of granite curb.

c. Sidewalks

The applicant has requested (Attachment 06) a waiver from the site plan requirement to provide sidewalks along all frontages (ie along Riverside Industrial Parkway, see photo right), and cites three of the waiver criteria 1, 2 and 6 from the "*Sidewalk*"waiver criteria (quoted below).

Riverside Industrial Parkway looking north adjacent to the project site



The applicant has also requested a waiver from the provision of curbing along this stretch of Riverside Industrial Parkway, citing the waiver criteria 4 and 5 from the "*Curbing*" list below.

From ordinance- list of waiver criteria:

Sidewalks-

1. There is no reasonable expectation for pedestrian usage coming from, going to and traversing the site.
2. There is no sidewalk in existence or expected within 1000 feet and the construction of sidewalks does not contribute to the development of a pedestrian oriented infrastructure.
3. A safe alternative-walking route is reasonably and safely available, for example, by way of a sidewalk on the other side of the street that is lightly traveled.
4. The reconstruction of the street is specifically identified and approved in the first or second year of the current Capital Improvement Program or has been funded through an earlier CIP or through other sources.
5. The street has been constructed or reconstructed without sidewalks within the last 24 months.
6. Strict adherence to the sidewalk requirement would result in the loss of significant site features related to landscaping or topography that are deemed to be of a greater public value.

Curbing-

1. The cost to construct the curbing, including any applicable street opening fees, is in excess of 5% of the overall project cost.
2. The reconstruction of the street is specifically identified and approved in the first or second year of the current Capital Improvement Program or has been funded through an earlier CIP or through other sources.
3. The street has been rehabilitated without curbing in the last 60 months.
4. Strict adherence to the curb requirement would result in the loss of significant site features related to landscaping or topography that are deemed to be of a greater public value.
5. Runoff from the development site or within the street does not require curbing for stormwater management.

Staff do not support the *sidewalk waiver* as they do not consider that the waiver criteria have been met. The City's Traffic Engineering reviewer has commented (Attachment A):

- *The Applicant conducted waiver analyses for provision of sidewalk and curbing on Riverside Industrial Parkway. In my professional opinion the project does not meet the necessary criteria for pedestrian activity along Riverside Industrial Parkway and loss of significant site features. Accordingly, a sidewalk shall be provided. A curbing waiver may be a consideration with a sidewalk set back from the roadway.*

- *The Applicant should consider a pedestrian facility between the site and Riverside Industrial Parkway.*

To amplify on these comments, staff note the following:

Criteria (Sidewalk) 1: There is an expectation that there will be pedestrian usage in the future. In all of Portland's industrial areas there has been an increase in walking to and from local businesses, and that when sidewalks have been introduced they are used. This may result from the fact that the industrial zones now allow uses such as offices and fitness centers, along with an increase in uses that are visited by members of the public. In addition, employees often walk to nearby businesses. In this case, there is evidence of a beaten path along the street- see Google screen shots.

Criteria (Sidewalk) 2: While the only segment of existing sidewalk along the Riverside Industrial Parkway is over 1000 feet from the site, sidewalks are expected to be provided nearby as number of sites nearby are currently developing/expanding. The staff position is that a sidewalk along one side of Riverside Industrial Parkway should be provided, and that it would be best located on the side along the frontage of the project site - which appears to be feasible.

Criteria (Sidewalk) 6: Although further site research should be undertaken, it appears that there are no features of importance in the area where a sidewalk would be located.

Consideration of the *curbing waiver* will depend on a more detailed review. However, curbing is not found along the street and drainage swales (rather than an underground stormwater system) exist along the street. Staff welcomes direction from the Planning Board on the *sidewalk waiver* question.

Similarly, staff recommend that a low key (maybe stonedust) walkway be provided along the narrow (24 feet wide) internal access drive, to connect the new building to the required sidewalk in the Riverside Industrial Parkway ROW. The final requirement for this walkway also depends on the resolution of the *sidewalk waiver*.

d. Public Transit Access - this standard does not apply

e. Parking

As noted above, the proposals show 26 parking spaces but note 50 are being provided for employees and visitors (Plan 03). The zoning requirement is 15 parking spaces. Staff recognize that the parking requirement for this use will be high and request further information to clarify the demand and the location of proposed parking.

f. Bicycle parking - this standard has been met.

g. ***TDM -*** this standard does not apply

h. Construction Management Plan - A final review has not been undertaken, but a preliminary concern is that it does not reflect the need to avoid the season when bats would be using the site for the rearing of young.

2. Environmental Quality Standards

a. Preservation of Significant Natural Features - covered by the SLODA review above.

b. ***Landscaping and Landscape Preservation, including buffering, parking lot landscaping and street trees***

The applicant has requested a waiver from these Site Plan standards, and the only landscape proposed is planting around the sign near the entrance to the site. The plans do not identify treesaves.

Staff consider that the project should address the standards as noted below (a memo from Jeff Tarling, City Arborist is expected to be available for the PB meeting):

- Street Trees and Tree Preservation: The treeline is shown but no tree preservation is called out on the plans. The applicant should clarify how they are meeting the tree preservation requirements generally. Staff support the principle of substituting treesaves for the new planting/street trees in relation to the landscape standards, and recommend that the Landscape Plan identify areas of treesaves, and identify the measures to be taken to protect them during and after construction.

- The landscape buffer standards refer to buffering along the property boundary and along public streets. The large gravel area (several acres) to the west of the site does not have any buffering and includes a chain link fence for part of the boundary with the Turnpike Authority land. The applicant should relocate the fence and retain existing trees/plant new ones along the outside of the fence and along that boundary.

- The parking lot landscaping standards, including the provision of islands, are intended to ensure that there is shading of parking areas, delineation of the parking area/drive aisles for safety, and are usually part of a plan that includes pedestrian walkways/crossings and lights. In view of the extensive clearance of trees in the vicinity of the new building and parking lot, staff consider that the standards for parking lot landscaping should be met. Staff also recommend the introduction of islands or other physical separation between the parking area and the drive aisle into the rear yard, and between the parking spaces and the apron near the building.

c. Water Quality/Storm Water Management/Erosion Control – covered by SLODA review above.

3. Public Infrastructure and Community Safety Standards

a. Consistency with City Master Plans

The Peer Engineer comments in Attachment B raise the following key concern:

Please clarify how SMH-1 will be tying into the existing sewer that crosses the site within the Presumpscot North Interceptor easement. The structure table notes an invert into this manhole from the proposed site sewer that is almost 17 feet higher than the inverts of the existing sewer. In addition to an ability to serve confirmation, the Applicant will need to provide verification that the connection methodology, and all proposed improvements within the easement are acceptable.

b. Public Safety (CPTED) and Fire Prevention

The lighting narrative suggests that there will not be any site lighting - this raises a number of concerns regarding safety and security. Otherwise this is still under review.

c. Availability and Adequate Capacity of Public Utilities

The Water District has confirmed the water capacity is adequate, and other letters are awaited.

4. *Site Design Standards* (as applicable)

a. Exterior Lighting

The Site Plan does not indicate the location of lights and the narrative (Attachment 32) notes that lighting will be at entrances with some on the building. The parking lot and drive access do not appear to have any lighting. The applicant has requested to defer the submission of a photometric and while staff support that request, staff also recommend additional lighting be incorporated for safety and security.

b. ***Noise/vibration/HVAC Equipment -*** the applicant has requested to defer this review and staff support that request.

c. Signage and Wayfinding - One sign is proposed near the entrance onto Riverside Industrial Parkway and that would require a separate sign permit.

VIII NEXT STEPS - the final submissions should include the following:

- Provide information and resolve whether a TMP is triggered
- Address comments regarding the sidewalk and curbing waivers, and associated internal drive walkway waiver
- Revise the final Landscape Plan to identify tree save areas, buffers and meet site plan ordinance standards for parking lot landscaping
- Clarify regarding parking demand and adequacy/location/design of parking provision
- Address the Peer Engineer comments regarding stormwater and sewer connections, and potential comments from DPW regarding water resources and quality
- Revise Construction Management Plan to address timing in relation to avoiding adverse impacts on bats, and to include more information on tree preservation and protection during construction
- Address Planning Board comments.

ATTACHMENTS:

PB MEMO ATTACHMENTS

A. Traffic Engineer Preliminary comments 10.18.18
B. Peer Engineer comments 10.19.18
C. City Arborist comments (to follow)

PUBLIC COMMENT (none)

APPLICANT'S SUBMITTALS

01-Cover ltr and Application
02-Right, Title, Interest
03-State+Federal Permits
04-Zoning Assessment
05-Exist.Prop Easements
06-Waiver Table.11x17
07-Financial Capability
08-Technical Capability
09-Transportation Analysis-Traffic Impact
10-Access & Circulation
11-Loading+Servicing
12-Sidewalks
13-Public Transit
14-Off-street Parking
15-Bicycle Parking
16-Snow Storage
17-Traffic Demand Mngmt
18-Pres of Sig Natural Features
19-Landscaping+Lighting Pres
20-Site Landscaping
21-Parking Lot Landscaping
22-Street Trees
23-WaterQual, SWtrMngmt, ESC
24-Consistency with City MstrPlan
25-Public Safety and Fire Prevention
26-Avail+Adequacy Public Utilities
27-Mass, Ventilation, Wind Impact
28-Shadows
29-Snow Ice Loading
30-View Corridor
31-Historic Resource
32-Exterior Lighting
33-Noise+Vibration
34-Signage Wayfinding
35-ZoneRelated Design Stds
36-Construction Management Plan
37- NRPA Permit application
38- SLOD applic. w-o duplicates of SP submissions
39- Neighborhod Meeting Invitation 10-5-18

PLANS

01a Boundary.ECJordanCompPlan.PB108
01b COVER SHEET
02 EXISTING CONDITIONS PLAN
03 SITE PLAN
04 UTILITY PLAN
05 GRADING AND EROSION CONTROL P
06 POND CONSTRUCTION PLANS
07 DETAILS
08 DETAILS
09 DETAILS
10 LANDSCAPING PLAN
11 PRE-DEVELOPMENT PLAN
12 POST-DEVELOPMENT WATERSHED PL
13 1st floor plan
14 2nd floor plan
15 Elevations

Portland Maine | Yes. Google's good here.

Jean Fraser <jf@portlandmaine.gov>

250 Riverside Industrial Parkway - Preliminary Traffic Comments

1 message

Tom Errico <thomas.errico@tylin.com> Thu, Oct 18, 2018 at 2:25 PM
To: Jean Fraser <jf@portlandmaine.gov>
Cc: Keith Gray <kgray@portlandmaine.gov>, Bruce Hyman <bhyman@portlandmaine.gov>, Jeremiah Bartlett <JBartlett@portlandmaine.gov>, "Jeff Tarling (JST@portlandmaine.gov)" <JST@portlandmaine.gov>

Hi Jean – I have reviewed the application materials and offer the following preliminary traffic comments.

- The Applicant has conducted a trip generation estimate for the project and moderate traffic is expected to be generated by the project during peak hours. The estimate was based upon a count at the existing Presumpscot Street site. I continue to review the methods used and information provided. The Applicant shall provide information regarding future expansion of operations and possible increases in traffic (versus the Presumpscot Street site). I would note a Traffic Impact Study may be required. I will also be confirming the requirement for a Traffic Movement Permit.
- The Applicant conducted sight distance measurements at the proposed driveway. Acceptable sight will be provided.
- The Applicant conducted waiver analyses for provision of sidewalk and curbing on Riverside Industrial Parkway. In my professional opinion the project does not meet the necessary criteria for pedestrian activity along Riverside Industrial Parkway and loss of significant site features. Accordingly, a sidewalk shall be provided. A curbing waiver may be a consideration with a sidewalk set back from the roadway.
- The Applicant should consider a pedestrian facility between the site and Riverside Industrial Parkway.

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
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Twitter | Facebook | LinkedIn | Google+

"One Vision, One Company"

COMMITMENT & INTEGRITY
DRIVE RESULTS

41 Hutchins Drive
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www.woodardcurran.com

T 800.426.4262
T 207.774.2112
F 207.774.6635

Comments

The Applicant should clarify the amount of wetland impacts. The number varies within the application materials and on the plans.

The SLODA notes that the Maine Construction General Permit will be reviewed as part of the SLODA application. Please note that the SLODA is being reviewed by the City of Portland as part of Delegated Review Authority, and the Maine Construction General Permit will still be required through the Maine DEP.

The project is in the Dole Brook watershed, which is an Urban Impaired Stream. The Applicant should provide additional information on how the project will meet the Urban Impaired Stream Standard.

The standard maximum filter area size for underdrain soil filters, per the Maine DEP BMP standard is 3,000 SF. Two of the proposed filters exceed this area.

The stormwater model includes vertical orifices for the underdrain soil filters ranging in size from 1" to 3.5". The plans and details do not identify these orifices. Please clarify their use, include them in the design details, and specifically identify any maintenance requirements associated with the orifices in the Inspection and Maintenance Plan.

For the final plans, the Underdrained Soil Filter Detail included on sheet 9 should be updated with project-specific elevation information for the project.

It appears based on site grades that there will be some offsite runoff onto the project site, including into Underdrained Soil Filter 2. The plans do not show offsite areas. Please clarify.

Per the City's Technical Manual, where driveways enter onto an existing street, the full radius of the driveway shall be designed and constructed of granite curb. The current design calls for bituminous curbing.

Verify that adequate cover is provided, both for frost protection, and installation of pipes into catch basins. It appears that there is 2.3' of cover at CB-4 and 1.34' of cover at CB-6.

Please clarify how SMH-1 will be tying into the existing sewer that crosses the site within the Presumpscot North Interceptor easement. The structure table notes an invert into this manhole from the proposed site sewer that is almost 17 feet higher than the inverts of the existing sewer. In addition to an ability to serve confirmation, the Applicant will need to provide verification that the connection methodology, and all proposed improvements within the easement are acceptable.

The existing sewer manhole SMH 1083 is located in an area with significant proposed grading with a 1.5:1 sides slope. Additional information should be provided on modifications to this manhole, and any stabilization required to maintain the structure within the steeply sloped area.

Please provide additional information on stabilization fabrics and rip rap sizing, in particular for the area identified with 1.5:1 sizing. Verify that the materials selected for stabilization in these steep areas are adequate for the proposed slopes. The landscape plan should also be reconciled with the grading plan, as it appears that seeding is identified in areas of riprap.

A stormwater maintenance agreement with the City of Portland will be required.

July 31, 2018
16360

City of Portland Planning Board
Mr. Sean Dundon, Chair
389 Congress Street, 4th Floor
Portland, Maine 04101

Level III Site Plan Application Submittal – Property Services Facility
250 Riverside Industrial Parkway, Portland

Dear Chair Dundon and Planning Board Members:

On behalf of Two Eisenhower Drive, LLC, we have assembled the following Site Plan Submittal for a new property services facility to be located at 250 Riverside Industrial Parkway. We have appreciated the opportunity to correspond with you and others from the City on multiple occasions during the initial phases of the project and permitting process. Over the past few months, the applicant has continued the planning and design of the facility and would like to move forward with the City Planning Board review process. In parallel with the City application, we will begin the Maine DEP review process.

The following narrative provides an overview of the project team and design/facility components.

Project Team:

Owner:	Two Eisenhower Drive, LLC
Building Design:	PATCO
Civil Engineer:	Sebago Technics, Inc.

Project Site:
The project site is located in the City of Portland's Riverton area between Riverside Street and the Maine Turnpike (I-95) with street frontage on Riverside Industrial Parkway. The proposed new entry drive is located approximately 400 feet north of Milliken Drive on the opposite side of the street. This location is opportune for the project given its size and IM Zoning. The project site is approximately 12.4 acres in size and has access to Riverside Industrial Parkway.

Historically, the parcel is primarily wooded and undeveloped with the exception of an existing parking lot to benefit the neighboring business that is under the same ownership. The portion of the site to be developed generally has flatter topography with an unnamed stream that runs approximately parallel to the northeasterly property line. The development area also contains mapped freshwater wetland area that will be impacted by the site development. The unnamed stream is a tributary to Dole Brook which is considered an Urban Impaired stream.

Development Program:
The development program includes a new entry drive from Riverside Industrial Parkway to the building site that will provide employee parking, a large circulation area for fleet vehicles and trailers, deliveries and 14,720 square-foot +/- building (11,200 square-foot footprint) with a private fueling area, landscape materials storage and office and conference space. Additionally, the site will include dedicated snow storage area and a series of under-drained soil filters for stormwater management. In total the disturbed area for development area is approximately 5.15 acres. The entry drive is curbed and is conformance with City standards. Waiver requests from sidewalk/curb along the street frontage, internal walk connection, landscaped parking islands and street trees standards are formally requested.

State and Federal Permits:
The project will require a Maine Department of Environmental Project (Maine DEP) Maine Construction General Permit Application (MCGP), Tier 1 Natural Resourced Protection Act Permit (NRPA) for wetland alteration and NRPA Permit by Rule (PBR) for the stream crossing. In addition, a U.S. Army Corp of Engineers permit, subject to timing requirements, may be required for the project. These applications are being prepared and submitted concurrently with this application.

Utilities:
The project will be served by public water and sewer available from an existing sewer easement on the lot and services extending from Riverside Industrial Parkway. We have been in contact with Portland Water District and the City Sewer Department regarding the proposed site development. Utilities and communication service connections will be coordinated with respective companies.

Lighting:
The project will include LED building mounted full cut-off fixtures within the development area. The light cut sheets are provided. The applicant requests that the Photometric Plan be submitted upon finalization of the proposed lighting design and be considered as a Condition of Approval. See Waiver Table where a temporary submittal waiver is requested.

Landscaping:
The project location is unique since the development area is located on a 12.4-acre tract of land with >900 linear feet of wooded street frontage on Riverside Industrial Parkway. The development area will occur within the interior portion of the lot adjacent to the Maine Turnpike ROW. The southwesterly portion of the site contains a small parking lot to benefit the business on the abutting lot that is under the same ownership. The remaining area of the site is primarily wooded areas and is therefore well buffered. As a result, we are proposing to utilize the existing landscape for buffering retaining perimeter wooded areas to serve as the project landscaping. Waiver requests from curbed landscaped parking islands and street trees are included in this submittal package.

Stormwater Management and Erosion Control:
A stormwater management plan has been prepared to include treatment of runoff to meet Maine DEP and City of Portland requirements. Stormwater from the developed area will be treated through a series of under-drained soil filters.

Traffic:
Sebago Technics, Inc. has completed an assessment of expected trip generation from the project. This information is included for review and consideration. The MaineDOT determines the need for a Traffic Movement Permit (TMP) based on the passenger car equivalent (PCE) trips to be generated by the

proposed development. Based on City standard, the development also does not require a Traffic Impact Study.

Schedule:
The applicant is hopeful to complete the permitting process through the City and Maine DEP by late summer to allow for early autumn start in 2018 and completion in 2019.

Closure:
We look forward to working with the City and Planning/Engineering staff through the permitting process for the proposed property services building to be located on Riverside Industrial Parkway. As always, please contact me if you have any questions or require further information.

Sincerely,

SEBAGO TECHNICS, INC.

William T. Conway, RLA, LEED-AP
Senior Vice President, Landscape Architecture

WTC/skn

enc.

cc: D. Machesney, Two Eisenhower Drive, LLC

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

Project Name:	Two Eisenhower Drive LLC
Proposed Development Address:	250 Riverside Industrial Parkway
Project Description:	New Property Services Facility
Chart/Block/Lot:	330A-B-1, 330A-B-4, 330A-B-11
Preliminary Plan	n/a
Final Plan	Dated: 07/16/2018

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

APPLICANT

Name:	c/o David Machesney
Business Name:	Two Eisenhower Drive LLC
Address:	P.O. Box 1120
City/State:	Portland, Maine
Zip Code:	04104
Work #:	(207) 854-5056
Home #:	
Cell #:	
Fax #:	
E-mail:	dmachesney@prattabbott.com

OWNER

Name:	Two Eisenhower Drive, LLC
Address:	P.O. Box 1120
City/State:	Portland, Maine
Zip Code:	04104
Work #:	(207) 854-5056
Home #:	
Cell #:	
Fax #:	
E-mail:	dmachesney@prattabbott.com

AGENT/REPRESENTATIVE

Name:	Sebago Technics, Inc. c/o William Conway, Senior V.P. Landscape Architecture
Address:	75 John Roberts Road, Suite 4A
City/State:	South Portland, Maine
Zip Code:	04106
Work #:	(207) 200-2055
Home #:	
Cell #:	
Fax #:	(207) 856-2206
E-mail:	wconway@sebagotechnics.com

BILLING (to whom invoices will be forwarded to)

Name:	Two Eisenhower Drive LLC c/o D. Machesney
Address:	P.O. Box 1120
City/State:	Portland, Maine
Zip Code:	04104
Work #:	(207) 854-5056
Home #:	
Cell #:	
Fax #:	
E-mail:	dmachesney@prattabbott.com

ENGINEER

Name:	Sebago Technics, Inc. c/o Shawn M. Frank, P.E.
Address:	75 John Roberts Road, Suite 4A
City/State:	South Portland, Maine
Zip Code:	04106
Work #:	(207) 200-2062
Home #:	
Cell #:	
Fax #:	(207) 856-2206
E-mail:	sfrank@sebagotechnics.com

SURVEYOR

Name:	Sebago Technics, Inc.
Address:	75 John Roberts Road, Suite 4A
City/State:	South Portland, Maine
Zip Code:	04106
Work #:	(207) 200-2100
Home #:	
Cell #:	
Fax #:	(207) 856-2206
E-mail:	wconway@sebagotechnics.com

~~**ARCHITECT**~~ **BUILDING DESIGNER**

Name:	PATCO, c/o Greg Patterson
Address:	1293 Main Street
City/State:	Sanford, Maine
Zip Code:	04073
Work #:	(207) 324-5574
Home #:	
Cell #:	
Fax #:	
E-mail:	greg@patco.com

ATTORNEY

Name:	
Address:	
City/State:	
Zip Code:	
Work #:	
Home #:	
Cell #:	
Fax #:	
E-mail:	

DESIGNATED PERSON(S) FOR UPLOADING INTO e-PLAN

Name:	Will Conway, Sebago Technics, Inc.
E-mail:	wconway@sebagotechnics.com
Name:	Stefanie Nichols, Sebago Technics, Inc.
E-mail:	snichols@sebagotechnics.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:	$ 6,750.00

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	540,144	sq. ft.
PROPOSED DISTURBED AREA OF THE SITE	224,296	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)	12,257	sq. ft.
Impervious Area (Total Proposed)	146,382	sq. ft.
Building Ground Floor Area and Total Floor		
Building Footprint (Total Existing)	n/a	sq. ft.
Building Footprint (Total Proposed)	11,200	sq. ft.
Building Floor Area (Total Existing)	n/a	sq. ft.
Building Floor Area (Total Proposed)	14,720 +/-	sq. ft.
ZONING		
Existing	IM (Industrial)	
Proposed, if applicable	n/a	
LAND USE		
Existing	Undeveloped	
Proposed	Property Services Business	
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)	n/a	
# of Parking Spaces (Total Proposed)	50	
# of Handicapped Spaces (Total Proposed)	2	
BICYCLE PARKING SPACES		
# of Bicycle Spaces (Total Existing)	n/a	
# of Bicycle Spaces (Total Proposed)	10	
ESTIMATED COST OF THE PROJECT	$ TBD	

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:	07/16/2018

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
X		1	A traffic study and other applicable transportation plans in accordance with Section 1 of the technical Manual, where applicable.
X		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
n/a		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
Waiver Request		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
		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;
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;
X			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;
X			Proposed buffers and preservation measures for significant natural features, where applicable, as defined in Section 14-526(b)(1);
X			Location and proposed alteration to any watercourse;
X			A delineation of wetlands boundaries prepared by a qualified professional as detailed in Section 8 of the Technical Manual;
X			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;
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;
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;
n/a		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.

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

Portland, Maine Yes. Life's good here.

Planning & Urban Development Department

LEVEL II and LEVEL III APPLICATION SUBMISSION CHECKLIST

Please submit each document as a separate PDF file.
Please confirm by electronically checking the boxes to the left

General Application Documents

Checklist	Items to be Provided	
Yes NA Plan ✔	PROJECT DESCRIPTION • Cover Letter with detailed project description	00
Yes NA Plan ✔	COMPLETED CHECKLIST – LEVEL III APPLICATION	01
Yes NA Plan ✔	RIGHT, TITLE AND INTEREST • Deeds, leases, or purchase and sales agreements	02
Yes NA Plan ✔	EVIDENCE OF STATE OR FEDERAL APPROVALS, if applicable • Permits or letters of non-jurisdiction, if applicable	03
Yes NA Plan ✔ ✔	ZONING ASSESSMENT • Table listing required and proposed uses and dimensional standards Zoning Assessment Table	04
Yes NA Plan ✔	EXISTING &/OR PROPOSED EASEMENTS OR COVENANTS, if applicable • Evidence of existing easements and any proposed easements	05
Yes NA Plan ✔	WAIVER REQUESTS • Written request for waiver describing request and reason. Waiver Table	06
Yes NA Plan ✔	FINANCIAL CAPABILITY • Letter or evidence from a financial institution or third party verifying financial capacity to undertake project	07
Yes NA Plan ✔	TECHNICAL CAPABILITY • Evidence of technical capability of applicant and consultants – resumes and/or examples of past projects	08

LEVEL II AND LEVEL III SITE PLAN STANDARDS AND SUBMISSION CHECKLIST

Provide assessment of compliance with standards and include supplemental documentation, as applicable.

Please submit each document as a separate PDF file.

TRANSPORTATION

Check list	Assess/Provide/Document:	
Yes NA Plan ✔ ✔ ✔	**Transportation Analysis- Traffic Impact (14-526 (a) 1)** • Provisions for pedestrian, bicycle, vehicle, and loading circulation and incremental volume of traffic impacts • Traffic Impact Study (Technical Manual, Section 1) if applicable	09
Yes NA Plan ✔ ✔	**Access and Circulation (14-526 (a) 2 a)** • Access and internal circulation, addressing ADA access • Access and egress impacts on traffic flows • Description and use of drive-up features, if applicable	10
Yes NA Plan ✔	**Loading and Servicing (14-526 (a) 2 b)** • Loading and servicing needs, route and travel way geometrics for deliveries • Turning templates for delivery vehicles, if applicable	11
Yes NA Plan ✔ ✔	**Sidewalks (14-526 (a) 2 c)** • Sidewalks and condition along street frontages and internal walkways • Engineered details for ADA ramps and public sidewalk details meeting sidewalk materials policy and ADA ramp construction details as applicable (Technical Manual, Section 1)	12
Yes NA Plan ✔	**Public Transit (14-526 (a) 3), if applicable** • Existing available transit services • Proposed site plan design details, such as easement, pad base, and shelter	13
Yes NA Plan ✔ ✔	**Off-Street Parking: Vehicle & Motorcycle/Scooter) (14-526 (a) 4 a and c)** • Expected parking demand, proposed parking supply, ADA parking, and applicable Zoning Requirements • Address Technical Manual standards (Section 1) for curb cut separation and parking lot layout and locate on site plan	14
Yes NA Plan ✔ ✔	**Bicycle Parking (14-526 (a) 4 b)** • Address bicycle parking requirements and identify locations on-site • Construction details for bike racks (Technical Manual, Section 1)	15
Yes NA Plan ✔ ✔	**Snow Storage (14-526 (a) 4 d)** • Management plan for snow removal and locate snow storage areas on plan	16
Yes NA Plan ✔	**Traffic Demand Management (TDM) (14-526 (a) 5), if applicable** • Develop TDM with Trip Reduction Targets and Strategies	17

ENVIRONMENTAL AND LANDSCAPE FEATURES	
Check list	Assess/Provide/Document:
Yes NA Plan ✔	Preservation of Significant Natural Features (14-526 (b) 1), if applicable 18 • Trees, plants, habitats listed on State or Federal list of endangered or threatened • High and moderate value waterfowl and wading habitat • Aquifers on Casco Bay Islands • Waterbodies (including wetlands, watercourses, significant vernal pools and floodplains) • Proposed preservation areas and protection measures • Documentation from environmental consultants, determinations from applicable state agencies
Yes NA Plan ✔	Landscaping and Landscape Preservation (14-526 (b) 2 a) 19 • Preservation of trees and preservation within required zoning setbacks (Technical Manual, Section 4) • Protection measures of existing vegetation during construction • Protection measures within Shoreland Zone, if applicable
Yes NA Plan ✔ ✔	Site Landscaping (14-526 (b) 2 b) 20 • Screening and buffering of service areas and between non-residential and residential uses • Planting plans with plant schedule and sizes (Technical Manual, Section 4)
Yes NA Plan ✔	Parking Lot Landscaping (14-526 (b) 2 b ii), if applicable 21 • Landscaped islands within parking areas (Technical Manual, Section 4)
Yes NA Plan ✔	Street Trees (14-526 (b) 2 b iii) 22 • Existing Heritage or Feature Trees on site and measures to preserve • Identify street trees on the plan meeting the site plan and Technical Manual standards (Section 4) or identify alternative measures, if applicable

ENVIRONMENTAL AND STORMWATER	
Check list	Assess/Provide/Document:
Yes NA Plan ✔ ✔	Water Quality, Stormwater Management and Erosion Control (14-526 (b) 3 a) 23 • Stormwater report in compliance with Section 5 of Technical Manual and DEP Chapter 500 stormwater for basic, general and flooding standards, as applicable • Erosion control plan and measures • Evidence of compliance with Urban Impaired Stream Standards pursuant to DEP Chapter 500 stormwater, as applicable • Subsurface sanitary sewage disposal and groundwater protection

PUBLIC INFRASTRUCTURE AND SAFETY	
Check list	Assess/Provide/Document:
Yes NA Plan ✔	**Consistency with City Master Plans (14-526 (c) 1)** 24 • Identify consistency with master plans • Proposed easements, rights and improvements to connect or continue off-premises public infrastructure, as applicable
Yes NA Plan ✔	**Public Safety and Fire Prevention (14-526 (c))** 25 • Address Crime Prevention through Environmental Design (CPTED) (Technical Manual, Section 3) • Emergency vehicle access • Address consistency with public safety standards (Technical Manual, Section 3) • Submit a code summary referring NFPA 1 and all Fire Department standards (Technical Manual, Section 3) – Fire Checklist
Yes NA Plan ✔	**Availability and Adequacy of Public Utilities (14-526 (c) 3) (Technical Manual, Sections 2 & 9)** 26 • Electrical services, including providing underground services • Identify existing and proposed connections for public utilities and required public utility upgrades • Sewer line connections are required, if there is a main within 200 feet • Proposed solid waste management facilities on-site and management for the site • Written evidence of the ability to serve from utility companies, as applicable

SITE DESIGN	
Check list	Assess/Provide/Document:
Yes NA Plan ✔	**Massing, Ventilations and Wind Impact (14-526 (d) 1)** 27 • Wind and ventilation impacts on adjoining structures and/or adjacent public spaces. Wind study, if applicable • Bulk, location or height impacts on adjoining structures • Identify and locate HVAC equipment and venting away from public spaces and residential properties • Identify screening and manufacturing specifications for noise, if applicable
Yes NA Plan ✔	**Shadows (14-526 (d) 2), if applicable** 28 • Shadow analysis of impacts on publicly accessible open space (Technical Manual, Section 11)
Yes NA Plan ✔	**Snow and Ice Loading (14-526 (d) 3)** 29 • Building design to prevent snow and ice from loading or falling onto adjacent properties or public ways
Yes NA Plan ✔	**View Corridors (14-526 (d) 4), if applicable** 30 • Protection of designated view corridors (Portland Design Manual, Appendix 1)

Yes	NA	Plan		
✔			**Historic Resources (14-526 (d) 5), if applicable** • Identify developments within Historic Districts or affecting Designated Landmarks • Certificate of Appropriateness or other evidence • Identify Developments within 100 feet of Historic Districts or affecting Designated Landmarks. Advisory HP review may be required • Address preservation and documentation of Archaeological Resources	
Yes	NA	Plan		
✔			**Exterior Lighting (14-526 (d) 6)** • Cut sheets of on-site light fixtures and any architectural or specialty lights (Technical Manual, Section 12) • Engineered details for any lights proposed in street right-of-way (Technical Manual, Section 10)	
Yes	NA	Plan		
✔			**Noise and Vibration (14-526 (d) 7)** • Evidence of noise levels for equipment, such as equipment specifications, to demonstrate consistency with zoning requirements	33
Yes	NA	Plan		
		✔	**Signage and Wayfinding (14-526 (d) 8), if applicable** • Signage plan showing the location, dimensions, height and setback of all existing and proposed signs. Signs in Historic Districts are reviewed by Historic Preservation staff • Proposed commercial and directional signage on site	34
Yes	NA	Plan		
	✔		**Zone Related Design Standards (14-526 (d) 5)** • Address Historic Preservation Design Review, if applicable • Address any applicable design review standards by zone • Address submission requirements from Design Manual, page 1, addressing neighborhood context • Description of exterior materials, color, finish, and samples	35
Construction Management Plan				
Check list				
Yes	NA	Plan		
✔		✔	**Construction Management Plan** • Construction Management Document and Plan	36

Level II and Level III Site Plan Checklist

Please upload the following drawings with the listed details into e-Plan as separate pdfs.

☐ **RECENT BOUNDARY SURVEY** (stamped by Maine Licensed Surveyor)

Must be in compliance with Technical Manual, Section 13

SITE PLAN(s) (stamped by Maine Licensed Engineer) including:

☑ **Existing Conditions**

- Approximate location of structures on abutting property
- Topography
- Locate water courses
- Delineate wetlands
- Zone lines

☑ **Proposed Site Plan**

- Ground floor area, and grade elevations for all buildings

☑ **Access, Circulation, and Parking**

- Streets and intersections adjacent to site , any proposed geometric modifications
- Location, dimensions and materials of all existing and proposed driveways, vehicle, bicycle, & pedestrian access ways with corresponding curb lines
- Engineered specifications/ cross-sections for proposed driveways, sidewalks & paved areas
- Location and dimensions of proposed loading areas
- Existing and proposed transit infrastructure with dimensions/ engineering specifications
- Location of vehicle and bicycle parking with dimensions and engineering specifications

☑ **Site Considerations**

- Identify snow storage areas
- Location of fire hydrants
- Location of solid waste management facilities

☑ **UTILITY PLAN** including:

- Existing utilities on site and within public streets
- Location, sizing, and directional flows of all existing and proposed utilities
- Location and dimensions of off-premises public or publicly accessible infrastructure adjacent to site
- Electric utility infrastructure

☑ **GRADING and DRAINAGE PLAN** including:

- Existing grades and drainage
- Proposed grades
- Proposed stormwater management meeting Technical Manual (Section 5) standards
- Location and proposed alteration of a water course
- Preservation or alteration of wetlands

☑ **EROSION CONTROL**

- Must be in compliance with Technical Manual, Section 5

☑ **LANDSCAPE PLAN** including:

- Existing vegetation to be preserved and preservation measures
- Proposed landscaping and buffers
- Planting schedule

☐ **RECORDING PLAT**, if applicable

- IF SUBDIVISION: Must be in compliance with requirements of Section 14-496 (b)

☑ **ARCHITECTURAL PLANS & RENDERINGS** including:

- Exterior building elevations, color renderings, illustrations of all sides
- Location and dimensions of all existing & proposed HVAC & mechanical equipment, all proposed screening
- Provide context drawings, if applicable (Design Manual, page 1)
- Floor plans

02: Right, Title, Interest

The record owner of the parcel(s) is Two Eisenhower Drive, LLC by deed 32031/039 recorded at the Cumberland County Registry of Deeds (CCRD) on 01/15/2015. The parcels are identified by the City of Portland Assessor as follows: 330A-B-1, 330A-B-4 and 330A-B-11. A copy of the referenced deed is included in this section.

TRUSTEE'S DEED
(Maine Statutory Short Form)

KNOW ALL PERSONS BY THESE PRESENTS, that I, Cindy H. Andrews, as Trustee of Marital Trust B under the Carl D. Andrews Revocable Trust u/a dated April 1, 1986, as affected by an Order of the Cumberland County Probate Court, dated November 12, 2012, Docket # 2012-1403, by the power conferred by law, and every other power, for consideration paid, grant to Two Eisenhower Drive, LLC, a Maine limited liability company with an address of P.O. Box 1120, Portland, ME 04104, the real property described as follows:

Certain lots or parcels of land, with any buildings or improvements thereon, situated in the City of Portland, County of Cumberland and State of Maine, and being bounded and described as follows:

MAINE REAL ESTATE TAX PAID

PARCEL 1: A certain lot or parcel of land, with any buildings and improvements thereon, situated on the westerly side of Riverside Industrial Parkway in the City of Portland, County of Cumberland and State of Maine and further bounded and described as follows: BEGINNING at an iron set in the ground on the westerly side of said Riverside Industrial Parkway, which iron designates a point on the reverse curve of said Riverside Industrial Parkway at center line Station 39+81.64; from said point of beginning thence running by the westerly side of Riverside Industrial Parkway by a curve to the southwest having a radius of 1090.00 feet, a distance of 104.52 feet measured on the arc thereof to land now or formerly of the City of Portland; thence running North 54°58' West by said City of Portland land 84.22 feet to the northeasterly corner of land now or formerly of Rufus H. Jones; thence running North 45°38'30" West by said Jones land, 368.42 feet to an iron set in the ground at land of the Maine Turnpike Authority; thence running North 25°50' East by said Maine Turnpike Authority land 620.00 feet to an iron set in the ground at other land now or formerly of Area Development Council Project #1, Inc.; thence running South 46°54'30" East by said land now or formerly of said Area Development Council Project #1, Inc. herein, 507.64 feet to land conveyed by ADC Building Fund Incorporated to Davis-Greene Co. by deed dated December 18, 1962 and recorded in the Cumberland County Registry of Deeds in Book 2723, Page 182; thence running South 19°49' West by said Davis-Greene Co. land 161.78 feet to a corner in said Davis-Greene Co. land; thence running South 56°08'30" East by said Davis-Greene Co. land 106.38 feet to the westerly side of said Riverside Industrial Parkway; thence by said Riverside Industrial Parkway by a curve to the southwest having a radius of 1091.67 feet, a distance of 356.31 feet measured on the arc thereof to the point of beginning.

The above-described premises are subject to an easement given by ADC Building Fund Incorporated to the City of Portland for a sewer line as set forth in the deed from ADC Building Fund Incorporated, dated October 18, 1965 and recorded in the Cumberland County Registry of Deeds in Book 2931, Page 430.

EXCEPT, so much of the above which was conveyed to John E. Burrell by Area Development Council Project #1, Inc. by deed dated December 16, 1977 and recorded in said Registry of Deeds in Book 4149, Page 262.

Also excepting that parcel of land conveyed by John E. Coney, Jr. to John E. Burrell by deed dated February 18, 1981 and recorded in said Registry of Deeds in Book 4743, Page 110.

PARCEL 2: Also, another certain lot or parcel of land, with any buildings or improvements thereon, situated on the westerly side of Riverside Industrial Parkway in the City of Portland, County of Cumberland and State of Maine, bounded and described as follows: BEGINNING at an iron pipe on the westerly side of Riverside Industrial Parkway at the southeast corner of the lot of land conveyed by Greater Portland Building Fund, Inc. to Aetna Cartage Company by deed dated April 18, 1972 and recorded in the Cumberland County Registry of Deeds in Book 3226, Page 290. Said corner also marks the line of a City of Portland sewer right of way, known as the Dole Branch, which is located on the lot herein conveyed; thence from said point of beginning and by said Aetna Cartage Company land running South 65°57' West 328.93 feet to an iron; thence continuing by said Aetna Cartage Company land and by a sewer right of way known as the Presumpscot North Maine Interceptor, North 24°03' West 303.34 feet to an iron pipe; thence through said sewer right of way North 71°22' West 106.03 feet to land of the Maine Turnpike Authority; thence by said Maine Turnpike Authority land South 25°50' West 527.41 feet to an iron at the northwest corner of land conveyed by Greater Portland Building Fund to John E. Coney, Jr. by deed dated March 29, 1973 and recorded in said Registry of Deeds in Book 3376, Page 51; thence by said Coney land South 46°54'30" East 507.64 feet to an iron pipe at land conveyed by ADC Building Fund Incorporated to Davis-Greene Co. by deed dated December 18, 1962, and recorded in said Registry of Deeds in Book 2723, Page 182; thence by said Davis-Greene Co. land North 19°49' East 320.12 feet to an iron pipe; thence continuing by said Davis-Greene Co. land North 68°40'30" East 196.31 feet to an iron pipe on the westerly side of Riverside Industrial Parkway; thence by said Riverside Industrial Parkway North 18°38' Fast 287.36 feet to the point of beginning.

Said above lot contains 279,815 square feet or 6.42 acres in accordance with a survey made by H.I. & E.C. Jordan, Surveyors.

Said above-described courses are based on true meridian.

PARCEL 3: A certain lot or parcel of land situated westerly of Riverside Industrial Parkway and Northerly of Milliken Street in the City of Portland, County of Cumberland, State of Maine, to wit:

COMMENCING at a point on the westerly side of land now or formerly of the Portland Terminal Company at the northerly corner of the land now or formerly owned by the Portland Water District;

Thence South 55°14'20" West, 71.28 feet along said Water District Land to a point;

Thence North 21°15'40" West, 17.82 feet along said Water District Land to a point;

Trustees of even date herewith executed by Richard A. Carriuolo and Cindy H. Andrews, as Trustees of Marital Trust B under the Carl D. Andrews Revocable Trust u/a dated April 1, 1986, as affected by Order of the Cumberland County Probate Court, dated November 12, 2012, Docket #2012-1403 and pursuant to Article VIII of the Agreement and Indenture of Trust establishing the Carl D. Andrews Revocable Trust u/a dated April 1, 1986, Cindy H. Andrews, acting singly, is duly authorized to execute and deliver this deed.

WITNESS our hands and seals, this 10th day of January, 2015.

WITNESS:

Cindy H. Andrews, as Trustee of Marital Trust B under the Carl D. Andrews Revocable Trust u/a dated April 1, 1986, as affected by Order of the Cumberland County Probate Court, dated November 12, 2012, Docket #2012-1403

~~STATE OF MAINE~~ Colorado
~~CUMBERLAND,~~ ss. Denver County

January 10, 2015

Then personally appeared the above-named Cindy H. Andrews, in her said capacity as Trustee and acknowledged the foregoing instrument to be her free act and deed as Trustee and the free act and deed of said Trust, before me,

Notary Public
Printed Name:

ZACHARY W. JOHNSON
NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID 20144024056
MY COMMISSION EXPIRES JUNE 16, 2018

Thence South 74° 52' 45" West, 31.62 feet along said Water District Land to a point near an iron pipe;

Thence South 55°51'08" West, 75.26 feet along land now or formerly owned by Milliken Street LLC to a point near a 5/8" rebar;

Thence North 21°16'37" West, 555.77' feet along land said Milliken Street LLC land to a 5/8" rebar;

Thence South 68°44'47" West, 114.56 feet along said Milliken Street LLC land to a point near a 5/8" rebar;

Thence North 14°55' 55" West, 14.08 feet along said Milliken Street LLC land, passing over an iron pipe, said pipe distant 1.2 feet from the terminus of said course, to a point;

Thence South 75°08'46" West, 328.45 feet along said Milliken Street LLC land to a point;

Thence South 13°13'08" West, 61.39 feet along said Milliken Street LLC land to a point;

Thence South 68°44'47" West, 143.78 feet to a point in the easterly line of Milliken Street;

Thence along said easterly line North 56°10'30" West, 92.98 feet to a point;

Thence North 56°04'53" West, 117.32 feet to a point;

Thence continuing along the easterly line of Milliken Street North 56□04'53" West, 280.50 feet to a point;

Thence North 63°50'00" West, 258.77 feet to a point at the intersection of said easterly line and the southern line of land conveyed to ADC Building Fund, Inc. by Davis-Greene Co. dated December 18, 1962, recorded in Book 2723, Page 182;

Thence leaving said easterly line along said southern line North 55°47'03" West, 91.92 feet to a point at the intersection of said easterly line and said southern line;

Thence leaving said southern line along said easterly line of Milliken Street;

Thence leaving said easterly line North 55°47'03" West, 103.56 feet to a found iron pipe in the westerly right-of-way line of said Riverside Industrial Parkway at the true point of beginning;

Thence North 55°47'03" West, 106.38 feet to a point;

Thence North 19°50'40" East, 481.46 feet to a point;

Thence North 68°40'30" East, 196.31 feet to a found pipe in the said westerly right-of-way line;

Thence along said westerly right-of-way line South 18°39'48" West, 285.34 feet to a point;

Thence along a curve deflecting to the right having a radius of 1091.67', on arc of 357.01', a chord bearing of South 28°01'49" West, a chord of 355.43', to the TRUE POINT OF BEGINNING, containing 1.85 acres.

SUBJECT TO:

a. Easement to Central Maine Power Company and New England Telephone and Telegraph Company as set forth in an instrument dated June 8, 1965 and recorded in said Registry of Deeds in Book 2937, Page 381.

b. Certificate of Taking of Property by City of Portland by instrument dated July 20, 1964 and recorded in the Cumberland County Registry of Deeds in Book 2881, Page 318.

To the extent not otherwise conveyed above, also hereby releasing all right title and interest in and to the following described property:

BEGINNING at a 1-1/2" iron pipe on the westerly right-of-way line of Riverside Industrial Parkway at a northeasterly corner of land N/F of Carl D. Andrews Marital Deduction Trust as recorded in Deed Book 19863, Page 40, Cumberland County Registry of Deeds (CCRD);

THENCE N 55°52'49" W along the northerly line of said Trust 105.92' to a 1" iron pipe;

THENCE N 19°52'56" E along an easterly line of said Trust 481.06' to a 1" iron pipe;

THENCE N 68°26'23" E along a southeasterly line of said Trust 196.43 ' to a #5 rebar. Said rebar being on the westerly right-of-way line of Riverside Industrial Parkway;

THENCE S 18°41'06" W along the westerly right-of-way line of Riverside Industrial Parkway 285.32' to a point of curvature in said right-of-way;

THENCE on a curve to the right along the westerly right-of-way line of Riverside Industrial Parkway 357.07' to the POINT OF BEGINNING. Said curve has a radius of 1091.67' and a chord of S 28° 03'19" W 355.48'.

The above described parcel contains 80,418 s.f. or 1.85 acres more or less.

The basis of bearing for the above described parcel is Grid North. The above described parcel is partially shown as an abutting on a boundary survey prepared for R.M. Davis, Inc. c/o Arthur Borduas by Northeast Civil Solutions, Inc., dated August 26, 2009.

Being the same premises described in the deed to Grantor, dated December 28, 2012 and recorded in the Cumberland County Registry of Deeds, Book 30295, Page 118. Pursuant to a Certificate of

Received
Recorded Register of Deeds
Jan 15,2015 02:29:24P
Cumberland County
Nancy A. Lane

TRUSTEE'S DEED
(Maine Statutory Short Form)

KNOW ALL PERSONS BY THESE PRESENTS, that I, Cindy H. Andrews, as Trustee of Marital Trust B under the Carl D. Andrews Revocable Trust u/a dated April 1, 1986, as affected by an Order of the Cumberland County Probate Court, dated November 12, 2012, Docket # 2012-1403, by the power conferred by law, and every other power, for consideration paid, grant to Two Eisenhower Drive, LLC, a Maine limited liability company with an address of P.O. Box 1120, Portland, ME 04104, the real property described as follows:

Certain lots or parcels of land, with any buildings or improvements thereon, situated in the City of Portland, County of Cumberland and State of Maine, and being bounded and described as follows:

MAINE REAL ESTATE TAX PAID

PARCEL 1: A certain lot or parcel of land, with any buildings and improvements thereon, situated on the westerly side of Riverside Industrial Parkway in the City of Portland, County of Cumberland and State of Maine and further bounded and described as follows: BEGINNING at an iron set in the ground on the westerly side of said Riverside Industrial Parkway, which iron designates a point on the reverse curve of said Riverside Industrial Parkway at center line Station 39+81.64; from said point of beginning thence running by the westerly side of Riverside Industrial Parkway by a curve to the southwest having a radius of 1090.00 feet, a distance of 104.52 feet measured on the arc thereof to land now or formerly of the City of Portland; thence running North 54°58' West by said City of Portland land 84.22 feet to the northeasterly corner of land now or formerly of Rufus H. Jones; thence running North 45°38'30" West by said Jones land, 368.42 feet to an iron set in the ground at land of the Maine Turnpike Authority; thence running North 25°50' East by said Maine Turnpike Authority land 620.00 feet to an iron set in the ground at other land now or formerly of Area Development Council Project #1, Inc.; thence running South 46°54'30" East by said land now or formerly of said Area Development Council Project #1, Inc. herein, 507.64 feet to land conveyed by ADC Building Fund Incorporated to Davis-Greene Co. by deed dated December 18, 1962 and recorded in the Cumberland County Registry of Deeds in Book 2723, Page 182; thence running South 19°49' West by said Davis-Greene Co. land 161.78 feet to a corner in said Davis-Greene Co. land; thence running South 56°08'30" East by said Davis-Greene Co. land 106.38 feet to the westerly side of said Riverside Industrial Parkway; thence by said Riverside Industrial Parkway by a curve to the southwest having a radius of 1091.67 feet, a distance of 356.31 feet measured on the arc thereof to the point of beginning.

The above-described premises are subject to an easement given by ADC Building Fund Incorporated to the City of Portland for a sewer line as set forth in the deed from ADC Building Fund Incorporated, dated October 18, 1965 and recorded in the Cumberland County Registry of Deeds in Book 2931, Page 430.

EXCEPT, so much of the above which was conveyed to John E. Burrell by Area Development Council Project #1, Inc. by deed dated December 16, 1977 and recorded in said Registry of Deeds in Book 4149, Page 262.

Also excepting that parcel of land conveyed by John E. Coney, Jr. to John E. Burrell by deed dated February 18, 1981 and recorded in said Registry of Deeds in Book 4743, Page 110.

PARCEL 2: Also, another certain lot or parcel of land, with any buildings or improvements thereon, situated on the westerly side of Riverside Industrial Parkway in the City of Portland, County of Cumberland and State of Maine, bounded and described as follows: BEGINNING at an iron pipe on the westerly side of Riverside Industrial Parkway at the southeast corner of the lot of land conveyed by Greater Portland Building Fund, Inc. to Aetna Cartage Company by deed dated April 18, 1972 and recorded in the Cumberland County Registry of Deeds in Book 3226, Page 290. Said corner also marks the line of a City of Portland sewer right of way, known as the Dole Branch, which is located on the lot herein conveyed; thence from said point of beginning and by said Aetna Cartage Company land running South 65°57' West 328.93 feet to an iron; thence continuing by said Aetna Cartage Company land and by a sewer right of way known as the Presumpscot North Maine Interceptor, North 24°03' West 303.34 feet to an iron pipe; thence through said sewer right of way North 71°22' West 106.03 feet to land of the Maine Turnpike Authority; thence by said Maine Turnpike Authority land South 25°50' West 527.41 feet to an iron at the northwest corner of land conveyed by Greater Portland Building Fund to John E. Coney, Jr. by deed dated March 29, 1973 and recorded in said Registry of Deeds in Book 3376, Page 51; thence by said Coney land South 46°54'30" East 507.64 feet to an iron pipe at land conveyed by ADC Building Fund Incorporated to Davis-Greene Co. by deed dated December 18, 1962, and recorded in said Registry of Deeds in Book 2723, Page 182; thence by said Davis-Greene Co. land North 19°49' East 320.12 feet to an iron pipe; thence continuing by said Davis-Greene Co. land North 68°40'30" East 196.31 feet to an iron pipe on the westerly side of Riverside Industrial Parkway; thence by said Riverside Industrial Parkway North 18°38' Fast 287.36 feet to the point of beginning.

Said above lot contains 279,815 square feet or 6.42 acres in accordance with a survey made by H.I. & E.C. Jordan, Surveyors.

Said above-described courses are based on true meridian.

PARCEL 3: A certain lot or parcel of land situated westerly of Riverside Industrial Parkway and Northerly of Milliken Street in the City of Portland, County of Cumberland, State of Maine, to wit:

COMMENCING at a point on the westerly side of land now or formerly of the Portland Terminal Company at the northerly corner of the land now or formerly owned by the Portland Water District;

Thence South 55°14'20" West, 71.28 feet along said Water District Land to a point;

Thence North 21°15'40" West, 17.82 feet along said Water District Land to a point;

Trustees of even date herewith executed by Richard A. Carriuolo and Cindy H. Andrews, as Trustees of Marital Trust B under the Carl D. Andrews Revocable Trust u/a dated April 1, 1986, as affected by Order of the Cumberland County Probate Court, dated November 12, 2012, Docket #2012-1403 and pursuant to Article VIII of the Agreement and Indenture of Trust establishing the Carl D. Andrews Revocable Trust u/a dated April 1, 1986, Cindy H. Andrews, acting singly, is duly authorized to execute and deliver this deed.

WITNESS our hands and seals, this 10th day of January, 2015.

WITNESS:

Cindy H. Andrews, as Trustee of Marital Trust B under the Carl D. Andrews Revocable Trust u/a dated April 1, 1986, as affected by Order of the Cumberland County Probate Court, dated November 12, 2012, Docket #2012-1403

~~STATE OF MAINE~~ Colorado
~~CUMBERLAND,~~ ss. Denver County

January 10, 2015

Then personally appeared the above-named Cindy H. Andrews, in her said capacity as Trustee and acknowledged the foregoing instrument to be her free act and deed as Trustee and the free act and deed of said Trust, before me,

Notary Public
Printed Name:

ZACHARY W. JOHNSON
NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID 20144024056
MY COMMISSION EXPIRES JUNE 16, 2018

Thence South 74° 52' 45" West, 31.62 feet along said Water District Land to a point near an iron pipe;

Thence South 55°51'08" West, 75.26 feet along land now or formerly owned by Milliken Street LLC to a point near a 5/8" rebar;

Thence North 21°16'37" West, 555.77' feet along land said Milliken Street LLC land to a 5/8" rebar;

Thence South 68°44'47" West, 114.56 feet along said Milliken Street LLC land to a point near a 5/8" rebar;

Thence North 14°55' 55" West, 14.08 feet along said Milliken Street LLC land, passing over an iron pipe, said pipe distant 1.2 feet from the terminus of said course, to a point;

Thence South 75°08'46" West, 328.45 feet along said Milliken Street LLC land to a point;

Thence South 13°13'08" West, 61.39 feet along said Milliken Street LLC land to a point;

Thence South 68°44'47" West, 143.78 feet to a point in the easterly line of Milliken Street;

Thence along said easterly line North 56°10'30" West, 92.98 feet to a point;

Thence North 56°04'53" West, 117.32 feet to a point;

Thence continuing along the easterly line of Milliken Street North 56□04'53" West, 280.50 feet to a point;

Thence North 63°50'00" West, 258.77 feet to a point at the intersection of said easterly line and the southern line of land conveyed to ADC Building Fund, Inc. by Davis-Greene Co. dated December 18, 1962, recorded in Book 2723, Page 182;

Thence leaving said easterly line along said southern line North 55°47'03" West, 91.92 feet to a point at the intersection of said easterly line and said southern line;

Thence leaving said southern line along said easterly line of Milliken Street;

Thence leaving said easterly line North 55°47'03" West, 103.56 feet to a found iron pipe in the westerly right-of-way line of said Riverside Industrial Parkway at the true point of beginning;

Thence North 55°47'03" West, 106.38 feet to a point;

Thence North 19°50'40" East, 481.46 feet to a point;

Thence North 68°40'30" East, 196.31 feet to a found pipe in the said westerly right-of-way line;

Thence along said westerly right-of-way line South 18°39'48" West, 285.34 feet to a point;

Thence along a curve deflecting to the right having a radius of 1091.67', on arc of 357.01', a chord bearing of South 28°01'49" West, a chord of 355.43', to the TRUE POINT OF BEGINNING, containing 1.85 acres.

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THENCE N 55°52'49" W along the northerly line of said Trust 105.92' to a 1" iron pipe;

THENCE N 19°52'56" E along an easterly line of said Trust 481.06' to a 1" iron pipe;

THENCE N 68°26'23" E along a southeasterly line of said Trust 196.43 ' to a #5 rebar. Said rebar being on the westerly right-of-way line of Riverside Industrial Parkway;

THENCE S 18°41'06" W along the westerly right-of-way line of Riverside Industrial Parkway 285.32' to a point of curvature in said right-of-way;

THENCE on a curve to the right along the westerly right-of-way line of Riverside Industrial Parkway 357.07' to the POINT OF BEGINNING. Said curve has a radius of 1091.67' and a chord of S 28° 03'19" W 355.48'.

The above described parcel contains 80,418 s.f. or 1.85 acres more or less.

The basis of bearing for the above described parcel is Grid North. The above described parcel is partially shown as an abutting on a boundary survey prepared for R.M. Davis, Inc. c/o Arthur Borduas by Northeast Civil Solutions, Inc., dated August 26, 2009.

Being the same premises described in the deed to Grantor, dated December 28, 2012 and recorded in the Cumberland County Registry of Deeds, Book 30295, Page 118. Pursuant to a Certificate of

Received
Recorded Register of Deeds
Jan 15,2015 02:29:24P
Cumberland County
Nancy A. Lane

03: State and Federal Permits

The proposed site development requires review a Maine Department of Environmental Protection (MDEP) and the US Army Corps of Engineers (ACOE) for a stream crossing to gain access to the interior portion of the lot. MDEP will review a Natural Resources Protection Act Application and Maine Construction General Permit Application. The state and federal permits will be reviewed concurrently with the City of Portland Planning Board Level III Site Plan Review Application. The approvals will be forwarded to the City upon receipt.

04: General Application Documents

Zoning Assessment

The subject parcel is located entirely within the moderate impact industrial zone (I-M); and does not abut any other City zoning districts. The site will be utilized as property services business, which is a permitted use per Ch. 14 Sec.247(c) *Building Contractors and Construction and Engineering Services* of the City of Portland Code of Ordinances.

In accordance with the dimensional requirements defined in Section 14-250 of the City of Portland Code of Ordinances, the proposed development meets or exceeds ordinance requirements. The required *Zoning Assessment Table* is included in this section and reference is made to the plan set for additional space and bulk information.

ZONING ANALYSIS Relevant Zone(s) IM

All Projects:

	Required	Proposed
Lot Size	none	12.4 Ac. +/-
Area Per Dwelling Unit	n/a	n/a
Minimum Street Frontage	60 feet	989 +/- feet
Front Yard Minimum	1 ft./1ft building height	325.9 feet
Front Yard Maximum	n/a	n/a
Rear Yard	24 feet	158.5 +/- feet
Yard Right	24 feet	453+/- feet
Yard Left	24 feet	207 +/- feet
Side Street Setback	n/a	n/a
Step Back	n/a	n/a
Maximum Lot Coverage	n/a	n/a
Minimum Lot Coverage	n/a	n/a
Maximum Height	75 feet	24 feet
Open Space	n/a	n/a
Maximum Impervious Area	75 %	27.1%
Pavement Setback	10	260 feet +/- Min
Floor Area Ratio		
Off Street Parking Spaces	1 sp./ 1,000 sf	50
Loading Bays	-	0
Other 1		
Other 2		
Other 3		

Planned Residential Unit Developments (PRUD) Requirements

	Required	Proposed
Minimum Lot Size	n/a	
Minimum Lot Area per Dwelling	n/a	
Maximum # Units per Building	n/a	
Maximum Building Length	n/a	
Maximum Accessory Building Length	n/a	
Minimum Setbacks	n/a	
Minimum Building Separation	n/a	
Minimum Open Space	n/a	

Affordable Housing Density Bonuses (if applicable)

	Bonus Increase or Decrease	Maximum Allowable With Bonus	Proposed
Density	n/a		
Height	n/a		
Setback Reduction	n/a		
Recreation Space	n/a		
Maximum Accessory Building Length	n/a		
Minimum Setbacks	n/a		
Minimum Building Separation	n/a		
Minimum Open Space	n/a		
Explanatory Text 1 (optional):			
Explanatory Text 2 (optional):			
Explanatory Text 3 (optional):			

05: General Application Documents

Existing and/or Proposed Easements or Covenants

The proposed development site includes three parcels and the record deed and available survey plan information indicate the following:

A. Existing Easements and other encumberances:

1. Bailey Avenue Branch Sewer Easement is partially located along the northerly end of the site over Lots 330A-B-4 and 330A-B-11 as shown on the Existing Conditions and Site Plans.

2. Presumpscot North Interceptor Sewer Easement as shown on the enclosed Existing Conditions and Site Plans.

3. Dole Branch Sewer Right of Way

4. Central Maine Power and New England Telephone & Telegraph Company easement, 06/8/1965, CCRD 2937/381

5. Taking of property by City of Portland, 7/20/1964, CCRD 2881/318

6. Sewer line easement to City of Portland, 10/18/1965, CCRD 2931/431

B. New Easements

No new easements are proposed as part of the site development.

Standards to be Waived: Cite Ordinance or Technical Manual Standard	**Cite Standard Language:** Cute specific language of applicable Ordinance or Technical Manual Standard	**Waiver Being Sought:** Describe waiver being sought. Ex-We are requesting a two-way parking lot drive aisle width to 20 feet.	**Justification for Waiver:** Address specific waiver criteria, if applicable, and document reasons for the waiver request.
HVAC Emissions Verification Submittal	Site Plan Application –Final Plan General Submission Checklist, Pg. 7	The applicant requests a temporary submittal waiver from providing manufacturer's verification that equipment meets federal and state emissions requirements.	The applicant requests that the information be submitted upon finalization of the building mechanical systems and be considered as a formal Condition of Approval.
Photometric Plan Submittal	Technical Manual Section 12.8 – Site Lighting, Submissions	The applicant requests a temporary submittal waiver from providing a photometric plan	The applicant requests that the Plan be submitted upon finalization of the proposed lighting design and be considered as a Condition of Approval.
Ch. 25, Art. VI, Sec. 25-96, Sidewalk and Curbing Construction and Maintenance Ch. 14, Sec. 14-506(b) Sidewalks 1, 2, 6 Curbing 4	Where a nonresidential,…development requiring site plan approval abuts any accepted public street and a sidewalk with granite curbing…has not already been provided along the entire street frontage if this lot…In conjunction with major site plan review, the Planning Board,…may waive or modify the requirements contained herein upon a like finding and on the same terms and conditions as set forth in section 14-506(b) of this code. Sidewalks 1 - There is no reasonable expectation for pedestrian usage coming from, going to and traversing the site. 2 - There is no sidewalk in existence or expected within 1000 feet and the construction of sidewalk does not contribute to the development of a pedestrian oriented infrastructure. 6 - Strict adherence to the sidewalk requirement would result in a loss of significant site features related to landscaping or topography that are deemed of a greater public value. Curbing 4 - Strict adherence to the curb requirement would result in a loss of significant site features related to landscaping or topography that are deemed of a greater public value. City of Portland Land Use Standards Code of Ordinances…Runoff from the development site does not require curbing for stormwater management. In no events shall the waiver have the effect of creating potentially hazardous vehicle or pedestrian conflict or nullifying the intent and purpose and policies of the land development plan relating to transportation and pedestrian infrastructure and the regulations of this article. At its discretion, the planning authority may refer any petition for a waiver from the curb and sidewalk requirement to the Planning Board for decision.	The applicant requests a waiver from providing sidewalk/curbing along the street frontage.	The uses in this area are not typically pedestrian destinations nor do they have services/businesses that historically move pedestrians from one business to another. There is no sidewalk/curbing within 1,000 feet of the proposed development site and the construction of a single section of sidewalk does not contribute significantly to pedestrian oriented infrastructure. Adjacent and nearby development along the Parkway does not include sidewalks and curbing is limited to the driveway radii. The entry drive will be curbed.
Ch. 14, Sec. 14-526 (a) 2 c iii)	Continuous internal walkways shall be provided between existing or planned public sidewalks adjacent to the site, transit stops and street crossings and primary building entrances on the site.	The applicant requests a waiver from providing an internal walk to a planned or public sidewalk.	A waiver from the street frontage sidewalk has been requested, therefore we are requesting a waiver from providing an internal walk connection to the street. A walk is provided between the building and adjacent paved parking area.
Ch. 14, Sec. 14-526 2 (b) ii) and Technical Manual, Section 4	Developments with five or more parking spaces shall include at least two trees or 1 tree and 3 shrubs per five parking spaces planted in a landscaped islands to screen, shade and break up parking. Note: Based upon the proposed 50 parking stalls, 20 trees are required.	The applicant requests a waiver from providing curbed, landscaped islands within the parking area.	A waiver is sought based on the use of the site. Elimination of the islands allows fleet vehicles with trailers ease of access and circulation. The portion of the site to be developed is setback from the street by 340'± providing ample screening from the public street. Shading will be provided at the out limits of the parking area where the existing vegetation will remain.
Ch. 14, Sec. 14-526 2 (b) iii) and Technical Manual, Section 4	All development shall include street trees in numbers and locations as specified in Sec. 4 of the Technical Manual. Street trees are intended to benefit public spaces by providing green and natural elements that contribute to the streetscape and the urban forest ecosystem, provide health benefits, and increase the tree canopy to maximize shade and reduce energy use. (b) where the applicant can demonstrate that planting of required street trees in the City right-of-way, the Reviewing Authority may permit the following to be counted towards the street tree requirements, subject to the detailed standards set out in the Technical Manual: iii. The preservation of existing healthy trees that area six (6) inches or more in caliper, visible from the right-of-way and on the site within twenty feet of the property line;	The applicant requests a waiver from providing street trees in favor of a permitted alternative allowing preservation of trees adjacent to the right-of-way.	The existing site is wooded and providing natural elements that contribute to the streetscape and urban ecosystem. The tree canopy provides shading and provides no relief from energy use as it is not in close proximity to existing or proposed buildings. More specifically, the applicant proposes the preservation of healthy trees that are 6 inches or more in caliper, visible from Riverside Industrial Parkway right-of-way and on the site within twenty feet of the property line in the area immediately adjacent to the entry drive location. The proposed tree preservation area will extend a distance of one hundred linear feet on either side of the project entry drive.

07: General Application Documents

Financial Capability

The applicant for the development of this project is the record owner, Two Eisenhower Drive, LLC c/o Mr. David Machesney. A letter from Biddeford Savings written on behalf of the applicant is enclosed as demonstration of financial capability.

Biddeford Savings

June 21, 2018

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

RE: Mr. David Machesney and 2 Eisenhower Drive, LLC, 250 Industrial Parkway.

To whom it may concern:

Biddeford Savings is pleased to entertain a request for financing by **2 Eisenhower Drive, LLC and David Machesney** on the development of a commercial building at 250 Industrial Parkway, Portland Maine. David Machesney and 2 Eisenhower Drive, LLC are customers in good standing and have the track record to engage in a project of this size.

The Bank is currently entertaining financing of the above referenced project and based on the current information on the project and subject to completion of underwriting and approval I am supportive of the request and it is my view that they have the financial capacity and wherewithal to complete the proposed project.

If you have any questions or comments regarding this letter, please call me at 571-5673, or send an e-mail to djones@biddefordsavings.com.

Sincerely,

Doug Jones
Senior Vice President
Business Banking Officer

08: General Application Documents

Technical Capability

The applicant has retained Sebago Technics, Inc., a consulting engineering firm, to assist in all aspects of the proposed site development. A firm introduction and key personnel resumes are included in this section.

Introduction to Sebago Technics, Inc.



Year Established: 1981 (36 years in business)

About Us: Sebago Technics, Inc. (STI) is a consulting firm of more than 65 design professionals and technical staff providing services throughout New England. From the start, our business plan was simple: "to provide quality, cost-effective civil engineering services that are responsive to a customer's goals, schedule and budget." Our One Company capabilities and resources provide clients with experience and solutions to respond to their planning, permitting and design needs.



Structure: Employee-owned since 1998

Services: Civil, environmental, transportation & traffic engineering; municipal engineering; local/state/federal permitting and planning; land surveying & laser scanning; GIS; landscape architecture; environmental services; and natural resources.

Employee Disciplines:
Professional Engineers, Civil Engineers, Transportation Engineers, Landscape Architects, Professional Land Surveyors, Survey Technicians, CADD Designers, Wetland Scientist, Soil Scientist, Construction Inspectors, Environmental Scientists, GIS Professionals, Marketing, Administrative & Financial



Professional Focus: Sebago Technics provides engineering and planning services to both public and private sector clients. In the municipal and government sectors we have provided multiple discipline services through General Services Contracts (GSC) and project specific contracts. A few examples include the Portland Jetport, City of Portland Public Services, City of South Portland, City of Lewiston, City of Westbrook and several smaller communities. Our municipal sector work includes street and utility infrastructure design, municipal facility planning and specialty work such as Island marine and solid waste planning & engineering.

Location: South Portland, ME



Geographic Service Area: Maine, New Hampshire, Vermont, Massachusetts

Web Site: www.sebagotechnics.com

WILLIAM T. CONWAY, RLA, LEED-AP

Senior Vice President, Landscape Architecture



When Mr. Conway joined Sebago Technics, Inc. in 1988, he established new disciplines of master planning, land planning, and landscape architecture. His extensive experience with multi-disciplinary professional teams and sound project management for government agencies, corporate clients, and private developers resulted in substantial growth in this field. The company is now recognized as one of the leading firms in the State of Maine for Landscape Architectural services.

Mr. Conway has had significant exposure and experience in professional practice resulting from his work throughout several regions of the United States, as well as Europe and the Middle East. He has also held key positions with design firms in Atlanta, Georgia and Tucson, Arizona prior to moving to Maine. He has held professional registrations in the states of Arizona, Georgia, Connecticut, Maine, and Hew Hampshire.

Much of his work involves large-scale projects, including the L.L. Bean Freeport Retail Store and Desert Road Campus, several projects for the American Skiing Company, the UNUM Provident Headquarters in Portland (HO-III), master planning and site design for Maine Medical Center in Portland and Scarborough, Maine, and a site selection study for IDEXX Laboratories in the Greater Portland area.

EXPERIENCE

Portsmouth Public Library, Portsmouth, New Hampshire - Will worked closely with City officials in the planning and design of this building, a recipient of LEED Silver Certification. Located in the vicinity of Strawberry Banke, the site design features an outdoor reading courtyard, in part enclosed by the remains of an historic armory which once stood on the library site.

Stroudwater Landing, Westbrook, Maine - Master planning services for a 65 acre elderly housing campus planned for comprehensive housing alternatives including independent and assisted living opportunities. Avita of Westbrook, a 70 bed assisted living facility specializing in memory care services, features extensively landscaped, secure exterior courtyards. Stroudwater Landing Lodge is a 95 unit independent and assisted living community, offering residents a variety of outdoor recreational amenities. The future build out of the campus is planned to accommodate 44 independent living cottage units and medical offices.

Avita of Brunswick, Brunswick, Maine – Site planning and landscape architectural services for a 70 bed assisted living facility, located within Brunswick Landing, a former naval air station. This project includes a graceful arrival to this one story building, comprised of three resident "neighborhoods" which share common core services and administrative offices. Each neighborhood has easy access to a secure exterior courtyard. The courtyards are lush garden areas with ample seating and activities including gardening and group activities.

Southern Maine Area on Aging Day Services, Biddeford, Maine – Site planning and landscape architecture for a day services facility serving the elderly population in southern York County. Working closely with the Southern Maine Area on Aging staff, this site was designed to facilitate daily drop off and pick up activities inherent with the facility program. The 10,000 square foot, single story building is complimented with a secure exterior courtyard with extensive landscape plantings, raised benches for gardening activities, walking paths and seating facilities.

Maine Veteran's Cemetery, Augusta, Maine – Site planning and landscape architectural services for a major expansion to the cemetery located in Augusta, Maine. The project is located in the heart of the cemetery grounds, and was designed with geometry derived from Arlington National Cemetery in Washington, D.C. Design review was coordinated with and approved by the Maine Bureau of General Services, the Maine Veterans Cemetery System, and the U.S. Department of Veterans Affairs.

EDUCATION

University of Tucson, Tucson, AZ
Bachelor of Science
Landscape Architecture, 1979

REGISTRATIONS

Registered Landscape Architect:
Maine #20000108

LEED Accredited Professional
CLARB Certified

MEMBERSHIPS

American Society of Landscape Architects

Council of Landscape Architectural Registration Boards

PUBLICATIONS

Doris Allen Twitchell Village Student Housing/ University of Maine, Orono, Maine; article in Contemporary Trends in Landscape Architecture, Van Nostrand Reinhold, 1997

SEBAGO TECHNICS

207.200.2055 WCONWAY@SEBAGOTECHNICS.COM

SHAWN M. FRANK, PE

Vice President, Commercial Development



Mr. Frank has over 33 years of experience in the civil engineering field on a wide variety of private and public projects. These include utility systems for sanitary and water supply, stormwater control/treatment, roadway design, and construction inspection. His expertise includes difficult design situations involving pipe trench depths of 20' and minimum slope piping in marginal soils. He has designed pump stations ranging from single-family package units to wet well/dry well systems exceeding 200 gpm.

EXPERIENCE

Mr. Frank specializes in the design and permitting of residential subdivisions and commercial site plans throughout southern Maine. The number of lots within the subdivisions ranged from three to ninety. All of the projects required review and approval by the local municipal planning board. The larger projects required permitting through the Maine Department of Environmental Protection. Mr. Frank prepared the applications for submission, coordinated the review with staff and presented the projects to the planning boards.

Mr. Frank is particularly skilled in the coordination of the internal departments at Sebago Technics, as well as presentations to clients and local planning boards. His professionalism and attention to publicly sensitive issues, combined with his technical knowledge, has made him effective in dealing with local concerns about project impacts, both during and after construction.

Prior to joining Sebago Technics, Mr. Frank worked as a design engineer with an architectural/engineering firm in Bangor. In this role, he was exposed to many disciplines of civil engineering. His main emphasis and responsibilities consisted of site and utility design.

EDUCATION

Norwich University
Northfield, VT
Bachelor of Science, Civil Engineering
1984

MEMBERSHIPS

Chi Epsilon,
National Civil Engineering Honor Society

American Society of Civil Engineers

Director, Maine Aggregate Association

REGISTRATIONS

Professional Engineering:
Maine #6396

SEBAGO TECHNICS

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RICHARD L. MEEK, PE, LEED-AP

Senior Project Engineer



Mr. Meek joined the staff of Sebago Technics, Inc. in 2002 as a Design Engineer. Since then, he has performed project engineering for numerous municipal, commercial and residential design projects in Maine and New Hampshire. His specialties include hydrologic and hydraulic analyses for open and closed roadway drainage systems, roadway design and plan preparation, utility coordination, design of temporary traffic control schemes, and environmental permitting associated with state and municipal transportation related projects. Rick is LEED certified and as such he has a particular interest in providing our projects with innovative water quality treatment solutions to stormwater management. He is proficient in the use of the latest design software including AutoCAD and MicroStation, HydroCAD, Hydra-Flow, HY-8, and the full suite of Microsoft Office products.

EXPERIENCE

Currently, he is involved in the final design of a $1.5M road reconstruction project on Rochester Street in Berwick, ME for the MaineDOT. This is an MS4 community that requires proactive strategies for stormwater management. A number of treatments were evaluated for use on this project, but ROW constraints limited the options to the use of catch basin cartridge inserts that will filter runoff prior to its being discharged into the Salmon Falls River.

Rick is also working with the Town of Kittery on the development of a long-range corridor improvement Study for Upper Route 1 through the commercial retail outlet section. This design includes access management provisions, new signalization, a uniform 5-lane section, a new Shared Use Path, landscaped medians, and innovative Low Impact Development (LID) stormwater treatment strategies for the roadway and abutting developments in several locations due to the proximity of Spruce Creek, and impaired water body.

Mr. Meek is an active member of the firm's Design/Build Team providing civil engineering and permitting support for a $60M interstate bridge replacement on I-91 in Brattleboro, VT for VTrans. Here he is assisting in the production of the Maintenance of Traffic Plans, approach roadway and drainage design, and environmental permitting.

Most recently, Rick is also providing utility design services in support of the new Sarah Mildred Long Bridge between Portsmouth and Kittery.

EDUCATION

Auburn University, Auburn, AL
Bachelor of Science,
Civil Engineering, 1999

New Hampshire Technical College,
Stratham, NH
Associate in Applied Science,
Electro-Mechanical Drafting, 1990

REGISTRATIONS

Professional Engineer: Maine #10668

LEED Accredited Professional

MEMBERSHIPS

American Society of Civil Engineers

TRAINING

University of New Hampshire's
Stormwater Center, 2013

Certified Professional in Erosion and
Sediment Control, 2011

Phosphorus Management Design, 2008

Biofilter Media Design, 2008

Maintenance and Inspection of
Stormwater BMP's, 2009

Low Impact Development, 2005

SEBAGO TECHNICS

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SARAH A. HANF

Civil Engineer



Mrs. Hanf joined Sebago Technics, Inc. in 2017 as a Civil Engineer. With 7 years of experience in the civil engineering field Mrs. Hanf has been involved in a wide variety of projects in Maine and New Hampshire. Sarah has a vast experience within the education sector for primary and secondary schools. She has designed and permitted residential developments for private developers and college universities. Sarah has also been involved in private retail and commercial developments, municipal sewer separations and small roadway projects.

EXPERIENCE

Blueberry Lane Improvements – Falmouth, ME: Civil Engineer/Designer: Led the design team's efforts in coordinating with the Public Works Director and Town Engineer on a full-depth sidewalk reconstruction project with milling and overlay of 2800 LF of roadway in Blueberry Lane. Additional project work consisted of road-side parking spaces, lighting and utility upgrades. Sarah assisted the Town throughout the bidding process. The project is to be constructed this summer.

Bowdoin Park Row Residences – Brunswick, ME: Mrs. Hanf is currently working as a Civil Engineer/Designer for designing and permitting the addition of four three-story apartment buildings along Park Row on the Bowdoin Campus. Proposed site improvements supporting the housing consist of pedestrian walkways, patios, common areas, landscaping, and innovative stormwater treatment areas such as porous asphalt, permeable pavers and meadow basins.

The Residences at Clarks Pond – South Portland, ME: Mrs. Hanf was a lead engineer/assistant for designing and permitting a residential community consisting of four six-story residential buildings. Project work included site and parking layout, site circulation, and designated common areas. The proposed community had very particular requirements for utilities and it was determined that the use of subsurface soil filters would be needed for treatment due to site restrictions and portions of the property belonging to the Portland Water District.

Ottawa Road – Sewer Separation – South Portland, ME: Mrs. Hanf assisted in the phased sewer separation project in South Portland. Responsibilities included disconnecting foundation drains, trench drains to eliminate inflow, and repairing damages to reduce infiltration into the existing sanitary sewer system. Project work involved lining sewers mains, manholes, and repairing lateral connections, where damages were noted from video surveillance. Other project work involved drainage improvements, utility upgrades and resurfacing existing roadways.

Waterpark Expansion Phase II, Funtown/Splashtown USA - Saco, ME: Performed extensive site and stormwater drainage design and analysis for a water park expansion that included the addition of a restroom facility, restaurant, group event area, six new water slides, and a concrete deck for additional seating and lounging to obtain state environmental permitting. Project included careful selection and design of stormwater treatment in order to maximize usable space within the project boundary. Treatment included porous pavers, grassed underdrained soil filters and bioretention cells. Construction observation and construction administration tasks were also performed.

Falmouth Elementary School - Falmouth, ME: Civil engineer/design assistant for multi-year, multi-phase project including the complete redevelopment of an existing school campus and the construction of a 139,000 sf elementary school, including parking, circulation, community connectivity, and athletic fields. Site development constraints necessitated the use of innovative use of stormwater treatment methods to meet State requirements for stormwater runoff. Services included site selection and design, environmental permitting, creation of bidding documents, and construction administration.

EDUCATION

University of Maine, Orono, ME
Bachelor of Science,
Civil & Environmental Engineering
2007

CERTIFICATIONS

Maine DEP Certified BMP Inspector
(Pending)

MEMBERSHIPS

American Society of Civil Engineers
(ASCE)

SKILLS

AutoCAD – Civil 3D, HydroCAD,
SWMM Modeling, HEC-RAS

SEBAGO TECHNICS

207.200.2115 SHANF@SEBAGOTECHNICS.COM

09: Transportation

Transportation Analysis – Traffic Impact (14-526(a)1)

- Provisions for pedestrian, bicycle, vehicle, and loading circulation and incremental volume of traffic impacts.

    1. In accordance with Transportation Standards – Impacts on Surrounding Street Systems, provision has been made for vehicle loading, unloading and parking and for vehicular and pedestrian circulation on the site and onto Riverside Industrial Parkway. Please see the attached site plan for additional information.

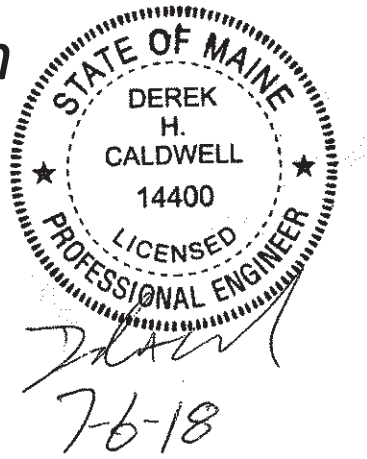
- Traffic Impact Study (Technical Manual, Section 1), if applicable.

    Not applicable. Reference is made to the enclosed Traffic Impact Statement addressing trip generation and sight distance analysis dated July 6, 2018 prepared by Mr. Derek Caldwell, PE, PTOE of Sebago Technics, Inc. Site Reconnaissance indicates that a Maine Department of Transportation (MDOT) Traffic Movement Permit is not necessary based on the projected Trip Ends and location of the entry drive. Per the Technical Manual, the proposed project also does not meet the criteria requiring a Traffic Impact Study.

SEBAGO TECHNICS

CIVIL ENGINEERING • SURVEYING • LANDSCAPE ARCHITECTURE

Memorandum



16360

To: **Shawn Frank, P.E.**

From: **Derek Caldwell, P.E., PTOE**

Date: **July 6th, 2018**

Subject: **Traffic Impact Statement**
Seabreeze Property Services Facility
Portland, Maine

We have completed a trip generation and sight distance analysis for the proposed Seabreeze Property Services facility on Riverside Industrial Parkway in Portland. It is our understanding the project is to consist of an approximately 11,200 square foot building accessed by a new driveway on the northern side of Riverside Industrial Parkway. The proposed driveway is to be located approximately 400 feet to the west of Milliken Street. The parcel of land is currently undeveloped.

Trip Generation

Turning movement counts were conducted at the existing Seabreeze facility located at 415 Presumpscot Street in Portland on Tuesday June 26, 2018 between the hours of 5-8 AM and 2-5 PM. These hours represent the expected peak hours of the facility. Based on the findings of the traffic counts, the peak hour of the development is between 6:30 AM and 7:30 AM. During this peak hour a total of 75 trips (39 entering and 36 exiting trips) were recorded. It is assumed that the new facility will generate a similar amount of traffic. Therefore this development does not require a MaineDOT Traffic Movement Permit (TMP).

In addition, we have evaluated the need for an additional traffic study based upon the Section 1.1 of the *City of Portland Technical Manual.* A traffic study is required 25 or more passenger car equivalent trips are generated and the following:

(1) on an arterial; and/or
(2) within ½ mile of a high crash location; and/or
(3) within ¼ mile of an intersection that has been identified in a previous traffic study as a failing intersection, with an overall level of service below level of service D,

Although the development is projected to generate more than 25 PCE, a traffic study is not required due to the following:

1.) Riverside Industrial Parkway is classified as a local roadway.
2.) The project site is not located within a ½ mile of a high crash location.

3.) The project site is not within ¼ mile of an intersection that has previously been identified as a failing intersection.

Sight Distance

Table 2 shows the minimum required sight distance as specified in the City of Portland Technical Manual.

Table 1
MaineDOT Required Sight Distance

Allowable Speed (MPH)	*Required Sight Distance (feet)*
25	200
30	250
35	305
40	360
45	425
50	495
55	570

At the driveway location the posted speed limit of Riverside Industrial Parkway is 25 miles per hour, and therefore requires an available sight distance of 200 feet.

Sight distance was measured at the location of the proposed driveway on June 27, 2018. Sight distance was determined to be in excess of 500 feet looking to the left and 425 feet looking to the right. Both of these measured distances are greater than the minimum required by the City of Portland.



Looking Right from the Site Driveway

75 John Roberts Road – Suite 4A, South Portland, ME 04106-6963 • 207.200.2100 • Fax: 207.856.2206



Looking Left from the Site Driveway

Attachment

- Turning Movement Counts

75 John Roberts Road – Suite 4A, South Portland, ME 04106-6963 • 207.200.2100 • Fax: 207.856.2206

Accurate Counts

978-664-2565

N/S Street : Presumpscot Street
E/W Street : Seabreeze Landscaping
City/State : Portland, ME
Weather : Clear

File Name : 13360001
Site Code : 13360001
Start Date : 6/26/2018

Groups Printed- Cars - Trucks

	Presumpscot St From North		Seabreeze Landscaping From East		Presumpscot St From South		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
05:00 AM	2	3	0	0	1	0	6
05:15 AM	0	7	0	0	5	0	12
05:30 AM	1	11	0	0	2	0	14
05:45 AM	1	15	1	0	2	2	21
Total	4	36	1	0	10	2	53
06:00 AM	5	19	0	0	6	2	32
06:15 AM	1	38	0	1	7	2	49
06:30 AM	12	49	1	2	11	8	83
06:45 AM	7	55	6	1	12	9	90
Total	25	161	7	4	36	21	254
07:00 AM	2	49	12	5	17	1	86
07:15 AM	0	82	6	3	13	0	104
07:30 AM	1	117	3	3	16	1	141
07:45 AM	4	132	0	2	24	1	163
Total	7	380	21	13	70	3	494
Grand Total	36	577	29	17	116	26	801
Apprch %	5.9	94.1	63	37	81.7	18.3	
Total %	4.5	72	3.6	2.1	14.5	3.2	
Cars	36	576	29	17	113	26	797
% Cars	100	99.8	100	100	97.4	100	99.5
Trucks	0	1	0	0	3	0	4
% Trucks	0	0.2	0	0	2.6	0	0.5

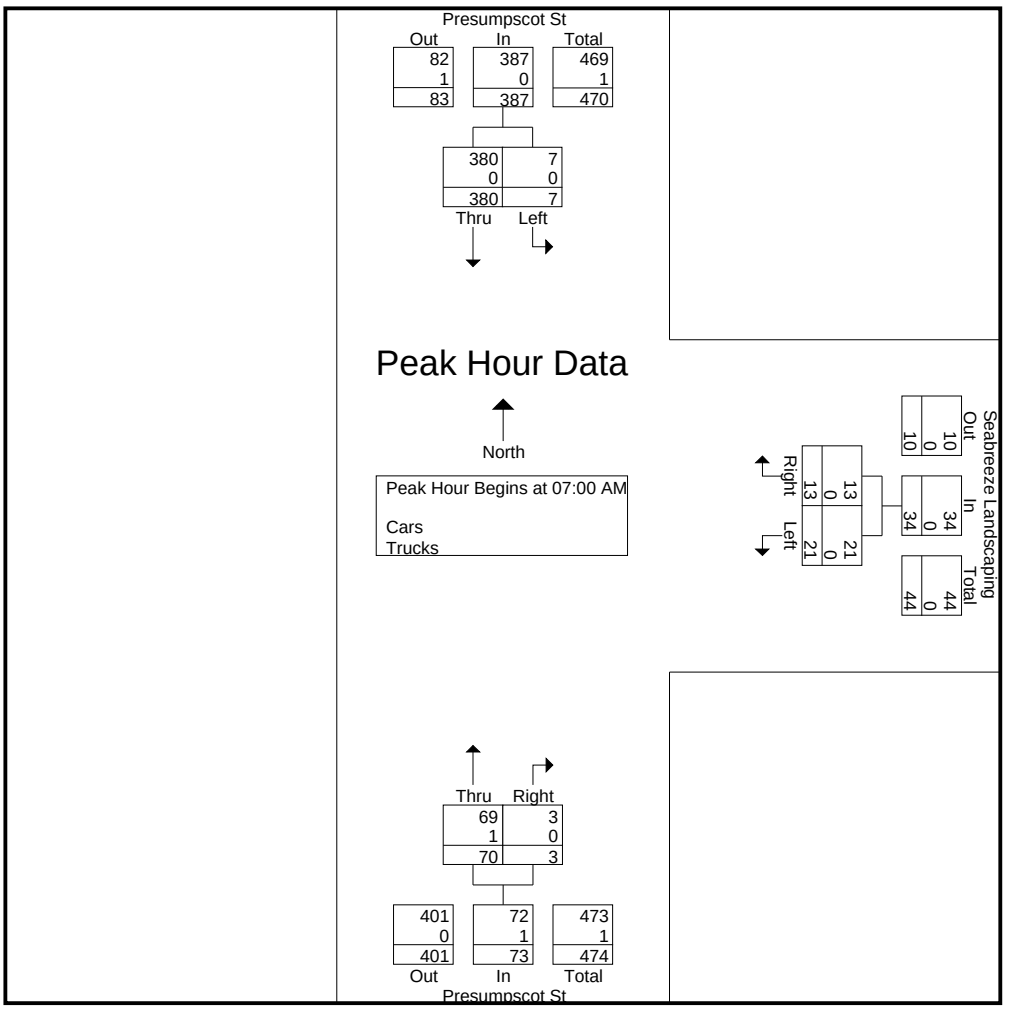
Accurate Counts

978-664-2565

N/S Street : Presumpscot Street
E/W Street : Seabreeze Landscaping
City/State : Portland, ME
Weather : Clear

File Name : 13360001
Site Code : 13360001
Start Date : 6/26/2018
Page No : 2

	Presumpscot St From North			Seabreeze Landscaping From East			Presumpscot St From South			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 05:00 AM to 07:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	2	49	51	**12**	**5**	**17**	17	**1**	18	86
07:15 AM	0	82	82	6	3	9	13	0	13	104
07:30 AM	1	117	118	3	3	6	16	1	17	141
07:45 AM	**4**	**132**	**136**	0	2	2	**24**	1	**25**	**163**
Total Volume	7	380	387	21	13	34	70	3	73	494
% App. Total	1.8	98.2		61.8	38.2		95.9	4.1		
PHF	.438	.720	.711	.438	.650	.500	.729	.750	.730	.758
Cars	7	380	387	21	13	34	69	3	72	493
% Cars	100	100	100	100	100	100	98.6	100	98.6	99.8
Trucks	0	0	0	0	0	0	1	0	1	1
% Trucks	0	0	0	0	0	0	1.4	0	1.4	0.2



Accurate Counts

978-664-2565

N/S Street : Presumpscot Street
E/W Street : Seabreeze Landscaping
City/State : Portland, ME
Weather : Clear

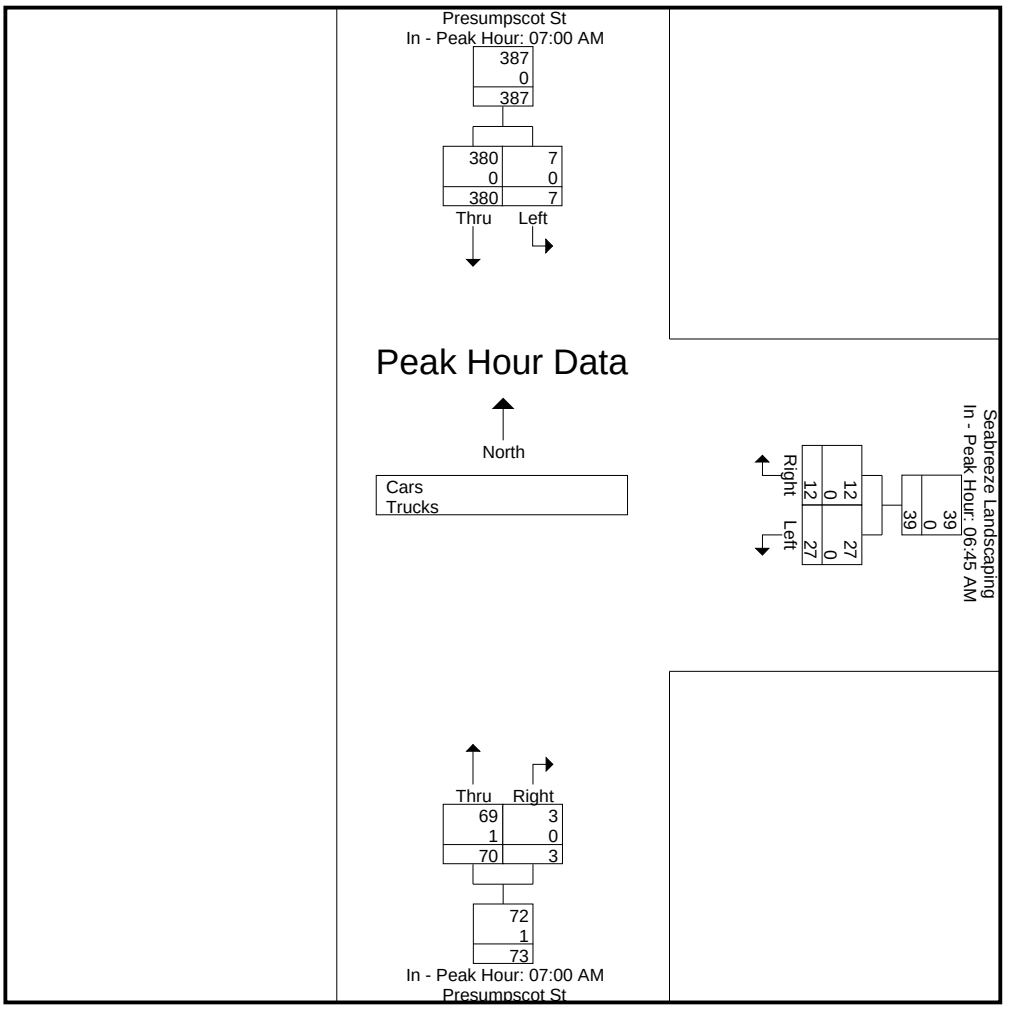
File Name : 13360001
Site Code : 13360001
Start Date : 6/26/2018
Page No : 3

	Presumpscot St From North			Seabreeze Landscaping From East			Presumpscot St From South			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total

Peak Hour Analysis From 05:00 AM to 07:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:00 AM			06:45 AM			07:00 AM		
+0 mins.	2	49	51	6	1	7	17	**1**	18
+15 mins.	0	82	82	**12**	**5**	**17**	13	0	13
+30 mins.	1	117	118	6	3	9	16	1	17
+45 mins.	**4**	**132**	**136**	3	3	6	**24**	1	**25**
Total Volume	7	380	387	27	12	39	70	3	73
% App. Total	1.8	98.2		69.2	30.8		95.9	4.1	
PHF	.438	.720	.711	.563	.600	.574	.729	.750	.730
Cars	7	380	387	27	12	39	69	3	72
% Cars	100	100	100	100	100	100	98.6	100	98.6
Trucks	0	0	0	0	0	0	1	0	1
% Trucks	0	0	0	0	0	0	1.4	0	1.4



Accurate Counts

978-664-2565

N/S Street : Presumpscot Street
E/W Street : Seabreeze Landscaping
City/State : Portland, ME
Weather : Clear

File Name : 13360001
Site Code : 13360001
Start Date : 6/26/2018

Groups Printed- Cars

	Presumpscot St From North		Seabreeze Landscaping From East		Presumpscot St From South		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
05:00 AM	2	3	0	0	1	0	6
05:15 AM	0	7	0	0	4	0	11
05:30 AM	1	11	0	0	2	0	14
05:45 AM	1	15	1	0	2	2	21
Total	4	36	1	0	9	2	52
06:00 AM	5	19	0	0	6	2	32
06:15 AM	1	37	0	1	7	2	48
06:30 AM	12	49	1	2	10	8	82
06:45 AM	7	55	6	1	12	9	90
Total	25	160	7	4	35	21	252
07:00 AM	2	49	12	5	16	1	85
07:15 AM	0	82	6	3	13	0	104
07:30 AM	1	117	3	3	16	1	141
07:45 AM	4	132	0	2	24	1	163
Total	7	380	21	13	69	3	493
Grand Total	36	576	29	17	113	26	797
Apprch %	5.9	94.1	63	37	81.3	18.7	
Total %	4.5	72.3	3.6	2.1	14.2	3.3	

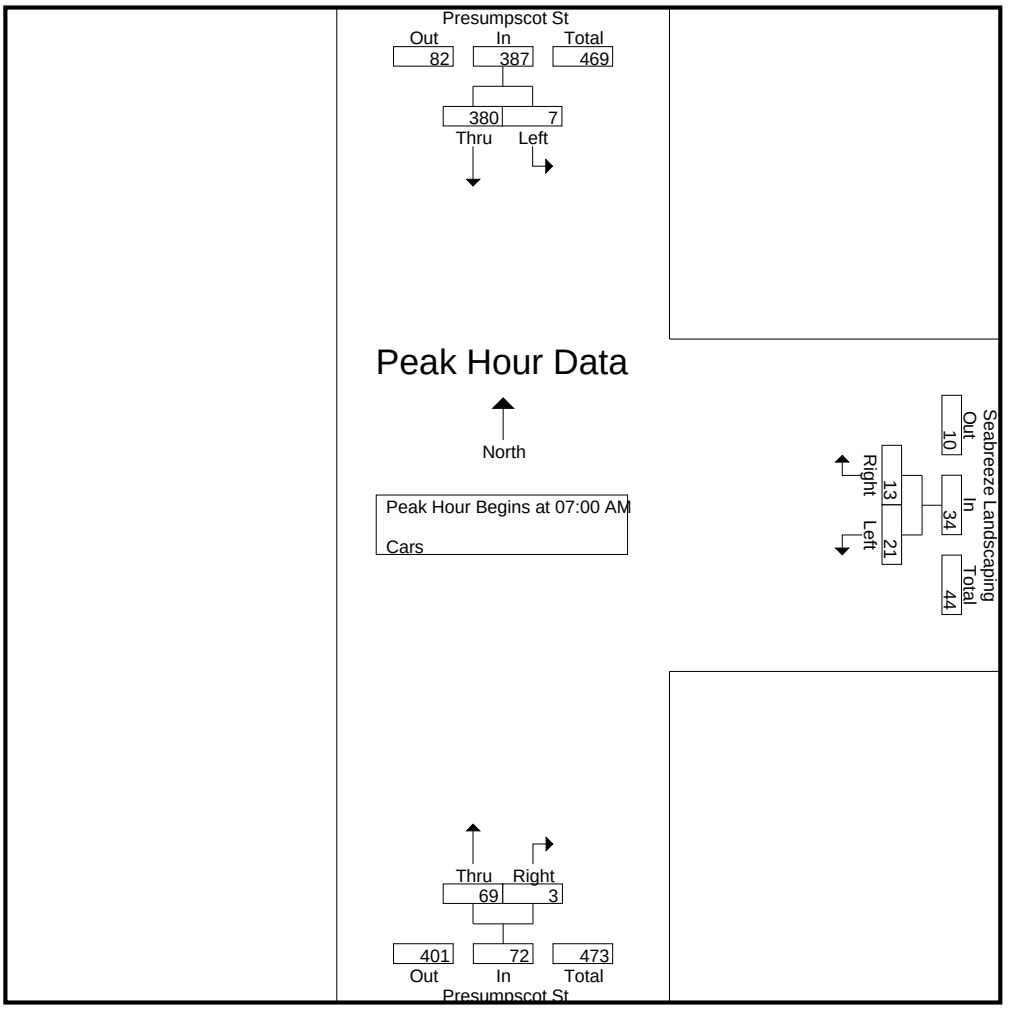
Accurate Counts

978-664-2565

N/S Street : Presumpscot Street
E/W Street : Seabreeze Landscaping
City/State : Portland, ME
Weather : Clear

File Name : 13360001
Site Code : 13360001
Start Date : 6/26/2018
Page No : 5

	Presumpscot St From North			Seabreeze Landscaping From East			Presumpscot St From South			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 05:00 AM to 07:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	2	49	51	**12**	**5**	**17**	16	**1**	17	85
07:15 AM	0	82	82	6	3	9	13	0	13	104
07:30 AM	1	117	118	3	3	6	16	1	17	141
07:45 AM	**4**	**132**	**136**	0	2	2	**24**	1	**25**	**163**
Total Volume	7	380	387	21	13	34	69	3	72	493
% App. Total	1.8	98.2		61.8	38.2		95.8	4.2		
PHF	.438	.720	.711	.438	.650	.500	.719	.750	.720	.756



Accurate Counts

978-664-2565

N/S Street : Presumpscot Street
E/W Street : Seabreeze Landscaping
City/State : Portland, ME
Weather : Clear

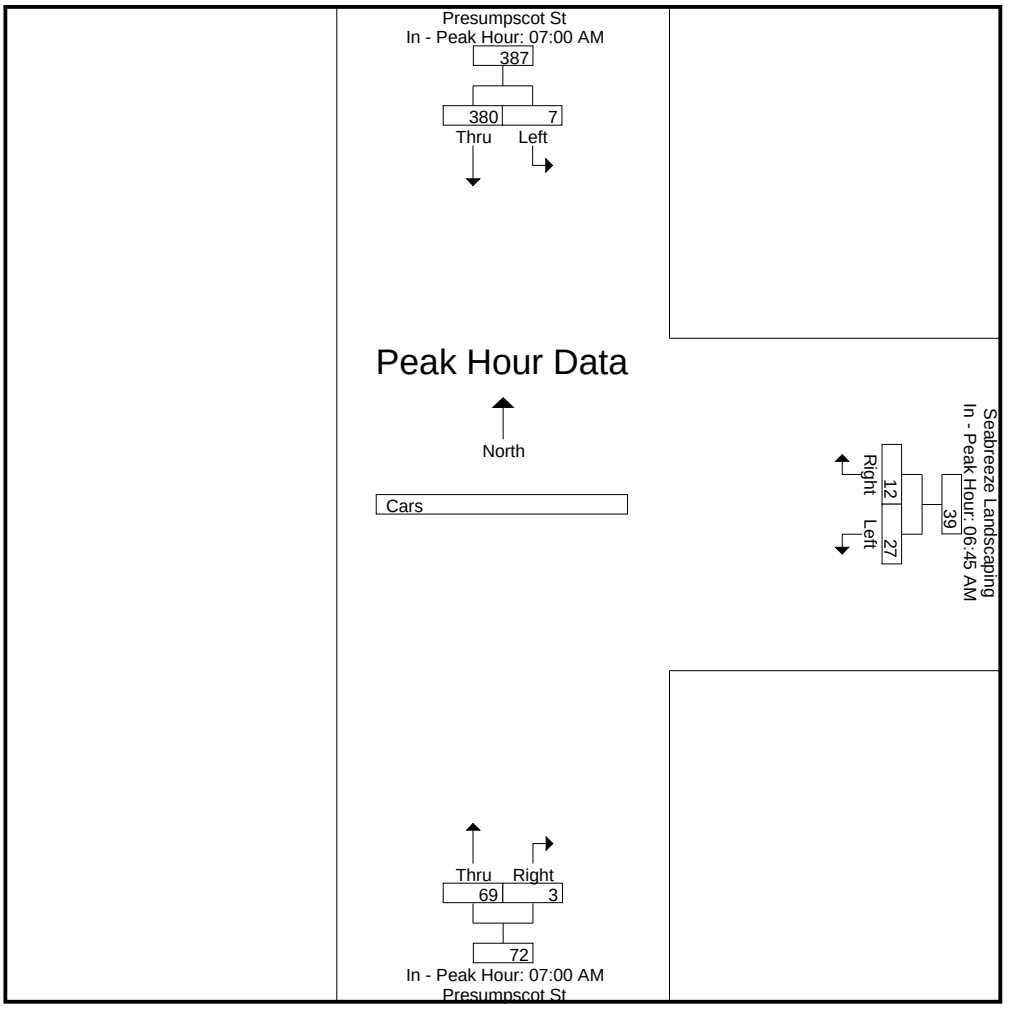
File Name : 13360001
Site Code : 13360001
Start Date : 6/26/2018
Page No : 6

	Presumpscot St From North			Seabreeze Landscaping From East			Presumpscot St From South			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total

Peak Hour Analysis From 05:00 AM to 07:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:00 AM			06:45 AM			07:00 AM		
+0 mins.	2	49	51	6	1	7	16	**1**	17
+15 mins.	0	82	82	**12**	**5**	**17**	13	0	13
+30 mins.	1	117	118	6	3	9	16	1	17
+45 mins.	**4**	**132**	**136**	3	3	6	**24**	1	**25**
Total Volume	7	380	387	27	12	39	69	3	72
% App. Total	1.8	98.2		69.2	30.8		95.8	4.2	
PHF	.438	.720	.711	.563	.600	.574	.719	.750	.720



Accurate Counts

978-664-2565

N/S Street : Presumpscot Street
E/W Street : Seabreeze Landscaping
City/State : Portland, ME
Weather : Clear

File Name : 13360001
Site Code : 13360001
Start Date : 6/26/2018

Groups Printed- Trucks

	Presumpscot St From North		Seabreeze Landscaping From East		Presumpscot St From South		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
05:00 AM	0	0	0	0	0	0	0
05:15 AM	0	0	0	0	1	0	1
05:30 AM	0	0	0	0	0	0	0
05:45 AM	0	0	0	0	0	0	0
Total	0	0	0	0	1	0	1
06:00 AM	0	0	0	0	0	0	0
06:15 AM	0	1	0	0	0	0	1
06:30 AM	0	0	0	0	1	0	1
06:45 AM	0	0	0	0	0	0	0
Total	0	1	0	0	1	0	2
07:00 AM	0	0	0	0	1	0	1
07:15 AM	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0
Total	0	0	0	0	1	0	1
Grand Total	0	1	0	0	3	0	4
Apprch %	0	100	0	0	100	0	
Total %	0	25	0	0	75	0	

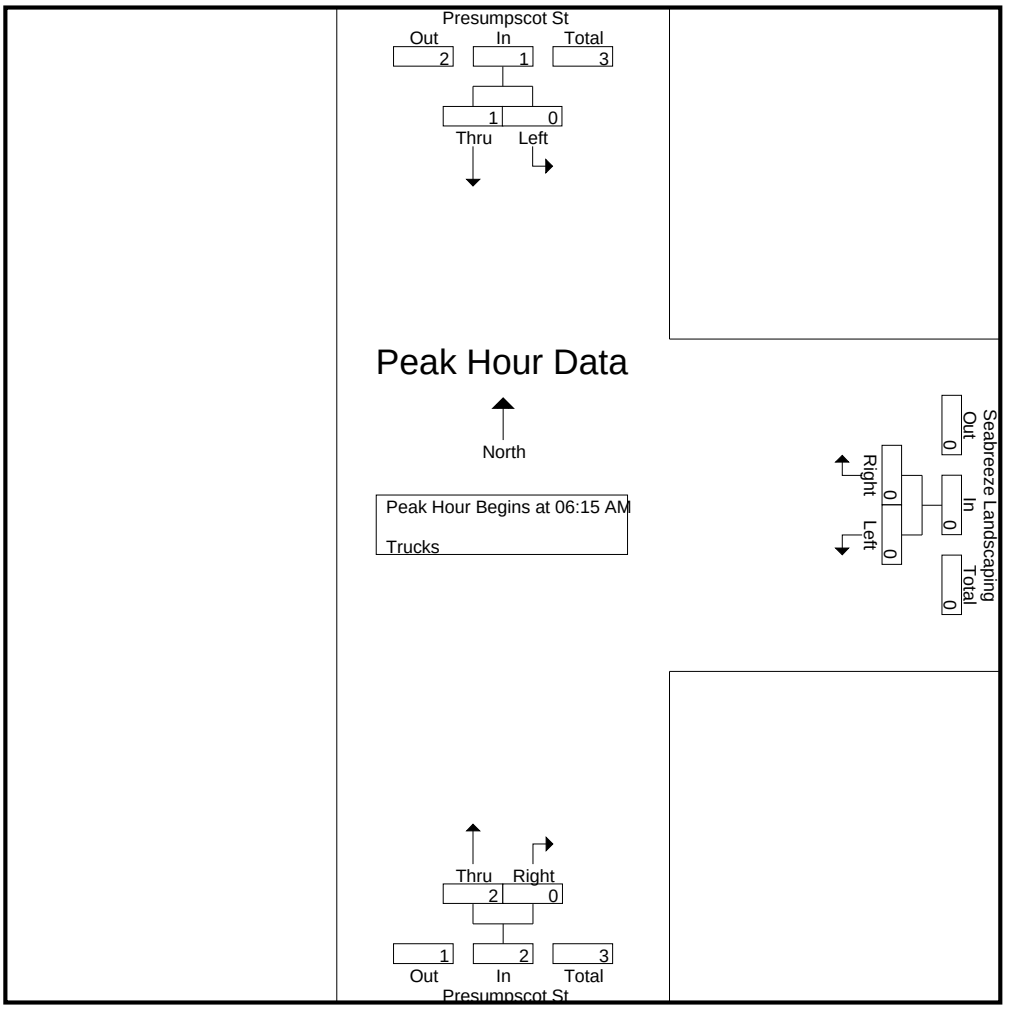
Accurate Counts

978-664-2565

N/S Street : Presumpscot Street
E/W Street : Seabreeze Landscaping
City/State : Portland, ME
Weather : Clear

File Name : 13360001
Site Code : 13360001
Start Date : 6/26/2018
Page No : 8

	Presumpscot St From North			Seabreeze Landscaping From East			Presumpscot St From South			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 05:00 AM to 07:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 06:15 AM										
06:15 AM	0	**1**	**1**	0	0	0	0	0	0	**1**
06:30 AM	0	0	0	0	0	0	**1**	0	**1**	1
06:45 AM	0	0	0	0	0	0	0	0	0	0
07:00 AM	0	0	0	0	0	0	1	0	1	1
Total Volume	0	1	1	0	0	0	2	0	2	3
% App. Total	0	100		0	0		100	0		
PHF	.000	.250	.250	.000	.000	.000	.500	.000	.500	.750



Accurate Counts

978-664-2565

N/S Street : Presumpscot Street
E/W Street : Seabreeze Landscaping
City/State : Portland, ME
Weather : Clear

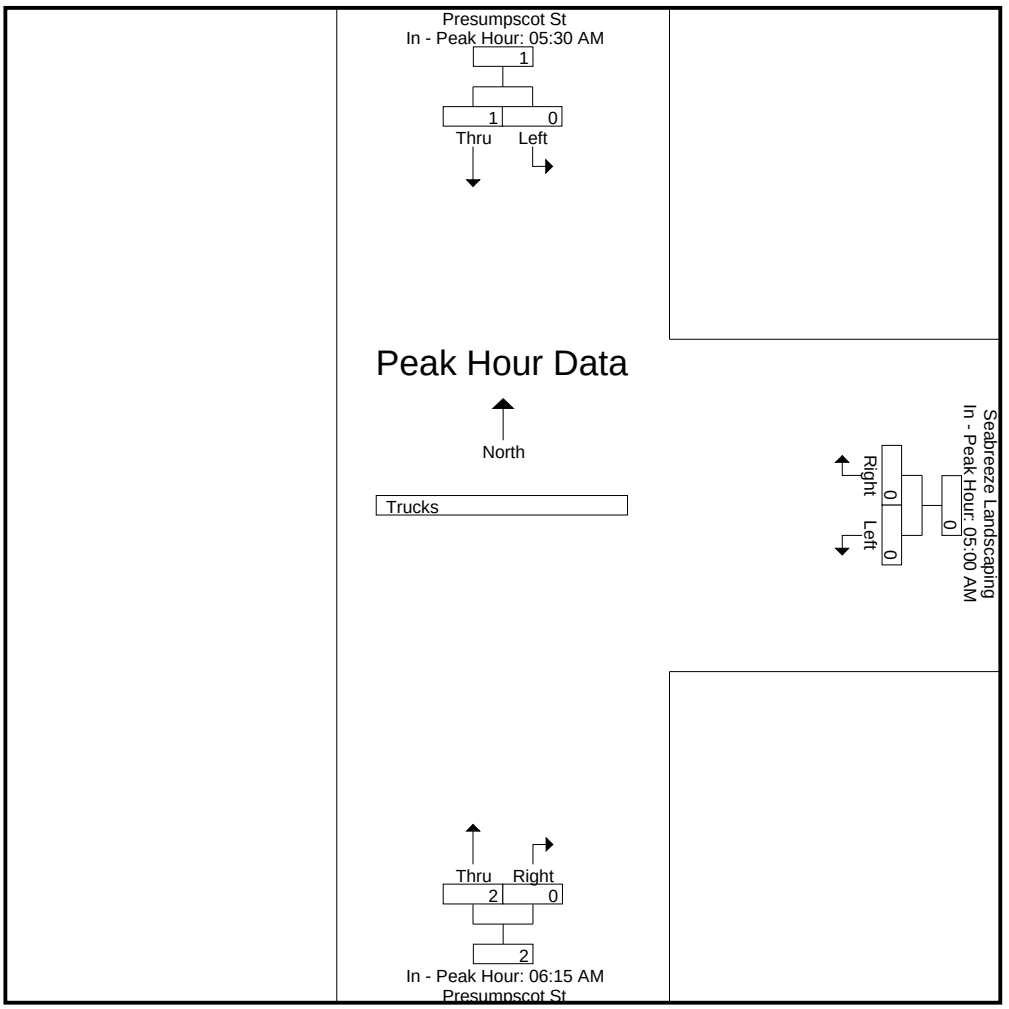
File Name : 13360001
Site Code : 13360001
Start Date : 6/26/2018
Page No : 9

	Presumpscot St From North			Seabreeze Landscaping From East			Presumpscot St From South			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total

Peak Hour Analysis From 05:00 AM to 07:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	05:30 AM			05:00 AM			06:15 AM		
+0 mins.	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	**1**	0	**1**
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	0	**1**	**1**	0	0	0	1	0	1
Total Volume	0	1	1	0	0	0	2	0	2
% App. Total	0	100		0	0		100	0	
PHF	.000	.250	.250	.000	.000	.000	.500	.000	.500



Accurate Counts

978-664-2565

N/S Street : Presumpscot Street
E/W Street : Seabreeze Landscaping
City/State : Portland, ME
Weather : Clear

File Name : 13360001
Site Code : 13360001
Start Date : 6/26/2018

Groups Printed- Bikes Peds

	Presumpscot St From North			Seabreeze Landscaping From East			Presumpscot St From South					
Start Time	Left	Thru	Peds	Left	Right	Peds	Thru	Right	Peds	Exclu. Total	Inclu. Total	Int. Total
05:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
05:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
05:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
05:45 AM	0	1	0	0	0	0	0	0	0	0	1	1
Total	0	1	0	0	0	0	0	0	0	0	1	1
06:00 AM	0	1	0	0	0	0	0	0	0	0	1	1
06:15 AM	0	0	0	0	0	0	0	1	0	0	1	1
06:30 AM	0	2	0	0	0	0	1	1	0	0	4	4
06:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	3	0	0	0	0	1	2	0	0	6	6
07:00 AM	0	2	0	0	0	0	0	0	0	0	2	2
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	2	0	0	0	2	2
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	2	0	0	0	0	2	0	0	0	4	4
Grand Total	0	6	0	0	0	0	3	2	0	0	11	11
Apprch %	0	100		0	0		60	40				
Total %	0	54.5		0	0		27.3	18.2		0	100	

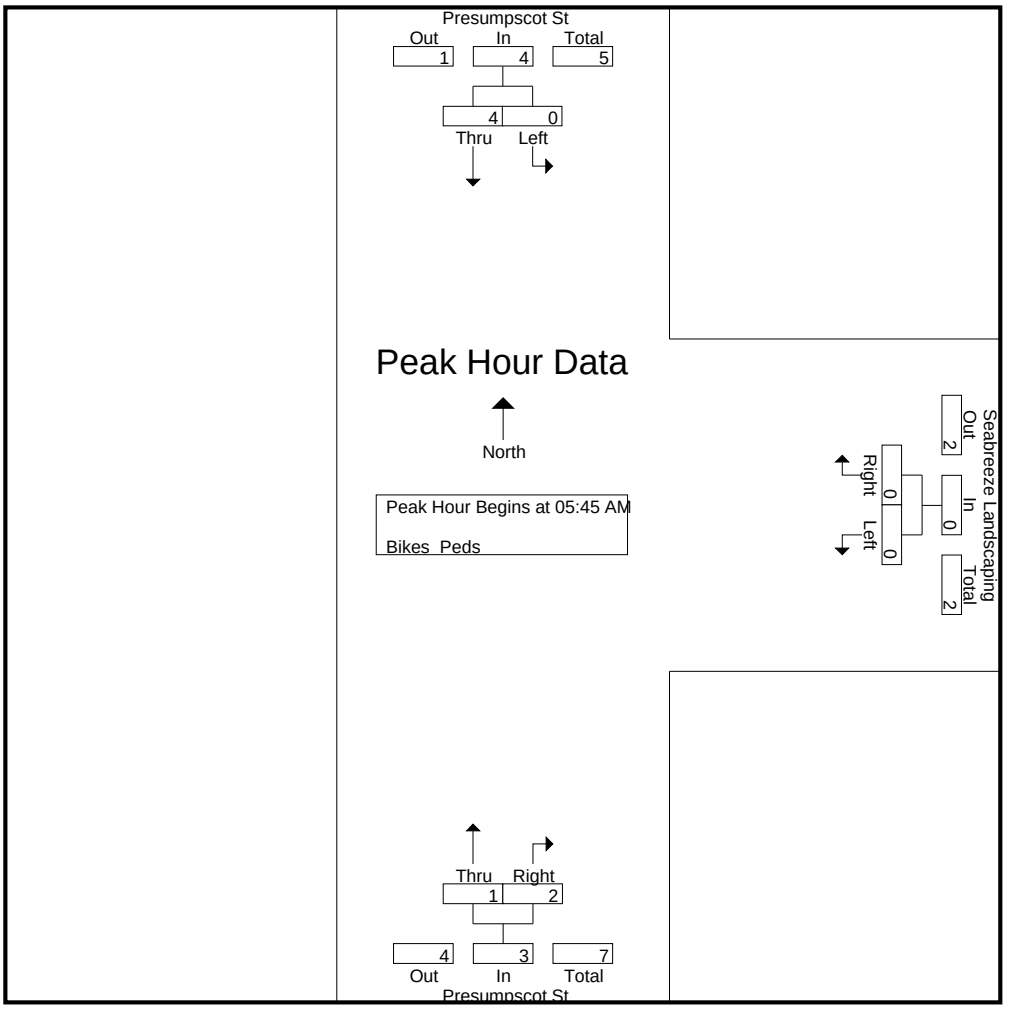
Accurate Counts

978-664-2565

N/S Street : Presumpscot Street
E/W Street : Seabreeze Landscaping
City/State : Portland, ME
Weather : Clear

File Name : 13360001
Site Code : 13360001
Start Date : 6/26/2018
Page No : 11

	Presumpscot St From North			Seabreeze Landscaping From East			Presumpscot St From South			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 05:00 AM to 07:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 05:45 AM										
05:45 AM	0	1	1	0	0	0	0	0	0	1
06:00 AM	0	1	1	0	0	0	0	0	0	1
06:15 AM	0	0	0	0	0	0	0	**1**	1	1
06:30 AM	0	**2**	**2**	0	0	0	**1**	1	**2**	**4**
Total Volume	0	4	4	0	0	0	1	2	3	7
% App. Total	0	100		0	0		33.3	66.7		
PHF	.000	.500	.500	.000	.000	.000	.250	.500	.375	.438



Accurate Counts

978-664-2565

N/S Street : Presumpscot Street
E/W Street : Seabreeze Landscaping
City/State : Portland, ME
Weather : Clear

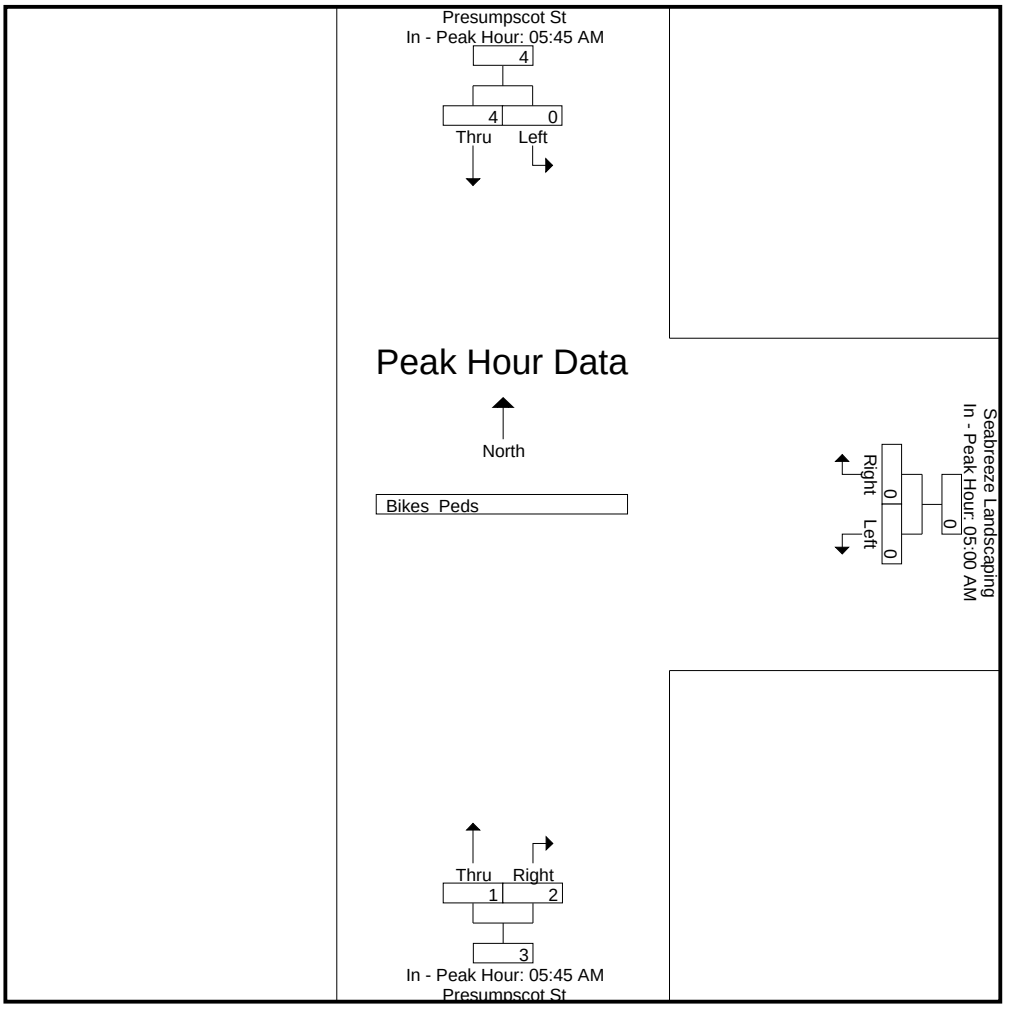
File Name : 13360001
Site Code : 13360001
Start Date : 6/26/2018
Page No : 12

	Presumpscot St From North			Seabreeze Landscaping From East			Presumpscot St From South			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total

Peak Hour Analysis From 05:00 AM to 07:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	05:45 AM			05:00 AM			05:45 AM		
+0 mins.	0	1	1	0	0	0	0	0	0
+15 mins.	0	1	1	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	**1**	1
+45 mins.	0	**2**	**2**	0	0	0	**1**	1	**2**
Total Volume	0	4	4	0	0	0	1	2	3
% App. Total	0	100		0	0		33.3	66.7	
PHF	.000	.500	.500	.000	.000	.000	.250	.500	.375



Accurate Counts

978-664-2565

N/S Street : Presumpscot Street
E/W Street : Seabreeze Landscaping
City/State : Portland, ME
Weather : Clear

File Name : 13360001
Site Code : 13360001
Start Date : 6/26/2018
Page No : 1

Groups Printed- Cars - Trucks

	Presumpscot St From North		Seabreeze Landscaping From East		Presumpscot St From South		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
02:00 PM	0	26	0	0	38	1	65
02:15 PM	0	34	0	1	45	1	81
02:30 PM	0	26	1	0	41	2	70
02:45 PM	0	21	3	3	41	1	69
Total	0	107	4	4	165	5	285
03:00 PM	0	30	1	2	53	0	86
03:15 PM	0	32	0	0	61	3	96
03:30 PM	0	33	2	0	69	2	106
03:45 PM	0	30	3	2	81	1	117
Total	0	125	6	4	264	6	405
04:00 PM	1	32	0	1	101	1	136
04:15 PM	0	30	2	0	98	1	131
04:30 PM	1	23	0	0	78	0	102
04:45 PM	0	40	0	0	113	1	154
Total	2	125	2	1	390	3	523
Grand Total	2	357	12	9	819	14	1213
Apprch %	0.6	99.4	57.1	42.9	98.3	1.7	
Total %	0.2	29.4	1	0.7	67.5	1.2	
Cars	2	354	12	9	818	14	1209
% Cars	100	99.2	100	100	99.9	100	99.7
Trucks	0	3	0	0	1	0	4
% Trucks	0	0.8	0	0	0.1	0	0.3

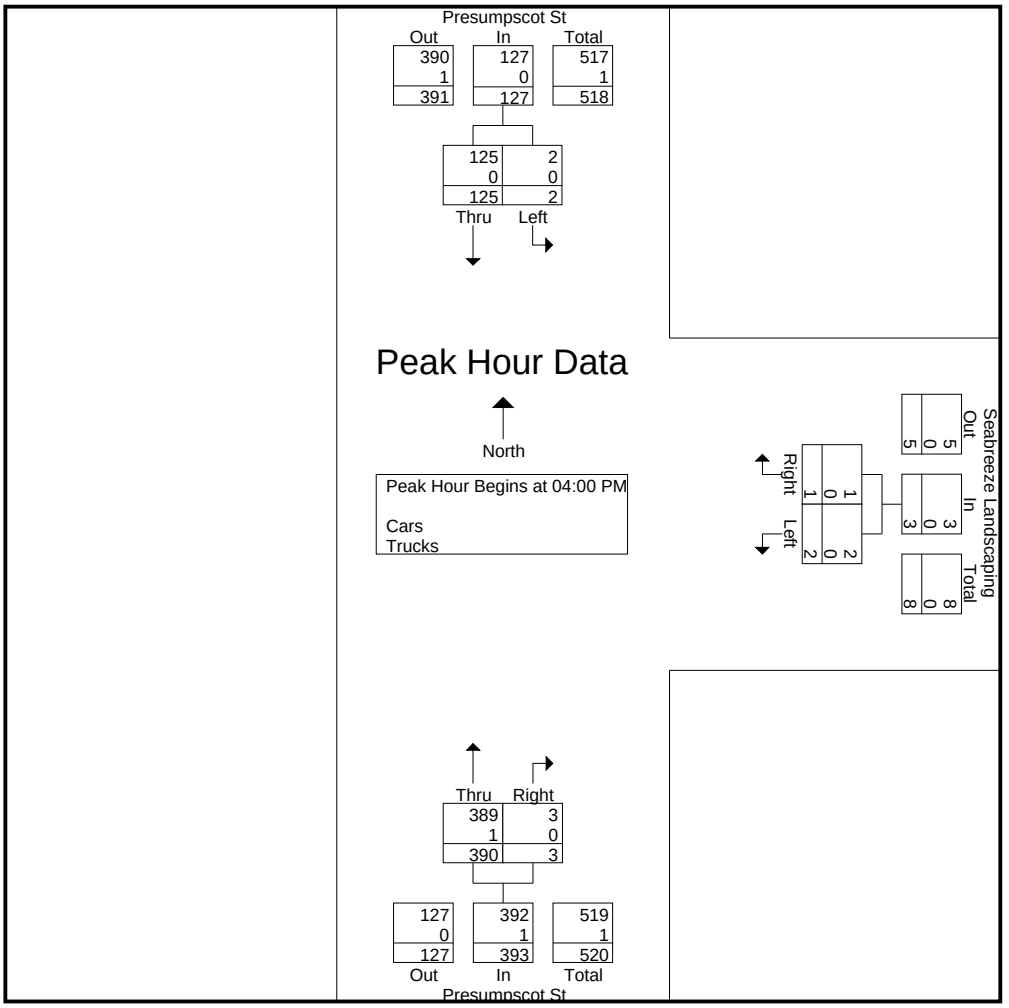
Accurate Counts

978-664-2565

N/S Street : Presumpscot Street
E/W Street : Seabreeze Landscaping
City/State : Portland, ME
Weather : Clear

File Name : 13360001
Site Code : 13360001
Start Date : 6/26/2018
Page No : 2

	Presumpscot St From North			Seabreeze Landscaping From East			Presumpscot St From South			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 04:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	**1**	32	33	0	**1**	1	101	**1**	102	136
04:15 PM	0	30	30	**2**	0	**2**	98	1	99	131
04:30 PM	1	23	24	0	0	0	78	0	78	102
04:45 PM	0	**40**	**40**	0	0	0	**113**	1	**114**	**154**
Total Volume	2	125	127	2	1	3	390	3	393	523
% App. Total	1.6	98.4		66.7	33.3		99.2	0.8		
PHF	.500	.781	.794	.250	.250	.375	.863	.750	.862	.849
Cars	2	125	127	2	1	3	389	3	392	522
% Cars	100	100	100	100	100	100	99.7	100	99.7	99.8
Trucks	0	0	0	0	0	0	1	0	1	1
% Trucks	0	0	0	0	0	0	0.3	0	0.3	0.2



Accurate Counts

978-664-2565

N/S Street : Presumpscot Street
E/W Street : Seabreeze Landscaping
City/State : Portland, ME
Weather : Clear

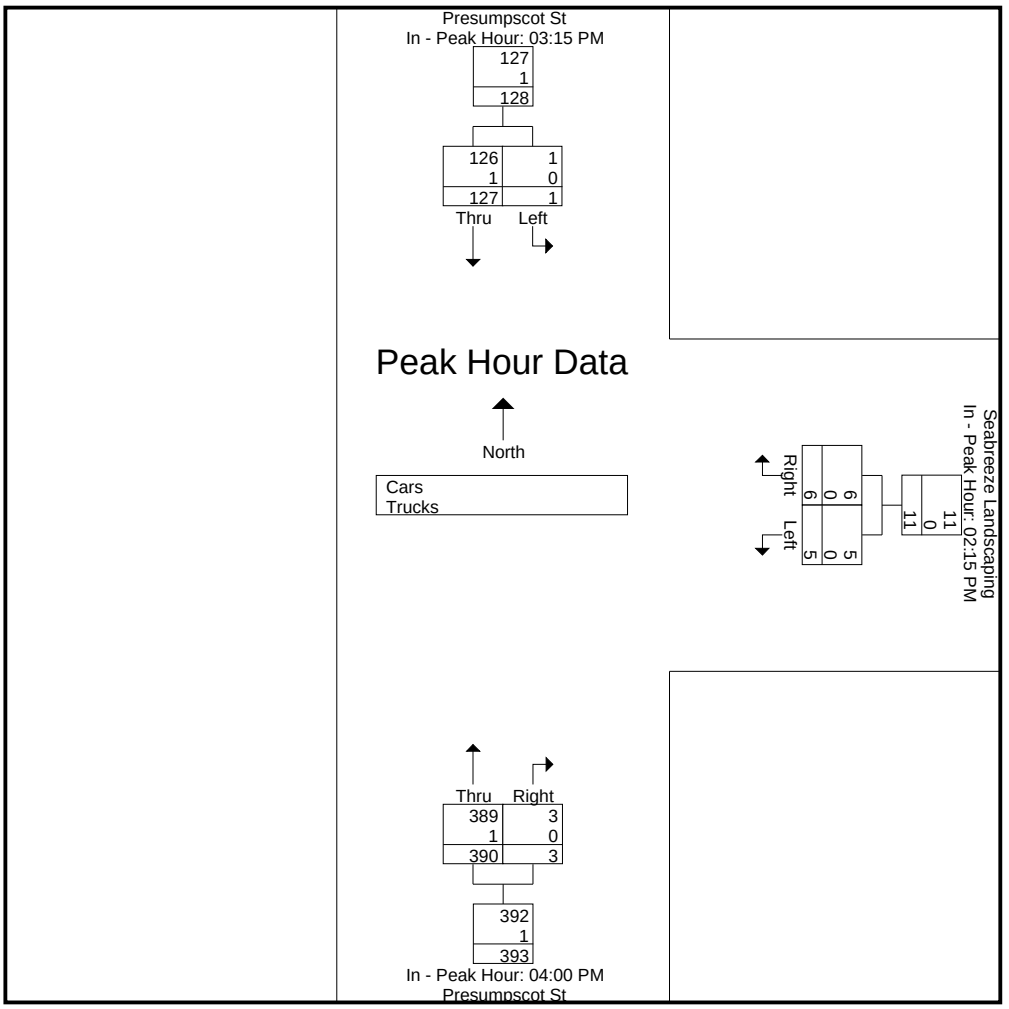
File Name : 13360001
Site Code : 13360001
Start Date : 6/26/2018
Page No : 3

	Presumpscot St From North			Seabreeze Landscaping From East			Presumpscot St From South			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total

Peak Hour Analysis From 02:00 PM to 04:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	03:15 PM			02:15 PM			04:00 PM		
+0 mins.	0	32	32	0	1	1	101	**1**	102
+15 mins.	0	**33**	**33**	1	0	1	98	1	99
+30 mins.	0	30	30	**3**	**3**	**6**	78	0	78
+45 mins.	**1**	32	33	1	2	3	**113**	1	**114**
Total Volume	1	127	128	5	6	11	390	3	393
% App. Total	0.8	99.2		45.5	54.5		99.2	0.8	
PHF	.250	.962	.970	.417	.500	.458	.863	.750	.862
Cars	1	126	127	5	6	11	389	3	392
% Cars	100	99.2	99.2	100	100	100	99.7	100	99.7
Trucks	0	1	1	0	0	0	1	0	1
% Trucks	0	0.8	0.8	0	0	0	0.3	0	0.3



Accurate Counts

978-664-2565

N/S Street : Presumpscot Street
E/W Street : Seabreeze Landscaping
City/State : Portland, ME
Weather : Clear

File Name : 13360001
Site Code : 13360001
Start Date : 6/26/2018

Groups Printed- Cars

	Presumpscot St From North		Seabreeze Landscaping From East		Presumpscot St From South		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
02:00 PM	0	26	0	0	38	1	65
02:15 PM	0	33	0	1	45	1	80
02:30 PM	0	25	1	0	41	2	69
02:45 PM	0	21	3	3	41	1	69
Total	0	105	4	4	165	5	283
03:00 PM	0	30	1	2	53	0	86
03:15 PM	0	32	0	0	61	3	96
03:30 PM	0	32	2	0	69	2	105
03:45 PM	0	30	3	2	81	1	117
Total	0	124	6	4	264	6	404
04:00 PM	1	32	0	1	101	1	136
04:15 PM	0	30	2	0	98	1	131
04:30 PM	1	23	0	0	78	0	102
04:45 PM	0	40	0	0	112	1	153
Total	2	125	2	1	389	3	522
Grand Total	2	354	12	9	818	14	1209
Apprch %	0.6	99.4	57.1	42.9	98.3	1.7	
Total %	0.2	29.3	1	0.7	67.7	1.2	

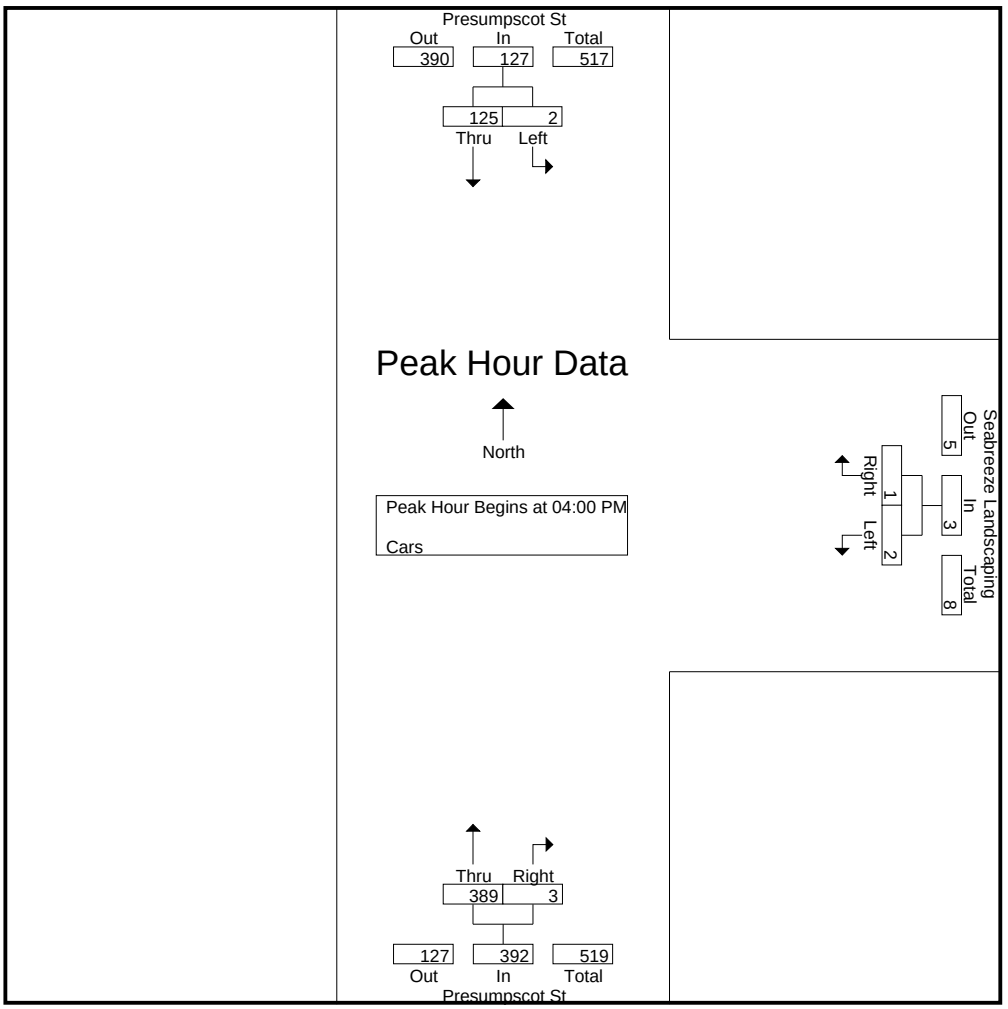
Accurate Counts

978-664-2565

N/S Street : Presumpscot Street
E/W Street : Seabreeze Landscaping
City/State : Portland, ME
Weather : Clear

File Name : 13360001
Site Code : 13360001
Start Date : 6/26/2018
Page No : 5

	Presumpscot St From North			Seabreeze Landscaping From East			Presumpscot St From South			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 04:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	**1**	32	33	0	**1**	1	101	**1**	102	136
04:15 PM	0	30	30	**2**	0	**2**	98	1	99	131
04:30 PM	1	23	24	0	0	0	78	0	78	102
04:45 PM	0	**40**	**40**	0	0	0	**112**	1	**113**	**153**
Total Volume	2	125	127	2	1	3	389	3	392	522
% App. Total	1.6	98.4		66.7	33.3		99.2	0.8		
PHF	.500	.781	.794	.250	.250	.375	.868	.750	.867	.853



Accurate Counts

978-664-2565

N/S Street : Presumpscot Street
E/W Street : Seabreeze Landscaping
City/State : Portland, ME
Weather : Clear

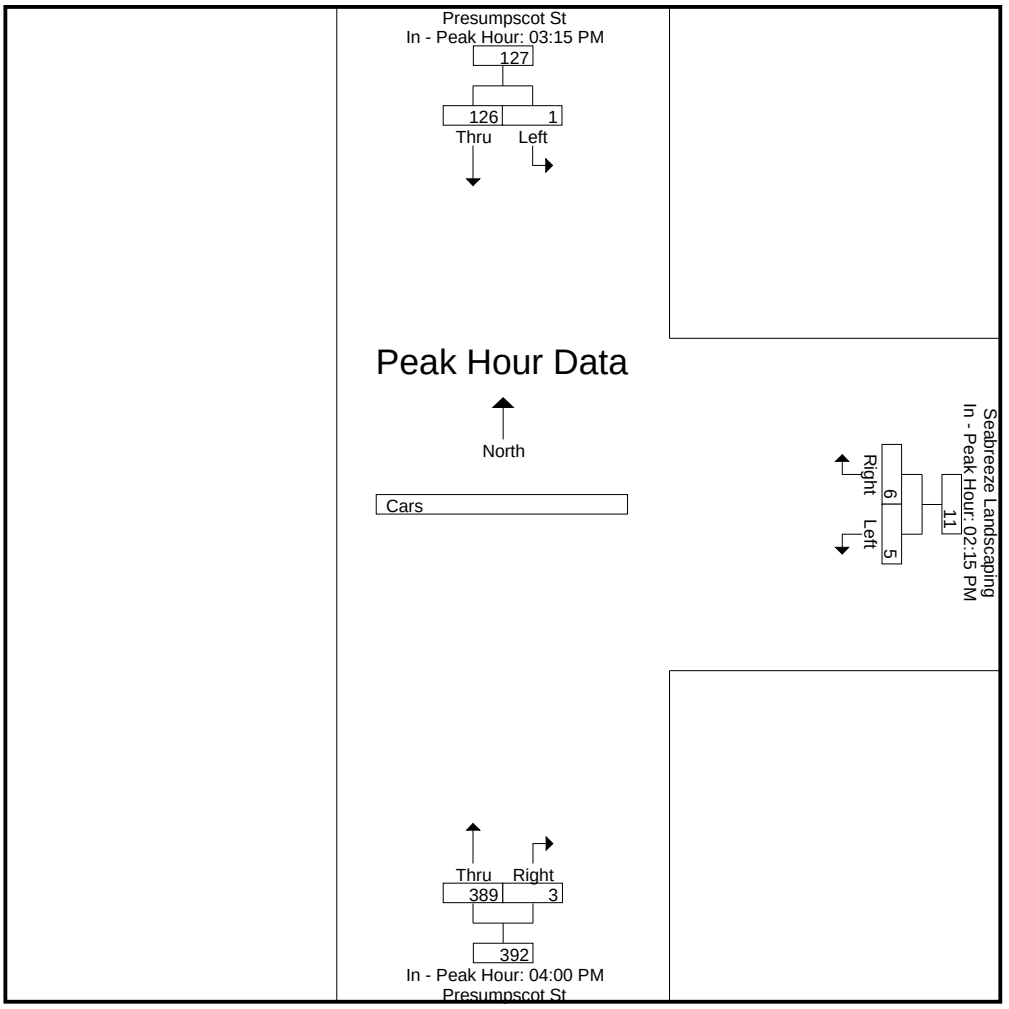
File Name : 13360001
Site Code : 13360001
Start Date : 6/26/2018
Page No : 6

	Presumpscot St From North			Seabreeze Landscaping From East			Presumpscot St From South			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total

Peak Hour Analysis From 02:00 PM to 04:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	03:15 PM			02:15 PM			04:00 PM		
+0 mins.	0	**32**	32	0	1	1	101	**1**	102
+15 mins.	0	32	32	1	0	1	98	1	99
+30 mins.	0	30	30	**3**	**3**	**6**	78	0	78
+45 mins.	**1**	32	**33**	1	2	3	**112**	1	**113**
Total Volume	1	126	127	5	6	11	389	3	392
% App. Total	0.8	99.2		45.5	54.5		99.2	0.8	
PHF	.250	.984	.962	.417	.500	.458	.868	.750	.867



Accurate Counts

978-664-2565

N/S Street : Presumpscot Street
E/W Street : Seabreeze Landscaping
City/State : Portland, ME
Weather : Clear

File Name : 13360001
Site Code : 13360001
Start Date : 6/26/2018

Groups Printed- Trucks

	Presumpscot St From North		Seabreeze Landscaping From East		Presumpscot St From South		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
02:00 PM	0	0	0	0	0	0	0
02:15 PM	0	1	0	0	0	0	1
02:30 PM	0	1	0	0	0	0	1
02:45 PM	0	0	0	0	0	0	0
Total	0	2	0	0	0	0	2
03:00 PM	0	0	0	0	0	0	0
03:15 PM	0	0	0	0	0	0	0
03:30 PM	0	1	0	0	0	0	1
03:45 PM	0	0	0	0	0	0	0
Total	0	1	0	0	0	0	1
04:00 PM	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	1	0	1
Total	0	0	0	0	1	0	1
Grand Total	0	3	0	0	1	0	4
Apprch %	0	100	0	0	100	0	
Total %	0	75	0	0	25	0	

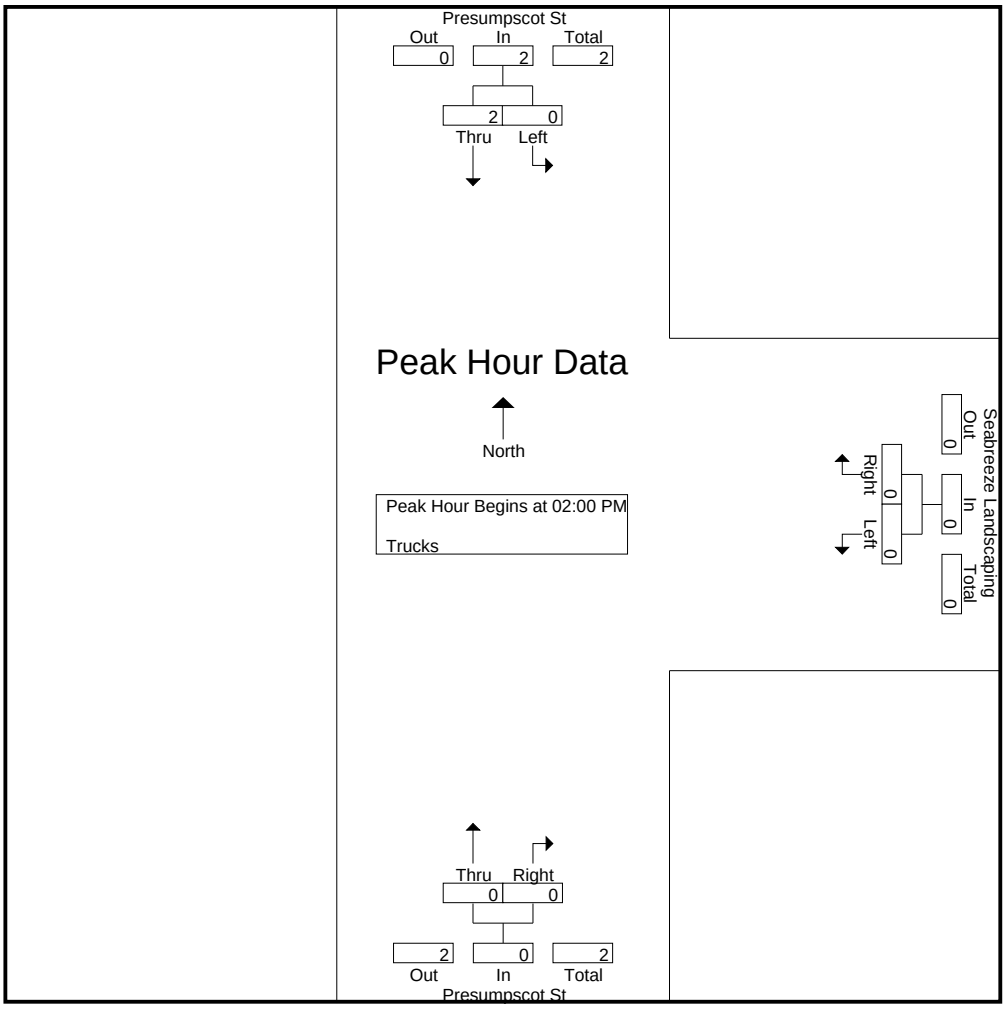
Accurate Counts

978-664-2565

N/S Street : Presumpscot Street
E/W Street : Seabreeze Landscaping
City/State : Portland, ME
Weather : Clear

File Name : 13360001
Site Code : 13360001
Start Date : 6/26/2018
Page No : 8

	Presumpscot St From North			Seabreeze Landscaping From East			Presumpscot St From South			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 04:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 02:00 PM										
02:00 PM	0	0	0	0	0	0	0	0	0	0
02:15 PM	0	**1**	**1**	0	0	0	0	0	0	**1**
02:30 PM	0	1	1	0	0	0	0	0	0	1
02:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	2	2	0	0	0	0	0	0	2
% App. Total	0	100		0	0		0	0		
PHF	.000	.500	.500	.000	.000	.000	.000	.000	.000	.500



Accurate Counts

978-664-2565

N/S Street : Presumpscot Street
E/W Street : Seabreeze Landscaping
City/State : Portland, ME
Weather : Clear

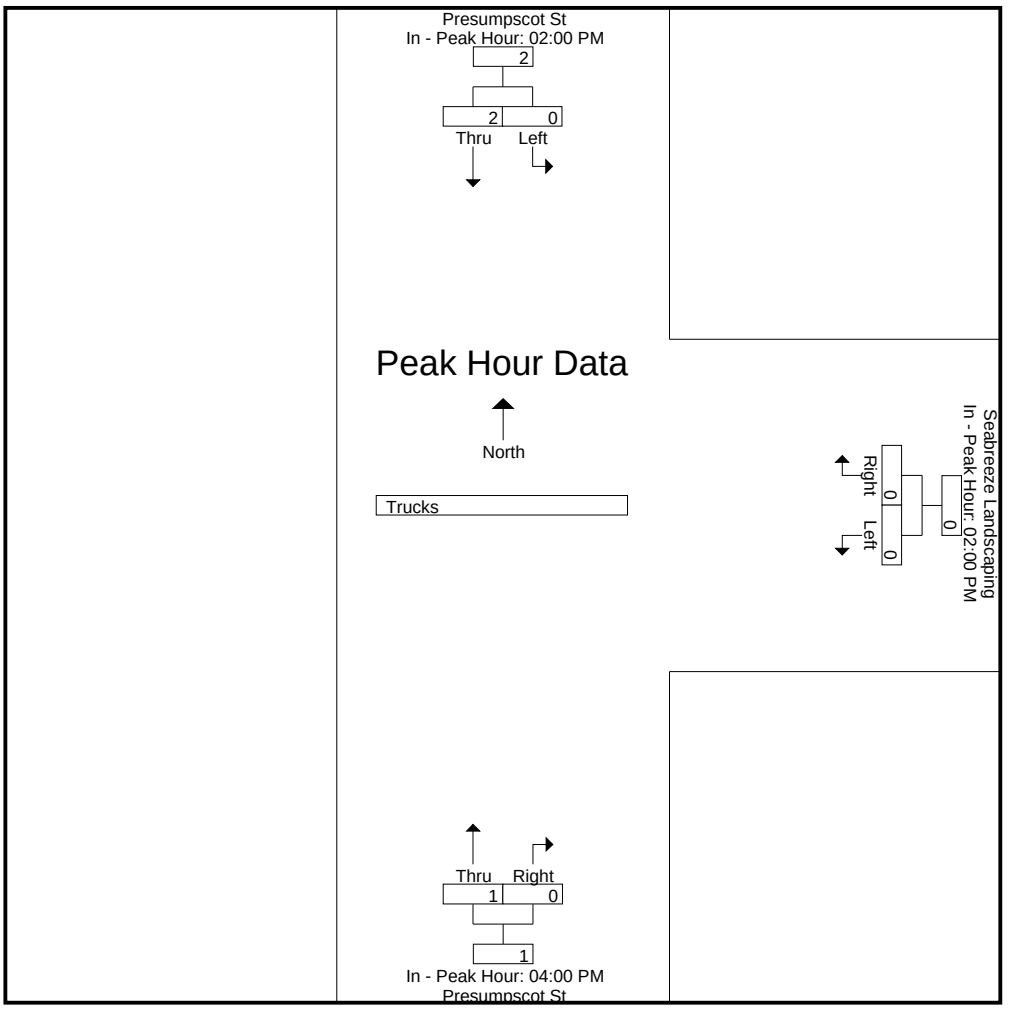
File Name : 13360001
Site Code : 13360001
Start Date : 6/26/2018
Page No : 9

	Presumpscot St From North			Seabreeze Landscaping From East			Presumpscot St From South			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total

Peak Hour Analysis From 02:00 PM to 04:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	02:00 PM			02:00 PM			04:00 PM		
+0 mins.	0	0	0	0	0	0	0	0	0
+15 mins.	0	**1**	**1**	0	0	0	0	0	0
+30 mins.	0	1	1	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	**1**	0	**1**
Total Volume	0	2	2	0	0	0	1	0	1
% App. Total	0	100		0	0		100	0	
PHF	.000	.500	.500	.000	.000	.000	.250	.000	.250



Accurate Counts

978-664-2565

N/S Street : Presumpscot Street
E/W Street : Seabreeze Landscaping
City/State : Portland, ME
Weather : Clear

File Name : 13360001
Site Code : 13360001
Start Date : 6/26/2018

Groups Printed- Bikes Peds

	Presumpscot St From North			Seabreeze Landscaping From East			Presumpscot St From South					
Start Time	Left	Thru	Peds	Left	Right	Peds	Thru	Right	Peds	Exclu. Total	Inclu. Total	Int. Total
02:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
02:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
02:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
02:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
03:15 PM	0	1	0	0	0	0	0	0	0	0	1	1
03:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
03:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	0	0	0	0	0	0	0	1	1
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	1	0	0	0	0	0	0	0	0	1	1
Apprch %	0	100		0	0		0	0				
Total %	0	100		0	0		0	0		0	100	

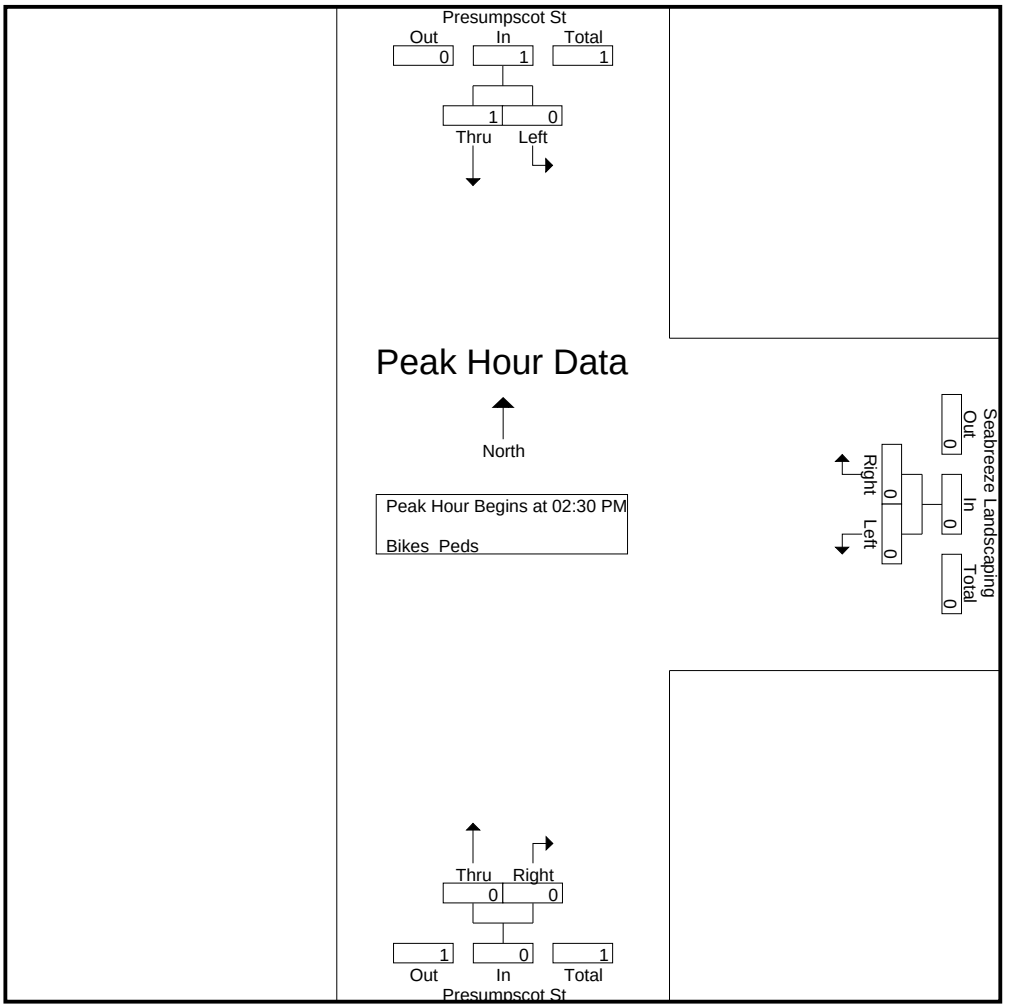
Accurate Counts

978-664-2565

N/S Street : Presumpscot Street
E/W Street : Seabreeze Landscaping
City/State : Portland, ME
Weather : Clear

File Name : 13360001
Site Code : 13360001
Start Date : 6/26/2018
Page No : 11

	Presumpscot St From North			Seabreeze Landscaping From East			Presumpscot St From South			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 04:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 02:30 PM										
02:30 PM	0	0	0	0	0	0	0	0	0	0
02:45 PM	0	0	0	0	0	0	0	0	0	0
03:00 PM	0	0	0	0	0	0	0	0	0	0
03:15 PM	0	**1**	**1**	0	0	0	0	0	0	**1**
Total Volume	0	1	1	0	0	0	0	0	0	1
% App. Total	0	100		0	0		0	0		
PHF	.000	.250	.250	.000	.000	.000	.000	.000	.000	.250



Accurate Counts

978-664-2565

N/S Street : Presumpscot Street
E/W Street : Seabreeze Landscaping
City/State : Portland, ME
Weather : Clear

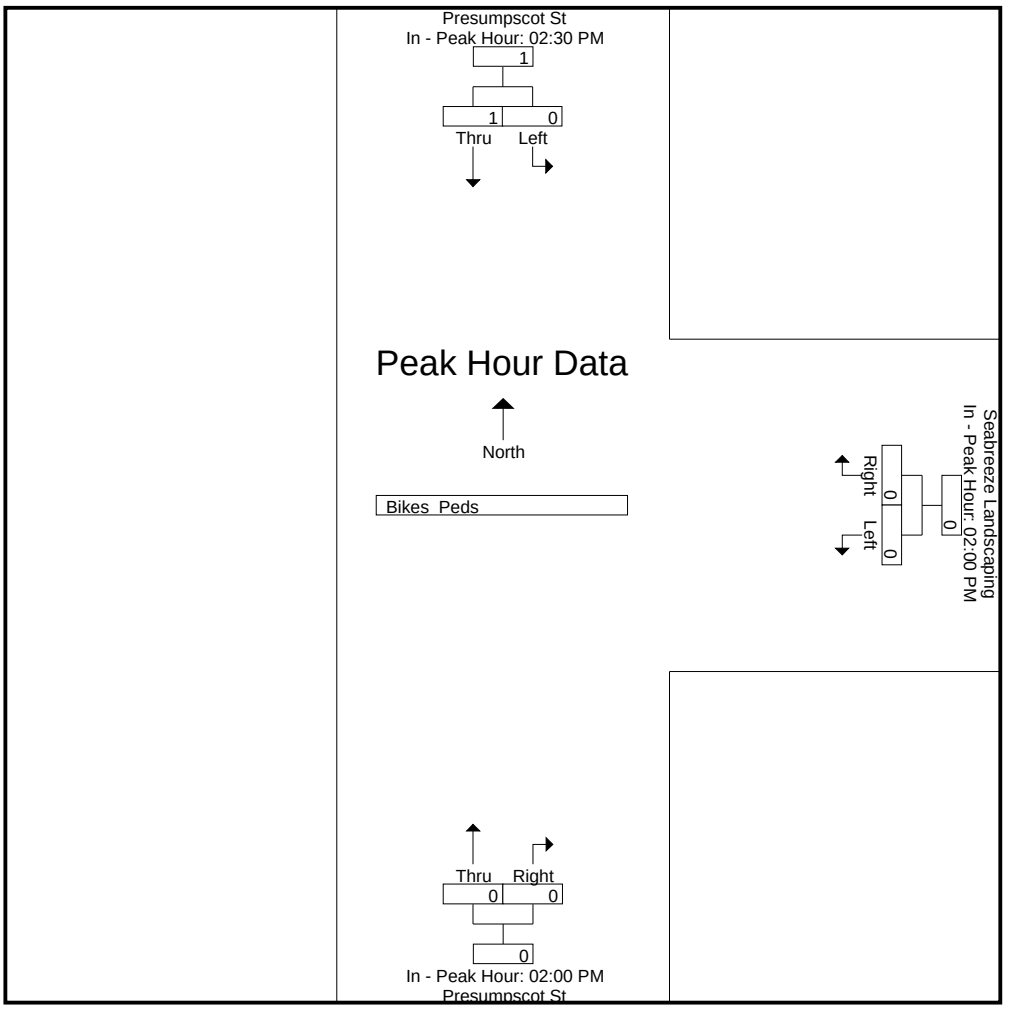
File Name : 13360001
Site Code : 13360001
Start Date : 6/26/2018
Page No : 12

	Presumpscot St From North			Seabreeze Landscaping From East			Presumpscot St From South			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total

Peak Hour Analysis From 02:00 PM to 04:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	02:30 PM			02:00 PM			02:00 PM		
+0 mins.	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	0	**1**	**1**	0	0	0	0	0	0
Total Volume	0	1	1	0	0	0	0	0	0
% App. Total	0	100		0	0		0	0	
PHF	.000	.250	.250	.000	.000	.000	.000	.000	.000



10: Transportation

Access and Circulation (14-526(a)2a)

- Access and internal circulation, addressing ADA access

    (i) The development provides safe and reasonable site access and provisions for internal circulation for all users of the site and complies with the standards set forth in Section 1 of the Technical Manual. Please see the site plan.

- Access and egress impacts on traffic flows

    (ii) The points of access and egress are located to avoid conflicts with the existing turning movements and traffic flows. Please see the site plan.

- Description and use of drive up features, if applicable.

    (iii) There are no public drive-up features on the site. Drive-up facilities are limited to a fueling area located at the rear of the building. Stacking and vehicular circulation on adjoining streets is not affected by the private fueling area.

11: Transportation

Loading and Servicing (14-526 (a) 2 b)

- Load and servicing needs, route and travel way geometrics for deliveries
- Turning templates for delivery vehicles, if applicable

(i) The site will be serviced occasionally by delivery vehicles. Access to the site includes a clear route permitting safe turning and backing for the anticipated vehicle lengths that will not impede site access, vehicle circulation, pedestrian movement, or affect the designated parking.

12: Transportation

Sidewalks (14-526 (a) 2 c)

- Sidewalks and condition along street frontages and internal walkways

  (i) No sidewalks are proposed as part of the proposed site development. Please see Waiver Table for specifics.

  (ii) Not applicable. There is no existing sidewalk adjacent to this project.

  (iii) Not applicable. Internal sidewalks are not proposed for this project. A request from the standard is located in the enclosed Waiver Table. It is anticipated that the site will be accessed by fleet vehicles, employees, occasional delivery vehicles, not pedestrians. Public sidewalks are not available along this section of Riverside Industrial Parkway.

- Engineered details for ADA ramps and public sidewalk details meeting sidewalk materials policy and ADA ramp construction details as applicable (Technical Manual, Section 1)

  Building access walks including ADA ramps and details are shown on the enclosed site plans. Public walks are not proposed for this project.

13: Transportation

Public Transit (14-526 (a) 3), if applicable

- Existing available transit services
- Proposed site plan design details, such as easement, pad base, and shelter

Not applicable. The project does not include residential development.

14: Transportation

Off-Street Parking: Vehicle & Motorcycle/Scooter) (14-526 (a) 4 a and c)

- Expected parking demand, proposed parking supply, ADA parking, and applicable Zoning Requirements

  a. The proposed parking area is appropriate for the intended use/zone and the spaces/aisles meet the dimensional standard as detailed in Section 1 of the City Technical Standard. The site includes paved parking and gravel work and storage yard area. Gravel areas will be maintained to avoid erosion or ponding. Please see the site plans.

  b. The bicycle parking spaces proposed meet the requirements of this section requiring 2 bicycle spaces for every ten (10) vehicle parking spaces.

  c. Motorcycle/scooter parking is available on the site. Please see the site plan.

- Address Technical Manual standards (Section 1) for curb cut separation and parking lot layout and locate on site plan

  The site is accessed by a single entry drive designed at 90 degrees to Riverside Industrial Parkway. Street and vertical grades for the proposed entry have been designed in compliance with applicable City Standards. The parking lot layout is shown on the site plan.

15: Transportation

Bicycle Parking (14-526 (a) 4 b)

- Address bicycle parking requirements and identify locations on-site

  b. Ten (10) secure bicycle parking spaces are proposed for the project. The bicycle parking location is shown on the site plan and the number of spaces meets the requirements of this section.

- Constuction details for bike racks (Technical Manual, Section 1)

  A bike rack detail is shown on the enclosed detail plan.

16: Transportation

Snow Storage (14-526 (a) 4 d)

- Management plan for snow removal and locate snow storage areas on plan

(i) The designated snow storage areas are shown on the site plan.

(ii) The snow storage areas will not adversely impact stormwater management systems and do not encroach on pedestrian, parking or accessways.

17: Transportation

Traffic Demand Management (TDM) (14-526 (a) 5)

- Develop TDM with Trip Reduction Targets and Strategies

Not applicable. The project does not meet the types of development required to implement a TMD Plan.

18: Environmental and Landscape Features

Preservation of Significant Natural Features (14-526 (b) 1), if applicable

The proposed project site is an undeveloped property. The project includes a stream crossing and small areas of freshwater wetland impact.

- Trees, plants, habitats listed on State or Federal list of endangered or threatened

  (i) Per the State of Maine Department of Agriculture, Conservation and Forestry Natural Areas Program, there are no known mapped significant natural features within the project site. Reference is made to the enclosed reply received from MNAP.

  (ii) Per the U.S. Department of Interior, Fish and Wildlife Service, critical habitats identified within the project area is limited to the threatened Northern Long-eared bat *Myotis septentionalis*. No know hibernacula occurs on the site and tree removal will not take place during the spring-summer bat pup-rearing season. See attached letter from US Fish and Wildlife Service.

- High and moderate value waterfowl and wading habitat

  (iii) A site review has been performed by the MDIFW and the reply and location map is attached. No high or moderate waterfowl and wading habitat occurs within the project site.

- Aquifers on Casco Bay Islands

  (iv) Not applicable.

- Waterbodies (including wetlands, watercourses, significant vernal pools and floodplains)

  (v) A stream and freshwater wetland area located within the proposed development area has been field located by Sebago Technics, Inc. The design as presented will impact ±7,448 square feet of freshwater wetland area and a stream crossing is required to gain access to the interior lot development area. The information is shown on the plan set enclosed in this submittal package. Impacts are being reviewed concurrently with applicable state and federal agencies. Approvals will be forwarded to the City upon receipt.

  The project site is not located in a flood plain as shown on the City maps generated from 1986 FEMA flood boundaries. A copy of the City of Portland GIS Map Viewer-Flood is enclosed in this section.

- Proposed preservation areas and protection measures

  The area outside of the proposed development area will remain wooded.

- Documentation from environmental consultants determinations from applicable state agencies

  Reference is made to the aforementioned correspondence regarding natural features.

STATE OF MAINE
DEPARTMENT OF AGRICULTURE, CONSERVATION & FORESTRY
93 STATE HOUSE STATION
AUGUSTA, MAINE 04333

PAUL R. LEPAGE
GOVERNOR

WALTER E. WHITCOMB
COMMISSIONER

June 25, 2018

Stefanie Nichols
Sebago Technics
75 John Roberts Road, Suite 4A
South Portland, ME 04106

Via email: snichols@sebagotechnics.com

Re: Rare and exemplary botanical features in proximity to: #16360, Seabreeze Development, 250 Riverside Industrial Parkway, Portland, Maine

Dear Ms Nichols:

I have searched the Natural Areas Program's Biological and Conservation Data System files in response to your request received June 21, 2018 for information on the presence of rare or unique botanical features documented from the vicinity of the project in Portland, Maine. Rare and unique botanical features include the habitat of rare, threatened, or endangered plant species and unique or exemplary natural communities. Our review involves examining maps, manual and computerized records, other sources of information such as scientific articles or published references, and the personal knowledge of staff or cooperating experts.

Our official response covers only botanical features. For authoritative information and official response for zoological features you must make a similar request to the Maine Department of Inland Fisheries and Wildlife, 284 State Street, Augusta, Maine 04333.

According to the information currently in our Biological and Conservation Data System files, there are no rare botanical features documented specifically within the project area. This lack of data may indicate minimal survey efforts rather than confirm the absence of rare botanical features. You may want to have the site inventoried by a qualified field biologist to ensure that no undocumented rare features are inadvertently harmed.

If a field survey of the project area is conducted, please refer to the enclosed supplemental information regarding rare and exemplary botanical features documented to occur in the vicinity of the project site. The list may include information on features that have been known to occur historically in the area as well as recently field-verified information. While historic records have not been documented in several years, they may persist in the area if suitable habitat exists. The enclosed list identifies features with potential to occur in the area, and it should be considered if you choose to conduct field surveys.

This finding is available and appropriate for preparation and review of environmental assessments, but it is not a substitute for on-site surveys. Comprehensive field surveys do not exist for all natural areas in Maine, and in the absence of a specific field investigation, the Maine Natural Areas Program cannot provide a definitive statement on the presence or absence of unusual natural features at this site.

MOLLY DOCHERTY, DIRECTOR
MAINE NATURAL AREAS PROGRAM

DEPARTMENT OF Agriculture Conservation & Forestry

PHONE: (207) 287-8044
FAX: (207) 287-8040
WWW.MAINE.GOV/DACF/MNAP

The Natural Areas Program is continuously working to achieve a more comprehensive database of exemplary natural features in Maine. We would appreciate the contribution of any information obtained should you decide to do field work. The Natural Areas Program welcomes coordination with individuals or organizations proposing environmental alteration, or conducting environmental assessments. If, however, data provided by the Natural Areas Program are to be published in any form, the Program should be informed at the outset and credited as the source.

The Natural Areas Program has instituted a fee structure of $75.00 an hour to recover the actual cost of processing your request for information. You will receive an invoice for $150.00 for two hours of our services.

Thank you for using the Natural Areas Program in the environmental review process. Please do not hesitate to contact me if you have further questions about the Natural Areas Program or about rare or unique botanical features on this site.

Sincerely,



Kristen Puryear | Ecologist | Maine Natural Areas Program
207-287-8043 | kristen.puryear@maine.gov

Rare and Exemplary Botanical Features within 4 miles of
Project: Seabreeze Development, 250 Riverside Industrial Parkway, Portland, Maine

Common Name	State Status	State Rank	Global Rank	Date Last Observed	Occurrence Number	Habitat
Allegheny Vine						
	E	S1	G4	1860-10	9	Rocky summits and outcrops (non-forested, upland),Dry barrens (partly forested, upland)
American Sea-blite						
	T	S2	G5	1932-09-12	5	Tidal wetland (non-forested, wetland)
	T	S2	G5	2011-08-15	17	Tidal wetland (non-forested, wetland)
Bottlebrush Grass						
	SC	S3	G5	1905-09-13	10	Hardwood to mixed forest (forest, upland)
Broad Beech Fern						
	SC	S2	G5	1872-08	15	Hardwood to mixed forest (forest, upland)
	SC	S2	G5	2001-08-28	28	Hardwood to mixed forest (forest, upland)
Clothed Sedge						
	E	S1	G5	2000-06-06	5	Dry barrens (partly forested, upland)
Columbia Water-meal						
	SC	S2	G5	2002-08-04	2	Open water (non-forested, wetland)
Ebony Spleenwort						
	SC	S2	G5	1910-06-06	10	Rocky summits and outcrops (non-forested, upland),Hardwood to mixed forest (forest, upland)
Engelmann's Spikerush						
	PE	SH	G4G5	1916-08-31	2	Open wetland, not coastal nor rivershore (non-forested, wetland)
Enriched Northern Hardwoods Forest						
	<null>	S3	GNR	2001-08-28	34	Hardwood to mixed forest (forest, upland)
Fern-leaved False Foxglove						
	SC	S3	G5	1902-09-02	13	Dry barrens (partly forested, upland),Hardwood to mixed forest (forest, upland)

Rare and Exemplary Botanical Features within 4 miles of
Project: Seabreeze Development, 250 Riverside Industrial Parkway, Portland, Maine

Common Name	State Status	State Rank	Global Rank	Date Last Observed	Occurrence Number	Habitat
Great Blue Lobelia						
	PE	SX	G5	1905-09	3	Forested wetland,Non-tidal rivershore (non-forested, seasonally wet)
Hollow Joe-pye Weed						
	SC	S2	G5?	2014-06-18	24	Open wetland, not coastal nor rivershore (non-forested, wetland),Old field/roadside (non-forested, wetland or upland)
	SC	S2	G5?	2007-10-22	18	Open wetland, not coastal nor rivershore (non-forested, wetland),Old field/roadside (non-forested, wetland or upland)
	SC	S2	G5?	2011-08-04	19	Open wetland, not coastal nor rivershore (non-forested, wetland),Old field/roadside (non-forested, wetland or upland)
Horned Pondweed						
	SC	S2	G5	1913-09-13	9	Tidal wetland (non-forested, wetland)
Marsh Milkwort						
	PE	SH	G5T4	1903-08-18	1	Dry barrens (partly forested, upland),Open wetland, not coastal nor rivershore (non-forested, wetland)
Missouri Rockcress						
	T	S1	G5	1905-06-11	5	Rocky summits and outcrops (non-forested, upland),Hardwood to mixed forest (forest, upland)
Mountain Honeysuckle						
	E	S2	G5	2014-08-03	14	Dry barrens (partly forested, upland),Hardwood to mixed forest (forest, upland)
	E	S2	G5	2007-10-05	11	Dry barrens (partly forested, upland),Hardwood to mixed forest (forest, upland)
	E	S2	G5	2015-07-07	17	Dry barrens (partly forested, upland),Hardwood to mixed forest (forest, upland)
Pitch Pine Woodland						
	<null>	S3	G2	2005-12-08	28	Rocky summits and outcrops (non-forested, upland)
Small Reed Grass						
	SC	S3	G5	2011-08-28	18	Old field/roadside (non-forested, wetland or upland)

Rare and Exemplary Botanical Features within 4 miles of
Project: Seabreeze Development, 250 Riverside Industrial Parkway, Portland, Maine

Common Name	State Status	State Rank	Global Rank	Date Last Observed	Occurrence Number	Habitat
Spotted Pondweed						
	T	S1	G5	1995-10-01	3	Open water (non-forested, wetland)
Tidal Marsh Estuary Ecosystem						
	<null>	S3	GNR	2011-08-25	8	Tidal wetland (non-forested, wetland)
Upper Floodplain Hardwood Forest						
	<null>	S3	GNR	2010-06-23	20	Forested wetland
Upright Bindweed						
	T	S2	G4G5	2007-06-28	5	Dry barrens (partly forested, upland),Old field/roadside (non-forested, wetland or upland)
Variable Sedge						
	E	S1	G3	1911	8	Dry barrens (partly forested, upland),Hardwood to mixed forest (forest, upland)
	E	S1	G3	1911-06-29	9	Dry barrens (partly forested, upland),Hardwood to mixed forest (forest, upland)
Vasey's Pondweed						
	SC	S2	G4	1901-08-04	7	Open water (non-forested, wetland)
Wild Garlic						
	SC	S2	G5	1918-07-16	6	Forested wetland,Hardwood to mixed forest (forest, upland)

STATE RARITY RANKS

S1 Critically imperiled in Maine because of extreme rarity (five or fewer occurrences or very few remaining individuals or acres) or because some aspect of its biology makes it especially vulnerable to extirpation from the State of Maine.

S2 Imperiled in Maine because of rarity (6-20 occurrences or few remaining individuals or acres) or because of other factors making it vulnerable to further decline.

S3 Rare in Maine (20-100 occurrences).

S4 Apparently secure in Maine.

S5 Demonstrably secure in Maine.

SU Under consideration for assigning rarity status; more information needed on threats or distribution.

SNR Not yet ranked.

SNA Rank not applicable.

S#? Current occurrence data suggests assigned rank, but lack of survey effort along with amount of potential habitat create uncertainty (e.g. S3?).

Note: **State Rarity Ranks** are determined by the Maine Natural Areas Program for rare plants and rare and exemplary natural communities and ecosystems. The Maine Department of Inland Fisheries and Wildlife determines State Rarity Ranks for animals.

GLOBAL RARITY RANKS

G1 Critically imperiled globally because of extreme rarity (five or fewer occurrences or very few remaining individuals or acres) or because some aspect of its biology makes it especially vulnerable to extinction.

G2 Globally imperiled because of rarity (6-20 occurrences or few remaining individuals or acres) or because of other factors making it vulnerable to further decline.

G3 Globally rare (20-100 occurrences).

G4 Apparently secure globally.

G5 Demonstrably secure globally.

GNR Not yet ranked.

Note: **Global Ranks** are determined by NatureServe.

STATE LEGAL STATUS

Note: State legal status is according to 5 M.R.S.A. § 13076-13079, which mandates the Department of Conservation to produce and biennially update the official list of Maine's **Endangered** and **Threatened** plants. The list is derived by a technical advisory committee of botanists who use data in the Natural Areas Program's database to recommend status changes to the Department of Conservation.

E ENDANGERED; Rare and in danger of being lost from the state in the foreseeable future; or federally listed as Endangered.

T THREATENED; Rare and, with further decline, could become endangered; or federally listed as Threatened.

NON-LEGAL STATUS

SC SPECIAL CONCERN; Rare in Maine, based on available information, but not sufficiently rare to be considered Threatened or Endangered.

PE Potentially Extirpated; Species has not been documented in Maine in past 20 years or loss of last known occurrence has been documented.

ELEMENT OCCURRENCE RANKS - EO RANKS

Element Occurrence ranks are used to describe the quality of a rare plant population or natural community based on three factors:

- **Size**: Size of community or population relative to other known examples in Maine. Community or population's viability, capability to maintain itself.
- **Condition**: For communities, condition includes presence of representative species, maturity of species, and evidence of human-caused disturbance. For plants, factors include species vigor and evidence of human-caused disturbance.
- **Landscape context**: Land uses and/or condition of natural communities surrounding the observed area. Ability of the observed community or population to be protected from effects of adjacent land uses.

These three factors are combined into an overall ranking of the feature of **A**, **B**, **C**, or **D**, where **A** indicates an **excellent** example of the community or population and **D** indicates a **poor** example of the community or population. A rank of **E** indicates that the community or population is **extant** but there is not enough data to assign a quality rank. The Maine Natural Areas Program tracks all occurrences of rare (S1-S3) plants and natural communities as well as A and B ranked common (S4-S5) natural communities.

Note: **Element Occurrence Ranks** are determined by the Maine Natural Areas Program for rare plants and rare and exemplary natural communities and ecosystems. The Maine Department of Inland Fisheries and Wildlife determines Element Occurrence ranks for animals.

Visit our website for more information on rare, threatened, and endangered species!
http://www.maine.gov/dacf/mnap

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Maine Ecological Services Field Office
P. O. Box A
East Orland, ME 04431
Phone: (207) 469-7300 Fax: (207) 902-1588
http://www.fws.gov/mainefieldoffice/index.html

In Reply Refer To:
Consultation Code: 05E1ME00-2018-SLI-0861
Event Code: 05E1ME00-2018-E-01754
Project Name: Seabreeze

June 20, 2018

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies the threatened, endangered, candidate, and proposed species and designated or proposed critical habitat that may occur within the boundary of your proposed project or may be affected by your proposed project. This species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC Web site at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the Endangered Species Consultation Handbook at: http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

This species list also identifies candidate species under review for listing and those species that the Service considers species of concern. Candidate species have no protection under the Act but are included for consideration because they could be listed prior to completion of your project. Species of concern are those taxa whose conservation status is of concern to the Service (i.e., species previously known as Category 2 candidates), but for which further information is needed.

If a proposed project may affect only candidate species or species of concern, you are not required to prepare a Biological Assessment or biological evaluation or to consult with the Service. However, the Service recommends minimizing effects to these species to prevent future conflicts. Therefore, if early evaluation indicates that a project will affect a candidate species or species of concern, you may wish to request technical assistance from this office to identify appropriate minimization measures.

Please be aware that bald and golden eagles are not protected under the Endangered Species Act but are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.). Projects affecting these species may require development of an eagle conservation plan: http://www.fws.gov/windenergy/eagle_guidance.html Information on the location of bald eagle nests in Maine can be found on the Maine Field Office Web site: http://www.fws.gov/mainefieldoffice/Project%20review4.html

Additionally, wind energy projects should follow the wind energy guidelines: http://www.fws.gov/windenergy/ for minimizing impacts to migratory birds and bats. Projects may require development of an avian and bat protection plan.

Migratory birds are also a Service trust resource. Under the Migratory Bird Treaty Act, construction activities in grassland, wetland, stream, woodland, and other habitats that would result in the take of migratory birds, eggs, young, or active nests should be avoided. Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g.,

cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm and at: http://www.towerkill.com; and at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Maine Ecological Services Field Office
P. O. Box A
East Orland, ME 04431
(207) 469-7300

Project Summary

Consultation Code: 05E1ME00-2018-SLI-0861

Event Code: 05E1ME00-2018-E-01754

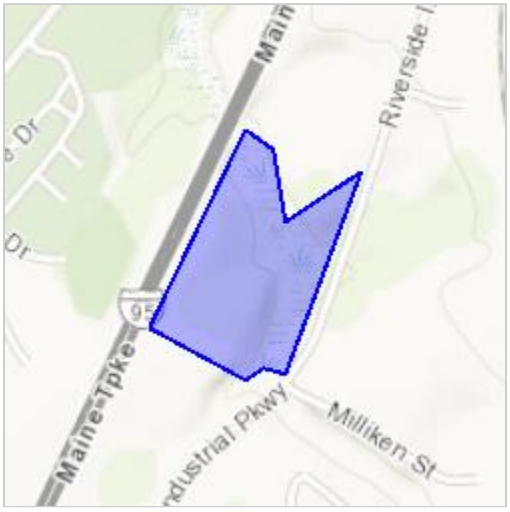
Project Name: Seabreeze

Project Type: DEVELOPMENT

Project Description: 250 Riverside Industrial Parkway - undeveloped parcel
Proposed new building, access and other site improvements
Timing 2018-19

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/43.70798281079453N70.30863366966179W



Counties: Cumberland, ME

Endangered Species Act Species

There is a total of 1 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

PAUL R. LEPAGE
GOVERNOR

STATE OF MAINE
DEPARTMENT OF
INLAND FISHERIES & WILDLIFE
284 STATE STREET
41 STATE HOUSE STATION
AUGUSTA ME 04333-0041

CHANDLER E. WOODCOCK
COMMISSIONER

July 13, 2018

Stefanie Nichols
Sebago Technics
75 John Roberts Road, Suite 1A
Portland, ME 04101

RE: Information Request - 250 Riverside Industry Parkway, Portland

Dear Stefanie:

Per your request received June 21, 2018, we have reviewed current Maine Department of Inland Fisheries and Wildlife (MDIFW) information for known locations of Endangered, Threatened, and Special Concern species; designated Essential and Significant Wildlife Habitats; and fisheries habitat concerns within the vicinity of the *250 Riverside Industry Parkway Project* in Portland. For purposes of this review we are assuming tree clearing will be part of your project.

Our Department has not mapped any Essential Habitats that would be directly affected by your project.

Endangered, Threatened, and Special Concern Species

Bats

Of the eight species of bats that occur in Maine, the three *Myotis* species are protected under Maine's Endangered Species Act (MESA) and are afforded special protection under 12 M.R.S §12801 - §12810. The three *Myotis* species include little brown bat (State Endangered), northern long-eared bat (State Endangered), and eastern small-footed bat (State Threatened). The five remaining bat species are listed as Special Concern: big brown bat, red bat, hoary bat, silver-haired bat, and tri-colored bat.

While a comprehensive statewide inventory for bats has not been completed, based on historical evidence it is likely that several of these species occur within the project area during migration and/or the breeding season. We recommend that you contact the U.S. Fish and Wildlife Service--Maine Fish and Wildlife Complex (Wende Mahaney, 207-902-1569) for further guidance, as the northern long-eared bat is also listed as a Threatened Species under the Federal Endangered Species Act. Otherwise, our Agency does not anticipate significant impacts to any of the bat species as a result of this project.

Significant Wildlife Habitat

Significant Vernal Pools

At this time, MDIFW Significant Wildlife Habitat (SWH) maps indicate no known presence of SWHs within the project area, which include Waterfowl and Wading Bird Habitats, Seabird Nesting Islands, Shorebird Areas, and Significant Vernal Pools. However, a comprehensive statewide inventory for

Significant Vernal Pools has not been completed. Therefore, we recommend that surveys for vernal pools be conducted within the project boundary by qualified wetland scientists prior to final project design to determine whether there are Significant Vernal Pools present in the area. These surveys should extend up to 250 feet beyond the anticipated project footprint because of potential performance standard requirements for off-site Significant Vernal Pools, assuming such pools are located on land owned or controlled by the applicant. Once surveys are completed, our Department will need to review and verify any vernal pool data prior to final determination of significance.

Fisheries Habitat

Without details, it is difficult to know what impacts your project may have on the mapped streams within the search area. That being said, MDIFW makes the following general recommendations as they pertain to streams.

We generally recommend that a 100-foot undisturbed vegetated buffers be maintained along streams. Buffers should be measured from the edge of stream or associated fringe and floodplain wetlands. Maintaining and enhancing buffers along streams that support coldwater fisheries is critical to the protection of water temperatures, water quality, natural inputs of coarse woody debris, and various forms of aquatic life necessary to support conditions required by many fish species. Stream crossings should be avoided, but if a stream crossing is necessary, or an existing crossing needs to be modified, it should be designed to provide full fish passage. Small streams, including intermittent streams, can provide crucial rearing habitat, cold water for thermal refugia, and abundant food for juvenile salmonids on a seasonal basis and undersized crossings may inhibit these functions. Generally, MDIFW recommends that all new, modified, and replacement stream crossings be sized to span at least 1.2 times the bankfull width of the stream. In addition, we generally recommend that stream crossings be open bottomed (i.e. natural bottom), although embedded structures which are backfilled with representative streambed material have been shown to be effective in not only providing habitat connectivity for fish but also for other aquatic organisms. Construction Best Management Practices should be closely followed to avoid erosion, sedimentation, alteration of stream flow, and other impacts as eroding soils from construction activities can travel significant distances as well as transport other pollutants resulting in direct impacts to fish and fisheries habitat. In addition, we recommend that any necessary instream work occur between July 15 and October 1.

This consultation review has been conducted specifically for known MDIFW jurisdictional features and should not be interpreted as a comprehensive review for the presence of other regulated features that may occur in this area. Prior to the start of any future site disturbance we recommend additional consultation with the municipality, and other state resource agencies including the Maine Natural Areas Program and Maine Department of Environmental Protection in order to avoid unintended protected resource disturbance.

Please feel free to contact my office if you have any questions regarding this information, or if I can be of any further assistance.

Best regards,



John Perry
Environmental Review Coordinator



Environmental Review of Fish and Wildlife Observations and Priority Habitats

Project Name: raremussels (Version 1)

N
W
E
S

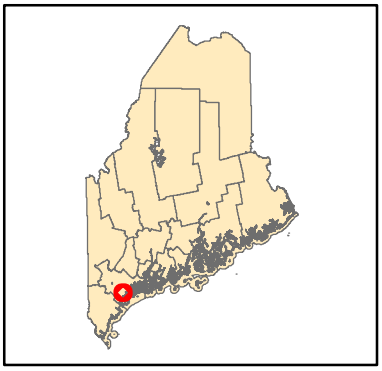
Maine Department of Inland Fisheries and Wildlife

0 0.125 0.25 0.5 0.75 1 Miles

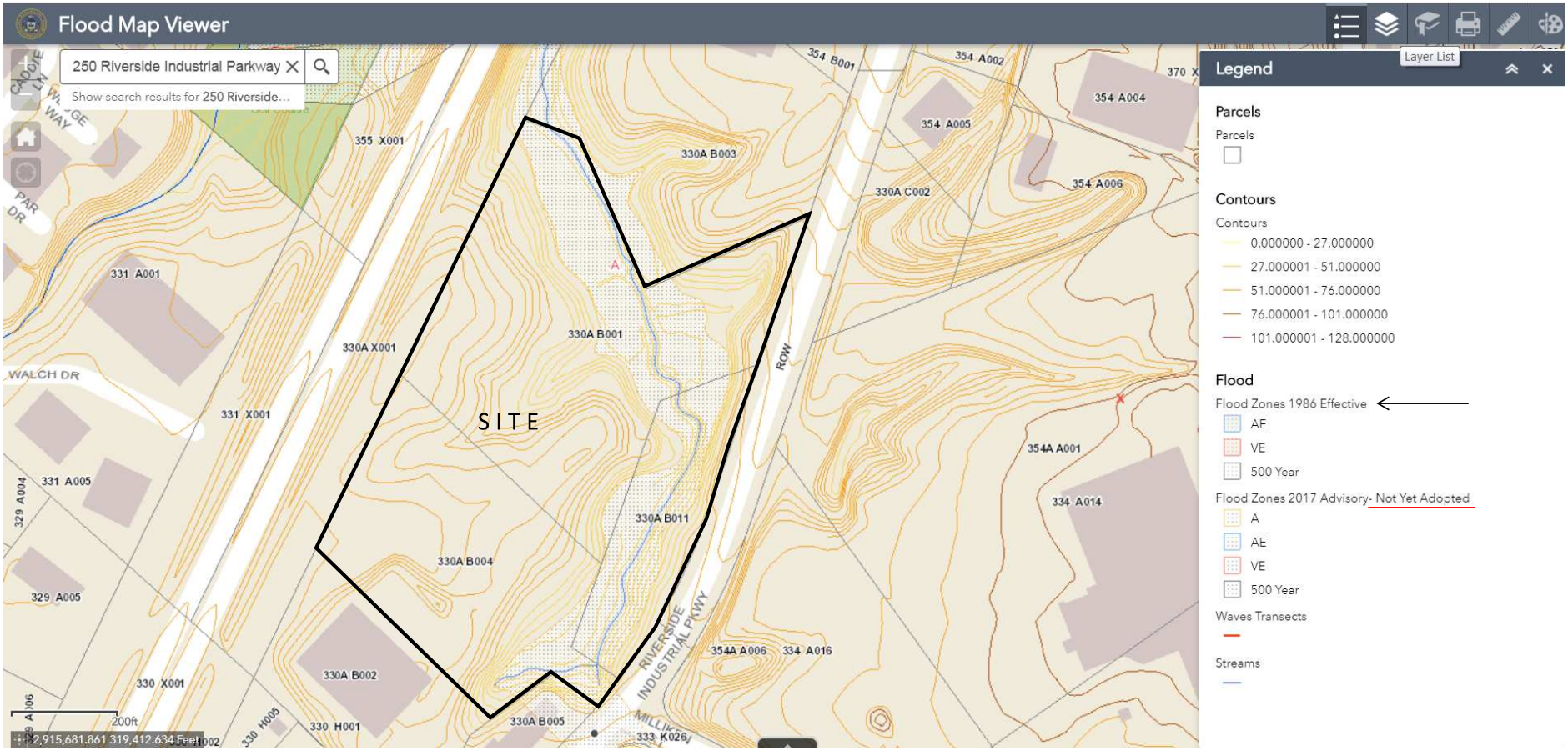
Projection: UTM, NAD83, Zone 19N

Date: 6/26/2018

- ProjectPolys
- ProjectSearchAreas
- ETSc Environmental Review Polygons



Reference: City of Portland GIS Map Viewer, http://portlandme.maps.arcgis.com/home/index.html



19: Environmental and Landscape Features

Landscaping and Landscape Preservation (14-526 (b) 2a)

- Preservation of trees and preservation within required zoning setbacks (Technical Manual, Section 4)
- Protection measures of existing vegetation during construction
- Protection measures within Shoreland Zone, if applicable

(i) Existing trees will be retained to the greatest extent practicable. Preserved trees will be considered as part of the site landscaping requirements. Please see the Landscape Plan.

(ii) Trees with a 10-inch or greater DBH located within the zoning setbacks will be preserved to meet the minimum 30% preservation threshold excepting invasive species, and City identified unsalvageable trees, as allowed.

(iii) Vegetation will be protected during site construction in accordance with the tree preservation standards found in Section 4 of the Technical Manual.

(iv) No waivers from the preservation of existing vegetation are requested.

(v) The proposed project has been designed in accordance with the provisions of the Div. 26 Shoreland Zone Regulations and Sections 5 and 8 of the Technical Manual and applicable Maine DEP regulations.

20: Environmental and Landscape Features

Site Landscaping (14-526 (b) 2 b)

- Screening and buffering of service areas and between non-residential and residential uses

  Not applicable

- Planting plans with plant schedule and sizes (Technical Manual, Section 4)

  (i)(a) The landscape materials storage area will be screened from 1-95 by a dense installation of evergreens. The development area is not visible from a public sidewalk or street. The abutting property to the south is under the same ownership and the applicant/owner does not desire visual screening from one site to the other.

  (i)(b) The applicant requests that the existing vegetation on the site be counted toward the understory setback planting requirement. Disturbed areas within the disturbed area will be seeded with New England Conservation Mix providing a permanent cover of grasses and wildflowers for erosion control, wildlife habitat value and aesthetics.

  (i)(c) Not applicable. The development does not abut a residential zone.

  (i)(d) Not applicable. The site development is not residential.

  Please see the Landscape Plan for specific information on the planting plan.

21: Environmental and Landscape Features

Parking Lot Landscaping (14-526 (b) 2 b ii), if applicable

- Landscaped islands within parking areas (Technical Manual, Section 4)

Landscaped islands are not included in the site design. Development of the site requiring 50 parking spaces requires 20 trees or 10 trees/30 shrubs located within curbed landscaped islands.

The applicant asks that the landscaped island requirement be waived with the understanding that a contribution to the City of Portland Tree fund is required. See enclosed Waiver Table.

22: Environmental and Landscape Features

Street Trees (14-526 (b) 2 B iii)

- Existing Heritage or Feature Trees on site and measures to preserve

  No existing Heritage or Feature Trees have been located on the site.

- Identify street trees on the plan meeting the site plan and Technical Manual standards (Section 4) or identify alternative measures, if applicable

  (iii)(b) The applicant proposes an allowed alternative measures be counted towared the street tree requirement. The applicant proposes to preserve existing healthy trees that are six (6) inches or more in caliper, visible from the right-of-way and on the site within twenty feet of the property line in the area immediately adjacent to the entry drive location extending a distance of 100 linear feet on each side of the proposed landscaped entrance. See enclosed Waiver Table.

Please see the Landscape Plan for proposed planting information.

23: Environmental and Stormwater

Water Quality, Stormwater Management and Erosion Control (14-526 (b) 3 a)

The proposed site development has been designed in accordance with the City and Maine DEP Chapter 500 Stormwater standards. Please refer to the Stormwater Management report and plans included in this submittal.

SEBAGO
TECHNICS
CIVIL ENGINEERING • SURVEYING • LANDSCAPE ARCHITECTURE

STORMWATER MANAGEMENT PLAN

250 Riverside Industrial Parkway
Portland, Maine 04101

Prepared for

Two Eisenhower Drive, LLC
PO Box 1120
Portland, ME 04104

July 2018

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A. Watershed Plans
B. Pre-Development Stormwater Modeling
C. Post-Development Stormwater Modeling
D. Stormwater Quality Calculations
E. Inspection, Maintenance, and Housekeeping Plan
F. Soil Survey

STORMWATER MANAGEMENT PLAN
Riverside Industrial Parkway
Portland, Maine

EXECUTIVE SUMMARY

Two Eisenhower Drive, LLC proposes to construct a 11,200 square-foot building, with an associated access drive, concrete pads, paved and gravel parking areas. The project site is located on a 12.4-acre parcel on Riverside Industrial Parkway. The proposed site development will include approximately 146382 square feet (3.36 acres) of new impervious parking areas, driveway and building area. The projects total developed area will be about 219,262 square feet (5.03 acres).

In order to meet City and MDEP requirements, the stormwater management system has been designed to treat at least 95% of new on-site impervious surfaces, and at least 80% of new on-site developed areas. Furthermore, the post development peak rates of runoff will be less than the pre-development peak rates of runoff during the 2, 10, and 25-year storm events.

Since stormwater drainage from the project site is tributary to Dole Brook, an Urban Impaired Stream identified by the Maine Department of Environmental Protection (MDEP), the development will be required to contribute to the Compensation Fee Utilization Program (CFUP) for Dole Brook. Additionally, an NRPA permit will be filed for stream impact resulting from the proposed access drive, and additional wetland impact within the project site.

STORMWATER MANAGEMENT PLAN
Riverside Industrial Parkway
Portland, Maine

I. Introduction

This Stormwater Management Plan has been prepared to address the potential impacts associated with this project due to the proposed modification in stormwater runoff characteristics. The stormwater management controls that are outlined in this plan have been designed based on commonly accepted engineering methods and to comply with applicable regulatory requirements.

II. Existing Conditions

The site consists of a 12.4-acre undeveloped parcel with frontage on Riverside Industrial Parkway. The site is located directly across from Milliken Street and abuts Titan Mechanical, Inc to the south and ABF Freight to the north.

A. Land Cover

The site is mostly undeveloped and is predominately wooded. Some of the site has been cleared, but for purposes of this study we have assumed all exiting landcover to be an undeveloped wooded/grassed condition.

B. Site Topography

The majority of the site consists of moderate slopes ranging from about 3% to 50%. The south eastern portion of the site consists of slopes ranging between 3 to 15%. The northwestern portion of the parcel contains the steepest slopes located in close proximity to the exiting stream.

C. Surface Water Features

Surface water from the site drains to Dole Brook, which crosses the site between Riverside Industrial Parkway and the proposed development.

D. Soils

Soil characteristics were obtained from Web Soil Survey for Cumberland County. Additional soil data was gathered in the field via test pits conducted and observed by a licensed soil excavator and used to supplement the State-provided soil information. Soils identified on the site are identified below in Table 1.

Table 1 – Proximity Soil Types and Characteristics

Soil Type	Symbol	HSG
Suffield Silt Loam, 25 to 45% slopes, eroded	SuE2	C
Buxton Silt Loam, 3 to 8% slopes	BuB	C/D
Scantic silt loam	Sn	D

The hydrologic soil group (HSG) designation is based on a rating of the relative permeability of a soil, with Group "A" being extremely permeable such as coarse sand, to Group "D"

having low permeability such as clay. Supporting soils information can be found in Appendix F of this report.

E. Historic Flooding

There are no apparent flooding issues in the vicinity of this project. The site is not located within a flood hazard area as according to the Federal Emergency Management Agency (FEMA) Community Panel: 2300052-0020-D.

F. Methodology

The stormwater runoff analysis was developed using the "HydroCAD" computer modeling software, which incorporates the TR-55 and TR-20 methodologies as provided by the Soil Conservation Service of the U.S. Department of Agriculture. A minimum Time of Concentration of 6 minutes was used in the model for subcatchments with direct entry flow in order to comply with the above-mentioned methodologies.

The peak runoff rates were calculated using a 24-hour duration storm event with a Type III rainfall distribution. The rainfall amounts for Cumberland County for the 2, 10, and 25-year storm events are as follows:

Storm Frequency	24-hr Duration Rainfall (in.)
2-yr	3.1
10-yr	4.6
25-yr	5.8

III. Proposed Development

The applicant plans to construct an approximately 11,200 square-foot building, with an associated access drive, concrete pads, paved and gravel parking areas.

A. Alterations to Land Cover

As a result of the proposed improvements, the site will include a total impervious area of approximately 146,382 square feet (3.36 acres). This area includes the building footprint, paved parking and access drives, concrete pads and gravel parking areas. The proposed development area including proposed landscaping will encompass approximately 219,262 square feet (5.03 acres) of the site.

IV. Downstream Ponds and Waterbodies

Stormwater from the site is tributary to the Dole Brook, an Urban Impaired Stream identified by the Maine Department of Environmental Protection (MDEP). Dole Brook ultimately drains to the Atlantic Ocean.

V. Pre-Development Watershed Model

The predevelopment watershed plan was created using survey data, Cumberland County GIS data, recent aerial imagery, and on-site field observations. The pre-development watershed plan is broken into three subcatchments, which have been delineated based on topography and an

analysis point which remain consistent from pre-development to post-development conditions. Pre-development stormwater quantity calculations can be found in Appendix B of this report.

VI. Post-Development Watershed Model

The post-development watershed model utilizes the subcatchments from the pre-development model, but further breaks down subcatchments based on site improvements. The naming convention is a similar format as that from the pre-development model, with exception to for example, watershed 2 is now represented by watersheds numbered in the 20 series. Post-development stormwater quantity calculations can be found in Appendix C of this report.

VII. Regulatory Requirements

A. Basic Standards - Chapter 500, Section 4(B)
This project will disturb more than one acre of land, and therefore is subject to the Basic Standards outlined in Section 4B in Chapter 500, which requires that grading or other construction activities on the site do not impede or otherwise alter drainage ways to have an unreasonable adverse impact. We have avoided adverse impacts by providing an Erosion & Sedimentation Control Plan, and an Inspection, Maintenance and Housekeeping Plan (see Appendix C) to be implemented during construction and post-construction stabilization of the site. These construction requirements have been developed following Best Management Practice guidelines.

B. General Standards - Chapter 500, Section 4(C)
This project is also subject to the General Standards because this project includes more than one acre of impervious area and is not in the direct watershed of a lake.

C. Urban Impaired Stream Standard - Chapter 502, Section B
The project will be subject to the Urban Impaired Stream Standards because stormwater drainage from the project site is tributary to Dole Brook, an Urban Impaired Stream identified by the Maine Department of Environmental Protection (MDEP).

D. Flooding Standard - Chapter 500, Section 4(F)
The project will create more than three (3) acres of impervious surface, and therefore the MDEP Flooding Standard applies.

VIII. Stormwater Management Best Management Practices (BMPs)

The site design includes three grassed underdrained soil filter BMPs that will provide stormwater quality treatment and detention. The underdrained soil filters have been sized and designed according to the standards in Volume III of the Maine Stormwater Management Design Manual, Technical Design Manual, last revised May 2016. Construction details can be found on sheet 10 of plan set, and water quality calculations can be found in Appendix D of this report.

IX. Stormwater Quality Analysis

Calculations which demonstrate that the Stormwater BMP designs meet the treatment requirements of the General Standards can be found in appendix B. The stormwater drainage

design for the site provides water quality treatment for 95.68% (95% required) of new impervious area, and 81.22% (80% required) of the new total developed area, which includes new impervious and new landscaped area.

X. Stormwater Quantity Analysis

It is required to address stormwater in the two, ten, and twenty-five-year, twenty-four-hour storm events. The following table, Table 2, shows the pre-development and post-development peak flow discharges at the analysis (study point) of the site. This study point was chosen based on existing and proposed site features. The data in Table 2 was determined using HydroCAD software to model the existing and proposed conditions associated with the attached Watershed Plans in Appendix A. Full HydroCAD modeling reports can be found in Appendices B and C.

Storm Event	Peak Flow Rate		
	Pre (cfs)	Post (cfs)	Change (cfs)
2-Year	4.17	1.93	2.24
10-Year	9.21	8.04	1.17
25-Year	13.64	13.23	0.41

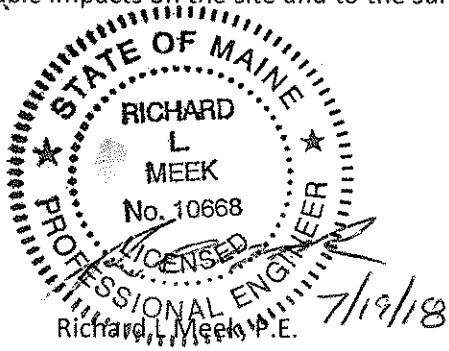
XI. Conclusions

The proposed development has been designed to manage stormwater runoff through Best Management Practices approved by MDEP. Stormwater BMP's provide treatment to 95.68% (95% required) of impervious areas, and 81.22% (80% required) of the total developed area. Runoff discharging from the site will be at or below pre-development conditions for the 2, 10, and 25-year storm events, as is required by the City of Portland. Additionally, erosion and sedimentation controls along with associated maintenance and housekeeping procedures have been outlined to prevent unreasonable impacts on the site and to the surrounding environment.

Prepared by:

SEBAGO TECHNICS, INC.

Sarah A. Hanf
Civil Engineer



Richard L. Meek, P.E.
Senior Project Engineer



GRAPHIC SCALE
40 0 20 40 80
(IN FEET)
1 INCH = 40 FT.

PRE-DEVELOPMENT LEGEND

- WATERSHED BOUNDARY
- TIME OF CONCENTRATION (B → C)
- REACH
- 1S — WATERSHED LABEL
- 1R — REACH
- SP1 — STUDY POINT
- 1P — STORMWATER TREATMENT/DETENTION POND
- SOILS BOUNDARY

PROGRESS PRINT

RICHARD L. MEEK PE.10668

STATE OF MAINE
RICHARD L. MEEK
No. 10668
REGISTERED PROFESSIONAL ENGINEER
07/13/18

DESIGNED	CHECKED
SAH	RLM

REV.	BY:	DATE:	STATUS:
A	SMF	7-13-18	ISSUED TO CITY

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 4A
South Portland, ME 04106
Tel. 207-200-2100

PRE-DEVELOPMENT WATERSHED PLAN

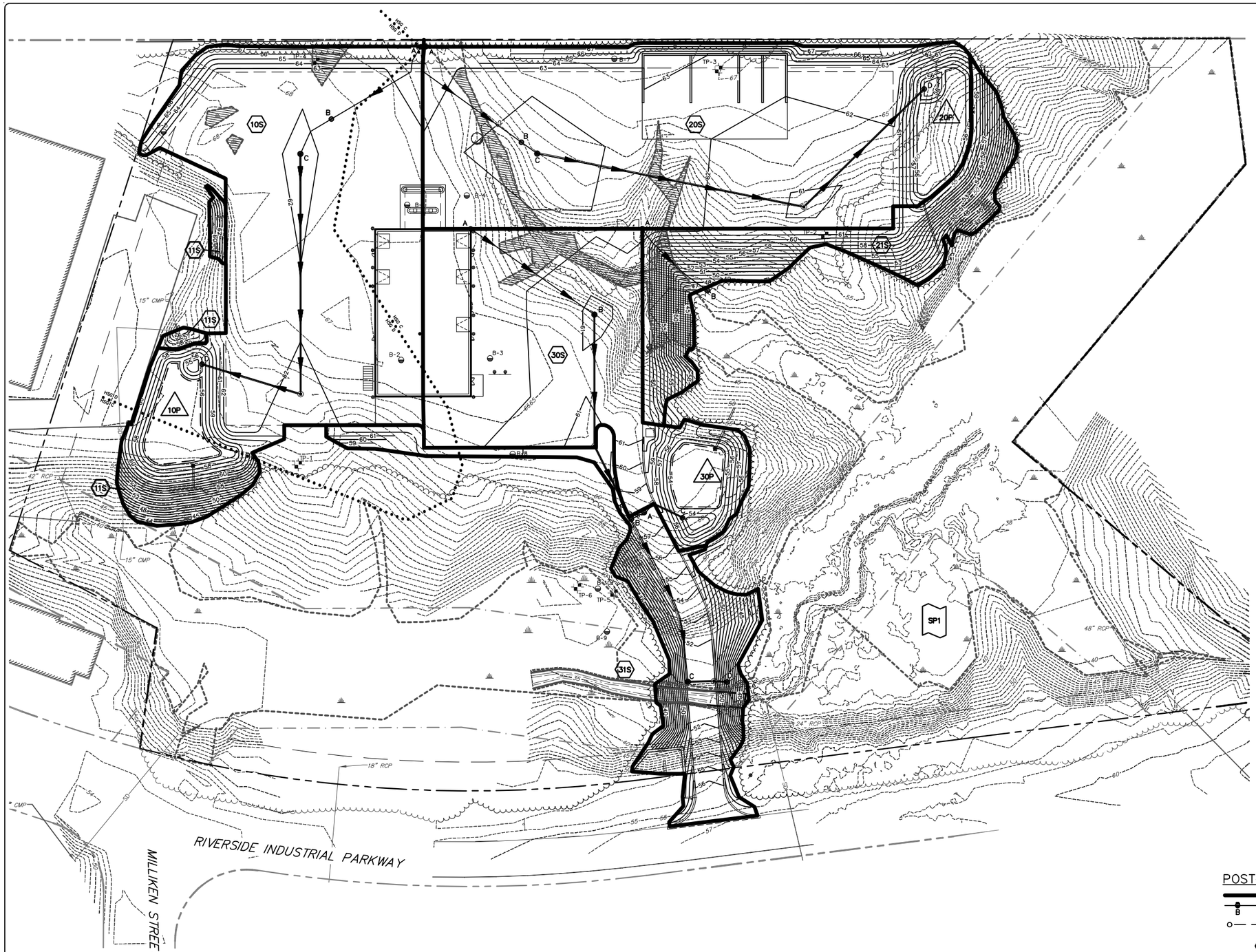
OF:
250 RIVERSIDE INDUSTRIAL PARKWAY
RIVERSIDE INDUSTRIAL PARKWAY
PORTLAND, MAINE

FOR:
TWO EISENHOWER DRIVE, LLC
P.O. BOX 1120
PORTLAND, MAINE 04104

PROJECT NO.	SCALE
16360	1" = 40'

SHEET 11 OF 12

16360 SWP.dwg, TAB:PRE



GRAPHIC SCALE
40 0 20 40 80
(IN FEET)
1 INCH = 40 FT.

POST-DEVELOPMENT LEGEND

- WATERSHED BOUNDARY
- TIME OF CONCENTRATION (B — C)
- REACH
- 10S — WATERSHED LABEL
- 10R — REACH
- SP1 — STUDY POINT
- 10P — STORMWATER TREATMENT/DETENTION POND
- SOILS BOUNDARY

PROGRESS PRINT

RICHARD L. MEEK PE.10668

STATE OF MAINE
RICHARD L. MEEK
No. 10668
REGISTERED PROFESSIONAL ENGINEER
07/13/18

DESIGNED	CHECKED
SAH	RLM

REV.	BY:	DATE:	STATUS:
A	SMF	7-13-18	ISSUED TO CITY

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Suite 4A
South Portland, ME 04106
Tel. 207-200-2100

POST-DEVELOPMENT WATERSHED PLAN

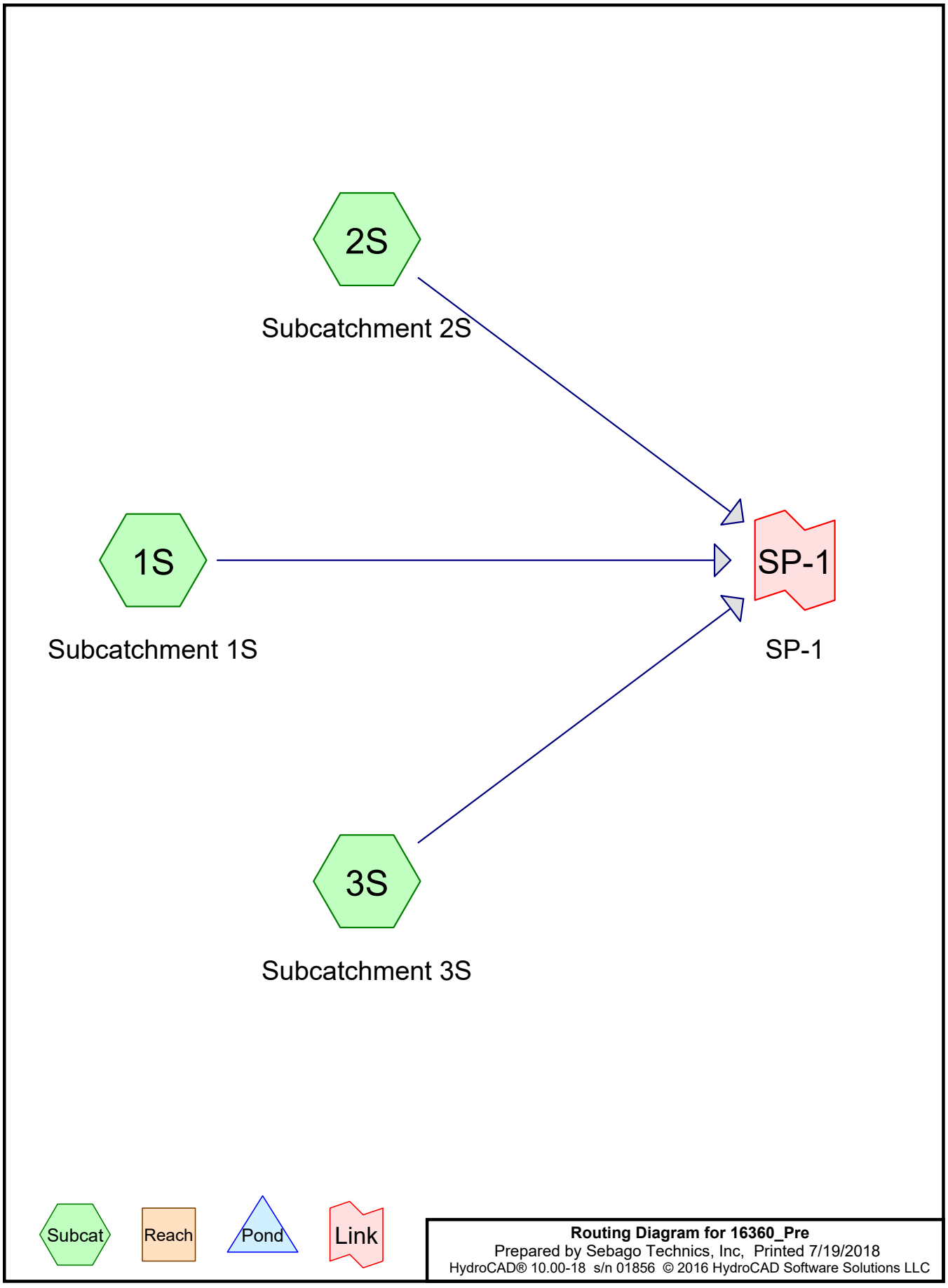
OF:
250 RIVERSIDE INDUSTRIAL PARKWAY
RIVERSIDE INDUSTRIAL PARKWAY
PORTLAND, MAINE

FOR:
TWO EISENHOWER DRIVE, LLC
P.O. BOX 1120
PORTLAND, MAINE 04104

PROJECT NO.	SCALE
16360	1" = 40'

SHEET 12 OF 12

16360 SWP.dwg, TAB:POST



Routing Diagram for 16360_Pre
Prepared by Sebago Technics, Inc, Printed 7/19/2018
HydroCAD® 10.00-18 s/n 01856 © 2016 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.018	98	Paved parking, HSG A (1S)
3.899	73	Woods, Fair, HSG C (1S, 2S, 3S)
1.281	79	Woods, Fair, HSG D (1S, 3S)

Summary for Subcatchment 1S: Subcatchment 1S

Runoff = 4.79 cfs @ 12.19 hrs, Volume= 0.439 af, Depth= 3.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (sf)	CN	Description
37,150	79	Woods, Fair, HSG D
33,570	73	Woods, Fair, HSG C
792	98	Paved parking, HSG A
71,512	76	Weighted Average
70,720		98.89% Pervious Area
792		1.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.3	100	0.0300	0.14		**Sheet Flow, A TO B** Grass: Dense n= 0.240 P2= 3.10"
1.7	190	0.0690	1.84		**Shallow Concentrated Flow, B TO C** Short Grass Pasture Kv= 7.0 fps
14.0	290	Total			

Summary for Subcatchment 2S: Subcatchment 2S

Runoff = 1.88 cfs @ 12.18 hrs, Volume= 0.169 af, Depth= 2.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (sf)	CN	Description
30,132	73	Woods, Fair, HSG C
30,132		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.3	100	0.0300	0.14		**Sheet Flow, A TO B** Grass: Dense n= 0.240 P2= 3.10"
0.8	132	0.1440	2.66		**Shallow Concentrated Flow, B TO C** Short Grass Pasture Kv= 7.0 fps
13.1	232	Total			

Summary for Subcatchment 3S: Subcatchment 3S

Runoff = 7.18 cfs @ 12.24 hrs, Volume= 0.720 af, Depth= 3.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (sf)	CN	Description
106,157	73	Woods, Fair, HSG C
18,641	79	Woods, Fair, HSG D
124,798	74	Weighted Average
124,798		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.2	100	0.0210	0.12		**Sheet Flow, A TO B** Grass: Dense n= 0.240 P2= 3.10"
0.6	67	0.0750	1.92		**Shallow Concentrated Flow, B TO C** Short Grass Pasture Kv= 7.0 fps
2.8	291	0.0600	1.71		**Shallow Concentrated Flow, C TO D** Short Grass Pasture Kv= 7.0 fps
17.6	458	Total			

Summary for Link SP-1: SP-1

Inflow Area = 5.198 ac, 0.35% Impervious, Inflow Depth = 3.07" for 25-YR event
Inflow = 13.64 cfs @ 12.22 hrs, Volume= 1.328 af
Primary = 13.64 cfs @ 12.22 hrs, Volume= 1.328 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Subcatchment1S Runoff Area=71,512 sf 1.11% Impervious Runoff Depth=1.08"
Flow Length=290' Tc=14.0 min CN=76 Runoff=1.55 cfs 0.148 af

Subcatchment2S: Subcatchment2S Runoff Area=30,132 sf 0.00% Impervious Runoff Depth=0.92"
Flow Length=232' Tc=13.1 min CN=73 Runoff=0.55 cfs 0.053 af

Subcatchment3S: Subcatchment3S Runoff Area=124,798 sf 0.00% Impervious Runoff Depth=0.97"
Flow Length=458' Tc=17.6 min CN=74 Runoff=2.17 cfs 0.232 af

Link SP-1: SP-1 Inflow=4.17 cfs 0.433 af
Primary=4.17 cfs 0.433 af

Total Runoff Area = 5.198 ac Runoff Volume = 0.433 af Average Runoff Depth = 1.00"
99.65% Pervious = 5.180 ac 0.35% Impervious = 0.018 ac

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Subcatchment1S Runoff Area=71,512 sf 1.11% Impervious Runoff Depth=2.21"
Flow Length=290' Tc=14.0 min CN=76 Runoff=3.28 cfs 0.302 af

Subcatchment2S: Subcatchment2S Runoff Area=30,132 sf 0.00% Impervious Runoff Depth=1.97"
Flow Length=232' Tc=13.1 min CN=73 Runoff=1.25 cfs 0.114 af

Subcatchment3S: Subcatchment3S Runoff Area=124,798 sf 0.00% Impervious Runoff Depth=2.05"
Flow Length=458' Tc=17.6 min CN=74 Runoff=4.82 cfs 0.489 af

Link SP-1: SP-1 Inflow=9.21 cfs 0.905 af
Primary=9.21 cfs 0.905 af

Total Runoff Area = 5.198 ac Runoff Volume = 0.905 af Average Runoff Depth = 2.09"
99.65% Pervious = 5.180 ac 0.35% Impervious = 0.018 ac

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

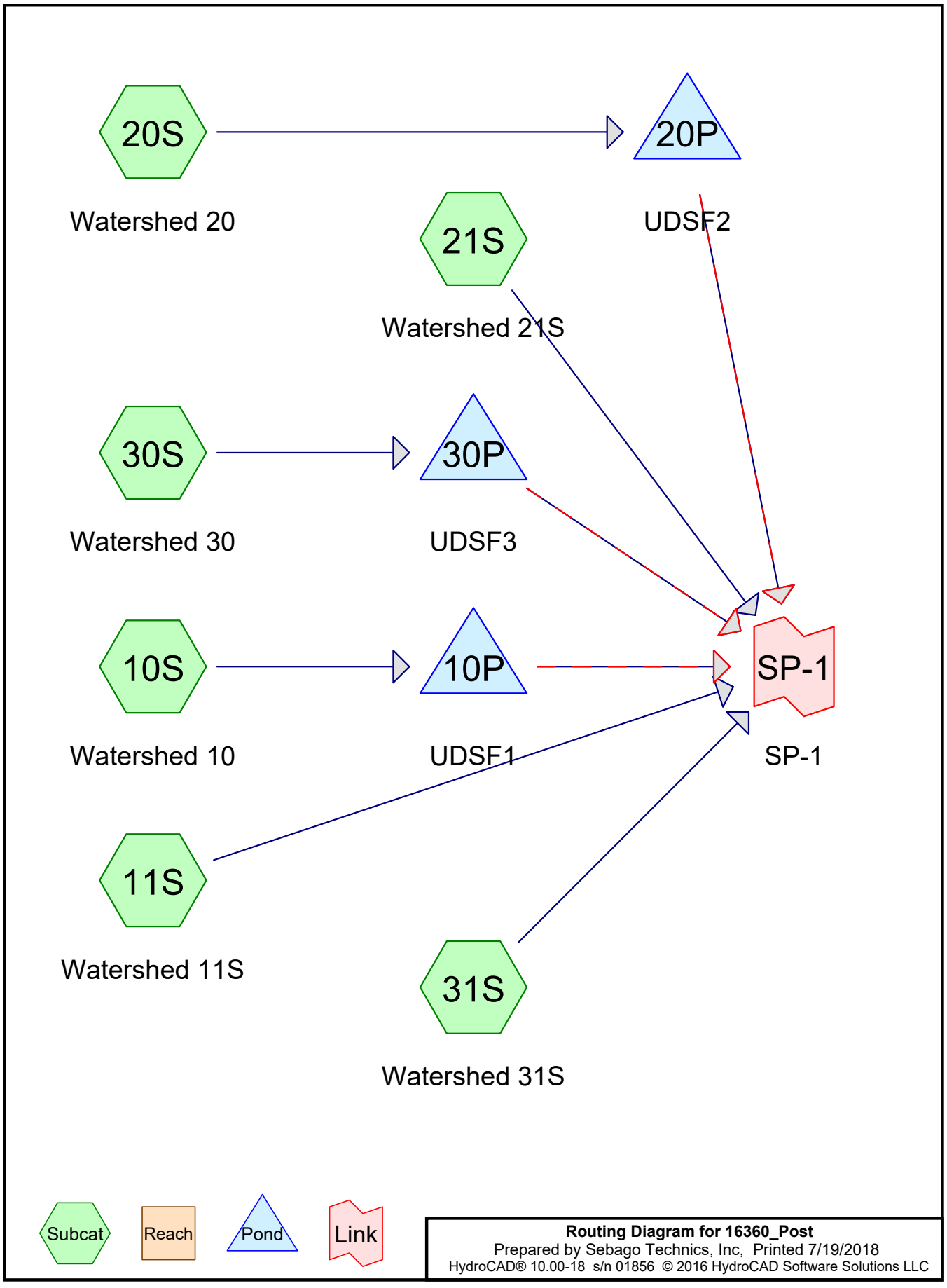
Subcatchment1S: Subcatchment1S Runoff Area=71,512 sf 1.11% Impervious Runoff Depth=3.21"
Flow Length=290' Tc=14.0 min CN=76 Runoff=4.79 cfs 0.439 af

Subcatchment2S: Subcatchment2S Runoff Area=30,132 sf 0.00% Impervious Runoff Depth=2.92"
Flow Length=232' Tc=13.1 min CN=73 Runoff=1.88 cfs 0.169 af

Subcatchment3S: Subcatchment3S Runoff Area=124,798 sf 0.00% Impervious Runoff Depth=3.02"
Flow Length=458' Tc=17.6 min CN=74 Runoff=7.18 cfs 0.720 af

Link SP-1: SP-1 Inflow=13.64 cfs 1.328 af
Primary=13.64 cfs 1.328 af

Total Runoff Area = 5.198 ac Runoff Volume = 1.328 af Average Runoff Depth = 3.07"
99.65% Pervious = 5.180 ac 0.35% Impervious = 0.018 ac



Routing Diagram for 16360_Post
Prepared by Sebago Technics, Inc, Printed 7/19/2018
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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
1.507	74	>75% Grass cover, Good, HSG C (10S, 11S, 20S, 21S, 30S, 31S)
0.342	80	>75% Grass cover, Good, HSG D (10S, 31S)
3.371	98	Impervious (10S, 20S, 30S, 31S)
0.018	98	Paved parking, HSG B (11S)

Summary for Subcatchment 10S: Watershed 10

Runoff = 8.58 cfs @ 12.08 hrs, Volume= 0.656 af, Depth= 4.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

	Area (sf)	CN	Description
*	51,893	98	Impervious
	3,774	74	>75% Grass cover, Good, HSG C
	13,066	80	>75% Grass cover, Good, HSG D
	68,733	93	Weighted Average
	16,840		24.50% Pervious Area
	51,893		75.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	100	0.0120	1.10		**Sheet Flow, A TO B** Smooth surfaces n= 0.011 P2= 3.10"
0.3	41	0.0120	2.22		**Shallow Concentrated Flow, B TO C** Paved Kv= 20.3 fps
1.5	287	0.0050	3.21	2.52	**Pipe Channel, C TO D** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013 Corrugated PE, smooth interior
2.7					**Direct Entry,**
6.0	428	Total			

Summary for Subcatchment 11S: Watershed 11S

Runoff = 0.53 cfs @ 12.09 hrs, Volume= 0.037 af, Depth= 3.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (sf)	CN	Description
792	98	Paved parking, HSG B
5,125	74	>75% Grass cover, Good, HSG C
5,917	77	Weighted Average
5,125		86.61% Pervious Area
792		13.39% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment 20S: Watershed 20

Runoff = 8.69 cfs @ 12.08 hrs, Volume= 0.657 af, Depth= 4.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

	Area (sf)	CN	Description
*	53,583	98	Impervious
	16,914	74	>75% Grass cover, Good, HSG C
	70,497	92	Weighted Average
	16,914		23.99% Pervious Area
	53,583		76.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0	26	0.0270	0.14		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 3.10"
0.7	117	0.0175	2.69		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
1.9	368	0.0050	3.21	2.52	**Pipe Channel, C to D** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013 Corrugated PE, smooth interior
0.4					**Direct Entry, Min Tc = 6.0 MIN**
6.0	511	Total			

Summary for Subcatchment 21S: Watershed 21S

Runoff = 1.57 cfs @ 12.09 hrs, Volume= 0.111 af, Depth= 3.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (sf)	CN	Description
19,280	74	>75% Grass cover, Good, HSG C
19,280		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	10	0.3300	0.32		**Sheet Flow, A TO B** Grass: Short n= 0.150 P2= 3.10"
0.2	55	0.3300	4.02		**Shallow Concentrated Flow, B TO C** Short Grass Pasture Kv= 7.0 fps
5.3					**Direct Entry,**
6.0	65	Total			

Summary for Subcatchment 30S: Watershed 30

Runoff = 5.34 cfs @ 12.08 hrs, Volume= 0.408 af, Depth= 4.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

	Area (sf)	CN	Description
*	34,586	98	Impervious
	8,181	74	>75% Grass cover, Good, HSG C
	42,767	93	Weighted Average
	8,181		19.13% Pervious Area
	34,586		80.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	125	0.0168	1.32		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 3.10"
1.1	205	0.0050	3.21	2.52	**Pipe Channel, B to C** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013 Corrugated PE, smooth interior
3.3					**Direct Entry, Min Tc = 6.0 Mins**
6.0	330	Total			

Summary for Subcatchment 31S: Watershed 31S

Runoff = 2.13 cfs @ 12.09 hrs, Volume= 0.153 af, Depth= 3.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

	Area (sf)	CN	Description
*	6,779	98	Impervious
	12,371	74	>75% Grass cover, Good, HSG C
	1,845	80	>75% Grass cover, Good, HSG D
	20,995	82	Weighted Average
	14,216		67.71% Pervious Area
	6,779		32.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	12	0.0200	0.89		**Sheet Flow, A TO B** Smooth surfaces n= 0.011 P2= 3.10"
0.6	146	0.0450	4.31		**Shallow Concentrated Flow, B TO C** Paved Kv= 20.3 fps
0.2	35	0.0050	3.21	2.52	**Pipe Channel, C TO D** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013 Corrugated PE, smooth interior
5.0					**Direct Entry,**
6.0	193	Total			

Summary for Pond 10P: UDSF1

Inflow Area = 1.578 ac, 75.50% Impervious, Inflow Depth = 4.99" for 25-YR event
Inflow = 8.58 cfs @ 12.08 hrs, Volume= 0.656 af
Outflow = 1.78 cfs @ 12.50 hrs, Volume= 0.636 af, Atten= 79%, Lag= 25.1 min
Primary = 1.78 cfs @ 12.50 hrs, Volume= 0.636 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 58.79' @ 12.50 hrs Surf.Area= 6,342 sf Storage= 15,509 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 461.5 min (1,235.5 - 774.0)

Volume	Invert	Avail.Storage	Storage Description
#1	55.50'	20,256 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
55.50	3,079	0	0
56.00	3,476	1,639	1,639
57.00	4,639	4,058	5,696
58.00	5,565	5,102	10,798
59.00	6,547	6,056	16,854
59.50	7,060	3,402	20,256

Device	Routing	Invert	Outlet Devices
#1	Primary	53.07'	**12.0" Round Culvert** L= 20.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 53.07' / 52.97' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	58.75'	**1.0" x 9.0" Horiz. Beehive Grate X 28.00** C= 0.600 Limited to weir flow at low heads
#3	Device 1	53.17'	**1.2" Vert. Orifice/Grate** C= 0.600
#4	Device 1	57.00'	**3.5" Vert. Orifice/Grate** C= 0.600
#5	Secondary	58.80'	**8.0' long x 9.0' 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 4.00 4.50 5.00 5.50

Coef. (English) 2.46 2.55 2.70 2.69 2.68 2.68 2.67 2.64 2.64
2.64 2.65 2.64 2.65 2.65 2.66 2.67 2.69

Primary OutFlow Max=1.78 cfs @ 12.50 hrs HW=58.79' TW=0.00' (Dynamic Tailwater)
- **1=Culvert** (Passes 1.78 cfs of 7.62 cfs potential flow)
  - **2=Beehive Grate** (Weir Controls 1.28 cfs @ 0.66 fps)
  - **3=Orifice/Grate** (Orifice Controls 0.09 cfs @ 11.37 fps)
  - **4=Orifice/Grate** (Orifice Controls 0.41 cfs @ 6.18 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=55.50' TW=0.00' (Dynamic Tailwater)
- **5=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 20P: UDSF2

Inflow Area = 1.618 ac, 76.01% Impervious, Inflow Depth = 4.87" for 25-YR event
Inflow = 8.69 cfs @ 12.08 hrs, Volume= 0.657 af
Outflow = 5.79 cfs @ 12.17 hrs, Volume= 0.657 af, Atten= 33%, Lag= 5.2 min
Primary = 5.76 cfs @ 12.17 hrs, Volume= 0.657 af
Secondary = 0.02 cfs @ 12.17 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 58.26' @ 12.17 hrs Surf.Area= 4,792 sf Storage= 8,959 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 269.8 min (1,047.9 - 778.2)

Volume	Invert	Avail.Storage	Storage Description
#1	56.00'	12,595 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
56.00	3,050	0	0
57.00	3,850	3,450	3,450
58.00	4,720	4,285	7,735
59.00	5,000	4,860	12,595

Device	Routing	Invert	Outlet Devices
#1	Primary	53.57'	**12.0" Round 12" SD** L= 20.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 53.57' / 53.30' S= 0.0135 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	53.67'	**1.2" Vert. Orifice/Grate** C= 0.600
#3	Device 1	57.40'	**1.0" W x 9.0" H Vert. Beehive X 28.00** C= 0.600
#4	Secondary	58.25'	**15.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=5.76 cfs @ 12.17 hrs HW=58.26' TW=0.00' (Dynamic Tailwater)
└**1=12" SD** (Passes 5.76 cfs of 6.83 cfs potential flow)
  ├**2=Orifice/Grate** (Orifice Controls 0.08 cfs @ 10.26 fps)
  └**3=Beehive** (Orifice Controls 5.68 cfs @ 3.25 fps)

Secondary OutFlow Max=0.02 cfs @ 12.17 hrs HW=58.26' TW=0.00' (Dynamic Tailwater)
└**4=Broad-Crested Rectangular Weir** (Weir Controls 0.02 cfs @ 0.21 fps)

Summary for Pond 30P: UDSF3

Inflow Area = 0.982 ac, 80.87% Impervious, Inflow Depth = 4.99" for 25-YR event
Inflow = 5.34 cfs @ 12.08 hrs, Volume= 0.408 af
Outflow = 3.67 cfs @ 12.17 hrs, Volume= 0.408 af, Atten= 31%, Lag= 4.9 min
Primary = 3.67 cfs @ 12.17 hrs, Volume= 0.408 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 55.62' @ 12.17 hrs Surf.Area= 3,718 sf Storage= 5,930 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 325.6 min (1,099.6 - 774.0)

Volume	Invert	Avail.Storage	Storage Description
#1	53.50'	11,788 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
53.50	2,003	0	0
54.00	2,269	1,068	1,068
55.00	3,197	2,733	3,801
56.00	4,043	3,620	7,421
57.00	4,690	4,367	11,788

Device	Routing	Invert	Outlet Devices
#1	Primary	51.07'	**12.0" Round 12" SD** L= 35.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 51.07' / 50.50' S= 0.0163 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	51.17'	**1.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	55.00'	**1.0" W x 9.0" H Vert. Beehive Grate X 28.00** C= 0.600
#4	Secondary	55.65'	**10.0' long x 12.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.57 2.62 2.70 2.67 2.66 2.67 2.66 2.64

Primary OutFlow Max=3.67 cfs @ 12.17 hrs HW=55.62' TW=0.00' (Dynamic Tailwater)
└─**1=12" SD** (Passes 3.67 cfs of 6.71 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 0.06 cfs @ 10.10 fps)
  └─**3=Beehive Grate** (Orifice Controls 3.62 cfs @ 2.52 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=53.50' TW=0.00' (Dynamic Tailwater)
└─**4=Broad-Crested Rectangular Weir**(Controls 0.00 cfs)

Summary for Link SP-1: SP-1

Inflow Area = 5.238 ac, 64.70% Impervious, Inflow Depth > 4.59" for 25-YR event
Inflow = 13.23 cfs @ 12.13 hrs, Volume= 2.002 af
Primary = 13.23 cfs @ 12.13 hrs, Volume= 2.002 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment10S: Watershed 10 Runoff Area=68,733 sf 75.50% Impervious Runoff Depth=2.35"
Flow Length=428' Tc=6.0 min CN=93 Runoff=4.22 cfs 0.309 af

Subcatchment11S: Watershed 11S Runoff Area=5,917 sf 13.39% Impervious Runoff Depth=1.14"
Tc=6.0 min CN=77 Runoff=0.18 cfs 0.013 af

Subcatchment20S: Watershed 20 Runoff Area=70,497 sf 76.01% Impervious Runoff Depth=2.26"
Flow Length=511' Tc=6.0 min CN=92 Runoff=4.19 cfs 0.304 af

Subcatchment21S: Watershed 21S Runoff Area=19,280 sf 0.00% Impervious Runoff Depth=0.97"
Flow Length=65' Slope=0.3300 '/' Tc=6.0 min CN=74 Runoff=0.47 cfs 0.036 af

Subcatchment30S: Watershed 30 Runoff Area=42,767 sf 80.87% Impervious Runoff Depth=2.35"
Flow Length=330' Tc=6.0 min CN=93 Runoff=2.62 cfs 0.192 af

Subcatchment31S: Watershed 31S Runoff Area=20,995 sf 32.29% Impervious Runoff Depth=1.46"
Flow Length=193' Tc=6.0 min CN=82 Runoff=0.82 cfs 0.059 af

Pond 10P: UDSF1 Peak Elev=57.41' Storage=7,688 cf Inflow=4.22 cfs 0.309 af
Primary=0.24 cfs 0.307 af Secondary=0.00 cfs 0.000 af Outflow=0.24 cfs 0.307 af

Pond 20P: UDSF2 Peak Elev=57.65' Storage=6,123 cf Inflow=4.19 cfs 0.304 af
Primary=0.99 cfs 0.304 af Secondary=0.00 cfs 0.000 af Outflow=0.99 cfs 0.304 af

Pond 30P: UDSF3 Peak Elev=55.13' Storage=4,213 cf Inflow=2.62 cfs 0.192 af
Primary=0.39 cfs 0.192 af Secondary=0.00 cfs 0.000 af Outflow=0.39 cfs 0.192 af

Link SP-1: SP-1 Inflow=1.93 cfs 0.911 af
Primary=1.93 cfs 0.911 af

Total Runoff Area = 5.238 ac Runoff Volume = 0.913 af Average Runoff Depth = 2.09"
35.30% Pervious = 1.849 ac 64.70% Impervious = 3.389 ac

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment10S: Watershed 10 Runoff Area=68,733 sf 75.50% Impervious Runoff Depth=3.81"
Flow Length=428' Tc=6.0 min CN=93 Runoff=6.65 cfs 0.500 af

Subcatchment11S: Watershed 11S Runoff Area=5,917 sf 13.39% Impervious Runoff Depth=2.29"
Tc=6.0 min CN=77 Runoff=0.36 cfs 0.026 af

Subcatchment20S: Watershed 20 Runoff Area=70,497 sf 76.01% Impervious Runoff Depth=3.70"
Flow Length=511' Tc=6.0 min CN=92 Runoff=6.70 cfs 0.499 af

Subcatchment21S: Watershed 21S Runoff Area=19,280 sf 0.00% Impervious Runoff Depth=2.05"
Flow Length=65' Slope=0.3300 '/' Tc=6.0 min CN=74 Runoff=1.05 cfs 0.076 af

Subcatchment30S: Watershed 30 Runoff Area=42,767 sf 80.87% Impervious Runoff Depth=3.81"
Flow Length=330' Tc=6.0 min CN=93 Runoff=4.14 cfs 0.311 af

Subcatchment31S: Watershed 31S Runoff Area=20,995 sf 32.29% Impervious Runoff Depth=2.72"
Flow Length=193' Tc=6.0 min CN=82 Runoff=1.54 cfs 0.109 af

Pond 10P: UDSF1 Peak Elev=58.30' Storage=12,525 cf Inflow=6.65 cfs 0.500 af
Primary=0.43 cfs 0.489 af Secondary=0.00 cfs 0.000 af Outflow=0.43 cfs 0.489 af

Pond 20P: UDSF2 Peak Elev=58.02' Storage=7,835 cf Inflow=6.70 cfs 0.499 af
Primary=3.75 cfs 0.499 af Secondary=0.00 cfs 0.000 af Outflow=3.75 cfs 0.499 af

Pond 30P: UDSF3 Peak Elev=55.42' Storage=5,223 cf Inflow=4.14 cfs 0.311 af
Primary=2.10 cfs 0.311 af Secondary=0.00 cfs 0.000 af Outflow=2.10 cfs 0.311 af

Link SP-1: SP-1 Inflow=8.04 cfs 1.510 af
Primary=8.04 cfs 1.510 af

Total Runoff Area = 5.238 ac Runoff Volume = 1.522 af Average Runoff Depth = 3.49"
35.30% Pervious = 1.849 ac 64.70% Impervious = 3.389 ac

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment10S: Watershed 10 Runoff Area=68,733 sf 75.50% Impervious Runoff Depth=4.99"
Flow Length=428' Tc=6.0 min CN=93 Runoff=8.58 cfs 0.656 af

Subcatchment11S: Watershed 11S Runoff Area=5,917 sf 13.39% Impervious Runoff Depth=3.31"
Tc=6.0 min CN=77 Runoff=0.53 cfs 0.037 af

Subcatchment20S: Watershed 20 Runoff Area=70,497 sf 76.01% Impervious Runoff Depth=4.87"
Flow Length=511' Tc=6.0 min CN=92 Runoff=8.69 cfs 0.657 af

Subcatchment21S: Watershed 21S Runoff Area=19,280 sf 0.00% Impervious Runoff Depth=3.02"
Flow Length=65' Slope=0.3300 '/' Tc=6.0 min CN=74 Runoff=1.57 cfs 0.111 af

Subcatchment30S: Watershed 30 Runoff Area=42,767 sf 80.87% Impervious Runoff Depth=4.99"
Flow Length=330' Tc=6.0 min CN=93 Runoff=5.34 cfs 0.408 af

Subcatchment31S: Watershed 31S Runoff Area=20,995 sf 32.29% Impervious Runoff Depth=3.80"
Flow Length=193' Tc=6.0 min CN=82 Runoff=2.13 cfs 0.153 af

Pond 10P: UDSF1 Peak Elev=58.79' Storage=15,509 cf Inflow=8.58 cfs 0.656 af
Primary=1.78 cfs 0.636 af Secondary=0.00 cfs 0.000 af Outflow=1.78 cfs 0.636 af

Pond 20P: UDSF2 Peak Elev=58.26' Storage=8,959 cf Inflow=8.69 cfs 0.657 af
Primary=5.76 cfs 0.657 af Secondary=0.02 cfs 0.000 af Outflow=5.79 cfs 0.657 af

Pond 30P: UDSF3 Peak Elev=55.62' Storage=5,930 cf Inflow=5.34 cfs 0.408 af
Primary=3.67 cfs 0.408 af Secondary=0.00 cfs 0.000 af Outflow=3.67 cfs 0.408 af

Link SP-1: SP-1 Inflow=13.23 cfs 2.002 af
Primary=13.23 cfs 2.002 af

Total Runoff Area = 5.238 ac Runoff Volume = 2.022 af Average Runoff Depth = 4.63"
35.30% Pervious = 1.849 ac 64.70% Impervious = 3.389 ac

Table 1: MDEP GENERAL STANDARD CALCULATIONS

Job # 16360 Riverside Street Lot

AREA ID	WATERSHED SIZE (S.F.)	EXISTING ONSITE IMPERVIOUS AREA TO REMAIN (S.F.)	NEW ONSITE IMPERVIOUS AREA (S.F.)	EXISTING ONSITE LANDSCAPED AREA TO REMAIN (S.F.)	NEW ONSITE LANDSCAPED AREA (S.F.)	NET NEW DEVELOPED AREA (S.F.)	NET EXISTING DEVELOPED AREAS (S.F.)	TREATMENT PROVIDED?	IMPERVIOUS AREA TREATED (S.F.)	LANDSCAPED AREA TREATED* (S.F.)	TOTAL AREA TREATED (S.F.)	TREATMENT BMP
10	64,830	459	51,434	1,556	11,381	62,815	0	YES	51,893	12,937	64,830	UDSF1
11	5,917	792	0	0	5,125	5,125	0	NO	0	0	0	
20	68,292	0	53,583	2,205	14,709	68,292	0	YES	53,583	16,914	70,497	UDSF2
21	19,268	0	0	0	19,268	19,268	0	NO	0	0	0	
30	42,767	0	34,586	0	8,181	42,767	0	YES	34,586	8,181	42,767	UDSF3
31	20,995	0	6,779	0	14,216	20,995	0	NO	0	0	0	
TOTAL (S.F.)	**222,069**	**1,251**	**146,382**	**3,761**	**72,880**	**219,262**	**0**		**140,062**	**38,032**	**178,094**	

TOTAL NEW IMPERVIOUS AREA (S.F.)	**146,382**	**TOTAL DEVELOPED AREA (S.F.)**	**219,262**
TOTAL IMPERVIOUS AREA RECEIVING TREATMENT (S.F.)	**140,062**	**TOTAL LANDSCAPED AREA RECEIVING TREATMENT (S.F.)**	**178,094**
% OF IMPERVIOUS AREA RECEIVING TREATMENT	**95.68%**	**% OF DEV. AREA RECEIVING TREATMENT**	**81.22%**

SEBAGO TECHNICS, INC.
75 John Roberts Road Suite 4A
South Portland, Maine 04106
Tel. (207) 200-2100

JOB
SHEET NO. 1 OF 1
CALCULATED BY DATE 3/2/2017
FILE NAME PRNT DATE 7/19/2018

UNDERDRAINED SOIL FILTER

Task: Calculate water quality volume per MDEP chapter 500 regulations

1. Maine DEP Chapter 500, Section 4.C.(3)(b)

References

a. "must detain a runoff volume equal to 1.0 inch times the subcatchment's impervious area plus 0.4 inch times the subcatchment's landscaped area"

2. Maine DEP Best Management Practices Stormwater Manual, Section 7.1

a. "surface should represent 5% of impervious area and 2% of landscaped area"

Tributary to Underdrained Filter: UDSF1

Landscaped Area	12,937.00	SF				
Impervious Area	53,143.00	SF				

Minimum Surface Area

Required (2% X Landscaped + 5%" X Impervious)

Total Landscaped Area	12,937.00	SF	Area	258.7	SF	
Total Impervious Area	53,143.00	SF	Area	2,657.2	SF	
Required Minimum Surface Area				2,915.9	SF	
Provided Surface Area				3,079.0	SF	

Treatment Volume

Required (0.4" X Landscaped + 1.0" X Impervious)

Landscaped Area	12,937.00	SF	Volume	431.2				
Impervious Area	53,143.00	SF	Volume	4,428.6				
Treatment Volume Required				4,859.8	CF	0.112	AF	
Provided Treatment Volume				5,696.0	CF	Elev 55.5 to Elev 57.0		

Sediment Pre-Treatment

Per Reference 2, Chapter 7.1 "Pretreatment devices shall be provided to minimize discharge of sediment to the soil filter"

Annual Sediment Load: 55 cubic feet per acre per year of sanded area

Area to be sanded:	53,143.00	SF						
Sediment Volume	67	CF						
Provided	100	CF	15	Inch Deep Forebay	with area of		80	sf

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SHEET NO. 1 OF 1
CALCULATED BY DATE 3/2/2017
FILE NAME PRNT DATE 7/19/2018

UNDERDRAINED SOIL FILTER

Task: Calculate water quality volume per MDEP chapter 500 regulations

1. Maine DEP Chapter 500, Section 4.C.(3)(b)

References

a. "must detain a runoff volume equal to 1.0 inch times the subcatchment's impervious area plus 0.4 inch times the subcatchment's landscaped area"

2. Maine DEP Best Management Practices Stormwater Manual, Section 7.1

a. "surface should represent 5% of impervious area and 2% of landscaped area"

Tributary to Underdrained Filter: UDSF2

Landscaped Area	16,914.00	SF				
Impervious Area	53,583.00	SF				

Minimum Surface Area

Required (2% X Landscaped + 5% X Impervious)

Total Landscaped Area	16,914.00	SF	Area	338.3	SF	
Total Impervious Area	53,583.00	SF	Area	2,679.2	SF	
Required Minimum Surface Area				3,017.4	SF	
Provided Surface Area				3,050.0	SF	

Treatment Volume

Required (0.4" X Landscaped + 1.0" X Impervious)

Landscaped Area	16,914.00	SF	Volume	563.8				
Impervious Area	53,583.00	SF	Volume	4,465.3				
Treatment Volume Required				5,029.1	CF	0.115	AF	
Provided Treatment Volume				5,060.0	CF	Elev 56.00 to Elev 57.40		

Sediment Pre-Treatment

Per Reference 2, Chapter 7.1 "Pretreatment devices shall be provided to minimize discharge of sediment to the soil filter"

Annual Sediment Load: 55 cubic feet per acre per year of sanded area

Area to be sanded:	53,583.00	SF						
Sediment Volume	68	CF						
Provided	180	CF	15	Inch Deep Forebay	with area of		144	sf

SEBAGO TECHNICS, INC.
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South Portland, Maine 04106
Tel. (207) 200-2100

JOB
SHEET NO. 1 OF 1
CALCULATED BY DATE 3/2/2017
FILE NAME PRNT DATE 7/19/2018

UNDERDRAINED SOIL FILTER

Task: Calculate water quality volume per MDEP chapter 500 regulations

1. Maine DEP Chapter 500, Section 4.C.(3)(b)

References

a. "must detain a runoff volume equal to 1.0 inch times the subcatchment's impervious area plus 0.4 inch times the subcatchment's landscaped area"

2. Maine DEP Best Management Practices Stormwater Manual, Section 7.1

a. "surface should represent 5% of impervious area and 2% of landscaped area"

Tributary to Underdrained Filter: UDSF3

Landscaped Area	8,181.00	SF				
Impervious Area	34,586.00	SF				

Minimum Surface Area

Required (2% X Landscaped + 5%" X Impervious)

Total Landscaped Area	8,181.00	SF	Area	163.6	SF	
Total Impervious Area	34,586.00	SF	Area	1,729.3	SF	
Required Minimum Surface Area				1,892.9	SF	
Provided Surface Area				2,003.0	SF	

Treatment Volume

Required (0.4" X Landscaped + 1.0" X Impervious)

Landscaped Area	8,181.00	SF	Volume	272.7				
Impervious Area	34,586.00	SF	Volume	2,882.2				
Treatment Volume Required				3,154.9	CF	0.072	AF	
Provided Treatment Volume				3,801.0	CF	Elev 53.50 to Elev 55.0		

Sediment Pre-Treatment

Per Reference 2, Chapter 7.1 "Pretreatment devices shall be provided to minimize discharge of sediment to the soil filter"

Annual Sediment Load: 55 cubic feet per acre per year of sanded area

Area to be sanded: 34,586.00 SF

Sediment Volume 44 CF

Provided 63 CF 15 Inch Deep Forebay with area of 50 sf

16360

INSPECTION, MAINTENANCE, AND HOUSEKEEPING PLAN
250 Riverside Industrial Parkway
Portland, Maine

Introduction

The following plan outlines the anticipated inspection and maintenance procedures for the erosion and sedimentation control measures as well as stormwater management facilities for the project. This plan also outlines several housekeeping requirements that shall be followed during and after construction. These procedures shall be followed in order to ensure the intended function of the designed measures and to prevent unreasonably adverse impacts to the surrounding environment.

The procedures outlined in this Inspection, Maintenance, and Housekeeping Plan are provided as an overview of the anticipated practices to be used on this site by the contractor during construction and the owner and/or the City of Portland after construction. In some instances, additional measures may be required due to unexpected conditions. For additional detail on any of the erosion and sedimentation control measures or stormwater management devices to be utilized on this project, refer to the most recently revised edition of the "Maine Erosion and Sedimentation Control BMP" manual and/or the "Stormwater Management for Maine: Best Management Practices" manual as published by the Maine Department of Environmental Protection (MDEP).

During Construction

1. **Inspection:** During the construction process, it is the Contractor's responsibility to comply with the inspection and maintenance procedures outlined in this section and the erosion and sedimentation control plan for the project. These responsibilities include inspecting disturbed and impervious areas, erosion control measures, materials storage areas that are exposed to precipitation, and locations where vehicles enter or exit the site. These areas shall be inspected at least once per week as well as before and after a storm event, and prior to completing permanent stabilization measures. A person with knowledge of erosion and stormwater control, including the standards and conditions in any applicable permits, shall conduct the inspections.

2. **Maintenance:** All measures shall be maintained in an effective operating condition until areas are permanently stabilized. If Best Management Practices (BMPs) need to be maintained or modified, additional BMPs are necessary, or other corrective action is needed, implementation must be completed within 7 calendar days and prior to any storm event (rainfall).

3. **Documentation:** A log summarizing the inspections and any corrective action taken must be maintained on-site. Correction action shall be performed in general conformance with the Maine Construction General Permit and Maine DEP Chapter 500 Stormwater standards. The log must include the name(s) and qualifications of the person making the inspections, the date(s) of the inspections, and major observations about the operation and maintenance of erosion and sedimentation controls, material storage areas, and vehicle access points to the site. Major observations must include BMPs that need maintenance, BMPs that failed to operate as designed or proved inadequate for a particular location, and locations where additional BMPs are needed. For each BMP requiring maintenance, BMP needing replacement, and location needing additional BMPs, note in the log the corrective action taken and when it was taken. The log must be made

accessible to the appropriate regulatory agency upon request. The permittee shall retain a copy of the log for a period of at least three years from the completion of permanent stabilization.

4. **Specific Inspection and Maintenance Tasks:** The following is a list of erosion control and stormwater management measures and the specific inspection and maintenance tasks to be performed during construction.

A. Filter Berms:

- Hay bale barriers, silt fences, and filter berms shall be inspected immediately after each rainfall and at least daily during prolonged rainfall.
- If the fabric on a silt fence or filter barrier should decompose or become ineffective prior to the end of the expected usable life and the barrier is still necessary, it shall be replaced.
- Sediment deposits should be removed after each storm event. They must be removed before deposits reach approximately one-half the height of the barrier.
- Filter berms shall 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.

B. Stone Check Dams:

- Inspect the center of the dam to make sure it is lower than the edges. Erosion caused by high flows around the edges of the dam must be corrected.
- Sediment accumulation shall be removed prior to reaching half of the original design height.
- Areas beneath stone check dams must be seeded and mulched upon removal.

C. Riprap Materials:

- Once a riprap installation has been completed, it should require very little maintenance. It shall, however, be inspected periodically to determine if high flows have caused scour beneath the riprap or dislodged any of the stone.

D. Erosion Control Blankets:

- Inspect these reinforced areas semi-annually and after significant rainfall events for slumping, sliding, seepage, and scour. Pay close attention to unreinforced areas adjacent to the erosion control blankets, which may experience accelerated erosion.
- Review all applicable inspection and maintenance procedures recommended by the specific blanket manufacturer. These tasks shall be included in addition to the requirements of this plan.

E. Stabilized Construction Entrances/Exits:

- 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. The entrance should then be reconstructed.
- Areas that have received mud-tracking or sediment deposits shall be swept or washed. Washing shall be done on an area stabilized with aggregate, which drains into an approved sediment-trapping device (not into storm drains, ditches, or waterways).

F. Temporary Seed and Mulch:

- Mulched areas should be inspected after rain events to check for rill erosion.
- If less than 90% of the soil surface is covered by mulch, additional mulch shall be applied in bare areas.
- In applications where seeding and mulch have been applied in conjunction with erosion control blankets, the blankets must be inspected after rain events for dislocation or undercutting.
- Mulch shall continue to be reapplied until 95% of the soil surface has established temporary vegetative cover.

G. Stabilized Temporary Drainage Swales:

- Sediment accumulation in the swale shall be removed once the cross section of the swale is reduced by 25%.
- The swales shall be inspected after rainfall events. Any evidence of sloughing of the side slopes or channel erosion shall be repaired and corrective action should be taken to prevent reoccurrence of the problem.
- In addition to the stabilized lining of the channel (i.e. erosion control blankets), stone check dams may be needed to further reduce channel velocity.

5. **Housekeeping:** The following general performance standards apply to the proposed project.

A. Spill prevention: Controls must be used to prevent pollutants from being discharged from materials on-site, including storage practices to minimize exposure of the materials to stormwater, and appropriate spill prevention, containment, and response planning and implementation. A Spill, Prevention, Control and Countermeasures Plan is created for the project and is to be kept onsite at all times.

B. Groundwater protection: During construction, liquid petroleum products and other hazardous materials with the potential to contaminate groundwater may not be stored or handled in areas of the site draining to an infiltration area. An "infiltration area" is any area of the site that by design or as a result of soils, topography and other relevant factors, accumulates runoff that infiltrates into the soil. Dikes, berms, sumps, and other forms of secondary containment that prevent discharge to groundwater may be used to isolate portions of the site for the purposes of storage and handling of these materials.

C. Fugitive sediment and dust: Actions must be taken to ensure that activities do not result in noticeable erosion of soils or fugitive dust emissions during or after construction. Oil may not be used for dust control.

D. Debris and other materials: Litter, construction debris, and chemicals exposed to stormwater must be prevented from becoming a pollutant source.

E. Trench or foundation dewatering: Trench dewatering is the removal of water from trenches, foundations, cofferdams, ponds, and other areas within the construction area that retain water after excavation. In most cases, the collected water is heavily silted and hinders correct and safe construction practices. The collected water must be removed from the ponded area, either through gravity or pumping, and must be spread through natural wooded buffers or removed to areas that are specifically designed to collect the maximum amount of sediment possible, like a cofferdam sedimentation basin. Avoid allowing the water to flow over disturbed areas of the site. Equivalent measures may be taken if approved.

Post-Construction

1. **Inspection:** After construction, it is the responsibility of Patco Construction or assigned heirs to comply with the inspection and maintenance procedures outlined in this section. All measures must be maintained in effective operating condition. A person with knowledge of erosion and stormwater control, including the standards and conditions in all applicable permits, shall conduct the inspections.

2. **Specific Inspection and Maintenance Tasks:** The following is a list of permanent erosion control and stormwater management measures and the inspection and maintenance tasks to be performed after construction.

   A. Vegetated Areas:
   - Inspect vegetated areas, particularly slopes and embankments, early in the growing season or after heavy rains to identify active or potential erosion problems.
   - Replant bare areas or areas with sparse growth. Where rill erosion is evident, armor the area with an appropriate lining or divert the erosive flows to on-site areas able to withstand the concentrated flows.

   B. Ditches, Swales and Other Open Channels:

   - Inspect ditches, swales, level spreaders and other open stormwater channels in the spring, in the late fall, and after heavy rains to remove any obstructions to flow. Remove accumulated sediments and debris, remove woody vegetative growth that could obstruct flow, and repair any erosion of the ditch lining.
   - Vegetated ditches must be mowed at least annually or otherwise maintained to control the growth of woody vegetation and maintain flow capacity.
   - Any woody vegetation growing through riprap linings must also be removed. Repair any slumping side slopes as soon as practicable.
   - If the ditch has a riprap lining, replace riprap in areas where any underlying filter fabric or underdrain gravel is showing through the stone or where stones have dislodged.

   C. Winter Sanding:

- Clear accumulations of winter sand along access road at least once a year, preferably in the spring.
- Accumulations of sand along road shoulders may be removed by grading excess sand to the pavement edge and removing it manually or by a front-end loader or other acceptable method.

D. Culverts:

- Inspect culverts in the spring, in the late fall, and after heavy rains to remove any obstructions to flow.
- Remove accumulated sediments and debris at the inlet, at the outlet, and within the conduit.
- Inspect and repair any erosion damage at the culvert's inlet and outlet.

E. Underdrained Soil Filter:

- During the first year, the basin shall be inspected semi-annually and following major storm events.
- Debris and sediment buildup shall be removed from the forebay and basin as needed. Mowing of a grassed basin can occur semiannually to a height no less than 6 inches. Any bare area or erosion rills shall be repaired with new filter media or sandy loam then seeded and mulched. Maintaining good grass cover will minimize clogging with fine sediments and if ponding exceeds 48 hours, the top of the filter bed must be rototilled to reestablish the soil's filtration capacity.
- The soil filter should be inspected after every major storm in the first year to be sure it is functioning properly. Thereafter, the filter should be inspected at least once every six months to ensure that it is draining within 48 hours following a one-inch storm or greater. Following storms that fill the system and overflow is observed, the soil filter should drain in no less than 36 to 60 hours. If the system drains too fast, an orifice may need to be added on the underdrain outlet or, if already present, may need to be modified.
- Soil Filter Replacement: The top several inches of the filter shall be replaced with fresh material when water ponds on the surface of the bed for more than 72 hours. Removed sediments should be disposed of in an acceptable manner.
- Sediment Removal: Sediment and plant debris should be removed from the pretreatment structure at least annually.
- Mowing: If mowing is desired, only handheld string trimmers or push-mowers are allowed on the filter (no tractor) and the grass bed should be mowed no more than 2 times per growing season to maintain grass heights of no less than 6 inches.
- Fertilization: Fertilization of the underdrained filter area should be avoided unless absolutely necessary to establish vegetation.
- Harvesting and Weeding: Harvesting and pruning of excessive growth will need to be done occasionally. Weeding to control unwanted or invasive plants may also be necessary.

3. Documentation:

A. A log summarizing the inspections and any corrective action taken must be maintained. The log must include the name(s) and qualifications of the person making the inspections, the date(s) of the inspections, and major observations about the operation and maintenance of controls. Major observations must include BMPs that need maintenance, BMPs that failed to operate as designed or proved inadequate for a particular location, and locations where additional BMPs are needed. For each BMP requiring maintenance, BMP needing replacement, and location needing additional BMPs, note in the log the corrective action taken and when it was taken. The log must be made accessible to the appropriate regulatory agency upon request. A sample "Stormwater Inspection and Maintenance Form" has been included as Attachment 1 of this Inspection, Maintenance, and Housekeeping Plan.

4. Maine DEP Recertification: A certification of the following shall be submitted to the MDEP within three months of the expiration of each five-year interval from the date of issuance of MDEP permits.

A. Identification and repair of erosion problems. All areas of the project site have been inspected for areas of erosion, and appropriate steps have been taken to permanently stabilize these areas.

B. Inspection and repair of stormwater control system. All aspects of the stormwater control system have been inspected for damage, wear, and malfunction, and appropriate steps have been taken to repair or replace the system, or portions of the system.

C. The Inspection, Maintenance, and Housekeeping Plan for the site is being implemented as written, or modifications to the plan have been submitted to and approved by the MDEP, and the maintenance log is being maintained.

5. Duration of Maintenance: Perform maintenance as described and required for any associated permits unless and until the system is formally accepted by a municipality or quasi-municipal district or is placed under the jurisdiction of a legally created association that will be responsible for the maintenance of the system. If a municipality or quasi-municipal district chooses to accept a stormwater management system, or a component of a stormwater system, it must provide a letter to the MDEP stating that it assumes responsibility for the system. The letter must specify the components of the system for which the municipality or district will assume responsibility, and that the municipality or district agrees to maintain those components of the system in compliance with MDEP standards. Upon such assumption of responsibility, and approval by the MDEP, the municipality, quasi-municipal district, or association becomes a co-permittee for this purpose only and must comply with all terms and conditions of the permit.

Attachments

Attachment 1 – Stormwater Inspection and Maintenance Log Form

16360

ATTACHMENT 1 – STORMWATER INSPECTION AND MAINTENANCE LOG

250 Riverside Industrial Parkway
Portland, Maine

This log is intended to accompany the Inspection, Maintenance, and Housekeeping Plan for the proposed Facility in Portland, Maine. The following items shall be checked, cleaned and maintained on a regular basis as specified in the Maintenance Plan and as described in the table below. This log shall be kept on file for a minimum of five (5) years and shall be available for review by the municipality. Qualified personnel familiar with drainage systems and soils shall perform all inspections. Attached is a copy of the construction and post-construction maintenance logs.

`	INSPECTOR NAME	DATE PERFORMED	SUGGESTED INTERVAL
Vegetated Areas			
Inspect all slopes and embankments			Annually
Replant bare areas or areas with sparse growth			Annually
Paved Surfaces			
Clear accumulated winter sand			Annually
Remove sediment along edges and in pockets			Annually
Ditches & Swales			
Remove any obstructions and accumulated sediments and debris			Monthly
Repair any erosion of ditch lining			Annually
Mow vegetated ditches			Annually
Remove woody vegetation growing through riprap			Annually
Repair any slumping side slopes			Annually
Replace riprap where stones have dislodged			Annually
Catch Basins			
Remove accumulated sediments and debris in the sump and at grate			Annually
Culverts			
Remove accumulated sediments and debris at the inlet, outlet, within conduit			Annually
Repair any erosion at inlet and outlet			Annually
Sump Depth			Annually

	Remove trash and other debris			Annually
	Replace mulch layer and tree pruning			Annually
Underdrained Soil Filter				
	Remove sediment & debris			Monthly
	Remove weeds			Monthly (during growing season)
	Erosion (side slopes, embankment)			Monthly
	Inspection after major storm to verify proper function			Bi-Annually


70° 18' 39" W
70° 18' 23" W
394420
394470
394520
394570
394620
394670
394720
43° 42' 35" N
43° 42' 20" N
4840470
4840420
4840370
4840320
4840270
4840220
4840170
4840120
4840070
4840020
95
BuB
SuE2
Sn
Riverside Industrial Pkwy
Soil Map may not be valid at this scale.
Map Scale: 1:2,290 if printed on A portrait (8.5" x 11") sheet.
N
Meters
0 30 60 120 180
Feet
0 100 200 400 600
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

A
A/D
B
B/D
C
C/D
D
Not rated or not available

Soil Rating Lines

A
A/D
B
B/D
C
C/D
D
Not rated or not available

Soil Rating Points

A
A/D
B
B/D
C
C/D
D
Not rated or not available

Water Features

Streams and Canals

Transportation

Rails
Interstate Highways
US Routes
Major Roads
Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Cumberland County and Part of Oxford County, Maine
Survey Area Data: Version 13, Sep 11, 2017

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Data not available.

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
BuB	Lamoine silt loam, 3 to 8 percent slopes	C/D	1.3	8.4%
Sn	Scantic silt loam, 0 to 3 percent slopes	D	2.1	14.3%
SuE2	Suffield silt loam, 25 to 45 percent slopes, eroded	C	11.5	77.3%
Totals for Area of Interest			**14.9**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Aggregation is the process by which a set of component attribute values is reduced to a single value that represents the map unit as a whole.

A map unit is typically composed of one or more "components". A component is either some type of soil or some nonsoil entity, e.g., rock outcrop. For the attribute being aggregated, the first step of the aggregation process is to derive one attribute value for each of a map unit's components. From this set of component attributes, the next step of the aggregation process derives a single value that represents the map unit as a whole. Once a single value for each map unit is derived, a thematic map for soil map units can be rendered. Aggregation must be done because, on any soil map, map units are delineated but components are not.

For each of a map unit's components, a corresponding percent composition is recorded. A percent composition of 60 indicates that the corresponding component typically makes up approximately 60% of the map unit. Percent composition is a critical factor in some, but not all, aggregation methods.

The aggregation method "Dominant Condition" first groups like attribute values for the components in a map unit. For each group, percent composition is set to the sum of the percent composition of all components participating in that group. These groups now represent "conditions" rather than components. The attribute value associated with the group with the highest cumulative percent composition is returned. If more than one group shares the highest cumulative percent composition, the corresponding "tie-break" rule determines which value should be returned. The "tie-break" rule indicates whether the lower or higher group value should be returned in the case of a percent composition tie. The result returned by this aggregation method represents the dominant condition throughout the map unit only when no tie has occurred.

Component Percent Cutoff: None Specified

Components whose percent composition is below the cutoff value will not be considered. If no cutoff value is specified, all components in the database will be considered. The data for some contrasting soils of minor extent may not be in the database, and therefore are not considered.

Tie-break Rule: Higher

The tie-break rule indicates which value should be selected from a set of multiple candidate values, or which value should be selected in the event of a percent composition tie.

24: Public Infrastructure and Safety

Consistency with City Master Plans (14-526 (c) 1)

- Identify consistency with master plans

    a. The proposed development is consistent with the City Master Plan. The proposed development is zoned for the proposed use and is consistent with the neighboring properties. The proposed site development does not include features that will burden the City's resources.

- Proposed easements, rights and improvements to connect or continue off-premises public infrastructure, as applicable

    b. Existing easements as shown on the site plans will be maintained in order to continue off-premises public infrastructure.

25: Public Infrastructure and Safety

Public Safety and Fire Prevention (14-526 (c))

- Address Crime Prevention through Environmental Design (CPTED) (Technical Manual, Section 3)

  3.1.1 Natural Surveillance: The area adjacent to the building affords on – site visibility. Building entrances and the parking area will be illuminated by proposed wall pack light fixtures.

  3.1.2 Access Management: The site plan is designed to allow access to the building at all times, while access to the gravel yard will be restricted by fencing and gates, which will be closed at the end of each business day.

  3.1.3 Territorial Reinforcement: While the entire site is private, members of the public are not restricted from accessing the site, except for the gravel yard during non – business hours.

- Emergency vehicle access

  2.b. There is adequate access to the site for emergency vehicles. Please see the plan set.

- Address consistency with public safety standards (Technical Manual, Section 3)

  The proposed development will comply with the applicable NFPA regulations. In addition, the site plan complies with the applicable sections of the Technical Design Manual in the following manner:

  3. Public Safety Standards

  3.2 Fire Hydrant Standard - There are two hydrants located northerly of the proposed access drive > 300 linear feet from the proposed entry drive off Riverside Industrial Parkway right of way. Review of the PWD infrastructure map does not provide clear status of the aforementioned nearby hydrants.

  3.4 Site Access Standards

  3.4.1 There are no dead end roads associated with the proposed site development. No lot connectivity is proposed as part of the site development.

  3.4.2 The access drive is ±340 LF and fire and rescue equipment can access at least two sides of the building.

  3.4.3 The building setbacks meet the zoning requirements and allow adequate access for emergency vehicles.

3.4.4 The main entry is located within fifty feet of the site access drive/work yard.

3.4.5 Site access provides the minimum 9-foot clearance height to accommodate ambulance access.

3.4.6 There are no elevators proposed.

3.4.7 The assigned street number will be visible from the project signage on Riverside Industrial Parkway and will be visible on the building façade as required by the City of Portland.

3.5 Standards for Emergency Access Lanes and Gates
Not applicable. Dedicated access lanes are not proposed. The circulation pattern on the site will accommodate fire and rescue vehicle turning radii, as required.

3.5.8. The clear opening provided through any drive-able gates shall be two (2') feet wider than the traveled way.

3.5.11. The applicant understands that use of automatic gates such as the "Click2enter" systems requires prior approval from the Reviewing Authority.

3.6 Subdivision Standards
The subdivision requirements do not apply to this project.

3.7 Standards for Blasting and Regulation of Explosives
No blasting is anticipated.

- Submit a code summary referring NFPA 1 and all Fire Department standards (Technical Manual, Section 3)-Fire Checklist

  Please see the attached Fire Department Checklist.

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 Two Eisenhower Drive LLC, PO Box 1120, Portland, ME 04104
2. c/o David Machesney, (207) 854-5056
3. Name address, telephone number of ~~architect~~ designer: PATCO, 1293 Main St., Sanford, ME 04073
   (207) 324-5574, c/o Greg Patterson
4. Proposed uses of any structures [NFPA and IBC classification]
5.
6. Square footage of all structures [total and per story]
   11,200 SF footprint (1st Fl.), +/- 3,520 SF (2nd Fl.) = 14,720 SF GROSS
7. Elevation of all structures Building height 24'
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 +/- 650' south of the proposed entry drive location on Riverside Industrial Parkway
10. Water main[s] size and location 16" DI at Riverside Industrial Parkway, 2" Domestic, 6" Fire Protection Proposed
11. Access to all structures [min. 2 sides] Yes. See Site Plan.
12. A code summary shall be included referencing NFPA 1 and all fire department. Technical standards. See narrative, this section -16.

Some structures may require Fire flows using annex H of NFPA 1

26: Public Infrastructure and Safety

Availability and Adequacy of Public Utilities (14-526 (c) 3) (Technical Manual, Sections 2 & 9)

- Electrical services, including providing underground services
- Identify existing and proposed connections for public utilities and required public utility upgrades
- Sewer line connections are required, if there is a main within 200 feet
- Proposed solid waste management facilities on-site and management for the site
- Written evidence of the ability to serve from utility companies, as applicable

a. The development will not overburden sanitary sewers, storm drains, water lines, or other public infrastructure and utilities. Adequate utility capacity confirmation has been solicited from respective utility companies. Please see attached letters of inquiry and responses.

b. Electrical service extends underground within the entry drive. See Utilities Plan.

c. All proposed sanitary sewers, storm drains, water lines or other utilities services meet the requirements of Sections 2 and 9 of the City Technical manual.

d. The proposed development will connect to the existing sewer main located within the sewer easement on the property. See Plan Set for locations and design specifics.

e. The proposed sanitary sewer and stormwater utilities are designed to City standards in Sections 2 and 4, Chapter 500 Stormwater Management Standards of the Technical Manual.

f. The proposed tenant will provide solid waste disposal for the proposed new facility per a lease agreement. Solid wastes will be recycled to greatest extent practicable. Exterior solid waste storage area is not included as part of this site plan application.

Portland Water District

FROM SEBAGO LAKE TO CASCO BAY

August 7, 2018

Sarah Hanf
Sebago Technics
75 John Roberts Road Suite 4A
South Portland, ME 04106

Re: 250 Riverside Industrial Parkway, PO
Ability to Serve with PWD Water

Dear Ms. Hanf:

The Portland Water District has received your request for an Ability to Serve Determination for the noted site submitted on July 16, 2018. Based on the information provided per plans dated July 2018 titled Utility Plan, 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 Riverside Industrial Parkway. The service should enter through the properties frontage on Riverside Industrial Parkway 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.
- Since the length of this service line will exceed 300-feet, a meter pit will be required. The meter pit should be located on private property within 10-20 feet of the property line at Riverside Industrial Parkway. It is recommended that the service size on private after the meter pit remains at least 2-inches in order to avoid significant pressure loss due to pipe friction.
- Approved backflow prevention devices must be installed on each service line prior to service activation. Please refer to the PWD website for more information on cross-connection control policies.
- Please note that PWD's Terms and Conditions require that a service to one parcel cannot serve another parcel. If in the future this parcel is subdivided, a separate service will be required.
- The Portland Water District does not have record of any other existing infrastructure in public roads and recommends a survey and test pitting be performed by the development team prior to construction. Any conflicts that arise during construction are at the risk of the developer and may result in job shutdown until new plans are submitted by the developer and reviewed and approved by PWD.

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 X-inch diameter material water main in Street and a public fire hydrant located approximately XX feet from the site. Recent flow data is not available in this area. The most recent static pressure reading was XX psi on Date.

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

CITY OF PORTLAND WASTEWATER CAPACITY APPLICATION

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

Date: 07/16/2018

Bradley Roland, P.E.
Water Resources Division

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

Site Address: 250 Riverside Industrial Parkway

Chart Block Lot Number: 330A-B-1, 330A-B-4, 330A-B-11

Proposed Use: Property Services Business
Previous Use: Undeveloped
Existing Sanitary Flows: n/a GPD
Existing Process Flows: n/a GPD

Description and location of City sewer that is to receive the proposed building sewer lateral.

The building lateral will be connected to the existing main located within the existing sewer easement. +/- 442 LF of 6" service line and two new SMH will be installed as part of the proposed connection. See enclosed Utility Plan.

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

Site Category

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

2. Please, Submit Contact Information.

City Planner's Name: TBD, Not Assigned Phone: (207) 874-8719, Portland Planning
Owner/Developer Name: Two Eisenhower Drive LLC
Owner/Developer Address: PO Box 1120, Portland, ME 04104
Phone: (207) 854-5056 Fax: E-mail: dmachesney@prattabbott.com
Engineering Consultant Name: Sebago Technics, Inc. c/o Shawn M. Frank, P.E.
Engineering Consultant Address: 75 John Roberts Road, Suite 4A, S. Portland, ME 04106
Phone: (207) 200-2062 Fax: (207) 856-2206 E-mail: sfrank@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: _____ 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.

Not Applicable

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

Not Applicable

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.

27: Site Design

Massing, Ventilations and Wind Impact (14-526 (d) 1)

- Wind and ventilation impacts on adjoining structures and/or adjacent public spaces. Windy study, if applicable

  Not applicable.

- Bulk, location or height impacts on adjoining structures
- Identify and located HVAC equipment and venting away from public spaces and residential properties
- Identify screening and manufacturing specifications for noise, if applicable

  Not applicable.

a. The bulk and height of the proposed building will not result in health or safety problems due to reduction in ventilation to abutting structures. Please see the site plan.

b. The bulk, location, and height of the proposed building will not minimize the value or utility to neighboring structures. The proposed development is consistent with other neighborhood properties and is an allowed use in the district. Refer to the plan set.

c. The HVAC venting mechanisms have not been formally sited or sized. The venting system will be construction in accordance with the requirements of this section requiring that they be directed away from public spaces. There are no adjacent residential properties.

28: Site Design

Shadows (14 526 9d) 2), if applicable

- Shadow analysis of impacts on publicly accessible open space (Technical Manual, Section 11)

Not applicable. There are no publicly accessible open spaces areas adjacent to the property.

29: Site Design

Snow and Ice Loading (14-526 (d) 3)

- Building design to prevent snow and ice from loading or falling onto adjacen properties or public ways

The building is situated on the site to avoid significant amounts of accumulated snow and ice from loading or falling onto adjacent properties or public ways. See Site Plan for building location.

30: Site Design

View Corridors (14-526 (d) 4), if applicable

- Protection of designated view corridors (Portland Design Manual, Appendix 1)

Not applicable. The site is not located in a designated view corridor.

31: Site Design

Historic Resources (14-526 (d) 5)

- Identify developments within Historic Districts or affecting Desginated Landmarks
- Certificate of Appropriateness or other evidence
- Identify Developments within 100 feet of Historic Districts of affecting Designated Landmarks. Advisory HP review may be required
- Address preservation and documentation of Archaelogical Resources

The proposed development is not located in a City Historic District and will not affect a Designated Landmark. Per the enclosed inquiry response from Maine Historic Preservation, dated 07/17/17, the project will not affect identified historic or archaeological features.

SEBAGO
TECHNICS
CIVIL ENGINEERING • SURVEYING • LANDSCAPE ARCHITECTURE

RECEIVED
JUL 03 2018
0843-18

16360
June 25, 2018

Mr. Kirk Mohney, State Historic Preservation Officer
Maine Historic Preservation Commission
State House Station 65
Augusta, Maine 04333

Re: 250 Riverside Industrial Parkway, Portland
Tax Parcels: 330A-B-1, 330A-B-4, 330A-B-11
Record Owner: Two Eisenhower Drive, LLC

Dear Mr. Mohney,

Sebago Technics, Inc. has been retained for services related to the construction of a new property maintenance services facility building at a wooded site located at 250 Riverside Industrial Parkway in the City of Portland. Site improvements include the construction of a new ±12,000 square foot two-story metal building, drive/parking and other associated site improvements. The site is located in a moderate impact industrial zone (IM) and consists of three tax parcels totaling ±12.4 acres bounded to the west by the Maine Turnpike (I-95) and to the east by Riverside Industrial Parkway.

The abutting and nearby properties include commercial buildings housing a NAPA Distribution Center Annex, Titan Mechanical, Maintenance Technology Co., etc. which are typical of, and consistent with, the industrial zoning along Riverside Industrial Parkway. No residential properties abut the site and there are no views to or from the project area from residential areas.

Sebago Technics is currently working on a regulatory permit applications for the proposed site development and we respectfully request a site review by the Commission for the presence of any archaeological or historic sites within or adjacent to the project area determined in accordance with the provisions of the National Historic Preservation Act 36 CFR, Part 800, Section 106.

We have enclosed a U.S.G.S. Topographic location map and aerial photograph from the City GIS for your reference. If you have any questions or require additional information please contact me at snichols@sebagotechnics.com or directly at (207) 200-2120.

Sincerely,

SEBAGO TECHNICS, INC.

Stefanie Nichols

Stefanie Nichols
Permitting Specialist/Project Coordinator

enc.

Based on the information submitted, I have concluded that there will be no historic properties affected by the proposed undertaking, as defined by Section 106 of the National Historic Preservation Act. Consequently, pursuant to 36 CFR 800.4(d)(1), no further Section 106 consultation is required unless additional resources are discovered during project implementation pursuant to 36 CFR 800.13.

Kirk F. Mohney

Kirk F. Mohney,
State Historic Preservation Officer
Maine Historic Preservation Commission

7/17/18
Date

32: Site Design

Exterior Lighting (14-526 (d) 6)

- Cut sheets of on-site light fixtures and any architectural or specialty lights (Technical Manual, Section 12)
- Engineered details for any lights proposed in street right-of-way (Technical Manual, Section 10)

(i) Full cut-off lighting will be installed at building entrances along the building faces, as necessary, to provide illumination levels for safety, comfort and convenience of occupants and users of the site. Light fixture cut sheets are included in this submittal. The applicant requests a temporary submittal waiver for the Photometric Plan. See Waiver Table.

(ii) The site development does not abut residential uses therefore no house-side shielding is necessary.

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.

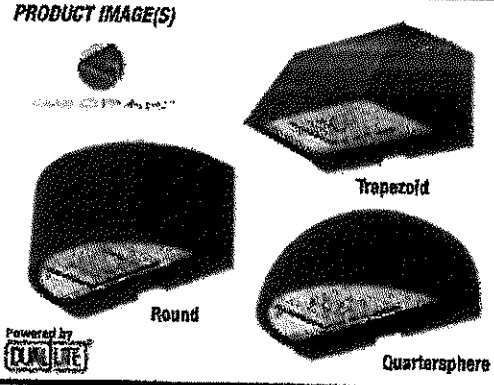
Installation:
- Universal plate for mounting to standard 3 1/2" and 4" square electrical boxes. All connections are made from connections at the rear of the unit.
- Optional back-box accessory available for surface conduit application. See BB-Geo accessories.

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

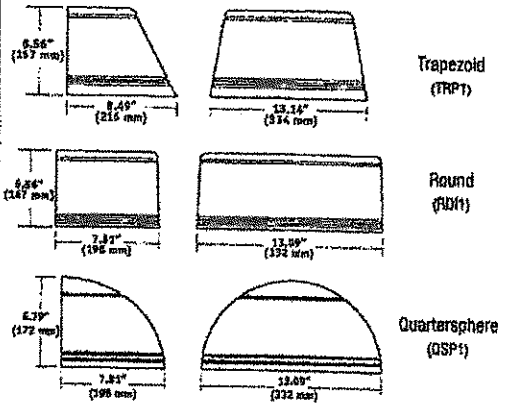
Warranty:
- For more information visit:

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	16.0	11.0	9.25
QSP1	10.5	17.0	9.6	10.5

CERTIFICATIONS/LISTINGS

C SA 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	Trapezoid	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 twilight calibration and different lamp delay settings, 120-277V only
[3] UO option not applicable, included in sensor
[4] Must specify input voltage (120, 208, 240 or 277)

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ACCESSORIES - Order separately

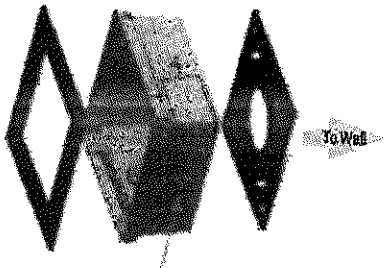
Catalog Number	Description
SCP-REMOTE[2]	Remote control for SCP option. Order at least one per project to program and control.
BB-GEO-XX	Back box with 4 - 1/2" threaded conduit holes, specify finish by replacing "XX" with finish selection, eg. Dark Bronze "DB"

[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



Fixture gasket 4 – 1/2" conduit entries Wall gasket

PERFORMANCE DATA (AC/Standard Configurations)

# OF LEDS	DRIVE CURRENT	SYSTEM WATTS	DIST. TYPE	5K (5000K nominal, 70 CRI)					4K (4000K nominal, 70 CRI)					3K (3000K nominal, 70 CRI)				
				LUMENS	LPW	B	U	G	LUMENS	LPW	B	U	G	LUMENS	LPW	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	2288	114	1	1	1	2175	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

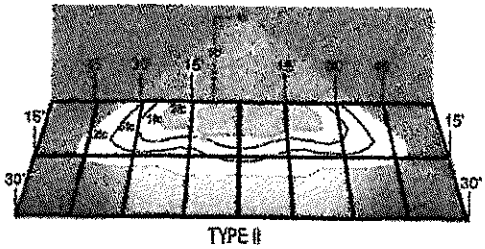
Ambient Temp.	Operating Hours 0	25,000	50,000	TM-21-11' 60,000	100,000	L70 (hours)
25°C/77°F	1.00	0.98	0.97	0.95	0.91	>345,000
40°C/104°F	1.00	0.96	0.95	0.92	0.87	>268,000

LUMINAIRE AMBIENT TEMPERATURE FACTOR (LATF)

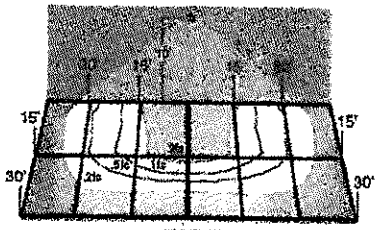
AMBIENT TEMPERATURE		LUMEN MULTIPLIER
0° C	32° F	1.02
10° C	50° F	1.01
20° C	68° F	1.00
25° C	77° F	1.00
30° C	86° F	1.00
40° C	104° F	0.99
50° C	122° F	0.98

Use these factors to determine relative lumen output for average ambient temperatures from 0-40°C (32-104°F).

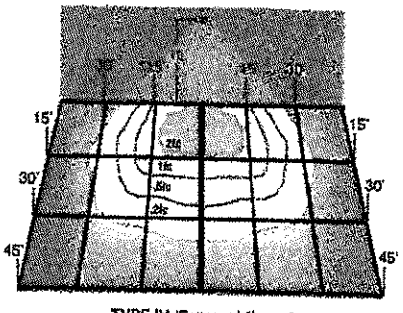
PHOTOMETRIC REPORTS
(30w, 4000K shown)



TYPE II



TYPE III



TYPE IV (Forward throw)

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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:

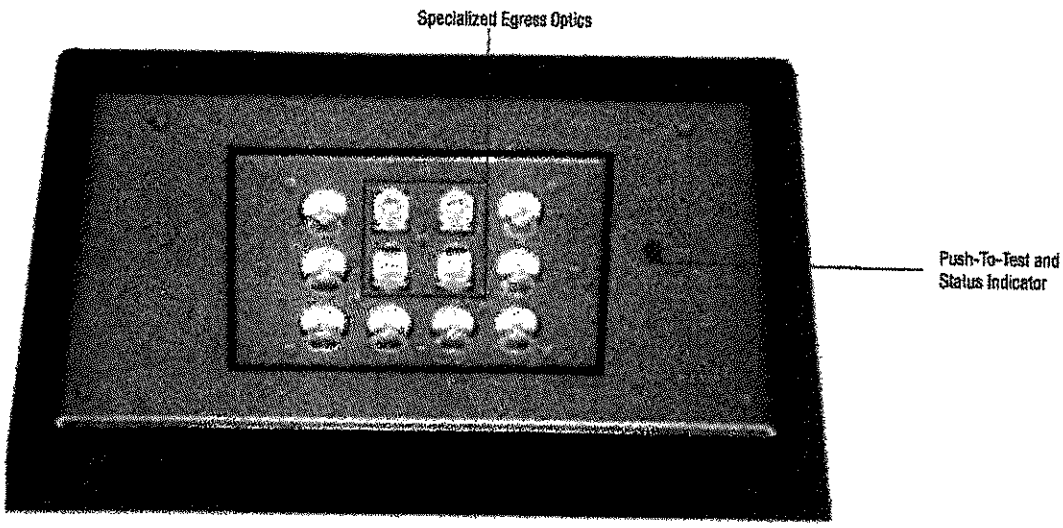
- Battery re-charge within 24 hours
- AC Lock-out circuit
- Self-diagnostics monitors LED status, LED driver circuit, battery capacity and charger function and displays any fault detection by means of a flashing code.
- Self-Test feature runs a 1 minute test once a month and an alternating 30 or 60 minute 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).

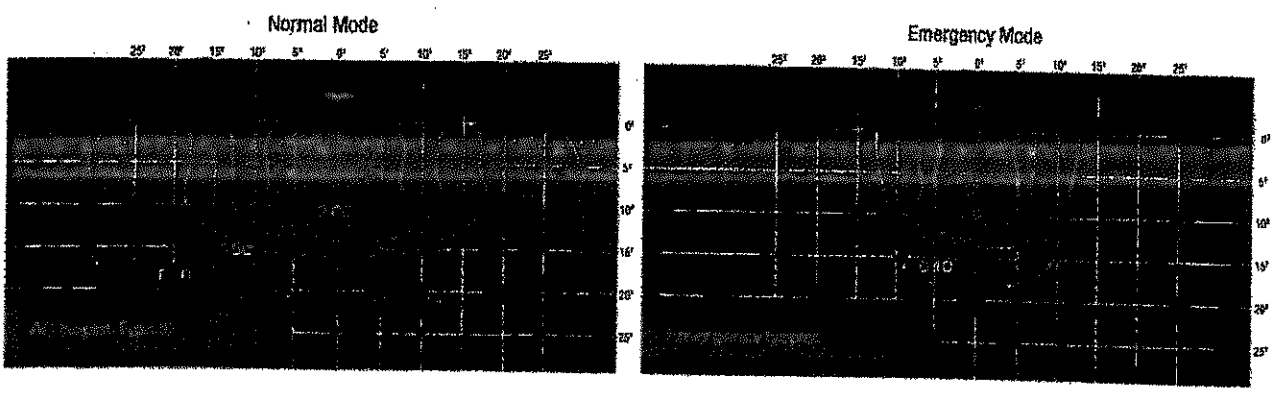
Emergency Photometric Performance (1 fc average .1 fc minimum)

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





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.

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33: Site Design

Noise and Vibration (14-526 (d) 7)

- Evidence of noise levels for equipment, such as equipment specifications, to demonstate consistency with zoning requirements

(i), (ii) All heating, ventilation and air conditioning equipment (HVAC), air handling units (AHU), emergency generators, and similar equipment will meet applicable state and federal emission requirements and generator testing timing and noise levels shall be performed in accordance with City standards. A temporary submittal waiver from manufacturer verification of emissions is requested. See Waiver Table.

34: Site Design

Signage and Wayfinding (14-526 (d) 8), if applicable

- Signage plan showing the location, dimensions, height and setback of all existing and proposed signs. Signs in Historic Districts are reviewed by Historic Preservation staff
- Proposed commercial and directional signage on site

All signage will meet applicable requirements of Divison 22 of the City Code and the additional provisions of this section. See Plan Set.

35: Site Design

Zone Related Design Standards (14-526 (d) 5)

- Address Historic Preservation Design Review, if applicable
- Address any applicable design review standards by zone
- Address submission requirements from Design Manual, page 1, addressing neighborhood context
- Description of exterior materials, color, finish, and samples

The project site is not located subject to Historic Design Review or design review standards based on zoning.

Construction Management Plan

July 16, 2018

City of Portland

250 Riverside Industrial Parkway – Site Development

Applicant: Two Eisenhower Drive LLC

Purpose:

Construction Management Plans shall be depicted on the projects site plan and will include 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.

Project Narrative:

The applicant/developer is proposing a new property maintenance services building off Riverside Industrial Parkway in the City of Portland. This project will disturb approximately 5.2 acres and the work will include:

1. Install erosion control measures;
2. Strip and stockpile loam for reuse;
3. Excavate and stockpile borrow from road and under drained soil filter(s);
4. Coordination with respective utilities regarding connections and required inspections;
5. Cut Riverside Industrial Parkway, as necessary for utilities service connections;
6. Sanitary sewer connection coordination at existing main (interior lot easement);
7. Installation of access drive stream crossing, utilities and drainage;
8. Installation of access drive base course;
9. Installation of under drained soil filters;
10. Building pad and gravel yard preparation;
11. Installation of binder course of asphalt for access drive;
12. Building construction;
13. Service connections;
14. Final yard grading and access drive wearing course asphalt installation;
15. Installation landscaping and other vegetation;
16. Fencing/gate installation;
17. Re-apply the stripped loam, seed and mulch to disturbed areas;
18. Temporary erosion control measures removed.

Performance Guarantees, Inspection Fees, Preconstruction Meeting, and Permits:

As a Level III Site Plan review, the developer of the project will be required to submit a performance guarantee for the proposed infrastructure work. This performance guarantee and site development inspection fees will be based upon a cost estimate submitted and approved by the City. The guarantee will be a letter of credit from an approved bank or credit union, deposited in a bank-held escrow account or a City- held escrow account. These fees/guarantees will need to be paid and in place prior to scheduling the pre-construction meeting.

As this project involves work within the right-of-way, the contractor will be responsible for obtaining street opening and street occupancy permits form the Department of Public Works. All construction in the right-of-way shall conform to Chapter 25 and all sewer and stormwater construction/connections shall conform to Chapters 24 & 32 of the Land Use Code. These permits will be for the connection to existing utilities and the driveway connection at Riverside Industrial Parkway.

No blasting in anticipated for this project.

Construction Administration and Communication:

This project will be managed by a representation of the developer, Two Eisenhower Drive LLC along with a project manager from the land development construction firm hired by the developer.

1. Contact Person and contact information:
   - Developer (Two Eisenhower Drive LLC): c/o David Machesney (207) 854-5056.
   - Site Contractor: TBD.
   - Engineer (Sebago Technics, Inc.): Shawn M. Frank, P.E. (Direct Line, Work 200-2062).
2. Signage will be placed at the site that will include the above contact information. This signage will be removed when the infrastructure for the project are complete.
3. The representative for the contractor /developer will reach out to adjacent abutter to notify them of the commencement of constructions and the proposed time frame to complete the infrastructure/roadway improvements for the project.

Construction Schedule*:

- Site Plan Approval: Expected –September 2018.
- Preconstruction Meeting: September 2018
- Construction of entry drive and stream crossing: Approximately 6 weeks.
- Stormwater management features, building construction: Approximately 24 weeks
- Expected Completion – Approximately May 2019. Paving – Spring 2019.

* Dates are subject to change at the discretion of the engineer, depending on construction progress.

Estimated construction time: ---------- 32 Weeks (8 Months)
Erosion Control Measures Placed: ---------- Week 1
Site clearing and grubbing ---------- Weeks 2-6
Construction of drive subbase for access ---------- Weeks 3-5
Stream Crossing ---------- Week 3
Stormwater management construction ----------Weeks 4 – 12
Utility Improvements and access drive construction-----Weeks 4 – Week 6
Road base and asphalt binder coarse (prior to plant shutdown)Weeks 6- 8
Final entry drive paving----------Week 22
Final yard grading and compaction ---------- Week 20-22
Start final seeding on prepared areas----------Week 24
Biweekly monitoring of vegetative growth ----------Week 26
Re-seeding of areas, if needed---------- Week 26-32
Removal of erosion control devices ----------Upon Final Project Completion

1. From September 1st to May 31st, no person shall engage in construction activities generating noise exceeding fifty (50) decibels, between the hours of 7:00 p.m. and 7:00 a.m., of the following day within five hundred (500) feet of any buildings. From June 1st to August 31st construction activity may continue until 8:00 p.m.
2. 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."
3. Pursuant to Section 25-129: "Each permittee shall conduct and carry out excavation work in such manner as to avoid unnecessary inconvenience and annoyance to the general public and occupants of neighboring property. To the fullest extent practicable, the permittee shall take appropriate measures to reduce noise, dust and unsightly debris in the performance of the excavation work. Excavation work, including the use of any tool, appliance, or equipment, shall be performed between the hours of 7:00 a.m. and 10:00 p.m. only, exclusive of emergency work. Time waiver requests may be submitted to the public works authority for work outside of this time period and will be subject to neighborhood concerns. Excavation work shall not occur on Sundays, holidays or on major holiday weekends, unless expressly authorized by the public works authority or as a result of emergency need.
4. If allowed, no construction activity shall begin before 8:00 a.m. on a Saturday, Sunday or legal holiday.
5. All deliveries for materials will comply with the noise requirements listed above or be restricted to the hours allowed for construction work.

Security and Public Safety:

1. Prior to commencing construction, site contractor shall install a "Construction Ahead" signs to warn bicyclists and motorists of construction with the area.
2. Contractor shall be responsible for the setup of construction staging area before construction begins. Contractor may provide fencing for staging area at their discretion. Fenced in areas shall be provided with gates passable by emergency vehicles and equipped with a Knox locking device.
3. Contractor shall be responsible for the safe storage of materials or equipment on-site.
4. Contractor shall have weekly tailgate meetings which shall include discussion relative to security and public security.
5. Contractor shall develop a fire safety and emergency protocol and contact the nearest fire station to advise them of the ongoing construction project.
6. All excavations with the right-of-way shall be filled or plated at night. Excavations within the site shall be provided with adequate barricades or warnings (i.e. construction area tape around excavation) at night.

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.
    a. Contractor will be required to submit Maintenance of Traffic Plans for all construction within the right-of-way of Riverside Industrial Parkway.
    b. Flaggers will be required for temporary lane closures for construction.
    c. Traffic Control signs shall not be placed where they are an obstruction to bicycles or pedestrians.

Site Management and Controls:

1. The land development contractor shall be responsible for the site managements during construction of site infrastructure. Building contractors will be responsible for the building site management.
2. Contractor will be responsible for providing and maintaining a dumpster during construction.
3. Contractor will install and maintain the construction entrance as shown on the plans and will maintain Riverside Industrial Parkway by including sweeping as necessary for removal of tracked materials.
4. Contractor shall be responsible for maintaining construction BMP's and executing good housekeeping measures as depicted on the approved plans and as included in the Inspection, Maintenance and Housekeeping Plan.
5. Dust controls: The construction shall comply with Portland's requirements under Section 25-129 on Noise, dust and debris.
6. 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. The Contractor and City will be responsible for adjusting work should noise become an issue.
7. Rodent Control is not expected for this project. Should it become necessary, it will be provided, if applicable, by a professional exterminator and consistent with Chapter 22 of the City Code or City of Portland Public Works.
8. 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 basin or drainage structures to help snow melt
    6) This would include Monday-Friday Sat/Sunday/Holidays.
9. Site management and controls shall be discussed at each tailgate meeting including maintenance of BMP's and good housekeeping measures.

Erosion Control and Preservation of Trees:

1. The site 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 upon request.
2. The site contractor shall maintain storage and of materials and equipment away from the tree drip lines in an effort to preserve vegetation at the construction limits.

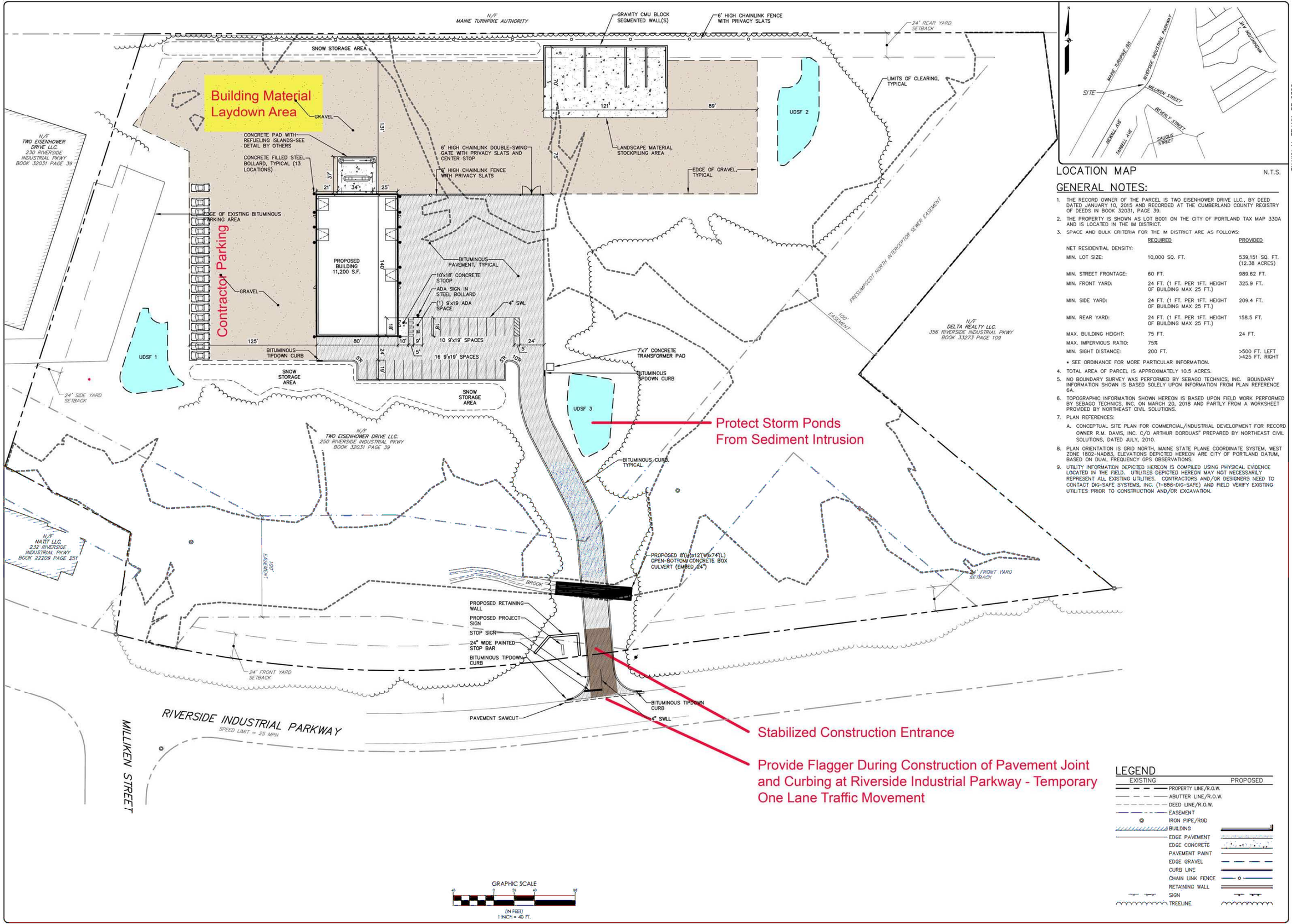
Construction Staging Area:

1. A Construction Management Plan is described on the site plan and depicts the location of the material (open storage) and equipment storage area. The exact location of these areas shall be up to the contractor but should be sufficiently away from any trees at the designated construction limit line.
2. Delivery Truck Holding Areas On-Site: The delivery holding area shall be adjacent to the site storage area 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 property 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, the contractor shall provide an area along the adjacent shoulder of Riverside Industrial Parkway for offloading. This area shall be provided within the buffer area of a maintenance of traffic area with the appropriate cones, advanced warning signs and flaggers as necessary. All off-loading shall occur from the project side of the truck and not within the roadway.

Parking During Construction:

1. Construction Parking: Parking for construction workers shall be on the site as indicted on the Construction Management Plan. No parking shall occur along Riverside Industrial Parkway. If sufficient space is not available on-site for parking, contractor shall make other parking arrangements and have workers brought or carpooled to the site.
2. Truck Routes and Volumes: All deliveries to and from site shall occur from Route 302 (Forest Avenue) and Riverside Street and proceed along Riverside Industrial Parkway to the site. Drivers for the contractors shall be advised weekly of the residential nature of portions of the site approach over Riverside Street and Route 302 (Forest Avenue) in the weekly tailgate meetings or by some other appropriate communication.

Prepared by:
Sebago Technics, Inc.



LOCATION MAP N.T.S.

GENERAL NOTES:

1. THE RECORD OWNER OF THE PARCEL IS TWO EISENHOWER DRIVE LLC., BY DEED DATED JANUARY 10, 2015 AND RECORDED AT THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN BOOK 32031, PAGE 39.
2. THE PROPERTY IS SHOWN AS LOT B001 ON THE CITY OF PORTLAND TAX MAP 330A AND IS LOCATED IN THE IM DISTRICT.
3. SPACE AND BULK CRITERIA FOR THE IM DISTRICT ARE AS FOLLOWS:

	REQUIRED	PROVIDED
NET RESIDENTIAL DENSITY:		
MIN. LOT SIZE:	10,000 SQ. FT.	539,151 SQ. FT. (12.38 ACRES)
MIN. STREET FRONTAGE:	60 FT.	989.62 FT.
MIN. FRONT YARD:	24 FT. (1 FT. PER 1FT. HEIGHT OF BUILDING MAX 25 FT.)	325.9 FT.
MIN. SIDE YARD:	24 FT. (1 FT. PER 1FT. HEIGHT OF BUILDING MAX 25 FT.)	209.4 FT.
MIN. REAR YARD:	24 FT. (1 FT. PER 1FT. HEIGHT OF BUILDING MAX 25 FT.)	158.5 FT.
MAX. BUILDING HEIGHT:	75 FT.	24 FT.
MAX. IMPERVIOUS RATIO:	75%	
MIN. SIGHT DISTANCE:	200 FT.	>500 FT. LEFT >425 FT. RIGHT

* SEE ORDINANCE FOR MORE PARTICULAR INFORMATION.

4. TOTAL AREA OF PARCEL IS APPROXIMATELY 10.5 ACRES.
5. NO BOUNDARY SURVEY WAS PERFORMED BY SEBAGO TECHNICS, INC. BOUNDARY INFORMATION SHOWN IS BASED SOLELY UPON INFORMATION FROM PLAN REFERENCE 6A.
6. TOPOGRAPHIC INFORMATION SHOWN HEREON IS BASED UPON FIELD WORK PERFORMED BY SEBAGO TECHNICS, INC. ON MARCH 20, 2018 AND PARTLY FROM A WORKSHEET PROVIDED BY NORTHEAST CIVIL SOLUTIONS.
7. PLAN REFERENCES:
   A. CONCEPTUAL SITE PLAN FOR COMMERCIAL/INDUSTRIAL DEVELOPMENT FOR RECORD OWNER R.M. DAVIS, INC. C/O ARTHUR DORDUAS" PREPARED BY NORTHEAST CIVIL SOLUTIONS, DATED JULY, 2010.
8. PLAN ORIENTATION IS GRID NORTH, MAINE STATE PLANE COORDINATE SYSTEM, WEST ZONE 1802-NAD83, ELEVATIONS DEPICTED HEREON ARE CITY OF PORTLAND DATUM, BASED ON DUAL FREQUENCY GPS OBSERVATIONS.
9. UTILITY INFORMATION DEPICTED HEREON IS COMPILED USING PHYSICAL EVIDENCE LOCATED IN THE FIELD. UTILITIES DEPICTED HEREON MAY NOT NECESSARILY REPRESENT ALL EXISTING UTILITIES. CONTRACTORS AND/OR DESIGNERS NEED TO CONTACT DIG-SAFE SYSTEMS, INC. (1-888-DIG-SAFE) AND FIELD VERIFY EXISTING UTILITIES PRIOR TO CONSTRUCTION AND/OR EXCAVATION.

LEGEND

EXISTING	PROPOSED
PROPERTY LINE/R.O.W.	
ABUTTER LINE/R.O.W.	
DEED LINE/R.O.W.	
EASEMENT	
IRON PIPE/ROD	
BUILDING	
EDGE PAVEMENT	
EDGE CONCRETE	
PAVEMENT PAINT	
EDGE GRAVEL	
CURB LINE	
CHAIN LINK FENCE	
RETAINING WALL	
SIGN	
TREELINE	

SHAWN M. FRANK, PE 6396

07/13/18

DESIGNED	CHECKED
SAH	SMF

REV.	BY:	DATE:	STATUS:
A	SMF	7-13-18	ISSUED TO CITY

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 4A
South Portland, ME 04106
Tel. 207-200-2100

SITE PLAN
OF:
250 RIVERSIDE INDUSTRIAL PARKWAY
RIVERSIDE INDUSTRIAL PARKWAY
PORTLAND, MAINE
FOR:
TWO EISENHOWER DRIVE, LLC
P.O. BOX 1120
PORTLAND, MAINE 04104

PROJECT NO.	SCALE
16360	1" = 40'

SHEET 3 OF10

16360 S.dwg, TAB: S

SEBAGO
TECHNICS

CIVIL ENGINEERING · SURVEYING · LANDSCAPE ARCHITECTURE

Maine Department of Environmental Protection
38 M.R.S.A. §§480-A to 480-BB
NRPA Tier 1 Application

for:

Property Services Facility
250 Riverside Industrial Parkway
Portland, Maine 04103

Applicant/Record Owner:

Two Eisenhower Drive, LLC
P.O. Box 1120
Portland, Maine 04104

Prepared by:

Sebago Technics, Inc.
75 John Roberts Road, Suite 4A
South Portland, Maine 04106

September 2018

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Agent Authorization
NRPA Application
Corporate Status

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Section 3 Project Narrative

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Section 6 USDA WSS Medium-Intensity Soils Map

Section 7 Maine Historic Preservation Inquiry

Section 8 Native American Tribe Inquiries/Responses

Section 9 8 ½"x11" Plan Set

SEBAGO
TECHNICS

September 21, 2018
16360

Ms. Alison Sirois, Supervisor
Maine DEP, SMRO
Bureau of Land Resources
312 Canco Road
Portland, Maine 04103

Maine DEP Natural Resources Protection Act Application – Tier 1
Two Eisenhower Drive, LLC
250 Riverside Industrial Parkway, Portland

Dear Alison:

On behalf of applicant Two Eisenhower Drive, LLC, Sebago Technics, Inc. submits the enclosed Natural Resource Protection Act (NRPA) Tier 1 application for wetland impact associated with the proposed new property services facility to be located at 250 Riverside Industrial Parkway, Portland on property of applicant, Two Eisenhower Drive, LLC. The property is identified as Tax Map 330A, Lots B-1, B-4 and B-11 which is an undeveloped parcel totaling approximately 12.4 acres within the Riverside Industrial Park.

The proposed development is for the construction of one building with a footprint area of 11,200 square feet. The proposed new development will impact approximately ~~6,550~~ 6,849.50 square feet of freshwater wetland. The development of the site also includes the construction parking and an entry drive, utility services, stormwater management features and other associated site improvements associated with a property services company. The entry drive will cross a stream that is being permitted as a PBR under separate cover.

Please find the application, required attachments and fee enclosed. Thank you for your time and attention to the application. Please contact me if you have any questions or require additional information. Please note that a full copy of the DEP NRPA application and PBR submittal has been sent directly to the U.S. Army Corps of Engineers as part of their review request for the proposed stream crossing and wetland impact area.

Sincerely,

SEBAGO TECHNICS, INC.

Shawn M. Frank, P.E.
Project Manager

SMF/skn
Enc.

cc: D. Machsesney, Two Eisenhower Drive, LLC

AGENT AUTHORIZATION

APPLICANT/ OWNER	**Name**	Two Eisenhower Drive LLC		
PROPERTY DESCRIPTION	**Physical Address**	250 Riverside Industrial Parkway Portland, Maine 04103	**Map**	330A
			Lots	B-1, B-4, B-11
APPLICANT'S AGENT INFORMATION	**Name**	Shawn M. Frank, P.E.		
	Phone	(207) 200-2062	**Business Name & Mailing Address**	Sebago Technics, Inc. 75 John Roberts Road, Suite 4A South Portland, Maine 04106
		Project Manager		

APPLICANT SIGNATURE DATE

David Machesney, Representative
Two Eisenhower Drive, LLC

9/5/19

PLEASE TYPE OR PRINT NAME HERE

APPLICANT'S AGENT SIGNATURE DATE

PLEASE TYPE OR PRINT NAME HERE

APPLICATION FOR A NATURAL RESOURCES PROTECTION ACT PERMIT

➔PLEASE TYPE OR PRINT IN *BLACK INK ONLY*

1. Name of Applicant:	Two Eisenhower Drive, LLC c/o David Machesney	**5.Name of Agent:**	Shawn M. Frank, P.E. Sebago Technics, Inc.
2. Applicant's Mailing Address:	PO Box 1120 Portland, ME 04104	**6. Agent's Mailing Address:**	75 John Roberts Rd., Ste.4A S. Portland,ME 04106
3. Applicant's Daytime Phone #:	(207) 854-5056	**7. Agent's Daytime Phone #:**	(207) 200-2062
4. Applicant's Email Address: Required from *either* applicant or agent:	dmachesney@prattabbott.com	**8.Agent's E-mail Address:**	sfrank@sebagotechnics.com

9. Location of Activity: (Nearest Road, Street, Rt.#)	250 Riverside Industrial Parkway	**10. Town:**	Portland	**11. County:**	Cumberland

12. Type of Resource: (Check all that apply)

- ❑ River, stream or brook
- ❑ Great Pond
- ❑ Coastal Wetland
- ☒ Freshwater Wetland
- ❑ Wetland Special Significance
- ❑ Significant Wildlife Habitat
- ❑ Fragile Mountain

13. Name of Resource:

14. Amount of Impact: (Sq.Ft.) 6,849.50

Fill: ~~6,550~~ SF

Dredging/Veg Removal/Other:

15. Type of Wetland: (Check all that apply)

- ❑ Forested
- ❑ Scrub Shrub
- ❑ Emergent
- ❑ Wet Meadow
- ❑ Peatland
- ❑ Open Water
- ❑ Other_____

FOR FRESHWATER WETLANDS

Tier 1	*Tier 2*	*Tier 3*
❑ 0 - 4,999 sq ft. ☒ 5,000-9,999 sq ft ❑ 10,000-14,999 sq ft	❑ 15,000 – 43,560 sq. ft.	❑ > 43,560 sq. ft. or ❑ smaller than 43,560 sq. ft., not eligible for Tier 1

16. Brief Activity Description

Construction of a new property services business building, parking, entry drive, utilities and other associated site improvements requiring freshwater wetland fill.

17. Size of Lot or Parcel & UTM Locations: ❑ _____square feet, or ☒ 12.4 +/- acres UTM Northing: _____ UTM Easting: _____

18. Title, Right or Interest: ☒ own ❑ lease ❑ purchase option ❑ written agreement

19. Deed Reference Numbers:	Book#: 32031 Page: 39	**20. Map and Lot Numbers:**	Map #: 330A	Lot #: B-1, B-4 B-11	
21. DEP Staff Previously Contacted:	Alison Sirois	**22. Part of a larger project:**	❑ Yes ☒ No	**After-the-Fact:**	❑ Yes ☒ No
23. Resubmission of Application?	❑ Yes➔ ☒ No	**If yes, previous application #**		**Previous project manager:**	
24. Written Notice of Violation?	❑ Yes ➔ ☒ No	**If yes, name of DEP enforcement staff involved:**		**25. Previous Wetland Alteration:**	❑ Yes ☒ No

26. Detailed Directions to the Project Site: NE on Canco toward Tamaralane, Left on Washington, Continue to left at Shaw's traffic signal to stay on Washington. Left at Riverside Street, Left on Riverside Industrial Parkway, Site is on left approximately 400' beyond Milliken on left.

27. TIER 1	**TIER 2/3 AND INDIVIDUAL PERMITS**	
☒ Title, right or interest documentation	❑ Title, right or interest documentation	❑ Erosion Control/Construction Plan
☒ Topographic Map	❑ Topographic Map	❑ Functional Assessment (Attachment 3), if required
☒ Narrative Project Description	❑ Copy of Public Notice/Public Information Meeting Documentation	❑ Compensation Plan (Attachment 4), if required
☒ Plan or Drawing (8 1/2" x 11")	❑ Wetlands Delineation Report (Attachment 1) that contains the Information listed under Site Conditions	❑ Appendix A and others, if required
☒ Photos of Area	❑ Alternatives Analysis (Attachment 2) including description of how wetland impacts were Avoided/Minimized	❑ Statement/Copy of cover letter to MHPC
☒ Statement of Avoidance & Minimization		❑ Description of Previously Mined Peatland, if required
☒ Statement/Copy of cover letter to MHPC		

28. FEES Amount Enclosed: TB, $75.00

CERTIFICATIONS AND SIGNATURES LOCATED ON PAGE 2

IMPORTANT: IF THE SIGNATURE BELOW IS NOT THE APPLICANT'S SIGNATURE, ATTACH LETTER OF AGENT AUTHORIZATION SIGNED BY THE APPLICANT.

By signing below the applicant (or authorized agent), certifies that he or she has read and understood the following :

DEP SIGNATORY REQUIREMENT

PRIVACY ACT STATEMENT

Authority: 33 USC 401, Section 10; 1413, Section 404. Principal Purpose: These laws require permits authorizing activities in or affecting navigable waters of the United States, the discharge of dredged or fill material into waters of the United States, and the transportation of dredged material for the purpose of dumping it into ocean waters. Disclosure: Disclosure of requested information is voluntary. If information is not provided, however, the permit application cannot be processed nor a permit be issued.

CORPS SIGNATORY REQUIREMENT

USC Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry shall be fines not more than $10,000 or imprisoned not more than five years or both. I authorize the Corps to enter the property that is subject to this application, at reasonable hours, including buildings, structures or conveyances on the property, to determine the accuracy of any information provided herein.

DEP SIGNATORY REQUIREMENT

"I certify under penalty of law that I have personally examined the information submitted in this document and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the information is true, accurate, and complete. I authorize the Department to enter the property that is the subject of this application, at reasonable hours, including buildings, structures or conveyances on the property, to determine the accuracy of any information provided herein. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Further, I hereby authorize the DEP to send me an electronically signed decision on the license I am applying for with this application by emailing the decision to the address located on the front page of this application (see #4 for the applicant and #8 for the agent)."

SIGNATURE OF AGENT/APPLICANT

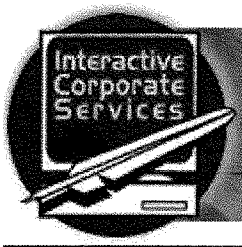
Date: 09/05/18

Signature of Agent _____ Date: _____

NOTE: Any changes in activity plans must be submitted to the DEP and the Corps in writing and must be approved by both agencies prior to implementation. Failure to do so may result in enforcement action and/or the removal of the unapproved changes to the activity.

(yellow)

Interactive Corporate Services



MAINE

Department of the Secretary of State

Bureau of Corporations, Elections and Commissions

Corporate Name Search

Information Summary

Subscriber activity report

This record contains information from the CEC database and is accurate as of: Thu Jun 28 2018 15:59:30. Please print or save for your records.

Legal Name	Charter Number	Filing Type	Status
TWO EISENHOWER DRIVE, LLC	20021106DC	LIMITED LIABILITY COMPANY (DOMESTIC)	GOOD STANDING

Filing Date	Expiration Date	Jurisdiction
02/14/2002	N/A	MAINE

Other Names **(A=Assumed ; F=Former)**

NONE

Clerk/Registered Agent

GARY D. VOGEL
84 MARGINAL WAY, SUITE 600

PORTLAND, ME 04101 2480

Section 1

Right, Title, Interest

TRUSTEE'S DEED
(Maine Statutory Short Form)

KNOW ALL PERSONS BY THESE PRESENTS, that I, Cindy H. Andrews, as Trustee of Marital Trust B under the Carl D. Andrews Revocable Trust u/a dated April 1, 1986, as affected by an Order of the Cumberland County Probate Court, dated November 12, 2012, Docket # 2012-1403, by the power conferred by law, and every other power, for consideration paid, grant to Two Eisenhower Drive, LLC, a Maine limited liability company with an address of P.O. Box 1120, Portland, ME 04104, the real property described as follows:

Certain lots or parcels of land, with any buildings or improvements thereon, situated in the City of Portland, County of Cumberland and State of Maine, and being bounded and described as follows:

MAINE REAL ESTATE TAX PAID

PARCEL 1: A certain lot or parcel of land, with any buildings and improvements thereon, situated on the westerly side of Riverside Industrial Parkway in the City of Portland, County of Cumberland and State of Maine and further bounded and described as follows: BEGINNING at an iron set in the ground on the westerly side of said Riverside Industrial Parkway, which iron designates a point on the reverse curve of said Riverside Industrial Parkway at center line Station 39+81.64; from said point of beginning thence running by the westerly side of Riverside Industrial Parkway by a curve to the southwest having a radius of 1090.00 feet, a distance of 104.52 feet measured on the arc thereof to land now or formerly of the City of Portland; thence running North 54°58' West by said City of Portland land 84.22 feet to the northeasterly corner of land now or formerly of Rufus H. Jones; thence running North 45°38'30" West by said Jones land, 368.42 feet to an iron set in the ground at land of the Maine Turnpike Authority; thence running North 25°50' East by said Maine Turnpike Authority land 620.00 feet to an iron set in the ground at other land now or formerly of Area Development Council Project #1, Inc.; thence running South 46°54'30" East by said land now or formerly of said Area Development Council Project #1, Inc. herein, 507.64 feet to land conveyed by ADC Building Fund Incorporated to Davis-Greene Co. by deed dated December 18, 1962 and recorded in the Cumberland County Registry of Deeds in Book 2723, Page 182; thence running South 19°49' West by said Davis-Greene Co. land 161.78 feet to a corner in said Davis-Greene Co. land; thence running South 56°08'30" East by said Davis-Greene Co. land 106.38 feet to the westerly side of said Riverside Industrial Parkway; thence by said Riverside Industrial Parkway by a curve to the southwest having a radius of 1091.67 feet, a distance of 356.31 feet measured on the arc thereof to the point of beginning.

The above-described premises are subject to an easement given by ADC Building Fund Incorporated to the City of Portland for a sewer line as set forth in the deed from ADC Building Fund Incorporated, dated October 18, 1965 and recorded in the Cumberland County Registry of Deeds in Book 2931, Page 430.

EXCEPT, so much of the above which was conveyed to John E. Burrell by Area Development Council Project #1, Inc. by deed dated December 16, 1977 and recorded in said Registry of Deeds in Book 4149, Page 262.

Also excepting that parcel of land conveyed by John E. Coney, Jr. to John E. Burrell by deed dated February 18, 1981 and recorded in said Registry of Deeds in Book 4743, Page 110.

PARCEL 2: Also, another certain lot or parcel of land, with any buildings or improvements thereon, situated on the westerly side of Riverside Industrial Parkway in the City of Portland, County of Cumberland and State of Maine, bounded and described as follows: BEGINNING at an iron pipe on the westerly side of Riverside Industrial Parkway at the southeast corner of the lot of land conveyed by Greater Portland Building Fund, Inc. to Aetna Cartage Company by deed dated April 18, 1972 and recorded in the Cumberland County Registry of Deeds in Book 3226, Page 290. Said corner also marks the line of a City of Portland sewer right of way, known as the Dole Branch, which is located on the lot herein conveyed; thence from said point of beginning and by said Aetna Cartage Company land running South 65°57' West 328.93 feet to an iron; thence continuing by said Aetna Cartage Company land and by a sewer right of way known as the Presumpscot North Maine Interceptor, North 24°03' West 303.34 feet to an iron pipe; thence through said sewer right of way North 71°22' West 106.03 feet to land of the Maine Turnpike Authority; thence by said Maine Turnpike Authority land South 25°50' West 527.41 feet to an iron at the northwest corner of land conveyed by Greater Portland Building Fund to John E. Coney, Jr. by deed dated March 29, 1973 and recorded in said Registry of Deeds in Book 3376, Page 51; thence by said Coney land South 46°54'30" East 507.64 feet to an iron pipe at land conveyed by ADC Building Fund Incorporated to Davis-Greene Co. by deed dated December 18, 1962, and recorded in said Registry of Deeds in Book 2723, Page 182; thence by said Davis-Greene Co. land North 19°49' East 320.12 feet to an iron pipe; thence continuing by said Davis-Greene Co. land North 68°40'30" East 196.31 feet to an iron pipe on the westerly side of Riverside Industrial Parkway; thence by said Riverside Industrial Parkway North 18°38' Fast 287.36 feet to the point of beginning.

Said above lot contains 279,815 square feet or 6.42 acres in accordance with a survey made by H.I. & E.C. Jordan, Surveyors.

Said above-described courses are based on true meridian.

PARCEL 3: A certain lot or parcel of land situated westerly of Riverside Industrial Parkway and Northerly of Milliken Street in the City of Portland, County of Cumberland, State of Maine, to wit:

COMMENCING at a point on the westerly side of land now or formerly of the Portland Terminal Company at the northerly corner of the land now or formerly owned by the Portland Water District;

Thence South 55°14'20" West, 71.28 feet along said Water District Land to a point;

Thence North 21°15'40" West, 17.82 feet along said Water District Land to a point;

Trustees of even date herewith executed by Richard A. Carriuolo and Cindy H. Andrews, as Trustees of Marital Trust B under the Carl D. Andrews Revocable Trust u/a dated April 1, 1986, as affected by Order of the Cumberland County Probate Court, dated November 12, 2012, Docket #2012-1403 and pursuant to Article VIII of the Agreement and Indenture of Trust establishing the Carl D. Andrews Revocable Trust u/a dated April 1, 1986, Cindy H. Andrews, acting singly, is duly authorized to execute and deliver this deed.

WITNESS our hands and seals, this 10th day of January, 2015.

WITNESS:

Cindy H. Andrews, as Trustee of Marital Trust B under the Carl D. Andrews Revocable Trust u/a dated April 1, 1986, as affected by Order of the Cumberland County Probate Court, dated November 12, 2012, Docket #2012-1403

~~STATE OF MAINE~~ Colorado
~~CUMBERLAND,~~ ss. Denver County

January 10, 2015

Then personally appeared the above-named Cindy H. Andrews, in her said capacity as Trustee and acknowledged the foregoing instrument to be her free act and deed as Trustee and the free act and deed of said Trust, before me,

Notary Public
Printed Name:

ZACHARY W. JOHNSON
NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID 20144024056
MY COMMISSION EXPIRES JUNE 16, 2018

Thence South 74° 52' 45" West, 31.62 feet along said Water District Land to a point near an iron pipe;

Thence South 55°51'08" West, 75.26 feet along land now or formerly owned by Milliken Street LLC to a point near a 5/8" rebar;

Thence North 21°16'37" West, 555.77' feet along land said Milliken Street LLC land to a 5/8" rebar;

Thence South 68°44'47" West, 114.56 feet along said Milliken Street LLC land to a point near a 5/8" rebar;

Thence North 14°55' 55" West, 14.08 feet along said Milliken Street LLC land, passing over an iron pipe, said pipe distant 1.2 feet from the terminus of said course, to a point;

Thence South 75°08'46" West, 328.45 feet along said Milliken Street LLC land to a point;

Thence South 13°13'08" West, 61.39 feet along said Milliken Street LLC land to a point;

Thence South 68°44'47" West, 143.78 feet to a point in the easterly line of Milliken Street;

Thence along said easterly line North 56°10'30" West, 92.98 feet to a point;

Thence North 56°04'53" West, 117.32 feet to a point;

Thence continuing along the easterly line of Milliken Street North 56□04'53" West, 280.50 feet to a point;

Thence North 63°50'00" West, 258.77 feet to a point at the intersection of said easterly line and the southern line of land conveyed to ADC Building Fund, Inc. by Davis-Greene Co. dated December 18, 1962, recorded in Book 2723, Page 182;

Thence leaving said easterly line along said southern line North 55°47'03" West, 91.92 feet to a point at the intersection of said easterly line and said southern line;

Thence leaving said southern line along said easterly line of Milliken Street;

Thence leaving said easterly line North 55°47'03" West, 103.56 feet to a found iron pipe in the westerly right-of-way line of said Riverside Industrial Parkway at the true point of beginning;

Thence North 55°47'03" West, 106.38 feet to a point;

Thence North 19°50'40" East, 481.46 feet to a point;

Thence North 68°40'30" East, 196.31 feet to a found pipe in the said westerly right-of-way line;

Thence along said westerly right-of-way line South 18°39'48" West, 285.34 feet to a point;

Thence along a curve deflecting to the right having a radius of 1091.67', on arc of 357.01', a chord bearing of South 28°01'49" West, a chord of 355.43', to the TRUE POINT OF BEGINNING, containing 1.85 acres.

SUBJECT TO:

a. Easement to Central Maine Power Company and New England Telephone and Telegraph Company as set forth in an instrument dated June 8, 1965 and recorded in said Registry of Deeds in Book 2937, Page 381.

b. Certificate of Taking of Property by City of Portland by instrument dated July 20, 1964 and recorded in the Cumberland County Registry of Deeds in Book 2881, Page 318.

To the extent not otherwise conveyed above, also hereby releasing all right title and interest in and to the following described property:

BEGINNING at a 1-1/2" iron pipe on the westerly right-of-way line of Riverside Industrial Parkway at a northeasterly corner of land N/F of Carl D. Andrews Marital Deduction Trust as recorded in Deed Book 19863, Page 40, Cumberland County Registry of Deeds (CCRD);

THENCE N 55°52'49" W along the northerly line of said Trust 105.92' to a 1" iron pipe;

THENCE N 19°52'56" E along an easterly line of said Trust 481.06' to a 1" iron pipe;

THENCE N 68°26'23" E along a southeasterly line of said Trust 196.43 ' to a #5 rebar. Said rebar being on the westerly right-of-way line of Riverside Industrial Parkway;

THENCE S 18°41'06" W along the westerly right-of-way line of Riverside Industrial Parkway 285.32' to a point of curvature in said right-of-way;

THENCE on a curve to the right along the westerly right-of-way line of Riverside Industrial Parkway 357.07' to the POINT OF BEGINNING. Said curve has a radius of 1091.67' and a chord of S 28° 03'19" W 355.48'.

The above described parcel contains 80,418 s.f. or 1.85 acres more or less.

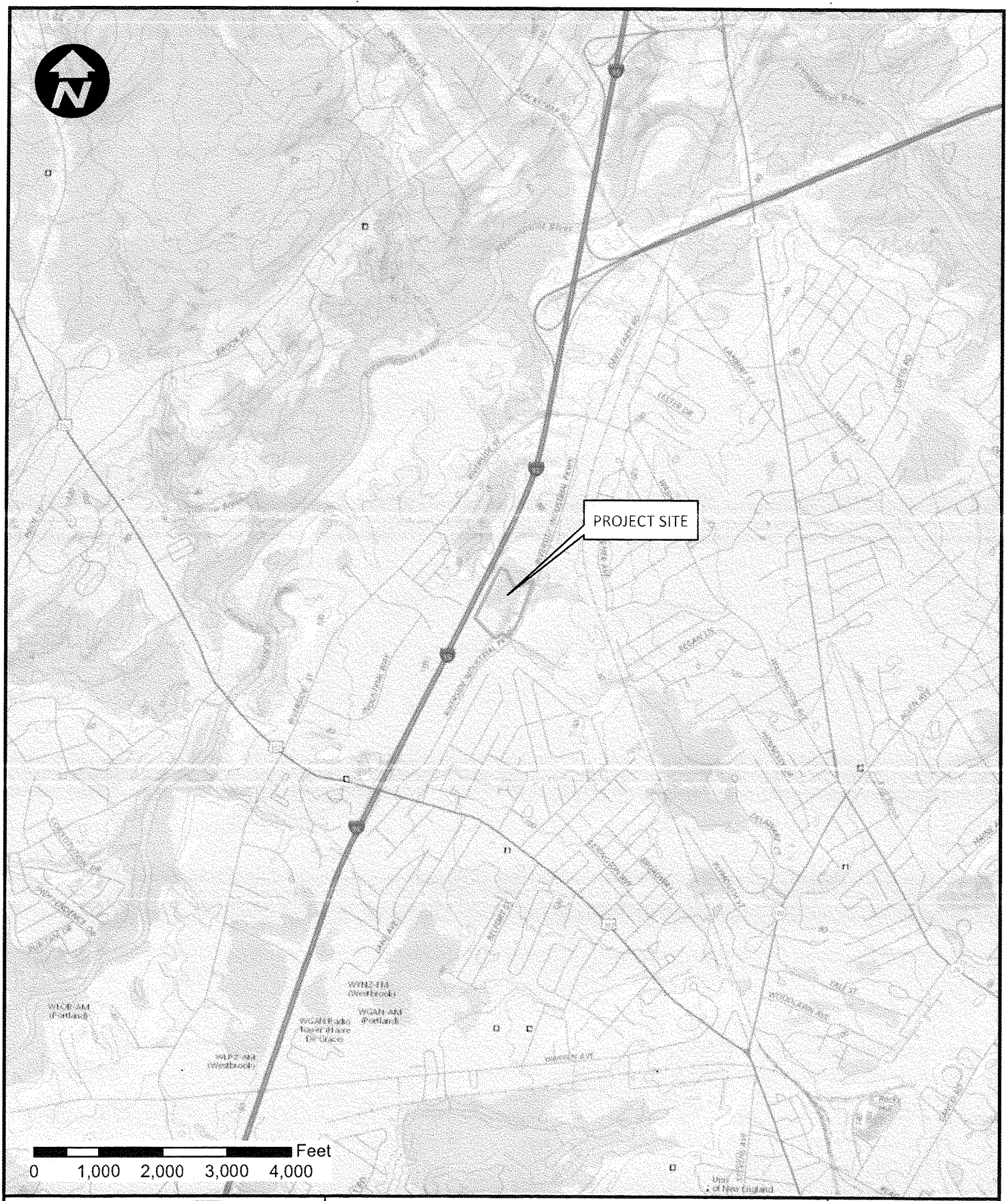
The basis of bearing for the above described parcel is Grid North. The above described parcel is partially shown as an abutting on a boundary survey prepared for R.M. Davis, Inc. c/o Arthur Borduas by Northeast Civil Solutions, Inc., dated August 26, 2009.

Being the same premises described in the deed to Grantor, dated December 28, 2012 and recorded in the Cumberland County Registry of Deeds, Book 30295, Page 118. Pursuant to a Certificate of

Received
Recorded Register of Deeds
Jan 15,2015 02:29:24P
Cumberland County
Nancy A. Lane

Section 2

USGS Site Location Map, Aerial Photo



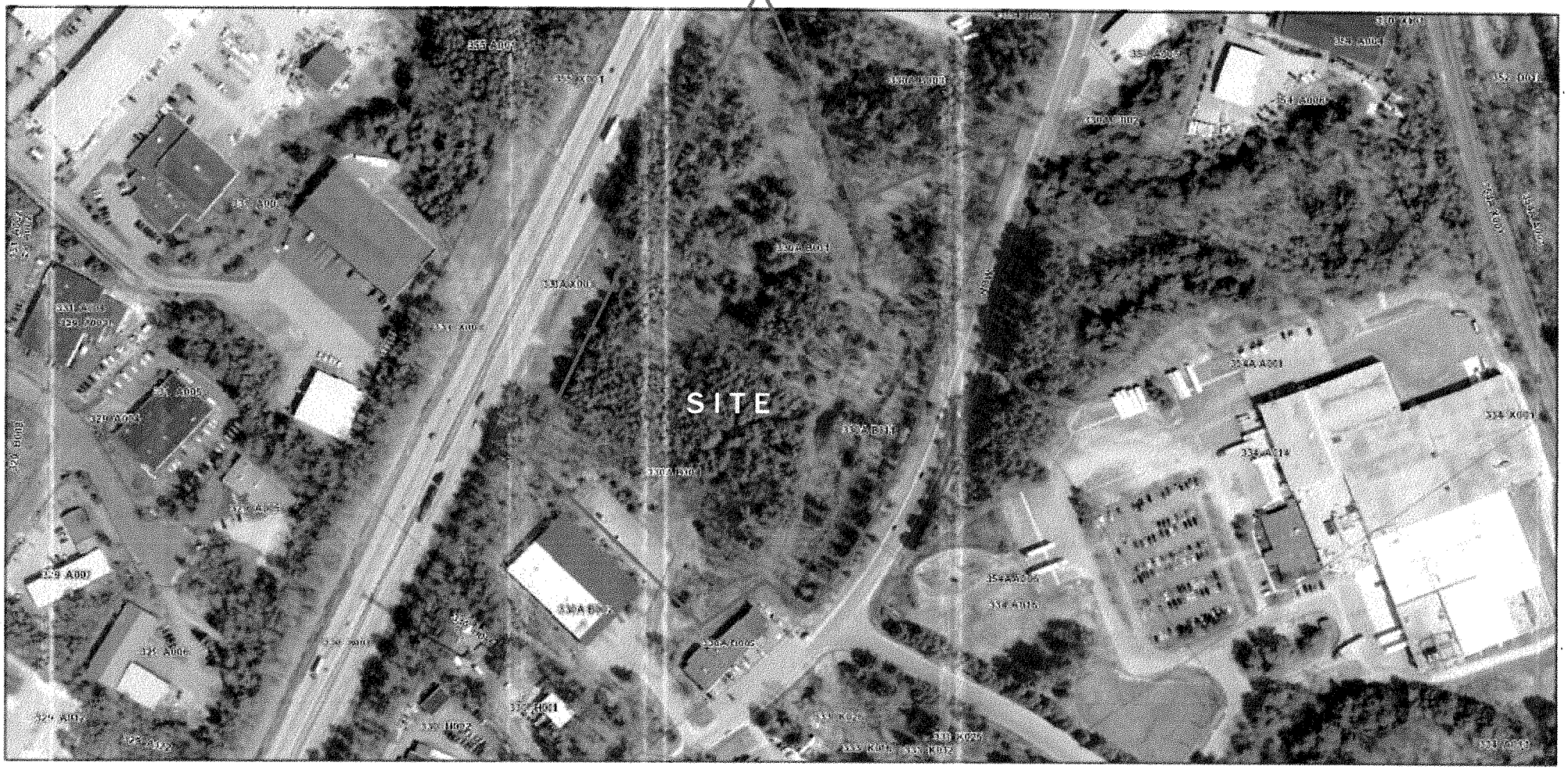
SEBAGO TECHNICS

WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd. - Suite 1A
South Portland, ME 04106
Tel. 207-200-2100

TITLE FOR:	SITE LOCATION MAP TWO EISENHOWER DRIVE, LLC	SCALE:	1 " = 2,000 '
		DATE:	06/20/2018
LOCATION:	250 Riverside Industrial Parkway Portland, ME 04103	INFORMATION:	USGS Quadrangle: Portland West

16360_LocationMap.mxd

PROJECT NUMBER: 16360



6/21/2018, 2:20:26 PM

Parcels

Portland_Photos_2015

1:2,178

0 140 280 560 ft

0 40 80 160 m

City of Portland, DPS

Two Eisenhower Drive LLC
250 Riverside Industrial Parkway
Portland, Maine

Web AppBuilder for ArcGIS
City of Portland, Maine

Section 3

Project Narrative

Exhibit 3: Project Description

The applicant proposes the construction of a new 11,200 square-foot ± (footprint) property services building, parking, and entry drive with stream crossing, exterior landscaping materials storage area, fleet and employee parking, stormwater management features and other associated site improvements on an undeveloped site at 250 Riverside Industrial Parkway in Portland. The portion of the project to be reviewed by this Maine DEP Natural Resources Protection Act Tier 1 application is for the proposed ~~6,550~~ 6,849.50 square foot freshwater wetland impact area. See **Exhibit 5** for a Statement of Avoidance and Minimization.

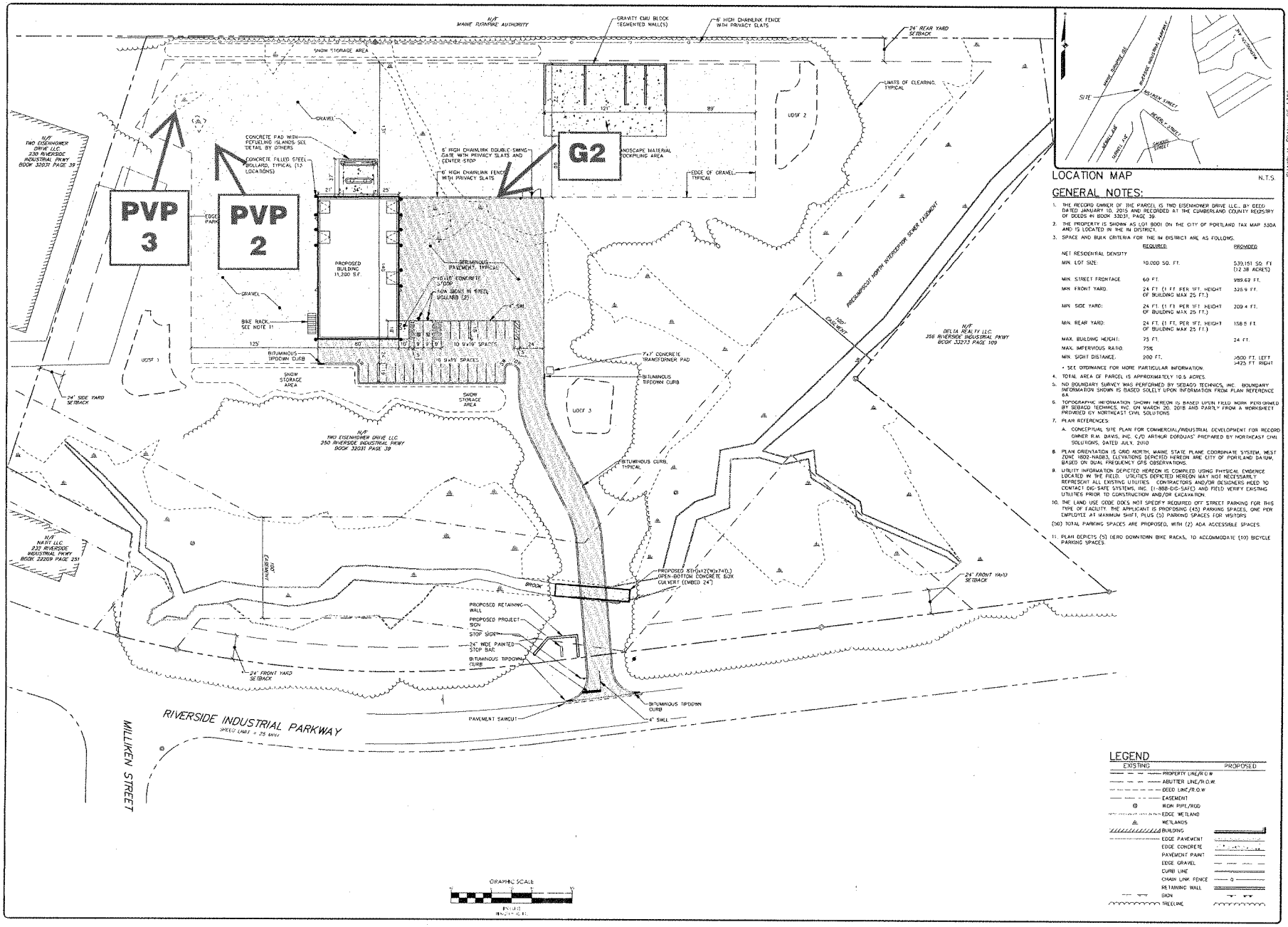
The proposed wetland impacts are limited to the locations shown on the site plans and the work will be performed in accordance with the design and notes shown on the enclosed 8.5x11 Sheet 3-Site, Sheet 5-Grading and Erosion Control and Sheet 7- Erosion Control Plan sheets included in this NRPA submittal.

TIMING - The project will commence upon receipt of all required approvals. The team anticipates an autumn 2018 project start with completion within eight months.

Applications have also been submitted under separate cover to MDEP for NRPA PBR review and to the Army Corps of Engineers (ACOE) for the stream crossing and freshwater wetland impact associated with the proposed site development. The City of Portland is reviewing a Site Location of Development/MCGP Application under the provisions of municipal delegated review.

Section 4

Photo Key & Existing Conditions Site Photographs



LOCATION MAP

N.T.S.

GENERAL NOTES:

1. THE RECORD OWNER OF THE PARCEL IS TWO EISENHOWER DRIVE LLC., BY DEED DATED JANUARY 10, 2015 AND RECORDED AT THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN BOOK 32031, PAGE 39.
2. THE PROPERTY IS SHOWN AS LOT 8001 ON THE CITY OF PORTLAND TAX MAP 530A AND IS LOCATED IN THE IN DISTRICT.
3. SPACE AND BULK CRITERIA FOR THE IN DISTRICT ARE AS FOLLOWS:

	REQUIRED:	PROVIDED
NET RESIDENTIAL DENSITY		
MIN. LOT SIZE:	10,000 SQ. FT.	539,151 SQ. FT. (12.38 ACRES)
MIN. STREET FRONTAGE	60 FT.	989.62 FT.
MIN. FRONT YARD:	24 FT. (1 FT. PER 3FT. HEIGHT OF BUILDING MAX 25 FT.)	325.9 FT.
MIN. SIDE YARD:	24 FT. (1 FT. PER 3FT. HEIGHT OF BUILDING MAX 25 FT.)	209.4 FT.
MIN. REAR YARD:	24 FT. (1 FT. PER 3FT. HEIGHT OF BUILDING MAX 25 FT.)	158.5 FT.
MAX. BUILDING HEIGHT:	75 FT.	24 FT.
MAX. IMPERVIOUS RATIO	75%	
MIN. SIGHT DISTANCE.	200 FT.	>500 FT. LEFT, >425 FT. RIGHT

* SEE ORDINANCE FOR MORE PARTICULAR INFORMATION.

4. TOTAL AREA OF PARCEL IS APPROXIMATELY 10.5 ACRES.
5. NO BOUNDARY SURVEY WAS PERFORMED BY SEBAGO TECHNICS, INC. BOUNDARY INFORMATION SHOWN IS BASED SOLELY UPON INFORMATION FROM PLAN REFERENCE 6A.
6. TOPOGRAPHIC INFORMATION SHOWN HEREON IS BASED UPON FIELD WORK PERFORMED BY SEBAGO TECHNICS, INC. ON MARCH 20, 2018 AND PARTLY FROM A WORKSHEET PROVIDED BY NORTHEAST CIVIL SOLUTIONS.
7. PLAN REFERENCES:
   A. CONCEPTUAL SITE PLAN FOR COMMERCIAL/INDUSTRIAL DEVELOPMENT FOR RECORD OWNER R.M. DAVIS, INC. C/O ARTHUR DORDUAS" PREPARED BY NORTHEAST CIVIL SOLUTIONS, DATED JULY, 2010
8. PLAN ORIENTATION IS GRID NORTH, MAINE STATE PLANE COORDINATE SYSTEM, WEST ZONE 1802-NAD83, ELEVATIONS DEPICTED HEREON ARE CITY OF PORTLAND DATUM, BASED ON DUAL FREQUENCY GPS OBSERVATIONS.
9. UTILITY INFORMATION DEPICTED HEREON IS COMPILED USING PHYSICAL EVIDENCE LOCATED IN THE FIELD. UTILITIES DEPICTED HEREON MAY NOT NECESSARILY REPRESENT ALL EXISTING UTILITIES. CONTRACTORS AND/OR DESIGNERS NEED TO CONTACT DIG-SAFE SYSTEMS, INC. (1-888-DIG-SAFE) AND FIELD VERIFY EXISTING UTILITIES PRIOR TO CONSTRUCTION AND/OR EXCAVATION.
10. THE LAND USE CODE DOES NOT SPECIFY REQUIRED OFF STREET PARKING FOR THIS TYPE OF FACILITY. THE APPLICANT IS PROPOSING (45) PARKING SPACES, ONE PER EMPLOYEE AT MAXIMUM SHIFT, PLUS (5) PARKING SPACES FOR VISITORS (50) TOTAL PARKING SPACES ARE PROPOSED, WITH (2) ADA ACCESSIBLE SPACES.
11. PLAN DEPICTS (5) DERO DOWNTOWN BIKE RACKS, TO ACCOMMODATE (10) BICYCLE PARKING SPACES.

LEGEND

EXISTING	PROPOSED
	PROPERTY LINE/R.O.W.
	ABUTTER LINE/R.O.W.
	DEED LINE/R.O.W.
	EASEMENT
IRON PIPE/ROD	
EDGE WETLAND	
WETLANDS	
	BUILDING
	EDGE PAVEMENT
	EDGE CONCRETE
	PAVEMENT PAINT
	EDGE GRAVEL
	CURB LINE
	CHAIN LINK FENCE
	RETAINING WALL
	SIGN
	TREELINE

PROGRESS PRINT

STATE OF MAINE — SHAWN M. FRANIS — 10627 — REGISTERED PROFESSIONAL ENGINEER — 9/27/18

SHAWN M. FRANIS, PE #10627

DESIGNED	CHECKED
SAH	SMF

REV	BY:	DATE	STATUS
3	SMF	8-27-18	REVISED PER CITY COMMENTS
2	SMF	7-13-18	ISSUED TO CITY
1			

WHITE BLACK SHALL NOT BE WORKED WITHOUT WRITTEN PERMISSION FROM SEBAGO TECHNICS, INC. ANY ALTERATIONS MADE TO THIS DRAWING WITHOUT THE WRITTEN CONSENT OF SEBAGO TECHNICS, INC. WILL RENDER THE ENGINEER OF RECORD RELEASED FROM RESPONSIBILITY FOR THE DRAWING.

SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Road
Suite 4A
South Portland, ME 04106
(207) 200-2100

SITE PLAN
OF
250 RIVERSIDE INDUSTRIAL PARKWAY
RIVERSIDE INDUSTRIAL PARKWAY
PORTLAND, MAINE
TWO EISENHOWER DRIVE, LLC
P.O. BOX 1120
PORTLAND, MAINE 04104

PROJECT NO	SCALE
19360	1" = 40'

SHEET 3 OF 12

19360 Site Plan.dwg

PHOTO KEY

PHOTO KEY



Exhibit 4: Existing Conditions Site Photographs


WP2


G2

Section 5

Statement of Avoidance and Minimization

Section 5: Statement of Avoidance and Minimization

The project has been sited to take advantage of the generally flat topography while maximizing development within the interior upland portion of the site. The design as presented has the smallest footprint that allows a functional facility based on the operational experience of the applicant and is limited to the least amount of wetland impact necessary ~~(6,550 sf)~~ 6,849.50 to complete the activity. Wetland impact cannot be avoided and construction of a smaller facility is not practicable when consideration is given to the logistics and cost of developing the site. Where feasible the fill sideslopes are designed at 2:1 in lieu of the 3:1 reducing impact area. Temporary and permanent erosion controls will be utilized throughout the project to prevent sedimentation of protected natural resources.

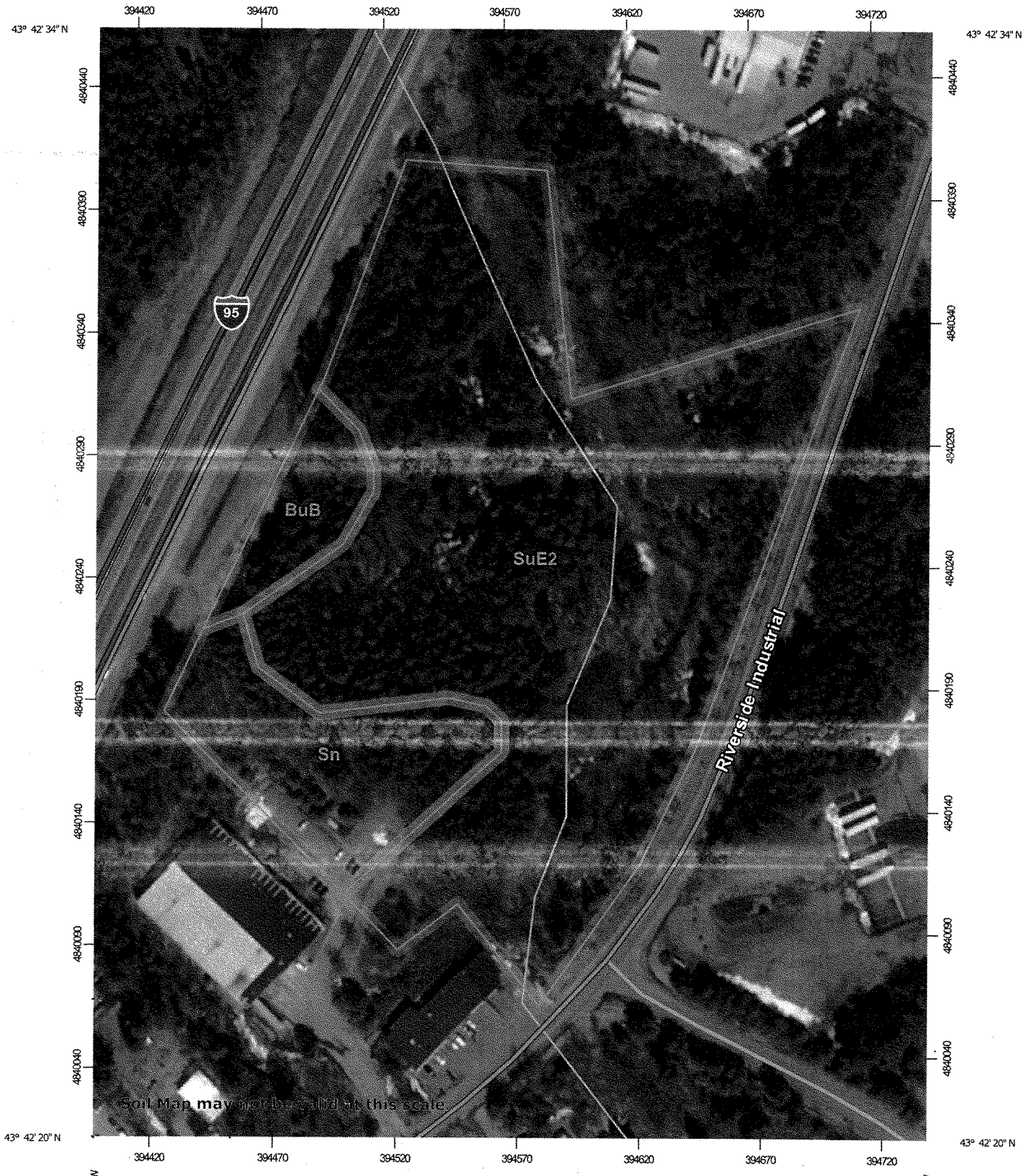
The development of the site will not have an unreasonable impact to resources and meets environmental standards by causing no unreasonable impacts to existing scenic areas, aesthetics, recreational uses, navigational uses and will not cause unreasonable erosion of soil or sediment, unreasonably harm any significant wildlife, fisheries or aquatic habitat, unreasonable interfere with natural flow of surface or subsurface waters, lower water quality or increase flooding.

Other activities on the site, a stream crossing is being reviewed under the provisions of a NRPA PBR submitted under separate cover.

Section 6

USDA Web Soil Survey

Soil Map—Cumberland County and Part of Oxford County, Maine
(Two Eisenhower Drive LLC)



Map Scale: 1:2,200 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 30 60 120 180

Feet: 0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Cumberland County and Part of Oxford County, Maine
Survey Area Data: Version 13, Sep 11, 2017

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Data not available.

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

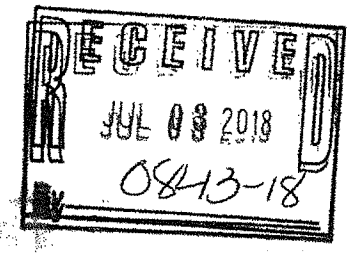
Map Unit Symbol	Map Unit Name
BuB	Lamoine silt loam, 3 to 8 percent slopes
Sn	Scantic silt loam, 0 to 3 percent slopes
SuE2	Suffield silt loam, 25 to 45 percent slopes, eroded

Section 7

Maine Historic Preservation

SEBAGO
TECHNICS

CIVIL ENGINEERING • SURVEYING • LANDSCAPE ARCHITECTURE



16360
June 25, 2018

Mr. Kirk Mohney, State Historic Preservation Officer
Maine Historic Preservation Commission
State House Station 65
Augusta, Maine 04333

Re: 250 Riverside Industrial Parkway, Portland
Tax Parcels: 330A-B-1, 330A-B-4, 330A-B-11
Record Owner: Two Eisenhower Drive, LLC

Dear Mr. Mohney,

Sebago Technics, Inc. has been retained for services related to the construction of a new property maintenance services facility building at a wooded site located at 250 Riverside Industrial Parkway in the City of Portland. Site improvements include the construction of a new ±12,000 square foot two-story metal building, drive/parking and other associated site improvements. The site is located in a moderate impact industrial zone (IM) and consists of three tax parcels totaling ±12.4 acres bounded to the west by the Maine Turnpike (I-95) and to the east by Riverside Industrial Parkway.

The abutting and nearby properties include commercial buildings housing a NAPA Distribution Center Annex, Titan Mechanical, Maintenance Technology Co., etc. which are typical of, and consistent with, the industrial zoning along Riverside Industrial Parkway. No residential properties abut the site and there are no views to or from the project area from residential areas.

Sebago Technics is currently working on a regulatory permit applications for the proposed site development and we respectfully request a site review by the Commission for the presence of any archaeological or historic sites within or adjacent to the project area determined in accordance with the provisions of the National Historic Preservation Act 36 CFR, Part 800, Section 106.

We have enclosed a U.S.G.S. Topographic location map and aerial photograph from the City GIS for your reference. If you have any questions or require additional information please contact me at snichols@sebagotechnics.com or directly at (207) 200-2120.

Sincerely,

SEBAGO TECHNICS, INC.

Stefanie Nichols

Stefanie Nichols
Permitting Specialist/Project Coordinator

enc.

Based on the information submitted, I have concluded that there will be no historic properties affected by the proposed undertaking, as defined by Section 106 of the National Historic Preservation Act. Consequently, pursuant to 36 CFR 800.4(d)(1), no further Section 106 consultation is required unless additional resources are discovered during project implementation pursuant to 36 CFR 800.13.

Kirk F. Mohney

Kirk F. Mohney,
State Historic Preservation Officer
Maine Historic Preservation Commission

7/17/18
Date

75 John Roberts Road – Suite 4A, South Portland, ME 04106-6963 • 207-200-2100 • Fax: 207-856-2206

Section 8

Native American Tribe Inquiries and Responses

Stefanie Nichols

From: Sue Young <ogs1@maliseets.com>
Sent: Thursday, June 21, 2018 2:07 PM
To: Stefanie Nichols
Subject: RE: Site Review - 250 Riverside Industrial Parkway, Portland

Stefanie,

We do not have an immediate concern with your project or project site, and do not currently have the resources to fully investigate same. Should any human remains, archaelogical properties or other items of historical importance be unearthed while working on this project, we recommend that you stop your project and report your findings to the appropriate authorities including the Houlton Band of Maliseet Indians.

Thank you.

<><><><><><><><><><><>
Susan Young
Tribal Historic Preservation Officer
Natural Resources Director
Houlton Band of Maliseets
88 Bell Road
Littleton, ME 04730
207-532-4273 ext. 202
fax 207-532-6883

ogs1@maliseets.com

www.maliseets.com

From: Stefanie Nichols [mailto:snichols@sebagotechnics.com]
Sent: Thursday, June 21, 2018 1:40 PM
To: Sue Young
Subject: Site Review - 250 Riverside Industrial Parkway, Portland

Good afternoon Susan,

Please find a site review request and a site location map for the proposed development 250 Riverside Industrial Parkway in Portland.

Many thanks, Stefanie

Stefanie Nichols *Permitting Specialist/Project Coordinator*
Office: 207.200.2100 | Direct: 207.200.2120
75 John Roberts Rd., Suite 4A, South Portland, ME 04106
snichols@sebagotechnics.com | www.sebagotechnics.com

Tribal Historic Preservation Office

Passamaquoddy Tribe
PO Box 159 Princeton, Me. 04668
207-796-5533

Stefanie Nichols *Permitting Specialist/Project Coordinator*
Office: 207.200.2100 | Direct: 207.200.2120
75 John Roberts Rd., Suite 4A, South Portland, ME 0410

July 6, 2018

- Re: Portland – 250 Riverside Industrial Parkway

Dear Stefanie;

The Passamaquoddy THPO has reviewed the following application regarding the historic properties and significant religious and cultural properties in accordance with NHPA, NEPA, AIRFA, NAGPRA, ARPA, Executive Order 13007 Indian Sacred Sites, Executive Order 13175 Consultation and Coordination with Indian Tribal Governments, and Executive Order 12898 Environmental Justice.

The above listed proposed project will not have any impact on cultural and historical concerns of the Passamaquoddy Tribe.

Sincerely;

Donald Soctomah
Soctomah@gmail.com
THPO
Passamaquoddy Tribe

PENOBSCOT NATION
CULTURAL & HISTORIC PRESERVATION
12 WABANAKI WAY, INDIAN ISLAND, ME 04468

CHRIS SOCKALEXIS – TRIBAL HISTORIC PRESERVATION OFFICER
E-MAIL: chris.sockalexis@penobscotnation.org

NAME	Stefanie Nichols
ADDRESS	Sebago Technics 75 John Roberts Road, Suite 4A South Portland, ME 04106-6963
OWNER'S NAME	Two Eisenhower Drive, LLC
TELEPHONE	(207) 200-2100
FAX	
EMAIL	snichols@sebagotechnics.com
PROJECT NAME	Construction of a metal two-story property maintenance services building and other site improvements at 250 Riverside Industrial Parkway
PROJECT SITE	Portland, ME
DATE OF REQUEST	June 21, 2018
DATE REVIEWED	July 10, 2018

Thank you for the opportunity to comment on the above refcrenced project. This project appcars to have no impact on a structure or site of historic, architectural or archaeological significance to the Penobscot Nation as defined by the National Historic Preservation Act of 1966, as amended.

If Native American cultural materials are cncountered during the course of the project, please contact my office at (207) 817-7471. Thank you for consulting with the Penobscot Nation Tribal Historic Preservation Office with this project.

Chris Sockalexis, THPO
Penobscot Nation

SEBAGO
TECHNICS

CIVIL ENGINEERING • SURVEYING • LANDSCAPE ARCHITECTURE

Transmittal

16360

To: Ms. Jennifer Pictou, THPO
Aroostook Band of Micmacs
jpictou@micmac-nsn.gov

From: Stefanie Nichols
Permitting Specialist/Project Coordinator

Date: June 21, 2018

Subject: 250 Riverside Industrial Parkway, Portland

Record Owner: Two Eisenhower Drive, LLC

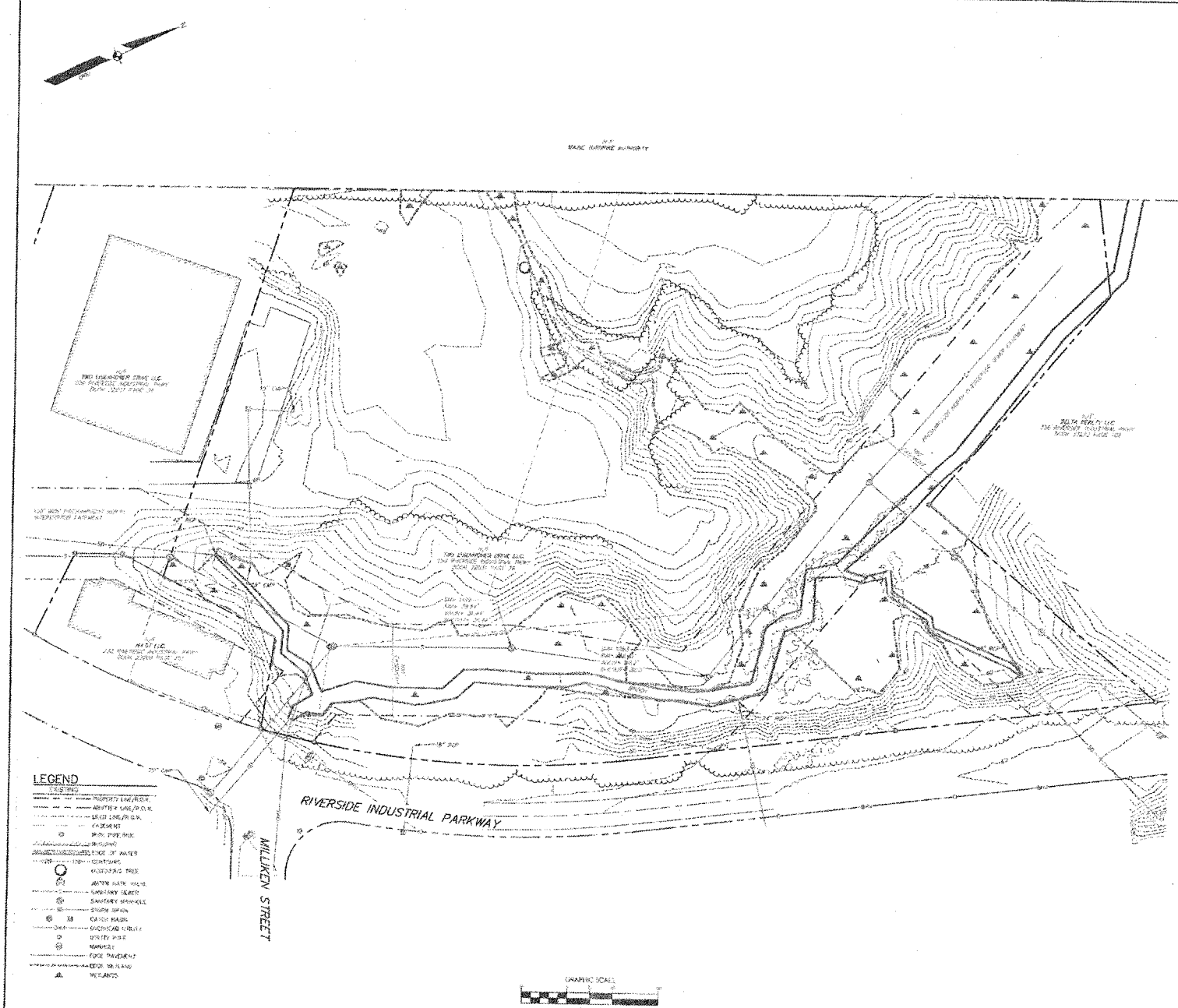
Sebago Technics will submit Maine DEP NRPA and Army Corps of Engineers permit applications for the development of an unimproved 12.4± acre site located at 250 Riverside Industrial Parkway in the City of Portland. The site improvements include construction of a new metal two-story property maintenance services building and other associated site improvements.

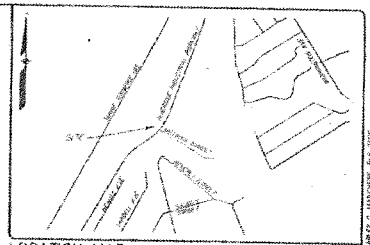
We respectfully request that you review available resources for the presence of any structures or sites of historic, architectural or archaeological significance to the Aroostook Band of Micmacs as defined by the amended National Historic Preservation Act of 1966. Should you have any questions, or if you need additional information please do not hesitate to contact me. Thank you in advance for your assistance.

enc. Site Location Map

Section 9

8 ½" x 11" Plans





LOCATION MAP N.T.S.

GENERAL NOTES:

1. THE RECORD OWNER OF THE PARCEL IS TWO EISENHOWER DRIVE, LLC., BY DEED DATED JANUARY 31, 2013 AND RECORDED AT THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN BOOK 30014, PAGE 36.
2. THE PROPERTY IS SHOWN AS LOT 1B001 ON THE CITY OF PORTLAND TAX MAP 410A AND IS LOCATED IN THE IM DISTRICT.
3. SPACE AND BULK CRITERIA FOR THE IM DISTRICT ARE AS FOLLOWS:

MINIMUM LOT SIZE:	10,000 SQ. FT.
MINIMUM STREET FRONTAGE:	100 FT.
MINIMUM FRONT YARD:	1 FT. PER FT. HEIGHT OF BUILDING (MAX 25 FT.)
MINIMUM SIDE YARD:	1 FT. PER FT. HEIGHT OF BUILDING (MAX 25 FT.)
MINIMUM REAR YARD:	1 FT. PER FT. HEIGHT OF BUILDING (MAX 25 FT.)
MAXIMUM BUILDING HEIGHT:	90 FT.
MAXIMUM IMPERVIOUS RATIO:	75%

* SEE ORDINANCE FOR MORE PARTICULAR INFORMATION

4. TOTAL AREA OF PARCEL IS APPROXIMATELY 12.4 ACRES.
5. NO INDEPENDENT BOUNDARY RETRACEMENT SURVEY WAS PERFORMED BY SEBAGO TECHNICS, INC. BOUNDARY INFORMATION SHOWN IS BASED SOLELY UPON INFORMATION FROM AN REFERENCE (7A).
6. TOPOGRAPHIC INFORMATION SHOWN HEREON IS BASED UPON FIELD WORK PERFORMED BY SEBAGO TECHNICS, INC. ON MARCH 22, 2018 AND IN PART FROM A HYDROGRAPHIC SURVEY BY NORTHEAST CIVIL SOLUTIONS.
7. PLAN REFERENCES:
   A. CONDITIONAL SITE PLAN FOR COMMERCIAL/INDUSTRIAL DEVELOPMENT FOR RECORD DRIVER, P.A., DATED NO. 6251 REVISED (ENGAGE) PREPARED BY NORTHEAST CIVIL SOLUTIONS, DATED JULY, 2013.
8. PLAN ORIENTATION IS GRID NORTH, MAINE STATE PLANE COORDINATE SYSTEM, WEST ZONE (1802 NAD83, 2011) AS DERIVED FROM GPS OBSERVATIONS. ELEVATIONS ARE REFERENCED TO NAVD88 (GEOID 12A) AND WERE DERIVED FROM GPS OBSERVATIONS. THE CITY OF PORTLAND BENCH MARK #28 WITH A PUBLISHED ELEVATION OF 103.69 FEET BASED ON U.S. ARMY CORPS OF ENGINEERS CORPSCON 6.0.1 SOFTWARE WAS USED FOR THIS SURVEY.
9. UTILITY INFORMATION DEPICTED HEREON IS COMPILED USING PHYSICAL EVIDENCE LOCATED IN THE FIELD, UTILITIES DEPICTED HEREON MAY NOT NECESSARILY REPRESENT ALL EXISTING UTILITIES. CONTRACTORS AND/OR DESIGNERS NEED TO CONTACT DIG-SAFE SYSTEMS, INC. TO MARK OUT SITE AND FIELD VERIFY EXISTING UTILITIES PRIOR TO CONSTRUCTION AND/OR EXCAVATION.
10. WETLAND INFORMATION DEPICTED HEREON WAS TAKEN FROM PLAN REFERENCE 7A. THE WETLANDS ON THIS SITE WERE DELINEATED ON JULY 25, 2018 BY GARY M. FULLERTON, CSS OF SEBAGO TECHNICS, INC. SAID DELINEATION CONFORMS TO THE STANDARDS AND METHODS OUTLINED IN THE 1987 WETLANDS DELINEATION MANUAL AND THE NORTHCENTRAL REGIONAL SUPPLEMENT REFERENCED AND PUBLISHED BY THE U.S. ARMY CORPS OF ENGINEERS. ALL WETLAND FLAGS WERE LOCATED USING A GPS DATA-GRADE UNIT CAPABLE OF SUBMETER ACCURACY.

LEGEND

- PROPERTY LINE/R.O.W.
- ABUTTER LINE/R.O.W.
- LEASE LINE/R.O.W.
- EASEMENT
- IRON PIPE/RODE
- BUILDING
- EDGE OF WATER
- CONTOURS
- EXISTING TREE
- WATER SERVICE
- SANITARY SEWER
- SANITARY MANHOLE
- STORM SEWER
- CATCH BASIN
- OVERHEAD UTILITY
- UTILITY POLE
- MARKERS
- EDGE PAVEMENT
- EDGE OF PLANS
- WETLANDS

SURVEYOR'S STATEMENT

THIS SURVEY WAS PERFORMED UNDER MY DIRECT SUPERVISION AND TO THE BEST OF MY KNOWLEDGE AND BELIEF, IT WAS DONE IN ACCORDANCE WITH CHAPTER 90, PART 1 (PROFESSIONAL STANDARDS OF PRACTICE) AND PART 2 (TECHNICAL STANDARDS OF PRACTICE) OF THE RULES ADOPTED BY THE MAINE BOARD OF LICENSURE FOR PROFESSIONAL LAND SURVEYORS.

CHARLES D. MINSHEW, P.E. 20538

JULY 17, 2018

CHARLES D. MINSHEW, P.E. 20538

DRAWN	CHECKED
MAC/TB W	CDM

C	CDM	7-25-18	REVISED WETLAND UPDATE & ENGR NOTE 9
B	CDM	7-13-18	ISSUED TO DOT
A	CDM	3-28-18	ISSUED FOR JOINT REVIEW
REVISED	BY	DATE	

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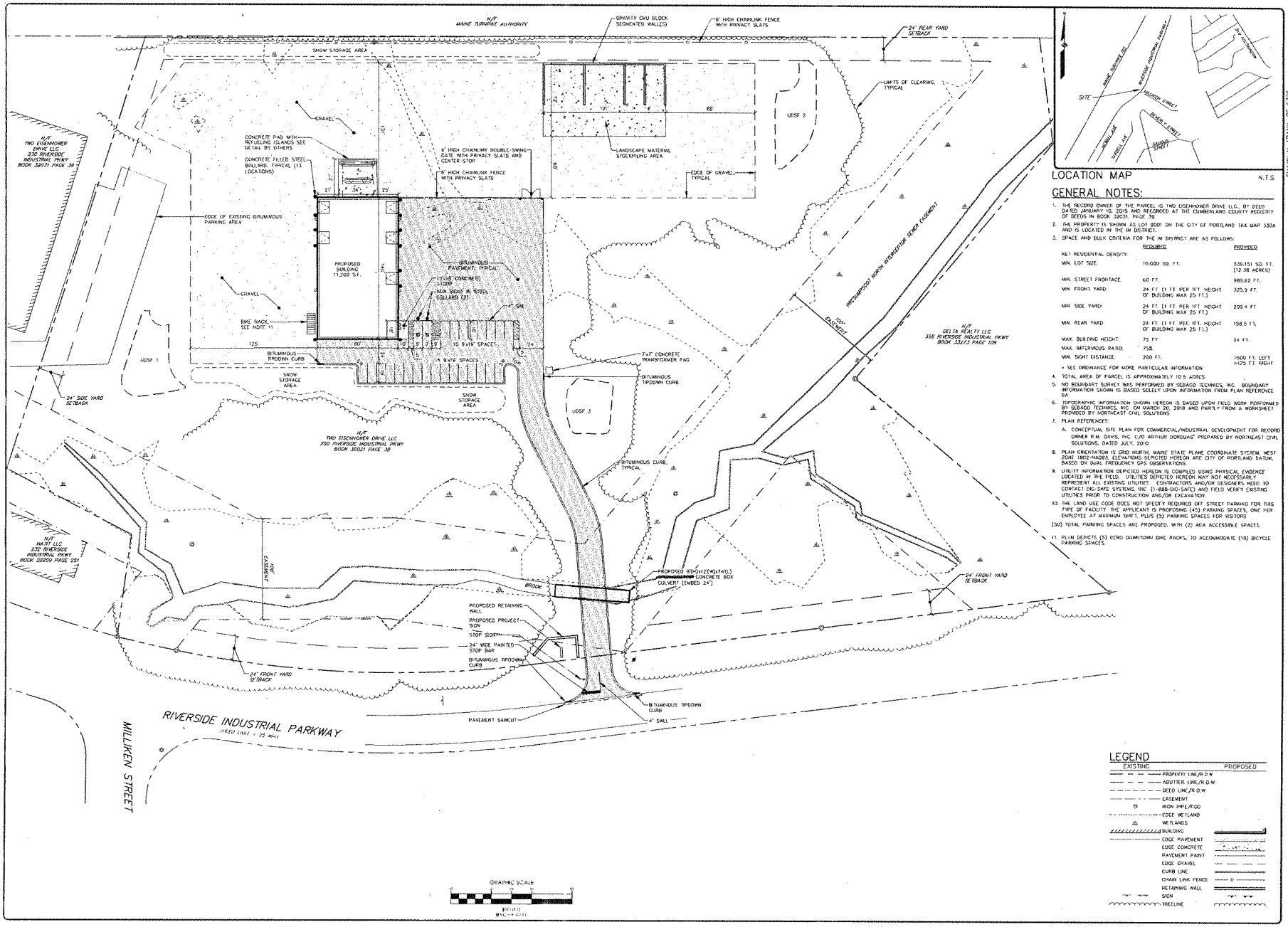
SEBAGO TECHNICS
ONE SEBAGO TECHNICS WAY
75 John Roberts Rd.
Suite 4A
South Portland, ME 04106
Tel: 207-200-2100
Fax: 207-200-2099

EXISTING CONDITIONS PLAN
250 RIVERSIDE INDUSTRIAL PARKWAY
RIVERSIDE INDUSTRIAL PARKWAY
PORTLAND, MAINE

FOR:
TWO EISENHOWER DRIVE, LLC
P.O. BOX 1700
FALMOUTH, MAINE 04104

PROJECT NO.	SCALE
16360	1" = 80'

SHEET 2 OF 12



LOCATION MAP N.T.S.

GENERAL NOTES:

1. THE RECORD OWNER OF THE PARCEL IS TWO EISENHOWER DRIVE, LLC., BY DEED DATED JANUARY 10, 2019 AND RECORDED AT THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN BOOK 32031, PAGE 39.
2. THE PROPERTY IS SHOWN AS LOT 8001 ON THE CITY OF PORTLAND TAX MAP 330A AND IS LOCATED IN THE IM DISTRICT.
3. SPACE AND BULK CRITERIA FOR THE IM DISTRICT ARE AS FOLLOWS:

	REQUIRED	PROVIDED
NET RESIDENTIAL DENSITY:		
MIN. LOT SIZE:	10,000 SQ. FT.	535,151 SQ. FT. (12.38 ACRES)
MIN. STREET FRONTAGE:	60 FT.	989.62 FT.
MIN. FRONT YARD:	24 FT. (1 FT PER 1FT. HEIGHT OF BUILDING MAX 25 FT.)	325.9 FT.
MIN. SIDE YARD:	24 FT. (1 FT. PER 1FT. HEIGHT OF BUILDING MAX 25 FT.)	209.4 FT
MIN. REAR YARD:	24 FT. (1 FT. PER 1FT. HEIGHT OF BUILDING MAX 25 FT.)	158.5 FT.
MAX. BUILDING HEIGHT:	75 FT.	24 FT.
MAX. IMPERVIOUS RATIO:	75%	
MIN. SIGHT DISTANCE:	200 FT.	>500 FT. LEFT, >475 FT. RIGHT

* SEE ORDINANCE FOR MORE PARTICULAR INFORMATION.

4. TOTAL AREA OF PARCEL IS APPROXIMATELY 10.5 ACRES
5. NO BOUNDARY SURVEY WAS PERFORMED BY SEBAGO TECHNICS, INC. BOUNDARY INFORMATION SHOWN IS BASED SOLELY UPON INFORMATION FROM PLAN REFERENCE 6A
6. TOPOGRAPHIC INFORMATION SHOWN HEREON IS BASED UPON FIELD WORK PERFORMED BY SEBAGO TECHNICS, INC ON MARCH 20, 2018 AND PARTLY FROM A WORKSHEET PROVIDED BY NORTHEAST CIVIL SOLUTIONS
7. PLAN REFERENCES:
   A. CONCEPTUAL SITE PLAN FOR COMMERCIAL/INDUSTRIAL DEVELOPMENT FOR RECORD OWNER R.M. DAVIS, INC C/O ARTHUR DORDUAS" PREPARED BY NORTHEAST CIVIL SOLUTIONS, DATED JULY, 2010
8. PLAN ORIENTATION IS GRID NORTH, MAINE STATE PLANE COORDINATE SYSTEM, WEST ZONE (1802-NAD83). ELEVATIONS DEPICTED HEREON ARE CITY OF PORTLAND DATUM, BASED ON DUAL FREQUENCY GPS OBSERVATIONS
9. UTILITY INFORMATION DEPICTED HEREON IS COMPILED USING PHYSICAL EVIDENCE LOCATED IN THE FIELD. UTILITIES DEPICTED HEREON MAY NOT NECESSARILY REPRESENT ALL EXISTING UTILITIES. CONTRACTORS AND/OR DESIGNERS NEED TO CONTACT DIG-SAFE SYSTEMS, INC (1-888-DIG-SAFE) AND FIELD VERIFY EXISTING UTILITIES PRIOR TO CONSTRUCTION AND/OR EXCAVATION.
10. THE LAND USE CODE DOES NOT SPECIFY REQUIRED OFF STREET PARKING FOR THIS TYPE OF FACILITY. THE APPLICANT IS PROPOSING (45) PARKING SPACES, ONE PER EMPLOYEE AT MAXIMUM SHIFT, PLUS (5) PARKING SPACES FOR VISITORS

(50) TOTAL PARKING SPACES ARE PROPOSED, WITH (2) ADA ACCESSIBLE SPACES.

11. PLAN DEPICTS (5) DERO DOWNTOWN BIKE RACKS, TO ACCOMMODATE (10) BICYCLE PARKING SPACES.

LEGEND

EXISTING	PROPOSED
	PROPERTY LINE/R.O.W.
	ABUTTER LINE/R.O.W.
	DEED LINE/R.O.W.
	EASEMENT
⊙	IRON PIPE/RIGID
	EDGE WETLAND
	WETLANDS
	BUILDING
	EDGE PAVEMENT
	EDGE CONCRETE
	PAVEMENT PAINT
	EDGE GRAVEL
	CURB LINE
	CHAIN LINK FENCE
	RETAINING WALL
	SIGN
	TREELINE

PROGRESS PRINT

STATE OF MAINE — SHAWN M. FRANK — No. 8396 — REGISTERED PROFESSIONAL ENGINEER — 8/27/19

SHAWN M. FRANK, PE 8396

DESIGNED	CHECKED
SAH	SMF

REV.	BY:	DATE:	STATUS:
1	SMF	8-27-19	REVISED PER CITY COMMENTS
4	SMF	7-23-18	ISSUED TO CITY

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SEBAGO TECHNICS, INC. AND ANY ALTERATIONS OR MODIFICATIONS SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO SEBAGO TECHNICS, INC.

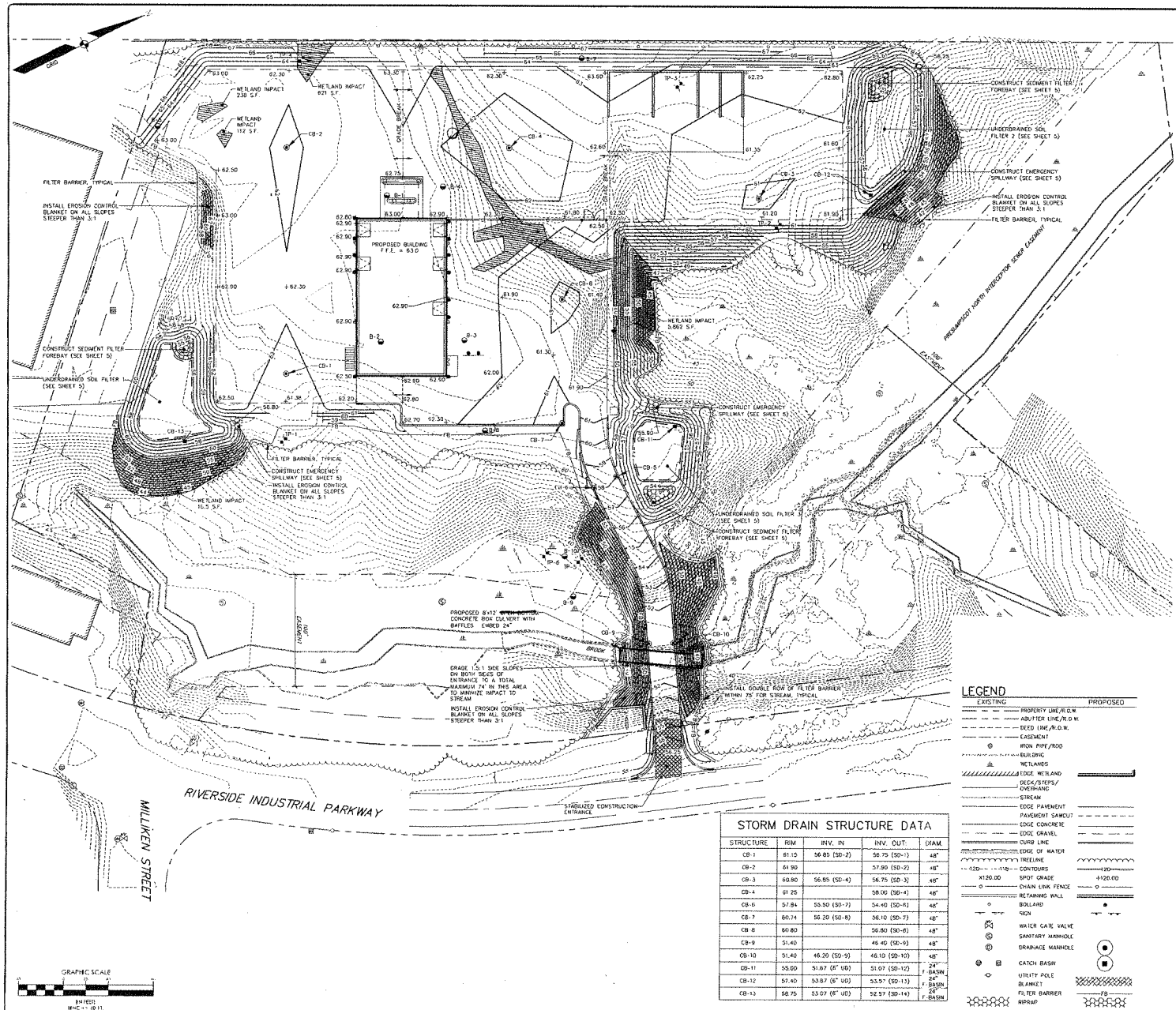
SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd
Suite B
South Portland, ME 04106
Tel: 207-200-2100

SITE PLAN
250 RIVERSIDE INDUSTRIAL PARKWAY
AT RIVERSIDE INDUSTRIAL PARKWAY
PORTLAND, MAINE
FOR:
TWO EISENHOWER DRIVE, LLC
C/O DON TAO
P.O. BOX 1120
PORTLAND, MAINE 04104

PROJECT NO	SCALE
16360	1" = 40'

SHEET 3 OF 12

USGS Survey Mk 5



CONSTRUCTION NOTES

1. ALL WORK SHALL CONFORM TO THE APPLICABLE CODES AND ORDINANCES.
2. CONTRACTOR SHALL VISIT THE SITE AND FAMILIARIZE HIM OR HERSELF WITH ALL CONDITIONS AFFECTING THE PROPOSED WORK AND SHALL MAKE PROVISIONS AS TO THE COST THEREOF. CONTRACTOR SHALL BE RESPONSIBLE FOR FAMILIARIZING HIM OR HERSELF WITH ALL CONTRACT DOCUMENTS, FIELD CONDITIONS AND DIMENSIONS AND CONFIRMING THAT THE WORK MAY BE ACCOMPLISHED AS SHOWN PRIOR TO PROCEEDING WITH CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO THE COMMENCEMENT OF WORK.
3. CONTRACTOR SHALL NOTIFY ENGINEER OF ALL PRODUCTS OR ITEMS NOTED AS "EXISTING" WHICH ARE NOT FOUND IN THE FIELD.
4. INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND OWNER'S REQUIREMENTS UNLESS SPECIFICALLY OTHERWISE INDICATED OR WHERE LOCAL CODES OR REGULATIONS TAKE PRECEDENCE.
5. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO FABRICATION AND ERECTION OF ANY MATERIAL. ANY UNUSUAL CONDITIONS SHALL BE REPORTED TO THE ATTENTION OF THE ENGINEER.
6. CONTRACTOR SHALL CLEAN AND REMOVE DEBRIS AND SEDIMENT DEPOSITED ON PUBLIC STREETS, SIDEWALKS, ADJACENT AREAS, OR OTHER PUBLIC WAYS DUE TO CONSTRUCTION.
7. CONTRACTOR SHALL INCORPORATE PROVISIONS AS NECESSARY IN CONSTRUCTION TO PROTECT EXISTING STRUCTURES, PHYSICAL FEATURES, AND MAINTAIN SITE STABILITY DURING CONSTRUCTION. CONTRACTOR SHALL RESTORE ALL AREAS TO ORIGINAL CONDITION AND AS DIRECTED BY DESIGN DRAWINGS.
8. SITE CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS PRIOR TO CONSTRUCTION.
9. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH "MAINE EROSION AND SEDIMENT CONTROL BMPS" PUBLISHED BY THE BUREAU OF LAND AND WATER QUALITY OF THE MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION, MARCH 2003 OR LATEST EDITION. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO POSSESS A COPY OF THE EROSION CONTROL PLAN AT ALL TIMES.
10. THE CONTRACTOR IS HEREBY CAUTIONED THAT ALL SITE FEATURES SHOWN HEREON ARE BASED ON FIELD OBSERVATIONS BY THE SURVEYOR AND BY INFORMATION PROVIDED BY UTILITY COMPANIES. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR SHALL CONTACT DIG SAFE (811) AT LEAST THREE (3) BUT NOT MORE THAN THIRTY (30) DAYS PRIOR TO COMMENCEMENT OF EXCAVATION OR DEMOLITION TO VERIFY HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITIES.
11. CONTRACTOR SHALL BE AWARE THAT DIG SAFE ONLY NOTIFIES ITS "MEMBER" UTILITIES ABOUT THE DIG WHEN NOTIFIED. DIG SAFE WILL ADVISE CONTRACTOR OF MEMBER UTILITIES IN THE AREA. CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING AND CONTACTING NON-MEMBER UTILITIES DIRECTLY. NON-MEMBER UTILITIES MAY INCLUDE TOWN OR CITY WATER AND SEWER DISTRICTS AND SMALL LOCAL UTILITIES, AS WELL AS USG PUBLIC WORKS SYSTEMS.
12. CONTRACTORS SHALL BE RESPONSIBLE FOR COMPLIANCE WITH THE REQUIREMENTS OF 23 MRSA 1365-A. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH THE APPROPRIATE UTILITIES TO OBTAIN AUTHORIZATION PRIOR TO RELOCATION OF ANY EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THESE PLANS. IF A UTILITY CONFLICT ARISES, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER, THE MUNICIPALITY AND APPROPRIATE UTILITY COMPANY PRIOR TO PROCEEDING WITH ANY RELOCATION.
13. ALL PAVEMENT MARKINGS AND DIRECTIONAL SIGNAGE SHOWN ON THE PLAN SHALL CONFORM TO THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) STANDARDS.
14. ALL PAVEMENT JOINTS SHALL BE SAWCUT PRIOR TO PAVING TO PROVIDE A DURABLE AND UNIFORM JOINT.
15. NO HOLES, TRENCHES OR STRUCTURES SHALL BE LEFT OPEN OVERNIGHT IN ANY EXCAVATION ACCESSIBLE TO THE PUBLIC OR IN PUBLIC RIGHTS-OF-WAY.
16. ALL WORK WITHIN THE PUBLIC RIGHT-OF-WAY SHALL REQUIRE A M.D.O.T. PERMIT AS WELL AS PERMITS FROM THE MUNICIPALITY AS APPLICABLE.
17. THE PROPOSED LIMITS OF CLEARING SHOWN HEREON ARE APPROXIMATE BASED UPON THE PROPOSED LIMITS OF SITE GRADING. THE APPLICANT RESERVES THE RIGHT TO PERFORM NORMAL FOREST MANAGEMENT ACTIVITIES OUTSIDE OF THE CLEARING LIMITS AS SHOWN. TREE REMOVAL OUTSIDE OF THE LIMITS OF CLEARING MAY BE NECESSARY TO REMOVE DEAD OR DYING TREES OR TREE LIMBS. TREE REMOVAL IS DUE TO POTENTIAL SAFETY HAZARDS AND TO PROMOTE PROPER FOREST GROWTH.
18. IMMEDIATELY UPON COMPLETION OF CUTS/FILLS, THE CONTRACTOR SHALL STABILIZE DISTURBED AREAS IN ACCORDANCE WITH EROSION CONTROL NOTES AND AS SPECIFIED ON PLANS.
19. THE CONTRACTOR SHALL BE FULLY AND SOLELY RESPONSIBLE FOR THE REMOVAL, REPLACEMENT AND RECTIFICATION OF ALL DAMAGED AND DEFECTIVE MATERIAL AND WORKMANSHIP IN CONNECTION WITH THE CONTRACT WORK. THE CONTRACTOR SHALL REPLACE OR REPAIR AS DIRECTED BY THE OWNER ALL SUCH DAMAGED OR DEFECTIVE MATERIALS WHICH APPEAR WITHIN A PERIOD OF ONE YEAR FROM THE DATE OF SUBSTANTIAL COMPLETION.
20. ALL WORK PERFORMED BY THE GENERAL CONTRACTOR AND/OR TRADE SUBCONTRACTOR SHALL CONFORM TO THE REQUIREMENTS OF LOCAL, STATE OR FEDERAL LAWS, AS WELL AS ANY OTHER GOVERNING REQUIREMENTS, WHETHER OR NOT SPECIFIED ON THE DRAWINGS.
21. WHERE THE TERMS "APPROVED EQUAL", "OTHER APPROVED", "EQUAL TO", "ACCEPTABLE" OR OTHER GENERAL QUALIFYING TERMS ARE USED IN THESE NOTES, IT SHALL BE UNDERSTOOD THAT REFERENCE IS MADE TO THE RULING AND JUDGMENT OF SEBAGO TECHNICS, INC.
22. THE GENERAL CONTRACTOR SHALL PROVIDE ALL NECESSARY PROTECTION FOR THE WORK UNTIL TURNED OVER TO THE OWNER.
23. THE GENERAL CONTRACTOR SHALL MAINTAIN A CURRENT AND COMPLETE SET OF CONSTRUCTION DRAWINGS ON SITE DURING ALL PHASES OF CONSTRUCTION FOR USE OF ALL TRADES.
24. THE CONTRACTOR SHALL TAKE FULL RESPONSIBILITY FOR ANY CHANGES AND DEVIATION OF APPROVED PLANS NOT AUTHORIZED BY THE ARCHITECT/ENGINEER AND/OR CLIENT/OWNER.
25. DETAILS ARE INTENDED TO SHOW END RESULT OF DESIGN. ANY MODIFICATION TO SUIT FIELD DIMENSION AND CONDITION SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO ANY WORK.
26. BEFORE THE FINAL ACCEPTANCE OF THE PROJECT, THE CONTRACTOR SHALL REMOVE ALL EQUIPMENT AND MATERIALS, REPAIR OR REPLACE PRIVATE OR PUBLIC PROPERTY WHICH MAY HAVE BEEN DAMAGED OR DESTROYED DURING CONSTRUCTION. CLEAN THE AREAS WITHIN AND ADJACENT TO THE PROJECT WHICH HAVE BEEN OBSTRUCTED BY HIS/HER OPERATIONS, AND LEAVE THE PROJECT AREA NEAT AND PRESENTABLE.
27. ALL SUBSURFACE UTILITY LINES SHOWN HEREON ARE BASED SOLELY ON THE FIELD LOCATION OF VISIBLE STRUCTURES, SUCH AS, CBS, HYDRANTS, ETC., IN CONJUNCTION WITH DESIGN AND OR AS-BUILT PLANS SUPPLIED TO SEBAGO TECHNICS INC. BY OTHERS PRIOR TO ANY CONSTRUCTION, EXCAVATION, TEST BORINGS, DRILLING, ETC. DIG SAFE MUST BE NOTIFIED AND A SITE IDENTIFICATION NUMBER ALONG WITH A SAFE TO DIG DATE OBTAINED. THE SITE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFYING THE LOCATION, DEPTH AND MATERIAL OF ALL SUBSURFACE UTILITY LINES SHOWN HEREON AND ANY AND ALL OTHERS LOCATED ON SITE WITHIN THE CONSTRUCTION AREA.

STORM DRAIN STRUCTURE DATA

STRUCTURE	RIM	INV. IN	INV. OUT	DIAM.
CB-1	61.15	56.85 (SD-2)	56.75 (SD-1)	48"
CB-2	64.90		57.90 (SD-2)	48"
CB-3	60.80	56.85 (SD-4)	56.75 (SD-3)	48"
CB-4	61.25		58.00 (SD-4)	48"
CB-5	57.84	55.50 (SD-7)	54.40 (SD-5)	48"
CB-7	60.74	56.20 (SD-8)	56.10 (SD-7)	48"
CB-8	60.80		56.80 (SD-8)	48"
CB-9	51.40		46.40 (SD-9)	48"
CB-10	51.40	46.20 (SD-9)	46.10 (SD-10)	48"
CB-11	55.00	51.87 (8" UD)	51.07 (SD-12)	24" F-BASIN
CB-12	57.40	53.87 (8" UD)	53.57 (SD-13)	24" F-BASIN
CB-13	58.75	53.07 (8" UD)	52.57 (SD-14)	24" F-BASIN

LEGEND

EXISTING	PROPOSED
PROPERTY LINE/R.O.W.	
ABUTTER LINE/R.O.W.	
DEED LINE/R.O.W.	
EASEMENT	
IRON PIPE/ROD	
BUILDING	
WETLANDS	
EDGE WETLAND	
DECK/STEPS/ OVERHANG	
STREAM	
EDGE PAVEMENT	
PAVEMENT SAWCUT	
EDGE CONCRETE	
EDGE GRAVEL	
CURB LINE	
EDGE OF WATER	
TREELINE	
120 CONTOURS	120
X120.00 SPOT GRADE	+120.00
CHAIN LINK FENCE	
RETAINING WALL	
BOLLARD	
SIGN	
WATER GATE VALVE	
SANITARY MANHOLE	
DRAINAGE MANHOLE	
CATCH BASIN	
UTILITY POLE	
BLANKET	
FILTER BARRIER	FB
RIPRAP	

PROGRESS PRINT

SHAWN M. FRANK, PE 13516
STATE OF MAINE
SHAWN M. FRANK
No. 13516
REGISTERED PROFESSIONAL ENGINEER
9/21/18

DESIGNED	CHECKED
SAH	SMF

REV	BY	DATE	STATUS
A	SMF	7-13-18	ISSUED TO CITY
B	SMF	8-21-18	REVISED PER CITY COMMENTS
C	SMF	8-27-18	REVISED WETLAND IMPACT AREA

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SEBAGO TECHNICS, INC. ANY ALTERATIONS MADE TO THIS PLAN SHALL BE AT THE USER'S RISK AND WITHOUT LIABILITY TO SEBAGO TECHNICS, INC.

SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd
South Portland, ME 04106
Tel: 207.200.2100

GRADING AND EROSION CONTROL PLAN
250 RIVERSIDE INDUSTRIAL PARKWAY
RIVERSIDE INDUSTRIAL PARKWAY
PORTLAND, MAINE
FOR
TWO EISENHOWER DRIVE, LLC
100 COMMERCIAL STREET
PORTLAND, MAINE 04104

PROJECT NO.	SCALE
16360	1" = 40'

SHEET 5 OF 12

16360 GPrj 18.0

EROSION CONTROL MEASURES

PRE-CONSTRUCTION PHASE

PRIOR TO CONSTRUCTION, PROPERLY INSTALL SEDIMENT BARRIERS AT THE DOWNGRADIENT EDGE OF ANY AREA TO BE DISTURBED AND ADJACENT TO ANY DRAINAGE CHANNELS WITHIN THE DISTURBED AREA. SEDIMENT BARRIERS SHOULD BE INSTALLED DOWNGRADIENT OF SOIL OR SEDIMENT STOCKPILES AND STORMWATER PREVENTED FROM RUNNING INTO THE STOCKPILE. MAINTAIN THE SEDIMENT BARRIERS BY REMOVING ACCUMULATED SEDIMENT, OR REMOVING AND REPLACING THE BARRIER, UNTIL THE DISTURBED AREA IS PERMANENTLY STABILIZED. WHERE A DISCHARGE TO A STORM DRAIN INLET OCCURS, IF THE STORM DRAIN CARRIES WATER DIRECTLY TO A SURFACE WATER AND YOU HAVE AUTHORITY TO ACCESS THE STORM DRAIN INLET, YOU MUST INSTALL AND MAINTAIN PROTECTION MEASURES THAT REMOVE SEDIMENT FROM THE DISCHARGE.

PRIOR TO CONSTRUCTION, PROPERLY INSTALL A STABILIZED CONSTRUCTION ENTRANCE (SCE) AT ALL POINTS OF EGRESS FROM THE SITE. THE SCE IS A STABILIZED PAD OF AGGREGATE, UNDERLAIN BY A GEOTEXTILE FILTER FABRIC, USED TO PREVENT TRAFFIC FROM TRACKING MATERIAL AWAY FROM THE SITE ONTO PUBLIC ROWS. MAINTAIN THE SCE UNTIL ALL DISTURBED AREAS ARE STABILIZED.

PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL PREPARE A DETAILED SCHEDULE AND MARKED UP PLAN INDICATING AREAS AND COMPONENTS OF THE WORK AND ANY DATES SHOWING THE DATE OF DISTURBANCE AND COMPLETION OF THE AREA. THE CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING WITH THE MUNICIPAL STAFF. THREE COPIES OF THE SCHEDULE AND MARKED UP PLAN SHALL BE PROVIDED TO THE MUNICIPALITY THREE DAYS PRIOR TO THE SCHEDULED PRE-CONSTRUCTION MEETING. SPECIAL ATTENTION SHALL BE GIVEN TO THE 14 DAY LIMIT OF DISTURBANCE IN THE SCHEDULE ADDRESSING TEMPORARY AND PERMANENT VEGETATION MEASURES.

CONSTRUCTION AND POST-CONSTRUCTION PHASE

DURING CONSTRUCTION

1. INSPECTION AND CORRECTIVE ACTION:
   INSPECT DISTURBED AND IMPERVIOUS AREAS, EROSION CONTROL MEASURES, MATERIALS STORAGE AREAS THAT ARE EXPOSED TO PRECIPITATION, AND LOCATIONS WHERE VEHICLES ENTER OR EXIT THE SITE. INSPECT THESE AREAS AT LEAST ONCE A WEEK AS WELL AS BEFORE AND WITHIN 24 HOURS AFTER A STORM EVENT (RAINFALL), AND PRIOR TO COMPLETING PERMANENT STABILIZATION MEASURES. A PERSON WITH KNOWLEDGE OF EROSION AND STORMWATER CONTROL, INCLUDING THE STANDARDS AND CONDITIONS IN THE PERMIT, SHALL CONDUCT THE INSPECTIONS.

2. MAINTENANCE:
   IF BEST MANAGEMENT PRACTICES (BMPS) NEED TO BE REPAIRED, THE REPAIR WORK SHOULD BE INITIATED UPON DISCOVERY OF THE PROBLEM BUT NO LATER THAN THE END OF THE NEXT WORKDAY. IF ADDITIONAL BMPS OR SIGNIFICANT REPAIR OF BMPS ARE NECESSARY, IMPLEMENTATION MUST BE COMPLETED WITHIN 7 CALENDAR DAYS AND PRIOR TO ANY STORM EVENT (RAINFALL). ALL MEASURES MUST BE MAINTAINED IN EFFECTIVE OPERATING CONDITION UNTIL AREAS ARE PERMANENTLY STABILIZED.

3. DOCUMENTATION:
   KEEP A LOG (REPORT) SUMMARIZING THE INSPECTIONS AND ANY CORRECTIVE ACTION TAKEN. THE LOG MUST INCLUDE THE NAME(S) AND QUALIFICATIONS OF THE PERSON MAKING THE INSPECTIONS, THE DATE(S) OF THE INSPECTIONS, AND MAJOR OBSERVATIONS ABOUT THE OPERATION AND MAINTENANCE OF EROSION AND SEDIMENTATION CONTROLS, MATERIALS STORAGE AREAS, AND VEHICLES ACCESS POINTS TO THE PARCEL. MAJOR OBSERVATIONS MUST INCLUDE BMPS THAT NEED MAINTENANCE, BMPS THAT FAILED TO OPERATE AS DESIGNED OR PROVED INADEQUATE FOR A PARTICULAR LOCATION, AND LOCATIONS WHERE ADDITIONAL BMPS ARE NEEDED. FOR EACH BMP REQUIRING MAINTENANCE, BMP REPAIR REPLACEMENT, AND LOCATION NEEDING ADDITIONAL BMPS, NOTE IN THE LOG THE CORRECTIVE ACTION TAKEN AND WHEN IT WAS TAKEN.

   THE LOG MUST BE MADE ACCESSIBLE TO DEPARTMENT STAFF AND A COPY MUST BE PROVIDED UPON REQUEST. THE PERMITTEE SHALL RETAIN A COPY OF THE LOG FOR A PERIOD OF AT LEAST THREE YEARS FROM THE COMPLETION OF PERMANENT STABILIZATION.

POST-CONSTRUCTION

1. PLAN:
   CARRY OUT AN APPROVED INSPECTION AND MAINTENANCE PLAN THAT IS CONSISTENT WITH THE MINIMUM REQUIREMENTS OF THIS SECTION. THE PLAN MUST ADDRESS INSPECTION AND MAINTENANCE OF THE PROJECT'S PERMANENT EROSION CONTROL MEASURES AND STORMWATER MANAGEMENT SYSTEM. THIS PLAN MAY BE COMBINED WITH THE PLAN LISTED IN SECTION 2(A) OF THIS APPENDIX. SEE SECTION 7(C)(2) FOR SUBMISSION REQUIREMENTS.

2. INSPECTION AND MAINTENANCE:
   ALL MEASURES MUST BE MAINTAINED IN EFFECTIVE OPERATING CONDITION. A PERSON WITH KNOWLEDGE OF EROSION AND STORMWATER CONTROL, INCLUDING THE STANDARDS AND CONDITIONS IN THE PERMIT, SHALL CONDUCT THE INSPECTIONS. THE FOLLOWING AREAS, FACILITIES, AND MEASURES MUST BE INSPECTED AND IDENTIFIED DEFICIENCIES MUST BE CORRECTED. AREAS, FACILITIES, AND MEASURES OTHER THAN THOSE LISTED BELOW MAY ALSO REQUIRE INSPECTION ON A SPECIFIC SITE. INSPECTION OR MAINTENANCE TASKS OTHER THAN THOSE DISCUSSED BELOW MUST BE INCLUDED IN THE MAINTENANCE PLAN DEVELOPED FOR A SPECIFIC SITE.

3. REGULAR MAINTENANCE:
   CLEAR ACCUMULATIONS OF WINTER SAND IN PARKING LOTS AND ALONG ROADWAYS AT LEAST ONCE A YEAR, PREFERABLY IN THE SPRING. ACCUMULATIONS ON PAVEMENT MAY BE REMOVED BY PAVEMENT SWEEPING. ACCUMULATIONS OF SAND ALONG ROAD SHOULDERS MAY BE REMOVED BY GRADING SAND INTO THE ROADWAY AND REMOVING IT ANNUALLY OR BY USING A FRONT-END LOADER. GRADING OF GRAVEL ROADS, OR GRADING OF THE GRAVEL SHOULDERS OF GRAVEL OR PAVED ROADS, MUST BE ROUTINELY PERFORMED TO ENSURE THAT STORMWATER DRAINS IMMEDIATELY OFF THE ROAD SURFACE TO ADJACENT BUFFER AREAS OR PARALLEL DITCHES, AND IS NOT IMPEDED BY ACCUMULATIONS OF GRADED MATERIAL ON THE ROAD SHOULDER OR BY EXCAVATION OF FALSE DITCHES IN THE SHOULDER. IF WATER BARS OR WATER TOP CUTWAYS ARE USED TO DIVERT RUNOFF FROM ROAD SURFACES, CLEAN-OUT ANY SEDIMENTS WITHIN OR AT THE OUTLET OF THESE STRUCTURES TO RESTORE THEIR FUNCTION.

4. DOCUMENTATION:
   KEEP A LOG (REPORT) SUMMARIZING INSPECTIONS, MAINTENANCE, AND ANY CORRECTIVE ACTIONS TAKEN. THE LOG MUST INCLUDE THE DATE ON WHICH EACH INSPECTION OR MAINTENANCE TASK WAS PERFORMED, A DESCRIPTION OF THE INSPECTION FINDINGS OR MAINTENANCE COMPLETED, AND THE NAME OF THE INSPECTOR OR MAINTENANCE PERSONNEL PERFORMING THE TASK. IF A MAINTENANCE TASK REQUIRES THE CLEAN-OUT OF ANY SEDIMENTS OR DEBRIS, INDICATE WHERE THE SEDIMENT AND DEBRIS WAS DISPOSED AFTER REMOVAL. THE LOG MUST BE MADE ACCESSIBLE TO DEPARTMENT STAFF AND A COPY PROVIDED TO THE DEPARTMENT UPON REQUEST. THE PERMITTEE SHALL RETAIN A COPY OF THE LOG FOR A PERIOD OF AT LEAST FIVE YEARS FROM THE COMPLETION OF PERMANENT STABILIZATION.

EROSION CONTROL APPLICATIONS & MEASURES

THE PLACEMENT OF EROSION CONTROL MEASURES SHALL BE COMPLETED IN ACCORDANCE WITH GUIDELINES ESTABLISHED WITHIN THE CURRENT MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION CHAPTER 500 RULES. THE DEPARTMENTS BEST MANAGEMENT PRACTICES AND IN ACCORDANCE WITH THE EROSION CONTROL PLAN AND DETAILS IN THE PLAN SET. EROSION CONTROL MEASURES SHALL BE IN PLACE BEFORE THE ACTIVITY BEGINS, MEASURES MUST REMAIN IN PLACE AND FUNCTIONAL UNTIL THE SITE IS PERMANENTLY STABILIZED. ADEQUATE AND TIMELY TEMPORARY AND PERMANENT STABILIZATION MEASURES MUST BE TAKEN.

1. POLLUTION PREVENTION:
   WHENEVER PRACTICABLE, NO DISTURBANCE ACTIVITIES SHOULD TAKE PLACE WITHIN 50 FEET OF ANY PROTECTED NATURAL RESOURCE. IF DISTURBANCE ACTIVITIES TAKE PLACE BETWEEN 30 FEET AND 50 FEET OF ANY PROTECTED NATURAL RESOURCE, AND STORMWATER DISCHARGES THROUGH THE DISTURBED AREA TOWARD THE PROTECTED NATURAL RESOURCE, PERIMETER EROSION CONTROLS MUST BE DOUBLED. IF DISTURBANCE ACTIVITIES TAKE PLACE LESS THAN 30 FEET FROM ANY PROTECTED NATURAL RESOURCE, AND STORMWATER DISCHARGES THROUGH THE DISTURBED AREA TOWARD THE PROTECTED NATURAL RESOURCE, PERIMETER EROSION CONTROLS MUST BE DOUBLED AND DISTURBED AREAS MUST BE TEMPORARILY OR PERMANENTLY STABILIZED WITHIN 48 HOURS.

2. TEMPORARY MULCHING:
   ALL DISTURBED AREAS SHALL BE MULCHED WITH MATERIALS SPECIFIED BELOW PRIOR TO ANY STORM EVENT. ALL DISTURBED AREAS NOT FINAL GRADED WITHIN 7 DAYS SHALL BE MULCHED. ALSO, AREAS WHICH HAVE BEEN TEMPORARILY OR PERMANENTLY SEEDED, SHALL BE MULCHED IMMEDIATELY FOLLOWING SEEDING. EROSION BLANKETS ARE RECOMMENDED TO BE USED IN THE BASE OF GRASSED WATERWAYS AND ON SLOPES GREATER THAN 15%. MULCH ANCHORING SHOULD BE USED ON SLOPES GREATER THAN 8% AFTER SEPTEMBER 15TH OF THE CONSTRUCTION YEAR. THE FOLLOWING INDICATES TYPES OF MULCH.
   HAY OR STRAW: SHALL BE APPLIED AT A RATE OF 75 LBS/1,000 S.F. (1.5 TONS PER ACRE).
   EROSION CONTROL MIX: SHALL BE PLACED EVENLY AND MUST PROVIDE 100% SOIL COVERAGE. EROSION CONTROL MIX SHALL BE APPLIED SUCH THAT THE THICKNESS ON SLOPES 3:1 OR LESS IS 2 INCHES PLUS 1/2 INCH PER 20 FEET OF SLOPE UP TO 100 FEET. THE THICKNESS ON SLOPES BETWEEN 3:1 AND 2:1 IS 3 INCHES PLUS 1/2 INCH PER 20 FEET PROPERTY LINE OR WATERCOURSE. THIS SHALL NOT BE USED ON SLOPES GREATER THAN 2:1.
   EROSION CONTROL BLANKETS: SHALL BE INSTALLED SUCH THAT CONTINUOUS CONTACT BETWEEN THE MAT AND THE SOIL IS OBTAINED. INSTALL BLANKETS AND STAPLE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

3. SOIL STOCKPILES:
   STOCKPILES OF SOIL OR SUBSOIL SHALL BE MULCHED WITH HAY OR STRAW AT A RATE OF 75 LBS/1,000 S.F. (1.5 TONS PER ACRE) OR WITH A FOUR-INCH LAYER OF WOOD WASTE EROSION CONTROL MIX. THIS WILL BE DONE WITHIN 24 HOURS OF STOCKING AND RE-ESTABLISHED PRIOR TO ANY RAINFALL. ANY SOIL STOCKPILE WILL NOT BE PLACED EVEN COVERED WITH HAY OR STRAW) WITHIN 100 FEET FROM ANY NATURAL RESOURCES.

4. NATURAL RESOURCES PROTECTION:
   ANY AREAS WITHIN 100 FEET FROM ANY NATURAL RESOURCES, IF NOT STABILIZED WITH A MINIMUM OF 75% MATURE VEGETATION CATCH, SHALL BE STABILIZED USING TEMPORARY MULCHING (AS DESCRIBED IN PART 1 OF THIS SECTION) OR OTHER NON-ERODIBLE COVER WITHIN 48 HOURS OF EXPOSURE OR PRIOR TO ANY STORM EVENT. SEDIMENT BARRIERS (AS DESCRIBED IN PART 4 OF THIS SECTION) SHALL BE PLACED BETWEEN ANY NATURAL RESOURCE AND THE DISTURBED AREA. PROJECTS CROSSING THE NATURAL RESOURCE SHALL BE PROTECTED A MINIMUM DISTANCE OF 100 FEET ON EITHER SIDE FROM ANY RESOURCE. IF DISTURBANCE TAKES PLACE LESS THAN 30 FEET FROM A PROTECTED RESOURCE AND STORMWATER DISCHARGES THROUGH THE DISTURBED AREAS TO THE RESOURCE, PERIMETER EROSION CONTROLS MUST BE DOUBLED.

5. SEDIMENT BARRIERS:
   PRIOR TO THE BEGINNING OF ANY CONSTRUCTION, SEDIMENT BARRIERS SHALL BE STAKED ACROSS THE SLOPE(S), ON THE CONTOUR AT OR JUST BELOW THE LIMITS OF DISTURBANCE OR GRUBBING, AND/OR JUST ABOVE ANY ADJACENT PROPERTY LINE OR WATERCOURSE TO PROTECT AGAINST CONSTRUCTION RELATED EROSION. SEDIMENT BARRIERS SHALL BE MAINTAINED BY THE CONTRACTOR UNTIL ALL EXPOSED SLOPES HAVE AT LEAST 80%-90% VIGOROUS PERENNIAL VEGETATIVE COVER TO PREVENT EROSION.

   SILT FENCE: SHALL BE INSTALLED PER THE DETAIL ON THE PLANS. THE EFFECTIVE LENGTH OF THE FENCE SHALL NOT EXCEED 36 INCHES. IT IS RECOMMENDED THAT SILT FENCE BE REMOVED BY CUTTING THE FENCE MATERIALS AT GROUND LEVEL SO AS TO AVOID ADDITIONAL SOIL DISTURBANCE.

   HAY BALES: SHALL BE INSTALLED PER THE DETAIL ON THE PLANS. BALES SHALL BE WIRE-BOUND OR STRING-TIED AND THESE BINDINGS MUST REMAIN PARALLEL WITH THE GROUND SURFACE DURING INSTALLATION TO PREVENT DETERIORATION OF THE BINDINGS. BALES SHALL BE INSTALLED WITHIN A MINIMUM 4 INCH DEEP TRENCH LINE WITH ENDS OF ADJACENT BALES TIGHTLY ABUTTING ONE ANOTHER.

   EROSION CONTROL MIX: SHALL BE INSTALLED PER THE DETAIL ON THE PLANS. THE MIX SHALL CONSIST PRIMARILY OF ORGANIC MATERIAL AND CONTAIN A WELL-GRADED MIXTURE OF PARTICLE SIZES AND MAY CONTAIN ROCKS LESS THAN 4 INCHES IN DIAMETER. THE MIX COMPOSITION SHALL MEET THE STANDARDS DESCRIBED WITHIN THE MDEP BEST MANAGEMENT PRACTICES. NO TRENCHING IS REQUIRED FOR INSTALLATION OF THIS BARRIER.

   CONTINUOUS CONTAINED BERM: SHALL BE INSTALLED PER THE DETAIL ON THE PLANS. THIS SEDIMENT BARRIER IS EROSION CONTROL MIX PLACED WITHIN A SYNTHETIC TUBULAR NETTING AND PERFORMS AS A STURDY SEDIMENT BARRIER THAT WORKS WELL ON HARD-GROUND SUCH AS FROZEN CONDITIONS, TRAVELED AREAS OR PAVEMENT. NO TRENCHING IS REQUIRED FOR INSTALLATION OF THIS BARRIER.

6. TEMPORARY CHECK DAMS:
   SHALL BE INSTALLED PER THE DETAIL ON THE PLANS. CHECK DAMS ARE TO BE PLACED WITHIN DITCHES/ SWALES AS SPECIFIED ON THE DESIGN PLANS IMMEDIATELY AFTER FINAL GRADING. CHECK DAMS SHALL BE 2 FEET HIGH. TEMPORARY CHECK DAMS MAY BE REMOVED ONLY AFTER THE ROADWAYS ARE PAVED AND THE VEGETATED SWALE ARE ESTABLISHED WITH AT LEAST 85%-90% OF VIGOROUS PERENNIAL GROWTH. THE AREA BENEATH THE CHECK DAM MUST BE SEEDED AND MULCHED IMMEDIATELY AFTER REMOVAL OF THE CHECK DAM.

STONE CHECK DAMS: SHOULD BE CONSTRUCTED OF 2 TO 3 INCH STONE AND PLACED SUCH THAT COMPLETE COVERAGE OF THE SWALE IS OBTAINED AND THAT THE CENTER OF THE DAM IS 6 INCHES LOWER THAT THE OUTER EDGES.

HAY BALE CHECK DAMS: WE DO NOT RECOMMEND THE USE OF HAY BALES AS CHECK DAMS.

MANUFACTURED CHECK DAMS: MANUFACTURED CHECK DAMS, AS SPECIFIED IN THE DETAIL ON THE PLANS, MAY BE USED IF AUTHORIZED BY THE PROPER LOCAL STATE OR FEDERAL REGULATING AGENCIES. THESE UNITS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURE'S RECOMMENDATIONS.

1. STORMDRAIN INLET PROTECTION:
   INLET PROTECTION SHALL BE PLACED AROUND A STORMDRAIN DROP INLETOR CURB INLET PRIOR TO PERMANENT STABILIZATION OF THE IMMEDIATE AND UPSTREAM DISTURBED AREAS. THEY SHALL BE CONSTRUCTED IN A MANNER THAT WILL FACILITATE CLEAN-OUT AND DISPOSAL OF TRAPPED SEDIMENTS AND MINIMIZE INTERFERENCE WITH CONSTRUCTION ACTIVITIES. ANY RESULTANT PONDING OF WATER FROM THE PROTECTION METHOD MUST NOT CAUSE EXCESSIVE INCONVENIENCE OR DAMAGE TO ADJACENT AREAS OR STRUCTURES.

HAY BALE DROP INLET PROTECTION: WE DO NOT RECOMMEND THE USE OF HAY BALES AS INLET PROTECTION.

CONCRETE BLOCK AND STONE INLET SEDIMENT FILTER (DROP OR CURB INLET): SHALL BE INSTALLED PER THE DETAIL ON THE PLANS. THE HEIGHT OF THE CONCRETE BLOCK BARRIER CAN VARY BUT MUST BE BETWEEN 12 AND 24 INCHES TALL. A MINIMUM OF 1 INCH CRUSHED STONE SHALL BE USED.

MANUFACTURED SEDIMENT BARRIERS AND FILTER (DROP OR CURB INLET): MANUFACTURED FILTERS, AS SPECIFIED IN THE DETAIL ON THE PLANS, MAY BE USED IF INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

2. STABILIZED CONSTRUCTION EXIT:
   PRIOR TO CLEARING AND/OR GRUBBING THE SITE A STABILIZED CONSTRUCTION ENTRANCE/EXIT SHALL BE CONSTRUCTED WHEREVER TRAFFIC WILL EXIT THE CONSTRUCTION SITE ONTO A PAVED ROADWAY IN ORDER TO MINIMIZE THE TRACKING OF SEDIMENT AND DEBRIS FROM THE CONSTRUCTION SITE ONTO PUBLIC ROADWAYS. THE ENTRANCES AND ADJACENT ROADWAY AREAS SHALL BE PERIODICALLY SWEPT OR WASHED TO FURTHER MINIMIZE THE TRACKING OF MUD, DUST OR DEBRIS FROM THE CONSTRUCTION AREA. STABILIZED CONSTRUCTION EXITS SHALL BE CONSTRUCTED IN AREAS SPECIFIED ON THE PLANS AND AS DETAILED ON THE PLANS.

3. DUST CONTROL:
   DUST CONTROL DURING CONSTRUCTION SHALL BE ACHIEVED BY THE USE OF A WATERING TRUCK TO PERIODICALLY SPRINKLE THE EXPOSED ROADWAY AREAS AS NECESSARY TO REDUCE DUST DURING THE DRY MONTHS. APPLYING OTHER DUST CONTROL PRODUCTS SUCH AS CALCIUM CHLORIDE OR OTHER MANUFACTURED PRODUCTS ARE ALLOWED IF AUTHORIZED BY THE PROPER LOCAL STATE AND/OR FEDERAL REGULATING AGENCIES. HOWEVER, IT IS THE CONTRACTOR'S ULTIMATE RESPONSIBILITY TO MITIGATE DUST AND SOIL LOSS FROM THE SITE.

4. TEMPORARY VEGETATION:
   TEMPORARY VEGETATION SHALL BE APPLIED TO DISTURBED AREAS THAT WILL NOT RECEIVE FINAL GRADING FOR PERIODS UP TO 12 MONTHS. THIS PROCEDURE SHOULD BE USED EXTENSIVELY IN AREAS ADJACENT TO NATURAL RESOURCES. SEEDBED PREPARATION AND APPLICATION OF SEED SHALL BE CONSIDERED AS INDICATED IN THE PERMANENT VEGETATION SECTION OF THIS NARRATIVE. SPECIFIC SEEDS (FAST GROWING AND SHORT LIVING) SHALL BE SELECTED FROM THE MAINE EROSION AND SEDIMENT CONTROL BMP MANUAL DATED 3/2003 OR LATER. ALTERNATIVE EROSION CONTROL MEASURES SHOULD BE USED IF SEEDING CAN NOT BE DONE BEFORE SEPTEMBER 15TH OF THE CONSTRUCTION YEAR.

5. PERMANENT VEGETATION:
   REVEGETATION MEASURES SHALL COMMENCE IMMEDIATELY UPON COMPLETION OF FINAL GRADING OF AREAS TO BE LOAMED AND SEEDED. THE IMPROVEMENTS SHALL BE COMPLETED BETWEEN APRIL 1ST AND OCTOBER 1ST OF THE CONSTRUCTION YEAR. PLEASE REFER TO THE WINTER EROSION CONTROL NOTES FOR MORE DETAIL. REVEGETATION MEASURES SHALL CONSIST OF THE FOLLOWING:

SEEDBED PREPARATION:

A. FOUR (4) INCHES OF LOAM SHALL BE SPREAD OVER DISTURBED AREAS AND SMOOTHED TO A UNIFORM SURFACE. LOAM SHALL BE FREE OF SUBSOIL, CLAY LUMPS, STONES AND OTHER OBJECTS OVER 2 INCHES OR LARGER IN ANY DIMENSION, AND WITHOUT WEEDS, ROOTS OR OTHER OBJECTIONABLE MATERIAL.

B. SOILS TESTS SHALL BE TAKEN AT THE TIME OF SOIL STRIPPING TO DETERMINE FERTILIZATION REQUIREMENTS. SOILS TESTS SHALL BE TAKEN PROMPTLY AS TO NOT INTERFERE WITH THE 14-DAY LIMIT ON SOIL EXPOSURE. BASED UPON TEST RESULTS, SOIL AMENDMENTS SHALL BE INCORPORATED INTO THE SOIL PRIOR TO FINAL SEEDING. IN LIEU OF SOIL TESTS, SOIL AMENDMENTS MAY BE APPLIED AS FOLLOWS:

ITEM	APPLICATION RATE
10-20-20 FERTILIZER (N-P205-K20 OR EQUAL)	18.4 LBS /1,000 S.F.
GROUND LIMESTONE (50% CALCIUM & MAGNESIUM OXIDE)	138 LBS /1,000 S.F.

C. WORK LIME AND FERTILIZER INTO THE SOIL AS NEARLY AS PRACTICAL TO A DEPTH OF 4 INCHES WITH PROPER EQUIPMENT. ROLL THE AREA TO FIRM THE SEEDBED EXCEPT ON CLAY OR SILTY SOILS OR COARSE SAND.

APPLICATION OF SEED:

A. SEEDING: SHALL BE CONDUCTED BETWEEN APRIL 1ST AND OCTOBER 1ST OF THE CONSTRUCTION YEAR. GENERALLY A SEED MIXTURE MAY BE APPLIED AS FOLLOWS: (MDEP SEED MIX 2 IS DISPLAYED)

SEED TYPE	APPLICATION RATE
CREEPING RED FESCUE	0.45 LBS/1,000 S.F. (20 LBS/ACRE)
REDTOP	0.05 LBS/1,000 S.F. (2 LBS/ACRE)
TALL FESCUE	0.46 LBS/1,000 S.F. (20 LBS/ACRE)
TOTAL:	0.97 LBS/1,000 S.F. (42 LBS/ACRE)

NOTE: A SPECIFIC SEED MIXTURE SHOULD BE CHOSEN TO MATCH THE SOILS CONDITION OF THE SITE. VARIOUS AGENCIES CAN RECOMMEND NEW MIXTURES. MDEP RECOMMENDED SEED MIX URES ARE IN THE EROSION AND SEDIMENT CONTROL BMP MANUAL DATED 3/2003 OR LATER.

B. HYDROSEEDING: SHALL BE CONDUCTED ON PREPARED AREAS WITH SLOPES LESS THAN 2:1. LIME AND FERTILIZER MAY BE APPLIED SIMULTANEOUSLY WITH THE SEED. RECOMMENDED SEEDING RATES MUST BE INCREASED BY 10% WHEN HYDROSEEDING.

C. MULCHING: SHALL COMMENCE IMMEDIATELY AFTER SEED IS APPLIED. REFER TO THE TEMPORARY MULCHING SECTION OF THIS NARRATIVE FOR DETAILS.

SODDING:

FOLLOWING SEEDBED PREPARATION, SOD CAN BE APPLIED IN LIEU OF SEEDING IN AREAS WHERE IMMEDIATE VEGETATION IS MOST BENEFICIAL SUCH AS DITCHES AROUND STORMWATER DROP INLETS AND AREAS OF AESTHETIC VALUE. SOD SHOULD BE LAID AT RIGHT ANGLES TO THE DIRECTION OF FLOW, STARTING AT THE LOWEST POINT. SOD SHOULD BE ROLLED OR TAMPED DOWN TO EVEN OUT THE JOINTS ONCE LAID DOWN. WHERE FLOW IS PREVALENT THE SOD MUST BE PROPERLY ANCHORED DOWN. IRRIGATE THE SOD IMMEDIATELY AFTER INSTALLATION. IN MOST CASES, SOD CAN BE ESTABLISHED BETWEEN APRIL 1ST AND NOVEMBER 15TH OF THE CONSTRUCTION YEAR. REFER TO THE EROSION CONTROL NOTES FOR ANY ACTIVITIES AFTER OCTOBER 1ST.

TRENCH DEWATERING AND TEMPORARY STREAM DIVERSION:

WATER FROM CONSTRUCTION TRENCH DEWATERING OR TEMPORARY STREAM DIVERSION WILL PASS FIRST THROUGH A FILTER BAG OR SECONDARY CONTAINMENT STRUCTURE (E.G. HAY BALE LINED POOL) PRIOR TO DISCHARGE. THE DISCHARGE SITE SHALL BE SELECTED TO AVOID FLOWING AND SEDIMENTS FROM REACHING A PROTECTED RESOURCE. IN NO CASE SHALL THE FILTER BAG OR CONTAINMENT STRUCTURE BE LOCATED WITHIN 100 FEET OF A PROTECTED NATURAL RESOURCE.

STANDARDS FOR TIMELY STABILIZATION:

STANDARD FOR THE TIMELY STABILIZATION OF DISTURBED SLOPES: - THE CONTRACTOR WILL CONSTRUCT AND STABILIZE STONE-COVERED SLOPES BY NOVEMBER 15. THE CONTRACTOR WILL SEED AND MULCH ALL SLOPES TO BE VEGETATED BY SEPTEMBER 15. THE MDEP WILL CONSIDER ANY AREA HAVING A GRADE GREATER THAN 2:1 (50%) TO BE A SLOPE. IF THE CONTRACTOR FAILS TO STABILIZE ANY SLOPE TO BE VEGETATED BY SEPTEMBER 15, THEN THE CONTRACTOR WILL TAKE ONE OF THE FOLLOWING ACTIONS TO STABILIZE THE SLOPE FOR LATE FALL AND WINTER:

A. STABILIZE THE SOIL WITH TEMPORARY VEGETATION AND EROSION CONTROL MATS -- BY OCTOBER 1, THE CONTRACTOR WILL SEED THE DISTURBED SLOPE WITH WINTER RYE AT A SEEDING RATE OF 3 POUNDS PER 1000 SQUARE FEET AND APPLY EROSION CONTROL MATS OVER THE MULCHED SLOPE. THE CONTRACTOR WILL MONITOR GROWTH OF THE RYE OVER THE NEXT 30 DAYS. IF THE RYE FAILS TO GROW AT LEAST THREE INCHES OR COVER AT LEAST 75% OF THE DISTURBED SLOPE BY NOVEMBER 1, THEN THE APPLICANT WILL COVER THE SLOPE WITH A LAYER OF EROSION CONTROL MIX AS DESCRIBED IN ITEM 2(C) OF THIS STANDARD OR WITH STONE RIPRAP AS DESCRIBED IN ITEM 2(D.) OF THIS STANDARD.

B. STABILIZE THE SLOPE WITH SOD -- THE CONTRACTOR WILL STABILIZE THE DISTURBED SLOPE WITH PROPERLY INSTALLED SOD BY NOVEMBER 15. PROPER INSTALLATION INCLUDES THE APPLICANT 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. THE APPLICANT WILL NOT USE LATE-SEASON SOD INSTALLATION TO STABILIZE SLOPES HAVING A GRADE GREATER THAN 33% (3H:1V).

C. STABILIZE THE SLOPE WITH EROSION CONTROL MIX -- THE CONTRACTOR WILL PLACE A SIX-INCH LAYER OF EROSION CONTROL MIX ON THE SLOPE BY NOVEMBER 15. PRIOR TO PLACING THE EROSION CONTROL MIX, THE APPLICANT WILL REMOVE ANY SNOW ACCUMULATION ON THE DISTURBED SLOPE. DO NOT USE EROSION CONTROL MIX TO STABILIZE SLOPES HAVING GRADES GREATER THAN 1H:1V OR MAKING GROUNDWATER SEEPS ON THE SLOPE FACE.

D. STABILIZE THE SLOPE WITH STONE RIPRAP -- THE CONTRACTOR WILL PLACE A LAYER OF STONE RIPRAP ON THE SLOPE BY NOVEMBER 15. THE APPLICANT WILL HIRE A REGISTERED PROFESSIONAL ENGINEER TO DETERMINE THE STONE SIZE NEEDED FOR STABILITY AND TO DESIGN A FILTER LAYER FOR UNDERNEATH THE RIPRAP.

STANDARD FOR THE TIMELY STABILIZATION OF DISTURBED SOILS: - BY SEPTEMBER 15 THE CONTRACTOR WILL SEED AND MULCH ALL DISTURBED SOILS ON AREAS HAVING A SLOPE LESS THAN ONE. IF THE CONTRACTOR FAILS TO STABILIZE THESE SOILS BY THIS DATE, THEN THE CONTRACTOR WILL TAKE ONE OF THE FOLLOWING ACTIONS TO STABILIZE THE SOIL FOR LATE FALL AND WINTER:

A. STABILIZE THE SOIL WITH TEMPORARY VEGETATION -- BY OCTOBER 1 THE CONTRACTOR WILL SEED THE DISTURBED SOIL WITH WINTER RYE AT A SEEDING RATE OF 3 POUNDS PER 1000 SQUARE FEET, LIGHTLY MULCH THE SEEDED SOIL WITH HAY OR STRAW AT 75 POUNDS PER 1000 SQUARE FEET, AND ANCHOR THE MULCH WITH PLASTIC NETTING. THE APPLICANT WILL MONITOR GROWTH OF THE RYE OVER THE NEXT 30 DAYS. IF THE RYE FAILS TO GROW AT LEAST THREE INCHES OR COVER AT LEAST 75% OF THE DISTURBED SOIL BEFORE NOVEMBER 15, THEN THE APPLICANT WILL MULCH THE AREA FOR OVER-WINTER PROTECTION AS DESCRIBED IN ITEM 2(C.) OF THIS STANDARD.

B. STABILIZE THE SOIL WITH SOD -- THE APPLICANT WILL STABILIZE THE DISTURBED SOIL WITH PROPERLY INSTALLED SOD BY OCTOBER 1. PROPER INSTALLATION INCLUDES THE APPLICANT 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.

C. STABILIZE THE SOIL WITH MULCH -- BY NOVEMBER 15 THE APPLICANT WILL MULCH THE DISTURBED SOIL BY SPREADING HAY OR STRAW AT A RATE OF AT LEAST 150 POUNDS PER 1000 SQUARE FEET ON THE AREA SO THAT NO SOIL IS VISIBLE THROUGH THE MULCH. PRIOR TO APPLYING THE MULCH, THE APPLICANT WILL REMOVE ANY SNOW ACCUMULATION ON THE DISTURBED AREA. IMMEDIATELY AFTER APPLYING THE MULCH, THE APPLICANT WILL ANCHOR THE MULCH WITH PLASTIC NETTING TO PREVENT WIND FROM MOVING THE MULCH OFF THE DISTURBED SOIL.

D. STABILIZE THE SOIL WITH EROSION CONTROL MIX -- THE CONTRACTOR WILL PLACE A MINIMUM TWO-INCH LAYER OF EROSION CONTROL MIX ON THE SOIL BY NOVEMBER 15. PRIOR TO PLACING THE EROSION CONTROL MIX, THE APPLICANT WILL REMOVE ANY SNOW ACCUMULATION ON THE DISTURBED SLOPE.

CONSTRUCTION SCHEDULE:

SITE IMPROVEMENTS WILL MOST LIKELY BEGIN IN _____ DEPENDING UPON FINAL PROJECT APPROVAL. THE FOLLOWING SCHEDULE IS ANTICIPATED.

1.	ESTIMATED CONSTRUCTION TIME:	-- MONTHS
2.	EROSION CONTROL MEASURES PLACED	WEEK 1 - WEEK 2
3.	SITE CLEARING AND GRUBBING	WEEK 2 - WEEK 5
4.	CONSTRUCTION OF ROAD SUBBASE FOR ACCESS	WEEK 5 - WEEK 13
5.	STORMWATER MANAGEMENT AREA CONSTRUCTION	WEEK 7 - WEEK 9
6.	UTILITY IMPROVEMENTS AND ROADWAY CONSTRUCTION	WEEK 7 - WEEK 24
7.	MULCH SPREAD FOR EROSION CONTROL	--

SEBAGO
TECHNICS
CIVIL ENGINEERING • SURVEYING • LANDSCAPE ARCHITECTURE

CITY OF PORTLAND DELEGATED REVIEW

Maine Department of
Environmental Protection
38 M.R.S.A. §§ 481 to 490

SITE LOCATION OF DEVELOPMENT

Property Services Facility
250 Riverside Industrial Parkway, Portland

Prepared for:

Two Eisenhower Drive, LLC
PO Box 1120
Portland, Maine 04104

Prepared by:

Sebago Technics, Inc.
75 John Roberts Road, Suite 4A
South Portland, Maine 04106

September 2018

Table of Contents

Agency Letter
Corporate Status
Form A Application/Signature Page
Form D Submissions Checklist

Narratives and Attachments by Section

1. Development Description
Attachments:
USGS Site Location Map
Aerial Photograph
Plan Set (11x17)

2. Right, Title Interest
Attachments:
Deed

3. Financial Capactity
Attachments: Bank Letter

4. Technical Ability
Attachments:
Firm Bio and Key Personnel Resumes

5. Noise

6. Visual Quality & Scenic Character
Attachment:
Existing Conditions Site Photographs

7. Wildlife and Fisheries
Attachments:
MDIFW Site Review and Map
USFWS Species List
Wetland Report

8. Historic Sites
Attachments:
MHPC Response

9. Unusual Natural Areas
Attachments:
MNAP Response

10. Buffers

11. Soils
Attachments:
USDA Medium-Intensity Soils Map

12. Stormwater Management
Attachments:
Stormwater Management Report

13. Urban Impaired Streams

14. Basic Standards

15. Groundwater
Attachments:
Significant Sand & Gravel Aquifer Map
Surficial Geology Map
Bedrock Geology Map

16. Water Supply

17. Wastewater Disposal

18. Solid Waste

19. Flooding

20. Blasting

21. – 24. Air Emissions, Odors, Water Vapor, Sunlight

Other Attachments: Full size plans, individually folded

AGENT AUTHORIZATION

APPLICANT/ OWNER	**Name**	Two Eisenhower Drive LLC		
PROPERTY DESCRIPTION	**Physical Address**	250 Riverside Industrial Parkway Portland, Maine 04103	**Map**	330A
			Lots	B-1, B-4, B-11
APPLICANT'S AGENT INFORMATION	**Name**	Shawn M. Frank, P.E.		
	Phone	(207) 200-2062	**Business Name & Mailing Address**	Sebago Technics, Inc. 75 John Roberts Road, Suite 4A South Portland, Maine 04106
		Project Manager		

APPLICANT SIGNATURE DATE

8/5/18

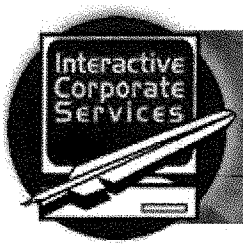
David Machesney, Representative
Two Eisenhower Drive, LLC

PLEASE TYPE OR PRINT NAME HERE

APPLICANT'S AGENT SIGNATURE DATE

PLEASE TYPE OR PRINT NAME HERE

Interactive Corporate Services



MAINE

Department of the Secretary of State

Bureau of Corporations, Elections and Commissions

Corporate Name Search

Information Summary

Subscriber activity report

This record contains information from the CEC database and is accurate as of: Thu Jun 28 2018 15:59:30. Please print or save for your records.

Legal Name	Charter Number	Filing Type	Status
TWO EISENHOWER DRIVE, LLC	20021106DC	LIMITED LIABILITY COMPANY (DOMESTIC)	GOOD STANDING

Filing Date	Expiration Date	Jurisdiction
02/14/2002	N/A	MAINE

Other Names **(A=Assumed ; F=Former)**

NONE

Clerk/Registered Agent

GARY D. VOGEL
84 MARGINAL WAY, SUITE 600

PORTLAND, ME 04101 2480

Department of Environmental Protection
Bureau of Land & Water Quality
17 State House Station
Augusta, Maine 04333
Telephone: 207-287-3901

FOR DEP USE
ATS # _____
L-_____
Total Fees: _____
Date: Received _____

FORM A PAGE 1

****

SITE LOCATION OF DEVELOPMENT PERMIT APPLICATION 38 M.R.SA. §§481-490

PLEASE TYPE OR PRINT IN *INK ONLY*

This application is for: (CHECK THE ONE THAT APPLIES)	☐ 20 acre development ☐ Planning Permit ☐ Metallic Mining	☐ Marine Oil Terminal ☐ Structure ☐ Subdivision	☐ Major Amendment ☐ Minor Amendment

1. Name of Applicant:	Two Eisenhower Drive, LLC c/o David Machesney	**6. Name of Agent (if applicable):**	Shawn M. Frank, P.E. Sebago Technics, Inc.
2. Applicant's Mailing Address:	PO Box 1120 Portland, ME 04104	**7. Agent's Mailing Address:**	75 John Roberts Road, Suite 4A S. Portland, ME 04106
3. Applicant's Daytime Phone #:	(207) 854-5056	**8. Agent's Daytime Phone # :**	(207) 200-2062
4. Applicant's Fax # (if available):		**9. Agent's Fax # (if available):**	(207) 856-2206
5. Applicant's *e-mail address* (REQUIRED -license will be sent via: e-mail):	dmachesney@prattabbott.com	**10. Agent's *e-mail address* (REQUIRED - license will be sent via e-mail):**	sfrank@sebagotechnics.com

PROJECT INFORMATION

11. Name of Development:	250 Riverside Industrial Parkway						
12. Map and Lot #'s:	**Map #:** 330A	**Lot #:** B-1,B-4	**13. Deed Reference #'s:**		**Book #:** 32031	**Page #:** 39	
14. Location of Project City/Town:	Portland B-11	**15. County:**	Cumberland	**16. UTM Northing**	4839926	**17. UTM Easting**	394595
18. Brief Description of Project including total parcel size:	Development of a 12.4+/- Ac. undeveloped property which is p/o the Greater Portland Building Fund, Riverside Industrial Park (Lots 2 and A), CCRD 07/08/1975. The site will be developed for use as a property services business and includes a 11,200 sf footprint building, fleet and employee parking, entry drive, materials storage area, stormwater management features and other associated site improvements.						

19. Type of Direct Watershed: (Check all that apply)	☐ Lake not most at risk	☒ River, stream or brook	☐ Coastal wetland
	☐ Lake most at risk	☒ Urban impaired stream	☐ Wellhead or public water
	☐ Lake most at risk, severely blooming	☒ Freshwater wetland	

20. Name of Waterbody Project Site drains to:			
21. Amount of Developed Area:	Total acres: 5.03	Existing Developed area: 0.28 acres	New Developed area: ____ acres
22. Amount of Impervious Area:	Total acres: 3.36	Existing Impervious areas 0.28 acres	New Impervious area: 3.08 acres

23. Development started prior to obtaining a license?:	☐ Yes ☒ No		
24. .Development or any portion of the site subject to enforcement action?	☐ Yes ☒ No	**If yes**, name of enforcement staff involved?	
25. Common scheme of development?:	☐ Yes ☒ No	**26. Title, Right or Interest:**	☒ own ☐ lease ☐ purchase option ☐ written agreement
27. Natural Resources Protection Act permit required?:	☒ Yes ☐ No	**If yes:** ☒ PBR	☒ Tier 1 ☐ Full Permit ☐ Tier 2
28. Existing DEP Permit number (if applicable):	n/a		
29. Names of DEP staff person(s) present at the pre-application meeting:	City of Portland Delegated Review, Barbara Barhydt		
30. Does agent have an interest in project? If yes, what is the interest?	☐ Yes ☒ No		

CERTIFICATIONS AND SIGNATURES LOCATED ON PAGE 2

IMPORTANT: IF THE SIGNATURE BELOW IS NOT THE APPLICANT'S SIGNATURE, ATTACH LETTER OF AGENT AUTHORIZATION SIGNED BY THE APPLICANT.

By signing below the applicant (or authorized agent), certifies that he or she has read and understood the following :

CERTIFICATIONS / SIGNATURES

"I certify under penalty of law that I have personally examined the information submitted in this document and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the information is true, accurate, and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment. I authorize the Department to enter the property that is the subject of this application, at reasonable hours, including buildings, structures or conveyances on the property, to determine the accuracy of any information provided herein.

Further, I hereby authorize the DEP to send me an electronically signed decision on the license I am applying for with this application by emailing the decision to the electronic address located on the front page of this application (see #5 for the applicant and #10 for the agent)".

Signed: [signature] **Title** MGR. **Date:** 9/05/18

Notice of Intent to Comply with Maine Construction General Permit	**With this Site Law application form and my signature, I am filing notice of my intent to carry out work which meets the requirements of the Maine Construction General Permit (MCGP). I have read and will comply with all of the MCGP standards.** **If this form is not being signed by the landowner or lessee of the property, attach documentation showing authorization to sign.** **Signed** [signature] MGR. **Date:** 09/05/18

NOTE: You must file a MCGP Notice of Termination (Form K) within 20 days of completing permanent stabilization of the project site.

CERTIFICATION

The person responsible for preparing this application and/or attaching pertinent site and design information hereto, by signing below, certifies that the application for development approval is complete and accurate to the best of his/her knowledge.

Signature: [signature]

Name (print): Shawn M. Frank

Date: 09/12/2018

Re/Cert/Lic No.:

Engineer Shawn M. Frank, #6396 ME

Geologist

Soil Scientist

Land Surveyor

Site Evaluator

Active Member of the Maine Bar

Professional Landscape Architect

Other

FORM D

SUBMISSIONS CHECKLIST

If a provision is not applicable, put "NA"

Section 1. Development description

- A. Narrative
  - 1. Objectives and details
  - 2. Existing facilities (with dates of construction)
- B. Topographic map
  - 1. Location of development boundaries
  - 2. Quadrangle name
- C. Construction plan
  - 1. Outline of construction sequence (major aspects)
  - 2. Dates
- D. Drawings
  - 1. Development facilities
    - a. Location, function and ground area
    - b. Length/cross-sections for roads
  - 2. Site work (nature and extent)
  - 3. Existing facilities (location, function ground area and floor area)
  - 4. Topography
    - a. Pre- and post-development (contours 2 ft or less)
    - b. Previous construction, facilities and lot lines

Section 2. Title, right or interest (copy of document)

Section 3. Financial capacity

- A. Estimated costs
- B. Financing
  - 1. Letter of commitment to fund
  - 2. Self-financing
    - a. Annual report
    - b. Bank statement
  - 3. Other
    - a. Cash equity commitment
    - b. Financial plan
    - c. Letter
  - 4. Affordable housing information

Section 4. Technical ability (description)

- A. Prior experience (statement)
- B. Personnel (documents)

Section 5. Noise

- A. Developments producing a minor noise impact (statement)
  - 1. Residential developments
  - 2. Certain non-residential subdivisions
  - 3. Schools and hospitals
  - 4. Other developments
    - a. Type, source and location of noise
    - b. Uses, zoning and plans
    - c. Protected locations
    - d. Minor nature of impact

e. Demonstration

n/a B. Developments producing a major noise impact (full noise study)

1. Baseline
   a. Uses, zoning and plans
   b. Protected locations
   c. Quiet area
2. Noise generated by the development
   a. Type, source and location of noise
   b. Sound levels
   c. Control measures
   d. Comparison with regulatory limits
   e. Comparison with local limits

X **Section 6. Visual quality and scenic character**(narrative, description, visual impact analysis)

X **Section 7. Wildlife and fisheries** (narrative)

X **Section 8. Historic sites** (narrative)

X **Section 9. Unusual natural areas** (narrative)

Section 10. Buffers

X A. Site plan and narrative

Section 11. Soils

X A. Soil survey map and report -See Section 12
   1. Soil investigation narrative
   2. Soil survey map

B. Soil survey intensity level by development type
   1. Class A (High Intensity) Soil Survey
   2. Class B (High Intensity) Soil Survey
   3. Class C (Medium High-Intensity) Soil Survey
   4. Class D (Medium Intensity) Soil Survey

C. Geotechnical Investigation

X D. Hydric soils mapping -See Existing Conditions Plan

Section 12. Stormwater management

X A. Narrative
   1. Development location
   2. Surface water on or abutting the site
   3. Downstream ponds and lakes
   4. General topography
   5. Flooding
   6. Alterations to natural drainage ways
   7. Alterations to land cover
   8. Modeling assumptions
   9. Basic standard
   10. Flooding standard
   11. General standard
   12. Parcel size
   13. Developed area
   14. Disturbed area
   15. Impervious area

X B. Maps
   1. U.S.G.S. map with site boundaries
   2. S.C.S. soils map with site boundaries

X C. Drainage Plans (a pre-development plan and a post-development plan)

1. Contours
2. Plan elements
3. Land cover types and boundaries
4. Soil group boundaries
5. Stormwater quantity subwatershed boundaries
6. Stormwater quality subwatershed boundaries
7. Watershed analysis points
8. Hydrologic flow lines (w/flow types and flow lengths labeled)
9. Runoff storage areas
10. Roads and drives
11. Buildings, parking lots, and other facilities
12. Drainage system layout for storm drains, catch basins, and culverts
13. Natural and man-made open drainage channels
14. Wetlands
15. Flooded areas
16. Benchmark
17. Stormwater detention, retention, and infiltration facilities
18. Stormwater treatment facilities
19. Drainage easements
20. Identify reaches, ponds, and subwatersheds matching stormwater model
21. Buffers

D. Runoff analysis (pre-development and post development)
1. Curve number computations
2. Time of concentration calculations
3. Travel time calculations
4. Peak discharge calculations
5. Reservoir routing calculations

E. Flooding Standard
1. Variance submissions (if applicable)
   a. Submissions for discharge to the ocean, great pond, or major river
      i. Map
      ii. Drainage plan
      iii. Drainage system design
      iv. Outfall design
      v. Easements
   b. Insignificant increase
      i. Downstream impacts
   c. Submissions for discharge to a public stormwater system
      i. Letter of permission
      ii. Proof of capacity
      ii. Outfall analysis and design (pictures)
2. Sizing of storm drains and culverts
3. Stormwater ponds and basins
   a. Impoundment sizing calculations
   b. Inlet calculations
   c. Outlet calculations
   d. Emergency spillway calculations
   e. Subsurface investigation report
   f. Embankment specifications
   g. Embankment seepage controls
   h. Outlet seepage controls
   i. Detail sheet
   j. Basin cross sections
   k. Basin plan sheet
4. Infiltration systems
   a. Well locations map
   b. Sand and gravel aquifer map
   c. Subsurface investigation report with test pit or boring logs

d. Permeability analysis
e. Infiltration structure design
f. Pollutant generation and transport analysis
g. Monitoring and operations plan
i. Locations of storage points of potential contaminants
ii. Locations of observation wells and infiltration monitoring plan
iii. Groundwater quality monitoring plan

n/a 5. Drainage easement declarations.

F. Stormwater quality treatment plan peak discharge calculations

1. Basic stabilization plan
a. Ditches, swales, and other open channel stabilization
b. Culvert and storm-drain outfall stabilization
c. Earthen slope and embankment stabilization
d. Disturbed area stabilization
e. Gravel roads and drives stabilization

X 2. General Standard
a. Calculations for sizing BMP
b. Impervious area calculation
c. Developed area calculation
d. Summary spreadsheet of calculations

3. Phosphorus control plan
a. Calculations for the site's allowable phosphorus export
b. Calculations for determining the developed site's phosphorus export
c. Calculations for determining any phosphorus compensation fees

4. Offset Credits
a. Urban impaired stream
Offset credit calculation

n/a b. Phosphorus credit determination
i. Location map
ii. Scaled plan
iii. Title and right
iv. Demolition plan
v. Vegetation plan
vi. Offset credit calculation
vii. Calculation for the new allowable export

X 5. Runoff treatment measures
a. structural measures
i. Design drawings and specifications
ii. Design calculations
iii. Maintenance plan
iv. TSS removal or phosphorus treatment factor determinations
v. Stabilization plan
b. Vegetated buffers
i. Soil survey
ii. Buffer plan
iii. Turnout and level spreader designs
iv. Deed restrictions

6. Control plan for thermal impacts to coldwater fisheries

X 7. Control plan for other pollutants

X 8. Engineering inspection of stormwater management facilities

G. Maintenance of common facilities or property

1. Components of the maintenance plan
A. Maintenance of facilities by owner or operator
1. Site owner or operator (name legally responsible party)
2. Contact person responsible for maintenance
3. Transfer mechanism

4. List of facilities to be maintained
5. List of inspection and maintenance tasks for each facility
6. Identifications of any deed covenants, easements, or restrictions
7. Sample maintenance log
8. Copies of any third-party maintenance contracts

n/a B. Maintenance of facilities by homeowner's association
1. Incorporation documents for the association
2. Membership criteria
3. Association officer responsible for maintenance
4. Establishment of fee assessment for maintenance work
5. Establishment of lien system
6. Reference to department order(s) in association charter
7. Transfer mechanism from developer to association
8. List of facilities to be maintained
9. Identification of any deed covenants, easements, or restrictions
10. Renewal of covenants and leases
11. List of inspection and maintenance tasks for each facility
12. Sample maintenance log
13. Copies of any third-party maintenance contracts

n/a C. Maintenance of facilities by municipality or municipal district
1. Identification of the municipal department or utility district
2. Contact person responsible for maintenance
3. Evidence of acceptance of maintenance responsibility
4. Transfer mechanism from developer
5. List of facilities to be maintained
6. List of inspection and maintenance tasks for each facility
7. Identifications of any deed covenants, easements, or restrictions
8. Sample maintenance log

X 2. General inspection and maintenance requirements
a. Drainage easements
b. Ditches, culverts, and catch-basin systems
c. Roadways and parking surfaces
d. Stormwater detention and retention facilities
1. Embankment inspection and maintenance
2. Outlet inspection and clean-out
3. Spillway maintenance
4. Sediment removal and disposal
e. Stormwater infiltration facilities
1. Sediment protection plan
2. Infiltration rehabilitation plan
3. Sediment removal and disposal
4. Groundwater monitoring plan
f. Proprietary treatment devices
g. Buffers
h. Other practices and measures

Section 13. Urban Impaired Stream Submissions

1. Off-site credits
2. Compensation fees (Urban Impaired Stream/Phosphorus)
3. Development impacts

Section 14. Basic Standards

X A. Narrative
1. Soil types
2. Existing erosion problems
3. Critical areas
4. Protected natural resources
5. Erosion control measures

6. Site stabilization

B. Implementation schedule

C. Erosion and sediment control plan
   1. Pre-development and post-development contours
   2. Plan scale and elements
   3. Land cover types and boundaries
   4. Existing erosion problems
   5. Critical areas
   6. Protected natural resources
   7. Locations (general)
   8. Locations of controls
   9. Disturbed areas
   10. Stabilized construction entrance

D. Details and specifications (for both temporary and permanent measures)

E. Design calculations

F. Stabilization plan
   1. Temporary seeding
   2. Permanent seeding
   3. Sodding
   4. Temporary mulching
   5. Permanent mulching

G. Winter construction plan
   1. Dormant seeding
   2. Winter mulching

n/a

H. Third-party inspections
   1. Inspector's name, address, and telephone number
   2. Inspector's qualifications
   3. Inspection schedule
   4. Contractor contact
   5. Reporting protocol

Section 15. Groundwater

X

A. Narrative
   1. Location and maps
   2. Quantity
   3. Sources
   4. Measures to prevent degradation

B. Groundwater protection plan

n/a

C. Monitoring plan
   1. Monitoring points
   2. Monitoring frequency
   3. Background conditions
   4. Monitoring parameters
   5. Personnel qualifications
   6. Proof of training
   7. Equipment and methods
   8. Quality assurance/quality control
   9. Reporting requirements
   10. Remedial action plan

n/a

D. Monitoring well installation report
   1. Well location map
   2. Elevation data
   3. Well installation data
   4. Well construction details
   5. Borehole logs
   6. Summary of depth measurements
   7. Characteristics of subsurface strata
   8. Well installation contract

9. Schematic cross-sections
10. Monitoring point summary table
11. Protective casing
12. On-site well identification

Section 16. Water supply

X A. Water supply method
1. Individual wells (evidence of sufficient/healthful supply)
a. Support of findings by well drillers
b. Support of findings by geologist
2. Common well(s) (reports)
a. Hydrogeology report
b. Engineering report
c. Well installation report
d. Long-term safe yield and zone of influence determination
e. Public water supply
i. Proposed well or wells
ii. Existing well or wells
iii. Water quality analysis
3. Well construction in shallow-to-bedrock areas
4. Additional information
X 5. Off-site utility company or public agency
6. Other sources

B. Subsurface wastewater disposal systems (locations of systems and wells)
C. Total usage (statement re: total anticipated water usage)

Section 17. Wastewater disposal

n/a A. On-site subsurface wastewater disposal systems (investigation results)
1. Site plan
2. Soil conditions summary table
3. Logs of subsurface explorations
4. Additional test pits, borings or probes
a. Soil conditions A
b. Soils with Profiles 8 and 9 parent material
c. Soil conditions D
d. Disposal field length 60 feet or greater
5. 3-bedroom design
6. Larger disposal systems
a. System design details
b. Plan view
c. Cross sections
d. Test pit data
e. Mounding analysis

B. Nitrate-nitrogen impact assessment
1. When required
a. Exempted____
i. Conventional systems meeting certain setbacks
ii. Denitrification systems
b. Special conditions and other exemptions
2. Assumptions
a. Initial concentration
b. Background concentration
c. Contribution from development
d. Mixing and dilution
e. Severe-drought scenario
f. Wastewater flow to subsurface wastewater disposal fields

3. Assessment report minimum requirements
    a. Narrative and calculations
    b. Site plan
        i. Well locations
        ii. 10 mg/l and 8 mg/l isocons
        iii. Groundwater contours and groundwater flow divides
    c. References
4. Denitrification systems
    a. Design plans and specifications
    b. Installation information
    c. Monitoring plan
    d. Maintenance
    e. Backup system

X D. Municipal facility or utility company letter

n/a E. Storage or treatment lagoons

X **Section 18. Solid waste** (list: type, quantity, method of collection and location)

A. Commercial solid waste facility (final disposal location)

B. Off-site disposal of construction/demolition debris (final disposal location)

C. On-site disposal of woodwaste/land clearing debris

1. Applicability of rules (evidence re: applicability of rules)
2. Burning of wood wastes
    a. Delineation on site plan
    b. Plans for handling unburned woodwaste and woodash
    c. Evidence of capacity to accept waste (approved facility)
    d. Usage of materials
    e. Data on mixing ratios and application rates

D. Special or Hazardous Waste

Section 19. Flooding

X A. Explanation of flooding impact

n/a B. Site plan showing 100-year flood elevation

n/a C. Hydrology analysis

X D. FEMA flood zone map with site boundaries

Section 20. Blasting

A. Site Plan or map

X B. Report
1. Assessment
2. Blasting plan

Section 21. Air emissions (narrative and summary)

n/a A. Point and non-point sources identified

B. Emission components (point sources)

Section 22. Odors

n/a A. Identification of nature/source

B. Estimate of areas affected

C. Methods of control)

n/a **Section 23. Water vapor** (narrative)

n/a **Section 24. Sunlight** (statement and drawing, if required)

Section 25. Notices

X A. Evidence that notice sent

X B. List of abutters for purposes of notice

Section 1

Development Description

Section 1: Development Description

A. Narrative

The project site is located in the City of Portland's Riverton area between Riverside Street and the Maine Turnpike (I-95) with street frontage on Riverside Industrial Parkway. The proposed new entry drive is located approximately 400 feet north of Milliken Drive on the opposite side of the street. This location is opportune for the project given its size and IM Zoning. The project site is approximately 12.4 acres in size and has access to Riverside Industrial Parkway. The project site is shown as Lots 2 and A on a recorded plan entitled *Greater Portland Building Fund, Composite Plan, Riverside Industrial Park by H.I. & E.C. Jordan*, CCRD 07/09/1975

The parcel is primarily wooded and undeveloped with the exception of an existing parking lot and adjacent cleared area. The existing parking lot benefits the neighboring business that is under the same ownership. The portion of the site to be developed generally has flatter topography with an unnamed stream that runs approximately parallel to the northeasterly property line. The development area also contains mapped freshwater wetland area, a portion of which, will be impacted by the proposed site development.

The development program includes a new entry drive from Riverside Industrial Parkway to the building site that will provide employee parking, a large circulation area for fleet vehicles and trailers, deliveries and 14,720 square-foot +/- building (11,200 square-foot footprint). The site will have a private fueling area, landscape materials storage employee and fleet parking. Additionally, the site will include dedicated snow storage area and a series of under-drained soil filters for stormwater management. In total the disturbed area for development area is approximately 5.15 acres.

A Maine Construction General Permit Application (MCGP) that is p/o of the SLODA review DEP application, Tier 1 Natural Resourced Protection Act Permit (NRPA) for ~~7,448~~ 6,849.5 sf of wetland alteration and NRPA Permit by Rule (PBR) for the entry drive stream crossing and adjacency for drive construction. In addition, a U.S. Army Corp of Engineers permit is required for wetland impact and the stream crossing. These applications will be reviewed concurrently with City of Portland Level III Site review application.

A stormwater management plan has been prepared to include treatment of runoff to meet Maine DEP and City of Portland requirements. Stormwater from the developed area will be treated through a series of under-drained soil filters. The site has been designed to comply with General, Basic, Flooding and the Urban Impaired Stream Standards of MDEP Ch. 500 Stormwater. Erosion controls will be installed to protect resources as shown on the enclosed site plans showing placement, a written ESC Plan and details.

The applicant is hopeful to complete the permitting process through the City and Maine DEP by late summer to allow for early autumn start in 2018 and completion in 2019.

B. Topographic map

Reference is made to the enclosed USGS Site Location Map and Aerial Photograph, this section.

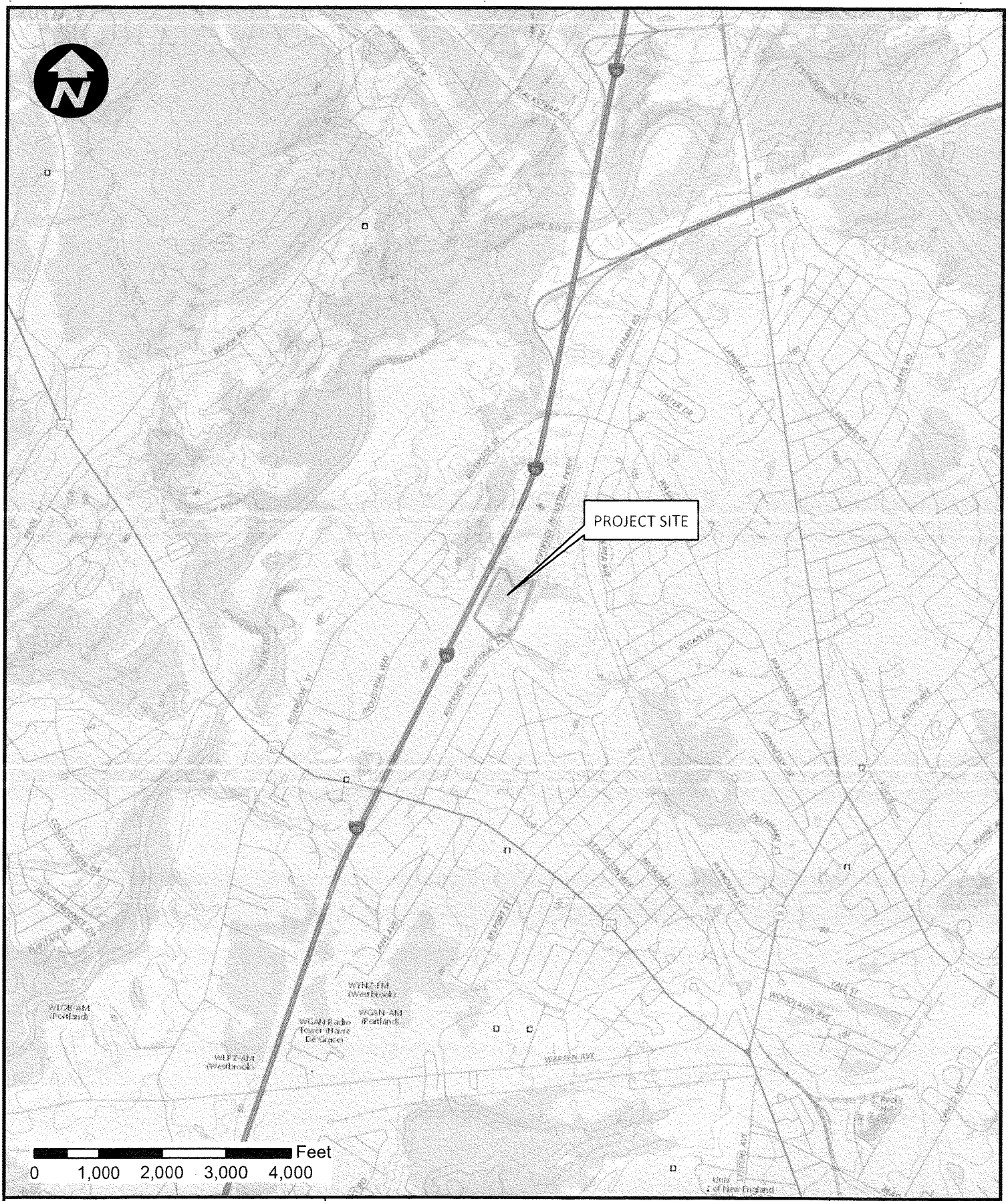
C. Construction Plan

Anticipated schedule late autumn 2018 through May 2019.

Estimated construction time: ---------- 32 Weeks (8 Months)
Erosion Control Measures Placed: ---------- Week 1
Site clearing and grubbing ---------- Weeks 2-6
Construction of drive subbase for access ---------- Weeks 3-5
Stream Crossing ---------- Week 3
Stormwater management construction ---------- Weeks 4 – 12
Utility Improvements and access drive construction ----- Weeks 4 – Week 6
Road base and asphalt binder coarse (prior to plant shutdown) Weeks 6- 8
Final entry drive paving ---------- Week 22
Final yard grading and compaction ---------- Week 20-22
Start final seeding on prepared areas ---------- Week 24
Biweekly monitoring of vegetative growth ---------- Week 26
Re-seeding of areas, if needed ---------- Week 26-32
Removal of erosion control devices ---------- Upon Final Project Completion

D. Drawings

Refer to 11x17 Site Plans, this section and the appended folded full-size plans.



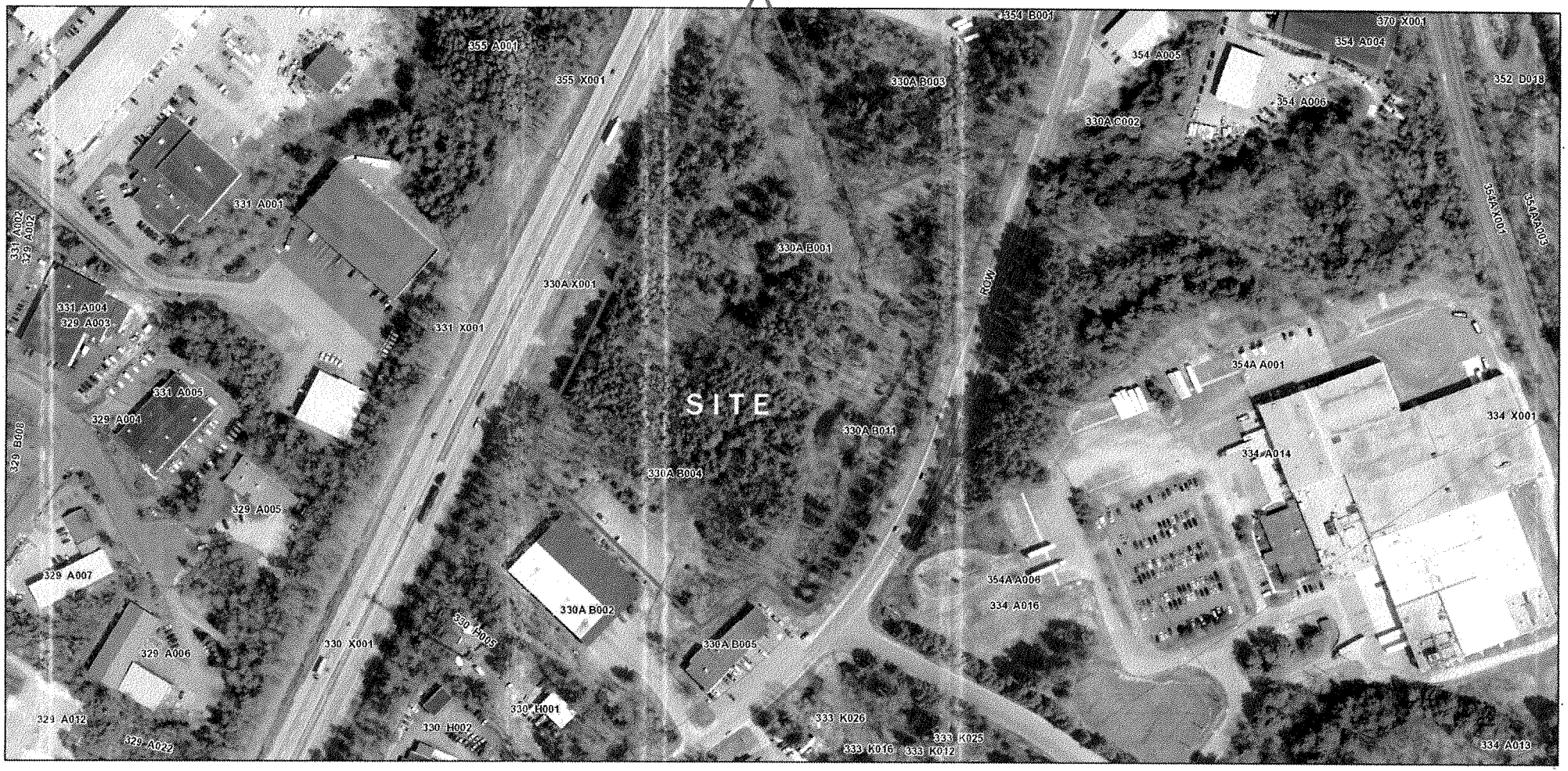
SEBAGO TECHNICS

WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd. - Suite 1A
South Portland, ME 04106
Tel. 207-200-2100

TITLE FOR:	SITE LOCATION MAP TWO EISENHOWER DRIVE, LLC	SCALE:	1 " = 2,000 '
		DATE:	06/20/2018
LOCATION:	250 Riverside Industrial Parkway Portland, ME 04103	INFORMATION:	USGS Quadrangle: Portland West

16360_LocationMap.mxd

PROJECT NUMBER: 16360



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Parcels

Portland_Photos_2015

Red: Band_1

Green: Band_2

Blue: Band_3

1:2,178

0 140 280 560 ft

0 40 80 160 m

City of Portland, DPS

Web AppBuilder for ArcGIS
City of Portland, Maine

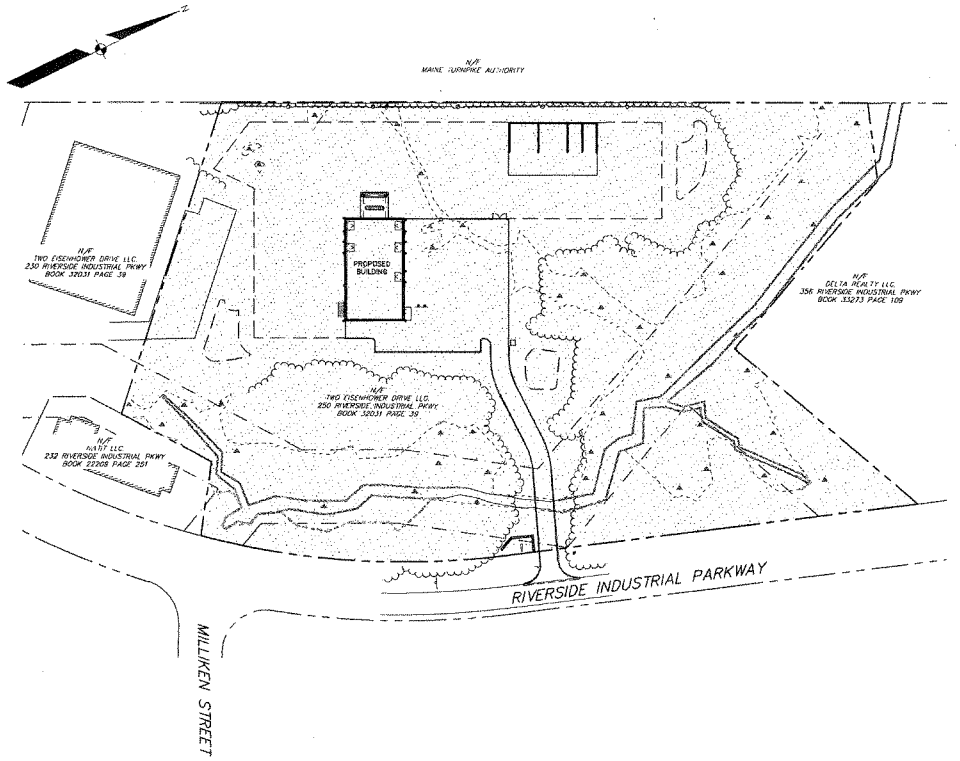
250 RIVERSIDE INDUSTRIAL PARKWAY

RIVERSIDE INDUSTRIAL PARKWAY
PORTLAND, MAINE

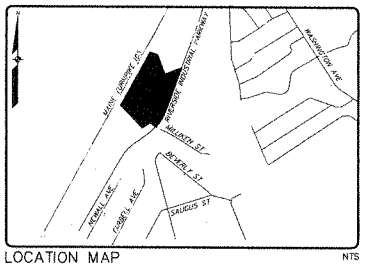
OWNER/APPLICANT:
TWO EISENHOWER DRIVE, LLC
P.O. BOX 1120
PORTLAND, MAINE 04104

ENGINEER/SURVEYOR/
LANDSCAPE ARCHITECT:

SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd
Suite 4A
South Portland, ME 04106
Tel. 207-200-2100



SCALE: 1" = 80'

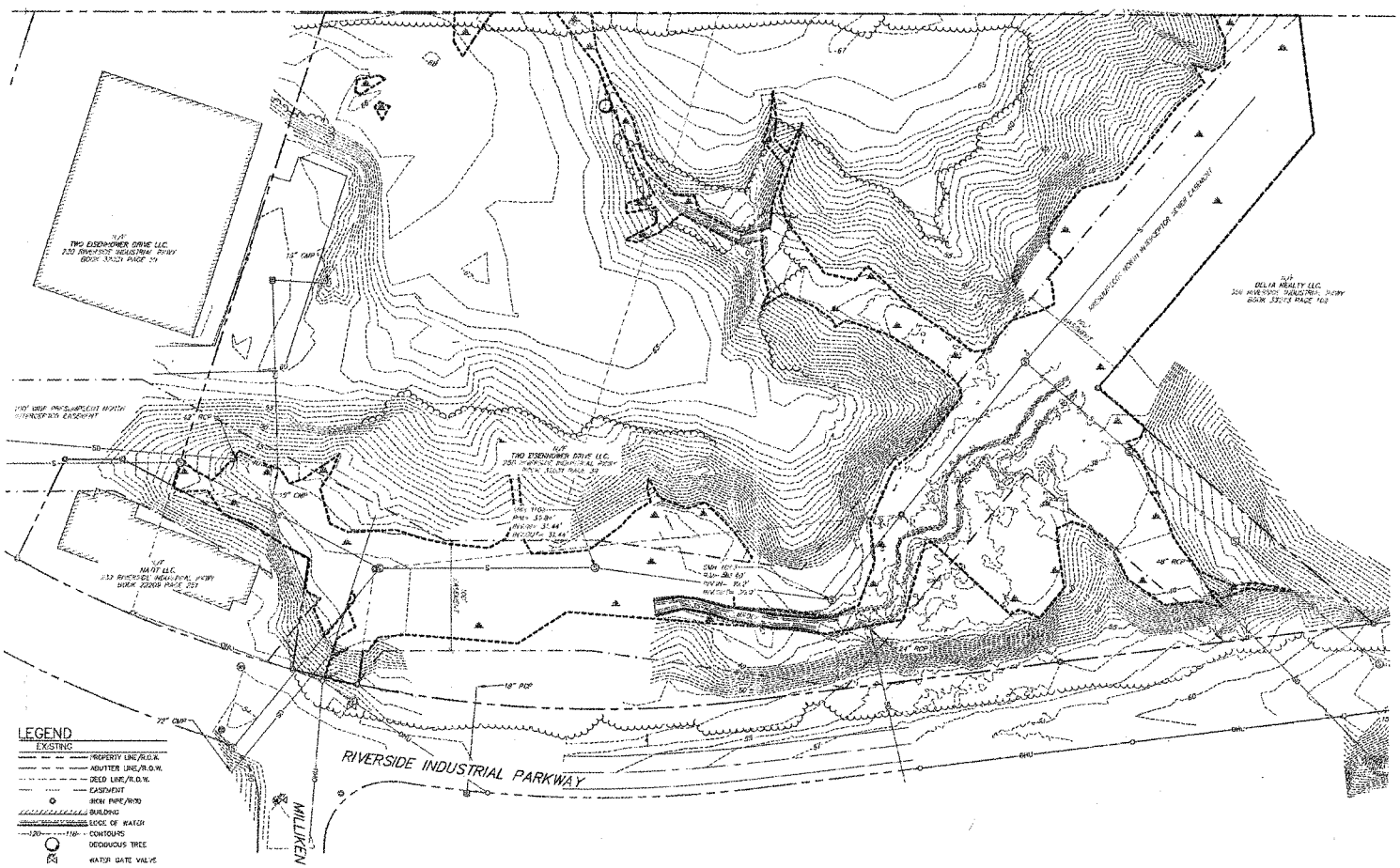


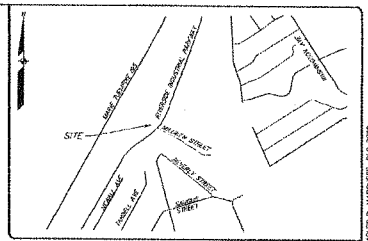
LOCATION MAP NTS

SHEET INDEX

SHEET	DESCRIPTION
1	COVER SHEET
2	EXISTING CONDITIONS PLAN
3	SITE PLAN
4	UTILITY PLAN
5	GRADING AND EROSION CONTROL PLAN
6	POND CONSTRUCTION PLANS
7	DETAILS
8	DETAILS
9	DETAILS
10	LANDSCAPING PLAN
11	PRE-DEVELOPMENT WATERSHED PLAN
12	POST-DEVELOPMENT WATERSHED PLAN

REVISED THROUGH 8-27-18





LOCATION MAP N.T.S.

GENERAL NOTES:

1. THE RECORD OWNER OF THE PARCEL IS TWO EISENHOWER DRIVE LLC., BY DEED DATED JANUARY 16, 2015 AND RECORDED AT THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN BOOK 32531, PAGE 39.
2. THE PROPERTY IS SHOWN AS LOT 2001 ON THE CITY OF PORTLAND TAX MAP 330A AND IS LOCATED IN THE IM DISTRICT.
3. SPACE AND BULK CRITERIA FOR THE IM DISTRICT ARE AS FOLLOWS:

NET RESIDENTIAL DENSITY:	
MINIMUM LOT SIZE:	10,000 SQ. FT.
MINIMUM STREET FRONTAGE:	50 FT.
MINIMUM FRONT YARD:	1 FT. PER 1FT. HEIGHT OF BUILDING (MAX 25 FT.)
MINIMUM SIDE YARD:	1 FT PER 1FT. HEIGHT OF BUILDING (MAX 25 FT.)
MINIMUM REAR YARD:	1 FT. PER 1FT. HEIGHT OF BUILDING (MAX 25 FT.)
MAXIMUM BUILDING HEIGHT:	75 FT.
MAXIMUM IMPERVIOUS RATIO:	75%

* SEE ORDINANCE FOR MORE PARTICULAR INFORMATION.

4. TOTAL AREA OF PARCEL IS APPROXIMATELY 12.4 ACRES.
5. NO INDEPENDENT BOUNDARY RETRACEMENT SURVEY WAS PERFORMED BY SEBAGO TECHNICS, INC. BOUNDARY INFORMATION SHOWN IS BASED SOLELY UPON INFORMATION FROM PLAN REFERENCE 7A.
6. TOPOGRAPHIC INFORMATION SHOWN HEREON IS BASED UPON FIELD WORK PERFORMED BY SEBAGO TECHNICS, INC. ON MARCH 20, 2018 AND IN PART FROM A WORKSHEET PROVIDED BY NORTHEAST CIV. SOLUTIONS.
7. PLAN REFERENCES:
   A. CONCEPTUAL SITE PLAN FOR COMMERCIAL/INDUSTRIAL DEVELOPMENT FOR RECORD OWNER R.M. DAMS INC C/O ARTHUR DONOVAN" PREPARED BY NORTHEAST CIVIL SOLUTIONS, DATED JULY, 2018.
7. PLAN ORIENTATION IS GRID NORTH. MAINE STATE PLANE COORDINATE SYSTEM, WEST ZONE 1802 (NAD83). ELEVATIONS DEPICTED HEREON ARE NAVD88 BASED ON DUAL FREQUENCY GPS OBSERVATIONS. TO CONVERT TO THE CITY OF PORTLAND DATUM, ADD 0.69 FEET BASED ON U.S. ARMY CORPS OF ENGINEERS CORPSCON 6.0.1 SOFTWARE IN THIS VICINITY.
8. UTILITY INFORMATION DEPICTED HEREON IS COMPILED USING PHYSICAL EVIDENCE LOCATED IN THE FIELD. UTILITIES DEPICTED HEREON MAY NOT NECESSARILY REPRESENT ALL EXISTING UTILITIES. CONTRACTORS AND/OR DESIGNERS NEED TO CONTACT DIG-SAFE SYSTEMS, INC. (1-888-DIG-SAFE) AND FIELD VERIFY EXISTING UTILITIES PRIOR TO CONSTRUCTION AND/OR EXCAVATION.
9. WETLAND INFORMATION DEPICTED HEREON WAS TAKEN FROM PLAN REFERENCE 7A. NO INDEPENDENT WETLAND DELINEATION WAS PERFORMED BY SEBAGO TECHNICS, INC.

LEGEND

EXISTING

- PROPERTY LINE/R.O.W.
- ABUTTER LINE/R.O.W.
- DEED LINE/R.O.W.
- EASEMENT
- IRON PIPE/ROD
- BUILDING
- EDGE OF WATER
- CONTOURS
- DECIDUOUS TREE
- WATER GATE VALVE
- SANITARY SEWER
- SANITARY MANHOLE
- STORM DRAIN
- CATCH BASIN
- OVERHEAD UTILITY
- UTILITY POLE
- MANHOLE
- EDGE PAVEMENT
- EDGE WETLAND
- WETLANDS

SURVEYOR'S STATEMENT

THIS SURVEY WAS PERFORMED UNDER MY DIRECT SUPERVISION AND TO THE BEST OF MY KNOWLEDGE AND BELIEF, IT WAS DONE IN ACCORDANCE WITH CHAPTER 90, PART 1 (PROFESSIONAL STANDARDS OF PRACTICE) AND PART 2 (TECHNICAL STANDARDS OF PRACTICE) OF THE MAINE BOARD OF LICENSURE FOR PROFESSIONAL LAND SURVEYORS.

CHARLES D. MARCHESE, PLS 3009 — JULY 17, 2018

STATE OF MAINE — CHARLES D. MARCHESE — 3009 — REGISTERED PROFESSIONAL LAND SURVEYOR

CHARLES D. MARCHESE, PLS 3009

DRAWN	CHECKED
MAC/BKW	CDM

NO.	DATE	STATUS
1	7-13-18	ISSUED TO CITY
2	3-28-18	ISSUED FOR CLIENT REVIEW
REV.	DATE	STATUS

THIS PLAN SHALL NOT BE MODIFIED IN WHOLE OR IN PART WITHOUT WRITTEN PERMISSION FROM SEBAGO TECHNICS, INC. ANY ALTERATIONS AUTHORIZED BY OTHERS SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO SEBAGO TECHNICS, INC.

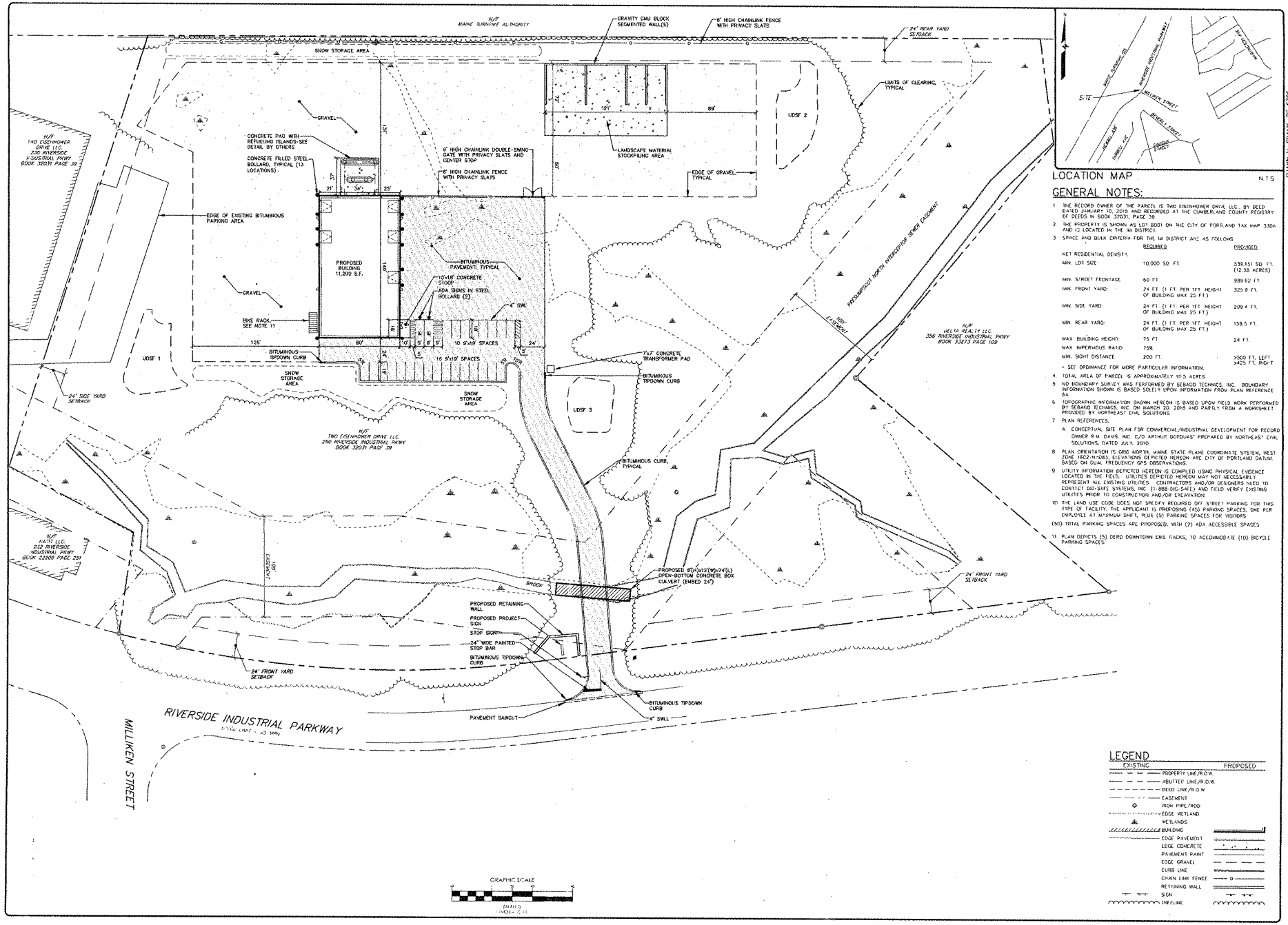
SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd.
South Portland, ME 04106
tel: 207-200-2100

EXISTING CONDITIONS PLAN
250 RIVERSIDE INDUSTRIAL PARKWAY
RIVERSIDE INDUSTRIAL PARKWAY
PORTLAND, MAINE
FOR:
TWO EISENHOWER DRIVE, LLC
P.O. BOX 1120
PORTLAND, MAINE 04104

PROJECT NO.	SCALE
16360	1" = 50'

SHEET 2 OF 10

16360EC-Reg_TAB_18JUL18EC



LOCATION MAP N.T.S

GENERAL NOTES:

1. THE RECORD OWNER OF THE PARCEL IS TWO EISENHOWER DRIVE LLC., BY DEED DATED JANUARY 10, 2018 AND RECORDED AT THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN BOOK 32031, PAGE 39.
2. THE PROPERTY IS SHOWN AS LOT B001 ON THE CITY OF PORTLAND TAX MAP 330A AND IS LOCATED IN THE IM DISTRICT.
3. SPACE AND BULK CRITERIA FOR THE IM DISTRICT ARE AS FOLLOWS:

	REQUIRED	PROVIDED
NET RESIDENTIAL DENSITY:		
MIN. LOT SIZE:	10,000 SQ FT.	539,151 SQ FT. (12.38 ACRES)
MIN. STREET FRONTAGE:	60 FT.	989.62 FT.
MIN. FRONT YARD:	24 FT. (1 FT. PER 1FT. HEIGHT OF BUILDING MAX 25 FT.)	325.9 FT.
MIN. SIDE YARD:	24 FT. (1 FT. PER 1FT. HEIGHT OF BUILDING MAX 25 FT.)	209.4 FT.
MIN. REAR YARD:	24 FT. (1 FT. PER 1FT. HEIGHT OF BUILDING MAX 25 FT.)	158.5 FT.
MAX BUILDING HEIGHT:	75 FT.	24 FT.
MAX IMPERVIOUS RATIO:	75%	
MIN. SIGHT DISTANCE:	200 FT.	>300 FT. LEFT, >425 FT. RIGHT

* SEE ORDINANCE FOR MORE PARTICULAR INFORMATION.

4. TOTAL AREA OF PARCEL IS APPROXIMATELY 10.5 ACRES
5. NO BOUNDARY SURVEY WAS PERFORMED BY SEBAGO TECHNICS, INC. BOUNDARY INFORMATION SHOWN IS BASED SOLELY UPON INFORMATION FROM PLAN REFERENCE 6A.
6. TOPOGRAPHIC INFORMATION SHOWN HEREON IS BASED UPON FIELD WORK PERFORMED BY SEBAGO TECHNICS, INC. ON MARCH 20, 2018 AND PARTLY FROM A WORKSHEET PROVIDED BY NORTHEAST CIVIL SOLUTIONS.
7. PLAN REFERENCES:
   A. CONCEPTUAL SITE PLAN FOR COMMERCIAL/INDUSTRIAL DEVELOPMENT FOR RECORD OWNER R.M. DAVIS, INC. C/O ARTHUR DORDUAS" PREPARED BY NORTHEAST CIVIL SOLUTIONS, DATED JULY, 2010.
8. PLAN ORIENTATION IS GRID NORTH, MAINE STATE PLANE COORDINATE SYSTEM, WEST ZONE 1802-NAD83, ELEVATIONS DEPICTED HEREON ARE CITY OF PORTLAND DATUM, BASED ON DUAL FREQUENCY GPS OBSERVATIONS.
9. UTILITY INFORMATION DEPICTED HEREON IS COMPILED USING PHYSICAL EVIDENCE LOCATED IN THE FIELD. UTILITIES DEPICTED HEREON MAY NOT NECESSARILY REPRESENT ALL EXISTING UTILITIES. CONTRACTORS AND/OR DESIGNERS NEED TO CONTACT DIG-SAFE SYSTEMS, INC. (1-888-DIG-SAFE) AND FIELD VERIFY EXISTING UTILITIES PRIOR TO CONSTRUCTION AND/OR EXCAVATION.
10. THE LAND USE CODE DOES NOT SPECIFY REQUIRED OFF STREET PARKING FOR THIS TYPE OF FACILITY. THE APPLICANT IS PROPOSING (40) PARKING SPACES, ONE PER EMPLOYEE AT MAXIMUM SHIFT, PLUS (5) PARKING SPACES FOR VISITORS.

(50) TOTAL PARKING SPACES ARE PROPOSED, WITH (2) ADA ACCESSIBLE SPACES

11. PLAN DEPICTS (5) DERO DOWNTOWN BIKE RACKS, TO ACCOMMODATE (10) BICYCLE PARKING SPACES.

LEGEND

EXISTING	PROPOSED
	PROPERTY LINE/R.O.W.
	ABUTTER LINE/R.O.W.
	DEED LINE/R.O.W.
	EASEMENT
	IRON PIPE/ROD
	EDGE WETLAND
	WETLANDS
	BUILDING
	EDGE PAVEMENT
	EDGE CONCRETE
	PAVEMENT PAINT
	EDGE GRAVEL
	CURB LINE
	CHAIN LINK FENCE
	RETAINING WALL
	SIGN
	TREELINE

PROGRESS PRINT

STATE OF MAINE — SHAWN M. FRANK — 6,568 — REGISTERED PROFESSIONAL ENGINEER — 8/27/18

SHAWN M. FRANK, PE, 6,568

DESIGNED	CHECKED
SAH	SMF

REV	BY	DATE	STATUS
B	SMF	8-27-18	REVISED PER CITY COMMENTS
A	SMF	7-13-18	ISSUED TO CITY

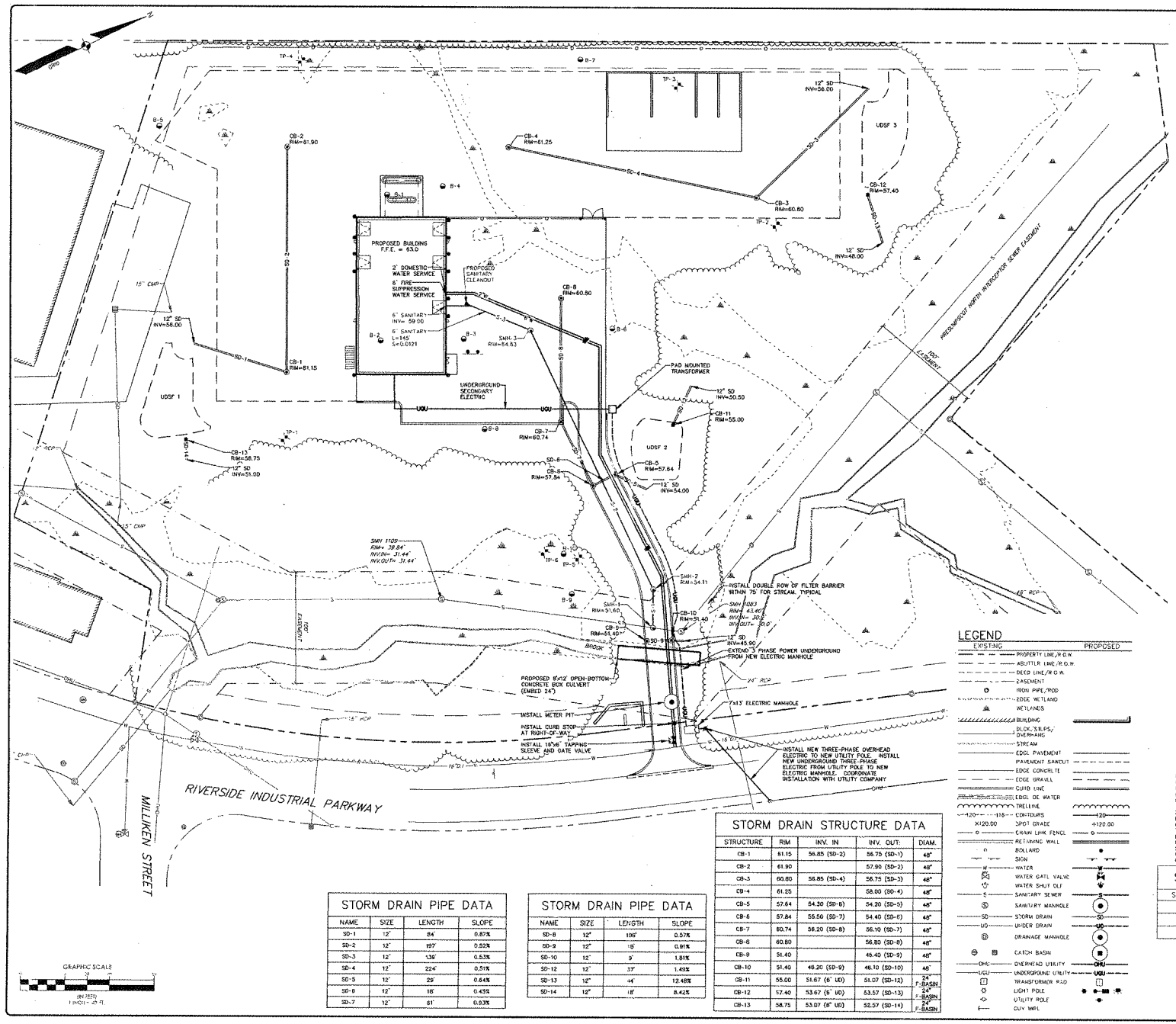
THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SEBAGO TECHNICS, INC. ANY ALTERATIONS MADE HEREON OR OTHERWISE SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO SEBAGO TECHNICS, INC.

SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd
Suite C
South Portland, ME 04106
tel: (207) 200-2100

SITE PLAN
OF
250 RIVERSIDE INDUSTRIAL PARKWAY
RIVERSIDE INDUSTRIAL PARKWAY
PORTLAND, MAINE
FOR
TWO EISENHOWER DRIVE, LLC
P.O. BOX 1120
PORTLAND, MAINE 04104

PROJECT NO.	SCALE
16380	1" = 40'

SHEET 3 OF 12



CONSTRUCTION NOTES

1. ALL WORK SHALL CONFORM TO THE APPLICABLE CODES AND ORDINANCES.

2. CONTRACTOR SHALL VISIT THE SITE AND FAMILIARIZE HIM OR HERSELF WITH ALL CONDITIONS AFFECTING THE PROPOSED WORK AND SHALL MAKE PROVISIONS AS TO THE COST THEREOF. CONTRACTOR SHALL BE RESPONSIBLE FOR FAMILIARIZING HIM OR HERSELF WITH ALL CONTRACT DOCUMENTS, FIELD CONDITIONS AND DIMENSIONS AND CONFIRMING THAT THE WORK MAY BE ACCOMPLISHED AS SHOWN PRIOR TO PROCEEDING WITH CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO THE COMMENCEMENT OF WORK.

3. CONTRACTOR SHALL NOTIFY ENGINEER OF ALL PRODUCTS OR ITEMS NOTED AS "EXISTING" WHICH ARE NOT FOUND IN THE FIELD.

4. INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND OWNER'S REQUIREMENTS UNLESS SPECIFICALLY OTHERWISE INDICATED OR WHERE LOCAL CODES OR REGULATIONS TAKE PRECEDENCE.

5. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO FABRICATION AND ERECTION OF ANY MATERIAL. ANY UNUSUAL CONDITIONS SHALL BE REPORTED TO THE ATTENTION OF THE ENGINEER.

6. CONTRACTOR SHALL CLEAN AND REMOVE DEBRIS AND SEDIMENT DEPOSITED ON PUBLIC STREETS, SIDEWALKS, ADJACENT AREAS, OR OTHER PUBLIC WAYS DUE TO CONSTRUCTION.

7. CONTRACTOR SHALL INCORPORATE PROVISIONS AS NECESSARY IN CONSTRUCTION TO PROTECT EXISTING STRUCTURES, PHYSICAL FEATURES, AND MAINTAIN SITE STABILITY DURING CONSTRUCTION. CONTRACTOR SHALL RESTORE ALL AREAS TO ORIGINAL CONDITION AND AS DIRECTED BY DESIGN DRAWINGS.

8. SITE CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS PRIOR TO CONSTRUCTION.

9. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH "MAINE EROSION AND SEDIMENT CONTROL BMPS" PUBLISHED BY THE BUREAU OF LAND AND WATER QUALITY OF THE MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION, MARCH 2003 OR LATEST EDITION. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO POSSESS A COPY OF THE EROSION CONTROL PLAN AT ALL TIMES.

10. THE CONTRACTOR IS HEREBY CAUTIONED THAT ALL SITE FEATURES SHOWN HEREON ARE BASED ON FIELD OBSERVATIONS BY THE SURVEYOR AND BY INFORMATION PROVIDED BY UTILITY COMPANIES. THIS INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR SHALL CONTACT DIG SAFE (811) AT LEAST THREE (3) BUT NOT MORE THAN THIRTY (30) DAYS PRIOR TO COMMENCEMENT OF EXCAVATION OR DEMOLITION TO VERIFY HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITIES.

11. CONTRACTOR SHALL BE AWARE THAT DIG SAFE ONLY NOTIFIES ITS "MEMBER" UTILITIES ABOUT THE DIG. WHEN NOTIFIED, DIG SAFE WILL ADVISE CONTRACTOR OF MEMBER UTILITIES IN THE AREA. CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING AND CONTACTING NON-MEMBER UTILITIES DIRECTLY. NON-MEMBER UTILITIES MAY INCLUDE TOWN OR CITY WATER AND SEWER DISTRICTS AND SMALL LOCAL UTILITIES, AS WELL AS USG PUBLIC WORKS SYSTEMS.

12. CONTRACTORS SHALL BE RESPONSIBLE FOR COMPLIANCE WITH THE REQUIREMENTS OF 23 MRSA §3360-A. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH THE APPROPRIATE UTILITIES TO OBTAIN AUTHORIZATION PRIOR TO RELOCATION OF ANY EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THESE PLANS. IF A UTILITY CONFLICT ARISES, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER, THE MUNICIPALITY AND APPROPRIATE UTILITY COMPANY PRIOR TO PROCEEDING WITH ANY RELOCATION.

13. ALL PAVEMENT MARKINGS AND DIRECTIONAL SIGNAGE SHOWN ON THE PLAN SHALL CONFORM TO THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) STANDARDS.

14. ALL PAVEMENT JOINTS SHALL BE SAWCUT PRIOR TO PAVING TO PROVIDE A DURABLE AND UNIFORM JOINT.

15. NO HOLES, TRENCHES OR STRUCTURES SHALL BE LEFT OPEN OVERNIGHT IN ANY EXCAVATION ACCESSIBLE TO THE PUBLIC OR IN PUBLIC RIGHTS-OF-WAY.

16. ALL WORK WITHIN THE PUBLIC RIGHT-OF-WAY SHALL REQUIRE A M.D.O.T. PERMIT AS WELL AS PERMITS FROM THE MUNICIPALITY AS APPLICABLE.

17. THE APPROVED LIMITS OF CLEARING SHOWN HEREON ARE APPROXIMATE BASED UPON THE PROPOSED LIMITS OF SITE GRADING. THE APPLICANT RESERVES THE RIGHT TO PERFORM NORMAL FOREST MANAGEMENT ACTIVITIES OUTSIDE OF THE CLEARING LIMIT AS SHOWN. TREE REMOVAL OUTSIDE OF THE LIMITS OF CLEARING MAY BE NECESSARY TO REMOVE DEAD OR DYING TREES OR WIDE LIMBS. THIS REMOVAL IS DUE TO POTENTIAL SAFETY HAZARDS AND TO PROMOTE PROPER FOREST GROWTH.

18. IMMEDIATELY UPON COMPLETION OF CUTS/FILLS, THE CONTRACTOR SHALL STABILIZE DISTURBED AREAS IN ACCORDANCE WITH EROSION CONTROL NOTES AND AS SPECIFIED ON PLANS.

19. THE CONTRACTOR SHALL BE FULLY AND SOLELY RESPONSIBLE FOR THE REMOVAL, REPLACEMENT AND RECTIFICATION OF ALL DAMAGED AND DEFECTIVE MATERIAL AND WORKMANSHIP IN CONNECTION WITH THE CONTRACT WORK. THE CONTRACTOR SHALL REPLACE OR REPAIR AS DIRECTED BY THE OWNER ALL SUCH DAMAGED OR DEFECTIVE MATERIALS WHICH APPEAR WITHIN A PERIOD OF ONE YEAR FROM THE DATE OF SUBSTANTIAL COMPLETION.

20. ALL WORK PERFORMED BY THE GENERAL CONTRACTOR AND/OR TRADE SUBCONTRACTOR SHALL CONFORM TO THE REQUIREMENTS OF LOCAL, STATE OR FEDERAL LAWS, AS WELL AS AND OTHERWISE COVERING REQUIREMENTS, WHETHER OR NOT SPECIFIED ON THE DRAWINGS.

21. WHERE THE TERMS "APPROVED EQUAL", "OTHER APPROVED", "EQUAL TO", "ACCEPTABLE" OR OTHER GENERAL QUALIFYING TERMS ARE USED IN THESE NOTES, IT SHALL BE UNDERSTOOD THAT REFERENCE IS MADE TO THE RULING AND JUDGMENT OF SEBAGO TECHNICS, INC.

22. THE GENERAL CONTRACTOR SHALL PROVIDE ALL NECESSARY PROTECTION FOR THE WORK UNTIL TURNED OVER TO THE OWNER.

23. THE GENERAL CONTRACTOR SHALL MAINTAIN A CURRENT AND COMPLETE SET OF CONSTRUCTION DRAWINGS ON SITE DURING ALL PHASES OF CONSTRUCTION FOR USE OF ALL TRADES.

24. THE CONTRACTOR SHALL TAKE FULL RESPONSIBILITY FOR ANY CHANGES AND DEVIATION OF APPROVED PLANS NOT AUTHORIZED BY THE ARCHITECT/ENGINEER AND/OR CLIENT/OWNER.

25. DETAILS ARE INTENDED TO SHOW END RESULT OF DESIGN. ANY MODIFICATION TO SUIT FIELD DIMENSION AND CONDITION SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO ANY WORK.

26. BEFORE THE FINAL ACCEPTANCE OF THE PROJECT, THE CONTRACTOR SHALL REMOVE ALL EQUIPMENT AND MATERIALS, REPAIR OR REPLACE PRIVATE OR PUBLIC PROPERTY WHICH MAY HAVE BEEN DAMAGED OR DESTROYED DURING CONSTRUCTION, CLEAN THE AREAS WITHIN AND ADJACENT TO THE PROJECT WHICH HAVE BEEN OBSTRUCTED BY HIS/HER OPERATIONS, AND LEAVE THE PROJECT AREA NEAT AND UNSCATHED.

27. ALL SUBSURFACE UTILITY LINES SHOWN HEREON ARE BASED SOLELY ON THE FIELD LOCATION OF VISIBLE STRUCTURES, SUCH AS: EB'S, HYDRANTS, ETC., IN CONJUNCTION WITH DESIGN AND OR AS-BUILT PLANS SUPPLIED TO SEBAGO TECHNICS INC BY OTHERS. PRIOR TO ANY CONSTRUCTION, EXCAVATION, TEST BORINGS, DRILLING, ETC., DIG SAFE MUST BE NOTIFIED AND A SITE IDENTIFICATION NUMBER ALONG WITH A DATE TO DIG DATE OBTAINED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFYING THE LOCATION, DEPTH AND MATERIAL OF ALL SUBSURFACE UTILITY LINES SHOWN HEREON AND ANY AND ALL OTHERS LOCATED ON SITE WITHIN THE CONSTRUCTION AREA.

LEGEND

EXISTING	PROPOSED
PROPERTY LINE/R.O.W.	
ABUTTER LINE/R.O.W.	
DEED LINE/R.O.W.	
EASEMENT	
IRON PIPE/ROD	
EDGE WETLAND	
WETLANDS	
BUILDING	
BLDG. SLIPS/ OVERHANG	
STREAM	
EDGE PAVEMENT	
PAVEMENT SAWCUT	
EDGE CONCRETE	
EDGE GRAVEL	
CURB LINE	
EDGE OF WATER	
TREELINE	
120 118 CONTOURS	120
X120.00 SPOT GRADE	+120.00
CHAIN LINK FENCE	
RETAINING WALL	
BOLLARD	
SIGN	
WATER	W
WATER GATE VALVE	
WATER SHUT OFF	
SANITARY SEWER	S
SANITARY MANHOLE	S
SD STORM DRAIN	SD
UD UNDER DRAIN	UD
DRAINAGE MANHOLE	
CATCH BASIN	
OHU OVERHEAD UTILITY	OHU
UGU UNDERGROUND UTILITY	UGU
TRANSFORMER PAD	
LIGHT POLE	
UTILITY POLE	
GUY WIRE	

STORM DRAIN PIPE DATA

NAME	SIZE	LENGTH	SLOPE
SD-1	12"	84'	0.87%
SD-2	12"	197'	0.52%
SD-3	12"	139'	0.53%
SD-4	12"	224'	0.51%
SD-5	12"	29'	0.64%
SD-6	12"	18'	0.43%
SD-7	12"	81'	0.93%

STORM DRAIN PIPE DATA

NAME	SIZE	LENGTH	SLOPE
SD-8	12"	108'	0.57%
SD-9	12"	15'	0.91%
SD-10	12"	9'	1.81%
SD-12	12"	37'	1.49%
SD-13	12"	14'	12.48%
SD-14	12"	18'	8.42%

STORM DRAIN STRUCTURE DATA

STRUCTURE	RIM	INV. IN	INV. OUT:	DIAM.
CB-1	61.15	56.85 (SD-2)	56.75 (SD-1)	48"
CB-2	61.90		57.90 (SD-2)	48"
CB-3	60.80	56.85 (SD-4)	56.75 (SD-3)	48"
CB-4	61.25		58.00 (SD-4)	48"
CB-5	57.64	54.20 (SD-6)	54.20 (SD-5)	48"
CB-6	57.84	55.50 (SD-7)	54.40 (SD-6)	48"
CB-7	60.74	56.20 (SD-8)	56.10 (SD-7)	48"
CB-8	60.80		56.80 (SD-8)	48"
CB-9	51.40		46.40 (SD-9)	48"
CB-10	51.40	46.20 (SD-9)	46.10 (SD-10)	48"
CB-11	55.00	51.67 (6" UD)	51.07 (SD-12)	24" F-BASIN
CB-12	57.40	53.67 (6" UD)	53.57 (SD-13)	24" F-BASIN
CB-13	58.75	53.07 (6" UD)	52.57 (SD-14)	24" F-BASIN

SANITARY SEWER STRUCTURE DATA

STRUCTURE	RIM	INV. IN	INV. OUT:	DIAM.
SMH-1	51.60	47.10 (S-1)		48"
SMH-2	54.11	48.55 (S-2)	48.45 (S-1)	48"
SMH-3	54.83	58.50 (S-3)	58.40 (S-2)	48"

SANITARY SEWER PIPE DATA

NAME	SIZE	LENGTH	SLOPE
S-1	6"	30'	3.93%
S-2	6"	254'	3.82%
S-3	6"	80'	0.006%

PROGRESS PRINT

STATE OF MAINE — SHAWN M. FRANK — No. 6386 — REGISTERED PROFESSIONAL ENGINEER — 8/27/18

SHAWN M. FRANK, PE 6386

DESIGNED	CHECKED
SMF	SMF

REV.#	BY*	DATE*	STATUS
B	SMF	8/27/18	REVISED PER CITY COMMENTS
A	SMF	7/13/18	ISSUED TO CITY

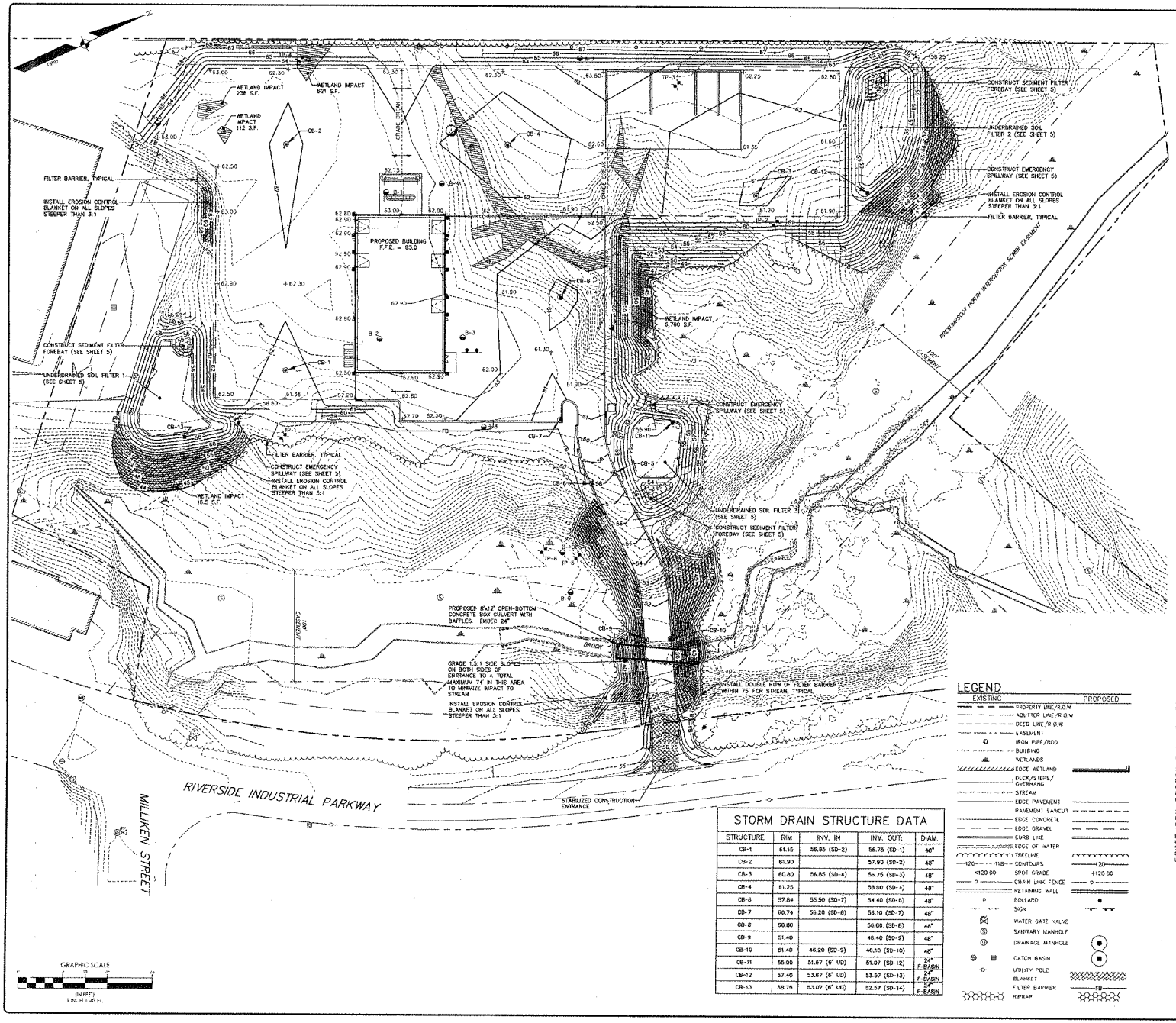
*THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SEBAGO TECHNICS, INC. ANY ALTERATIONS TO THIS PLAN SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO SEBAGO TECHNICS, INC.

SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd.
South Portland, ME 04106
TEL: 207-200-2100

UTILITY PLAN
OF
250 RIVERSIDE INDUSTRIAL PARKWAY
RIVERSIDE INDUSTRIAL PARKWAY
PORTLAND, MAINE
FOR:
TWO EISENHOWER DRIVE, LLC
PORTLAND, MAINE 04104

PROJECT NO.	SCALE
16360	1" = 40'

SHEET 4 OF 12



CONSTRUCTION NOTES

1. ALL WORK SHALL CONFORM TO THE APPLICABLE CODES AND ORDINANCES.
2. CONTRACTOR SHALL VISIT THE SITE AND FAMILIARIZE HIM OR HERSELF WITH ALL CONDITIONS AFFECTING THE PROPOSED WORK AND SHALL MAKE PROVISIONS AS TO THE COST THEREOF. CONTRACTOR SHALL BE RESPONSIBLE FOR FAMILIARIZING HIM OR HERSELF WITH ALL CONTRACT DOCUMENTS, FIELD CONDITIONS AND DIMENSIONS AND CONFIRMING THAT THE WORK MAY BE ACCOMPLISHED AS SHOWN PRIOR TO PROCEEDING WITH CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO THE COMMENCEMENT OF WORK.
3. CONTRACTOR SHALL NOTIFY ENGINEER OF ALL PRODUCTS OR ITEMS NOTED AS "EXISTING" WHICH ARE NOT FOUND IN THE FIELD.
4. INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND OWNER'S REQUIREMENTS UNLESS SPECIFICALLY OTHERWISE INDICATED OR WHERE LOCAL CODES OR REGULATIONS TAKE PRECEDENCE.
5. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO FABRICATION AND ERECTION OF ANY MATERIAL. ANY UNUSUAL CONDITIONS SHALL BE REPORTED TO THE ATTENTION OF THE ENGINEER.
6. CONTRACTOR SHALL CLEAN AND REMOVE DEBRIS AND SEDIMENT DEPOSITED ON PUBLIC STREETS, SIDEWALKS, ADJACENT AREAS, OR OTHER PUBLIC WAYS DUE TO CONSTRUCTION.
7. CONTRACTOR SHALL INCORPORATE PROVISIONS AS NECESSARY IN CONSTRUCTION TO PROTECT EXISTING STRUCTURES, PHYSICAL FEATURES, AND MAINTAIN SITE STABILITY DURING CONSTRUCTION. CONTRACTOR SHALL RESTORE ALL AREAS TO ORIGINAL CONDITION AND AS DIRECTED BY DESIGN DRAWINGS.
8. SITE CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS PRIOR TO CONSTRUCTION.
9. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH "MAINE EROSION AND SEDIMENT CONTROL BMPS" PUBLISHED BY THE BUREAU OF LAND AND WATER QUALITY OF THE MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION, MARCH 2003 OR LATEST EDITION. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO POSSESS A COPY OF THE EROSION CONTROL PLAN AT ALL TIMES.
10. THE CONTRACTOR IS HEREBY CAUTIONED THAT ALL SITE FEATURES SHOWN HEREON ARE BASED ON FIELD OBSERVATIONS BY THE SURVEYOR AND BY INFORMATION PROVIDED BY UTILITY COMPANIES. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR SHALL CONTACT DIG SAFE (811) AT LEAST THREE (3) BUT NOT MORE THAN THIRTY (30) DAYS PRIOR TO COMMENCEMENT OF EXCAVATION OR DEMOLITION TO VERIFY HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITIES.
11. CONTRACTOR SHALL BE AWARE THAT DIG SAFE ONLY NOTIFIES ITS "MEMBER" UTILITIES ABOUT THE DIG WHEN NOTIFIED, DIG SAFE WILL ADVISE CONTRACTOR OF MEMBER UTILITIES IN THE AREA. CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING AND CONTACTING NON-MEMBER UTILITIES DIRECTLY. NON-MEMBER UTILITIES MAY INCLUDE TOWN OR CITY WATER AND SEWER DISTRICTS AND SMALL LOCAL UTILITIES, AS WELL AS LOCAL PUBLIC WORKS SYSTEMS.
12. CONTRACTORS SHALL BE RESPONSIBLE FOR COMPLIANCE WITH THE REQUIREMENTS OF 23 MRSA 3360-A; IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH THE APPROPRIATE UTILITIES TO OBTAIN AUTHORIZATION PRIOR TO RELOCATION OF ANY EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THESE PLANS. IF A UTILITY CONFLICT ARISES, THE CONTRACTOR SHALL NOTIFY THE OWNER, THE MUNICIPALITY AND APPROPRIATE UTILITY COMPANY PRIOR TO PROCEEDING WITH ANY RELOCATION.
13. ALL PAVEMENT MARKINGS AND DIRECTIONAL SIGNAGE SHOWN ON THE PLAN SHALL CONFORM TO THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) STANDARDS.
14. ALL PAVEMENT JOINTS SHALL BE SAWCUT PRIOR TO PAVING TO PROVIDE A DURABLE AND UNIFORM JOINT.
15. NO HOLES, TRENCHES OR STRUCTURES SHALL BE LEFT OPEN OVERNIGHT IN ANY EXCAVATION ACCESSIBLE TO THE PUBLIC OR IN PUBLIC RIGHTS-OF-WAY.
16. ALL WORK WITHIN THE PUBLIC RIGHT-OF-WAY SHALL REQUIRE A M.D.O.T. PERMIT AS WELL AS PERMITS FROM THE MUNICIPALITY AS APPLICABLE.
17. THE PROPOSED LIMITS OF CLEARING SHOWN HEREON ARE APPROXIMATE BASED UPON THE PROPOSED LIMITS OF SITE GRADING. THE APPLICANT RESERVES THE RIGHT TO PERFORM NORMAL FOREST MANAGEMENT ACTIVITIES OUTSIDE OF THE CLEARING LIMIT AS SHOWN. TREE REMOVAL OUTSIDE OF THE LIMITS OF CLEARING MAY BE NECESSARY TO REMOVE DEAD OR DYING TREES OR TREE LIMBS. THIS REMOVAL IS DUE TO POTENTIAL SAFETY HAZARDS AND TO PROMOTE PROPER FOREST GROWTH.
18. IMMEDIATELY UPON COMPLETION OF CUTS/FILLS, THE CONTRACTOR SHALL STABILIZE DISTURBED AREAS IN ACCORDANCE WITH EROSION CONTROL NOTES AND AS SPECIFIED ON PLANS.
19. THE CONTRACTOR SHALL BE FULLY AND SOLELY RESPONSIBLE FOR THE REMOVAL, REPLACEMENT AND RECTIFICATION OF ALL DAMAGED AND DEFECTIVE MATERIAL AND WORKMANSHIP IN CONNECTION WITH THE CONTRACT WORK. THE CONTRACTOR SHALL REPLACE OR REPAIR AS DIRECTED BY THE OWNER ALL SUCH DAMAGED OR DEFECTIVE MATERIALS WHICH APPEAR WITHIN A PERIOD OF ONE YEAR FROM THE DATE OF SUBSTANTIAL COMPLETION.
20. ALL WORK PERFORMED BY THE GENERAL CONTRACTOR AND/OR TRADE SUBCONTRACTOR SHALL CONFORM TO THE REQUIREMENTS OF LOCAL, STATE OR FEDERAL LAWS, AS WELL AS ANY OTHER GOVERNING REQUIREMENTS, WHETHER OR NOT SPECIFIED ON THE DRAWINGS.
21. WHERE THE TERMS "APPROVED EQUAL", "OTHER APPROVED", "EQUAL TO", "ACCEPTABLE" OR OTHER GENERAL QUALIFYING TERMS ARE USED IN THESE NOTES, IT SHALL BE UNDERSTOOD THAT REFERENCE IS MADE TO THE RULING AND JUDGMENT OF SEBAGO TECHNICS, INC.
22. THE GENERAL CONTRACTOR SHALL PROVIDE ALL NECESSARY PROTECTION FOR THE WORK UNTIL TURNED OVER TO THE OWNER.
23. THE GENERAL CONTRACTOR SHALL MAINTAIN A CURRENT AND COMPLETE SET OF CONSTRUCTION DRAWINGS ON SITE DURING ALL PHASES OF CONSTRUCTION FOR USE OF ALL TRADES.
24. THE CONTRACTOR SHALL TAKE FULL RESPONSIBILITY FOR ANY CHANGES AND DEVIATION OF APPROVED PLANS NOT AUTHORIZED BY THE ARCHITECT/ENGINEER AND/OR CLIENT/OWNER.
25. DETAILS ARE INTENDED TO SHOW END RESULT OF DESIGN. ANY MODIFICATION TO SUIT FIELD DIMENSION AND CONDITION SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO ANY WORK.
26. BEFORE THE FINAL ACCEPTANCE OF THE PROJECT, THE CONTRACTOR SHALL REMOVE ALL EQUIPMENT AND MATERIALS, REPAIR OR REPLACE PRIVATE OR PUBLIC PROPERTY WHICH MAY HAVE BEEN DAMAGED OR DESTROYED DURING CONSTRUCTION, CLEAN THE AREAS WITHIN AND ADJACENT TO THE PROJECT WHICH HAVE BEEN OBSTRUCTED BY HIS/HER OPERATIONS, AND LEAVE THE PROJECT AREA NEAT AND PRESENTABLE.
27. ALL SUBSURFACE UTILITY LINES SHOWN HEREON ARE BASED SOLELY ON THE FIELD LOCATION OF VISIBLE STRUCTURES, SMH'S, CB'S, HYDRANTS, ETC. IN CONJUNCTION WITH DESIGN AND OR AS-BUILT PLANS SUPPLIED TO SEBAGO TECHNICS INC BY OTHERS PRIOR TO ANY CONSTRUCTION, EXCAVATION, TEST BORINGS, DRILLING, ETC., DIG SAFE MUST BE NOTIFIED AND A SITE IDENTIFICATION NUMBER ALONG WITH A SAFE TO DIG DATE OBTAINED. THE SITE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFYING THE LOCATION, DEPTH AND MATERIAL OF ALL SUBSURFACE UTILITY LINES SHOWN HEREON AND ANY AND ALL OTHERS LOCATED ON SITE WITHIN THE CONSTRUCTION AREA.

STORM DRAIN STRUCTURE DATA

STRUCTURE	RIM	INV. IN	INV. OUT:	DIAM.
CB-1	61.15	56.85 (SD-2)	56.75 (SD-1)	48"
CB-2	61.90		57.90 (SD-2)	48"
CB-3	60.80	56.85 (SD-4)	56.75 (SD-3)	48"
CB-4	61.25		58.00 (SD-4)	48"
CB-6	57.84	55.50 (SD-7)	54.40 (SD-6)	48"
CB-7	60.74	56.20 (SD-8)	56.10 (SD-7)	48"
CB-8	60.80		56.80 (SD-8)	48"
CB-9	51.40		46.40 (SD-9)	48"
CB-10	51.40	46.20 (SD-9)	46.10 (SD-10)	48"
CB-11	55.00	51.67 (6" UD)	51.07 (SD-12)	24" F-BASIN
CB-12	57.40	53.67 (6" UD)	53.57 (SD-13)	24" F-BASIN
CB-13	58.75	53.07 (6" UD)	52.57 (SD-14)	24" F-BASIN

LEGEND

EXISTING	PROPOSED
PROPERTY LINE/R.O.W.	
ABUTTER LINE/R.O.W.	
DEED LINE/R.O.W.	
EASEMENT	
IRON PIPE/ROD	
BUILDING	
WETLANDS	
EDGE WETLAND	
DECK/STEPS/ OVERHANG	
STREAM	
EDGE PAVEMENT	
PAVEMENT SAWCUT	
EDGE CONCRETE	
EDGE GRAVEL	
CURB LINE	
EDGE OF WATER	
TREELINE	
120 CONTOURS	120
X120.00 SPOT GRADE	+120.00
CHAIN LINK FENCE	
RETAINING WALL	
BOLLARD	
SIGN	
WATER GATE VALVE	
SANITARY MANHOLE	
DRAINAGE MANHOLE	
CATCH BASIN	
UTILITY POLE	
BLANKET	
FILTER BARRIER	FB
RIPRAP	

PROGRESS PRINT

STATE OF MAINE SHAWN M. FRANK 6/27/18 PROFESSIONAL ENGINEER

SHAWN M. FRANK, PE 6366

DESIGNED	CHECKED
SAH	SMF

REV	BY	DATE	STATUS
B	SMF	6-27-18	REVISED PER CITY COMMENTS
A	SMF	7-13-18	ISSUED TO CITY

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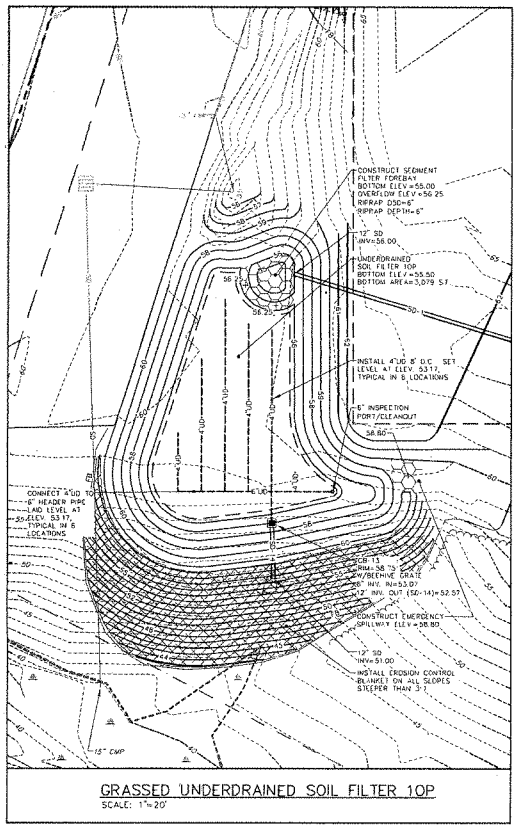
SEBAGO TECHNICS INC
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd
Suite B
South Portland, ME 04106
Tel: 207-200-2100

GRADING AND EROSION CONTROL PLAN
OF:
250 RIVERSIDE INDUSTRIAL PARKWAY
RIVERSIDE INDUSTRIAL PARKWAY
PORTLAND, MAINE
FOR:
TWO EISENHOWER DRIVE, LLC
P.O. BOX 4750
PORTLAND, MAINE 04104

PROJECT NO.	SCALE
16360	1" = 40'

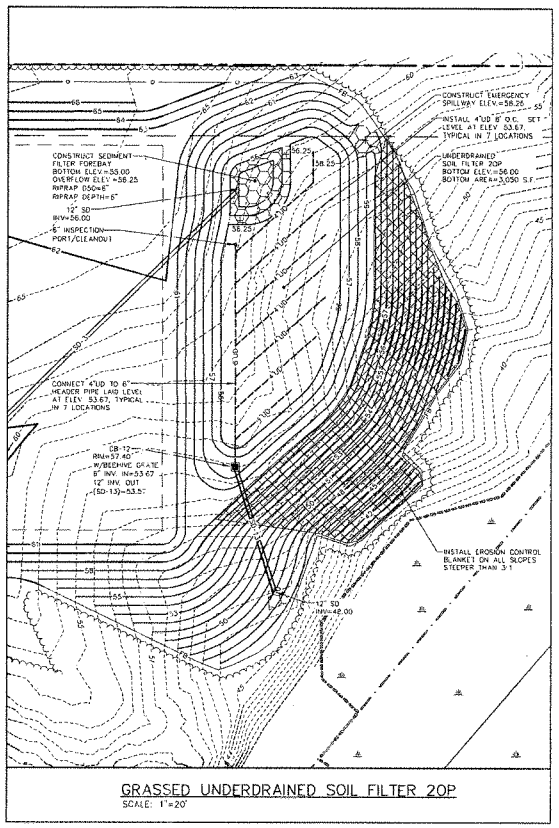
SHEET 5 OF 12



GRASSED UNDERDRAINED SOIL FILTER 10P
SCALE: 1"=20'

STORM DRAIN STRUCTURE DATA				
STRUCTURE	RIM	INV. IN	INV. OUT:	DIAM.
CB-13	58.75	53.67 (6" UD)	52.57 (SD-14)	24" F-BASIN

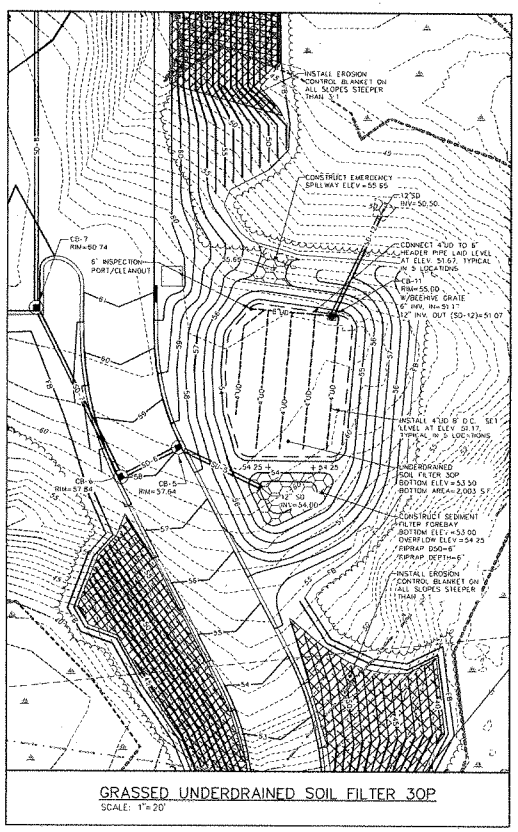
STORM DRAIN PIPE DATA			
NAME	SIZE	LENGTH	SLOPE
SD-1	12"	84'	0.87%
SD-14	12"	18'	8.42%



GRASSED UNDERDRAINED SOIL FILTER 20P
SCALE: 1"=20'

STORM DRAIN STRUCTURE DATA				
STRUCTURE	RIM	INV. IN	INV. OUT:	DIAM.
CB-12	57.40	53.67 (6" UD)	53.57 (SD-13)	24" F-BASIN

STORM DRAIN PIPE DATA			
NAME	SIZE	LENGTH	SLOPE
SD-3	12"	139'	0.53%
SD-13	12"	44'	12.48%



GRASSED UNDERDRAINED SOIL FILTER 30P
SCALE: 1"=20'

STORM DRAIN STRUCTURE DATA				
STRUCTURE	RIM	INV. IN	INV. OUT:	DIAM.
CB-5	57.64	54.30 (SD-6)	54.20 (SD-5)	48"
CB-6	57.84	55.50 (SD-7)	54.40 (SD-6)	48"
CB-7	60.74	56.20 (SD-8)	56.10 (SD-7)	48"
CB-11	55.00	51.67 (6" UD)	51.07 (SD-12)	24" F-BASIN

STORM DRAIN PIPE DATA			
NAME	SIZE	LENGTH	SLOPE
SD-5	12"	29'	0.64%
SD-6	12"	18'	0.45%
SD-7	12"	61'	0.93%
SD-8	12"	108'	0.57%
SD-12	12"	37'	1.48%

GENERAL POND CONSTRUCTION NOTES:

1. INSTALL HAY BALE BARRIER AROUND ALL CATCH BASINS NOT IN PAVEMENT
2. SEE DETAIL SHEETS FOR EROSION CONTROL NOTES.
3. SOIL STOCKPILES SHALL NOT BE LOCATED WITHIN 100 FEET OF ANY NATURAL RESOURCES. STOCKPILES SHALL BE CONTAINED WITH A DOUBLE BOUNDARY OF FILTRATION BARRIER. SEE EROSION CONTROL NOTES.
4. PIPE MATERIALS:
   a) STORM DRAIN: SMOOTH WALL CORRUGATED HDPE
   b) UNDER DRAIN: 6" PERFORATED HDPE
   c) SANITARY SEWER: SDR-35 HDPE
5. SEE DETAIL SHEETS FOR ADDITIONAL DETAILS

GENERAL NOTES:

1. BORINGS SHOWN ARE REFERENCED FROM A REPORT, 14-0209 DATED MAY 7, 2014, GEOTECHNICAL ENGINEERING SERVICES, PROPOSED CONDOMINIUM DEVELOPMENT PHASE II (WOODS EDGE) AND PHASE III (RIDGEFIELD), FOR HILL ROAD, GORHAM, MAINE. REPORT WAS PREPARED BY S.W. COLE ENGINEERING SERVICES, INC. BY MICHAEL ST. PIERRE, GEOTECHNICAL ENGINEER, MAINE PE #12319. THE REPORT ALSO INCLUDES SUBSURFACE DATA AND NARRATIVE OF THE FINDINGS AND RECOMMENDATIONS.

LEGEND

EXISTING		PROPOSED
120 / 118	CONTOURS	120
X120.00	SPOT GRADE	+120.00
SD	STORM DRAIN	SD
UD	UNDER DRAIN	UD
	DRAINAGE MANHOLE	
	CATCH BASIN	
	EDGE WETLAND	
	WETLANDS	

GRAPHIC SCALE
1" = 20'

SHAWN M. FRANK, PE 6396

PROGRESS PRINT

STATE OF MAINE SHAWN M. FRANK No. 6396 REGISTERED PROFESSIONAL ENGINEER 07/13/18

DESIGNED	CHECKED
SAH	SMF

REV.	BY	DATE:	STATUS:
A	SMF	7-13-18	ISSUED TO CITY

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SEBAGO TECHNICS
75 John Roberts Rd.
Suite A
South Portland, ME 04106
TEL (207) 200-2100
WWW.SEBAGOTECHNICS.COM

POND CONSTRUCTION PLANS
OF
250 RIVERSIDE INDUSTRIAL PARKWAY
RIVERSIDE INDUSTRIAL PARKWAY
PORTLAND, MAINE
FOR
TWO EISENHOWER DRIVE, LLC
TWO EISENHOWER DRIVE
PORTLAND, MAINE 04104

PROJECT NO.	SCALE
16360	1" = 20'

SHEET 6 OF 12

EROSION CONTROL MEASURES

PRE-CONSTRUCTION PHASE

PRIOR TO CONSTRUCTION, PROPERLY INSTALL SEDIMENT BARRIERS AT THE DOWNGRADIENT EDGE OF ANY AREA TO BE DISTURBED AND ADJACENT TO ANY DRAINAGE CHANNELS WITHIN THE DISTURBED AREA. SEDIMENT BARRIERS SHOULD BE INSTALLED DOWNGRADIENT OF SOIL OR SEDIMENT STOCKPILES AND STORMWATER PREVENTED FROM RUNNING ONTO THE STOCKPILE. MAINTAIN THE SEDIMENT BARRIERS BY REMOVING ACCUMULATED SEDIMENT, OR REMOVING AND REPLACING THE BARRIER, UNTIL THE DISTURBED AREA IS PERMANENTLY STABILIZED. WHERE A DISCHARGE TO A STORM DRAIN INLET OCCURS, IF THE STORM DRAIN CARRIES WATER DIRECTLY TO A SURFACE WATER AND YOU HAVE AUTHORITY TO ACCESS THE STORM DRAIN INLET, YOU MUST INSTALL AND MAINTAIN PROTECTION MEASURES THAT REMOVE SEDIMENT FROM THE DISCHARGE.

PRIOR TO CONSTRUCTION, PROPERLY INSTALL A STABILIZED CONSTRUCTION ENTRANCE (SCE) AT ALL POINTS OF EGRESS FROM THE SITE. THE SCE IS A STABILIZED PAD OF AGGREGATE, UNDERLAIN BY A GEOTEXTILE FILTER FABRIC, USED TO PREVENT TRAFFIC FROM TRACKING MATERIAL AWAY FROM THE SITE ONTO PUBLIC ROWS. MAINTAIN THE SCE UNTIL ALL DISTURBED AREAS ARE STABILIZED.

PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL PREPARE A DETAILED SCHEDULE AND MARKED UP PLAN INDICATING AREAS AND COMPONENTS OF THE WORK AND KEY DATES SHOWING DATE OF DISTURBANCE AND COMPLETION OF THE WORK. THE CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING WITH THE MUNICIPAL STAFF. THREE COPIES OF THE SCHEDULE AND MARKED UP PLAN SHALL BE PROVIDED TO THE MUNICIPALITY THREE DAYS PRIOR TO THE SCHEDULED PRE-CONSTRUCTION MEETING. SPECIAL ATTENTION SHALL BE GIVEN TO THE 14 DAY LIMIT OF DISTURBANCE IN THE SCHEDULE ADDRESSING TEMPORARY AND PERMANENT VEGETATION MEASURES.

CONSTRUCTION AND POST-CONSTRUCTION PHASE

DURING CONSTRUCTION

1. INSPECTION AND CORRECTIVE ACTION:
INSPECT DISTURBED AND IMPERVIOUS AREAS, EROSION CONTROL MEASURES, MATERIALS STORAGE AREAS THAT ARE EXPOSED TO PRECIPITATION, AND LOCATIONS WHERE VEHICLES ENTER OR EXIT THE SITE. INSPECT THESE AREAS AT LEAST ONCE A WEEK AS WELL AS BEFORE AND WITHIN 24 HOURS AFTER A STORM EVENT (RAINFALL), AND PRIOR TO COMPLETING PERMANENT STABILIZATION MEASURES. A PERSON WITH KNOWLEDGE OF EROSION AND STORMWATER CONTROL, INCLUDING THE STANDARDS AND CONDITIONS IN THE PERMIT, SHALL CONDUCT THE INSPECTIONS.

2. MAINTENANCE:
IF BEST MANAGEMENT PRACTICES (BMPS) NEED TO BE REPAIRED, THE REPAIR WORK SHOULD BE INITIATED UPON DISCOVERY OF THE PROBLEM BUT NO LATER THAN THE END OF THE NEXT WORKDAY. IF ADDITIONAL BMPS OR SIGNIFICANT REPAIR OF BMPS ARE NECESSARY, IMPLEMENTATION MUST BE COMPLETED WITHIN 7 CALENDAR DAYS AND PRIOR TO ANY STORM EVENT (RAINFALL). ALL MEASURES MUST BE MAINTAINED IN EFFECTIVE OPERATING CONDITION UNTIL AREAS ARE PERMANENTLY STABILIZED.

3. DOCUMENTATION:
KEEP A LOG (REPORT) SUMMARIZING THE INSPECTIONS AND ANY CORRECTIVE ACTION TAKEN. THE LOG MUST INCLUDE THE NAME(S) AND QUALIFICATIONS OF THE PERSON MAKING THE INSPECTIONS, THE DATE(S) OF THE INSPECTIONS, AND MAJOR OBSERVATIONS ABOUT THE OPERATION AND MAINTENANCE OF EROSION AND SEDIMENTATION CONTROLS, MATERIALS STORAGE AREAS, AND VEHICLES ACCESS POINTS TO THE PARCEL. MAJOR OBSERVATIONS MUST INCLUDE BMPS THAT NEED MAINTENANCE, BMPS THAT FAILED TO OPERATE AS DESIGNED OR PROVED INADEQUATE FOR A PARTICULAR LOCATION, AND LOCATION(S) WHERE ADDITIONAL BMPS ARE NEEDED. FOR EACH BMP REQUIRING MAINTENANCE, BMP NEEDING REPLACEMENT, AND LOCATION NEEDING ADDITIONAL BMPS, NOTE IN THE LOG THE CORRECTIVE ACTION TAKEN AND WHEN IT WAS TAKEN.

THE LOG MUST BE MADE ACCESSIBLE TO DEPARTMENT STAFF AND A COPY MUST BE PROVIDED UPON REQUEST. THE PERMITTEE SHALL RETAIN A COPY OF THE LOG FOR A PERIOD OF AT LEAST THREE YEARS FROM THE COMPLETION OF PERMANENT STABILIZATION.

POST-CONSTRUCTION

1. PLAN:
CARRY OUT AN APPROVED INSPECTION AND MAINTENANCE PLAN THAT IS CONSISTENT WITH THE MINIMUM REQUIREMENTS OF THIS SECTION. THE PLAN MUST ADDRESS INSPECTION AND MAINTENANCE OF THE PROJECT'S PERMANENT EROSION CONTROL MEASURES AND STORMWATER MANAGEMENT SYSTEM. THIS PLAN MAY BE COMBINED WITH THE PLAN LISTED IN SECTION 2(A) OF THIS APPENDIX. SEE SECTION 7(C)(2) FOR SUBMISSION REQUIREMENTS

2. INSPECTION AND MAINTENANCE:
ALL MEASURES MUST BE MAINTAINED IN EFFECTIVE OPERATING CONDITION. A PERSON WITH KNOWLEDGE OF EROSION AND STORMWATER CONTROL, INCLUDING THE STANDARDS AND CONDITIONS IN THE PERMIT, SHALL CONDUCT THE INSPECTIONS. THE FOLLOWING AREAS, FACILITIES, AND MEASURES MUST BE INSPECTED AND IDENTIFIED DEFICIENCIES MUST BE CORRECTED. AREAS, FACILITIES, AND MEASURES OTHER THAN THOSE LISTED BELOW MAY ALSO REQUIRE INSPECTION ON A SPECIFIC SITE. INSPECTION OR MAINTENANCE TASKS OTHER THAN THOSE DISCUSSED BELOW MUST BE INCLUDED IN THE MAINTENANCE PLAN DEVELOPED FOR A SPECIFIC SITE.

3. REGULAR MAINTENANCE:
CLEAR ACCUMULATIONS OF WINTER SAND IN PARKING LOTS AND ALONG ROADWAYS AT LEAST ONCE A YEAR, PREFERABLY IN THE SPRING. ACCUMULATIONS ON PAVEMENT MAY BE REMOVED BY PAVEMENT SWEEPING. ACCUMULATIONS OF SAND ALONG ROAD SHOULDERS MAY BE REMOVED BY GRADING EXCESS SAND TO THE PAVEMENT EDGE AND REMOVING IT MANUALLY OR BY A FRONT-END LOADER. GRADING OF GRAVEL ROADS, OR ADDING LAYERS OF GRAVEL OR PAVED ROADS, MUST BE ROUTINELY PERFORMED TO ENSURE THAT STORMWATER DRAINS IMMEDIATELY OFF THE ROAD SURFACE TO ADJACENT BUFFER AREAS OR STABLE DITCHES, AND IS NOT IMPEDED BY ACCUMULATIONS OF GRADED MATERIAL ON THE ROAD SHOULDER OR BY EXCAVATION OF FALSE DITCHES IN THE SHOULDER. IF WATER BARS OR OPEN-TOP CULVERTS ARE USED TO DIVERT RUNOFF FROM ROAD SURFACES, CLEAN OUT ANY SEDIMENTS WITHIN OR AT THE OUTLET OF THESE STRUCTURES TO RESTORE THEIR FUNCTION

4. DOCUMENTATION:
KEEP A LOG (REPORT) SUMMARIZING INSPECTIONS, MAINTENANCE, AND ANY CORRECTIVE ACTIONS TAKEN. THE LOG MUST INCLUDE THE DATE ON WHICH EACH INSPECTION OR MAINTENANCE TASK WAS PERFORMED, A DESCRIPTION OF THE INSPECTION FINDINGS OR MAINTENANCE COMPLETED, AND THE NAME OF THE INSPECTOR OR MAINTENANCE PERSONNEL PERFORMING THE TASK. IF A MAINTENANCE TASK REQUIRES THE CLEAN-OUT OF ANY SEDIMENTS OR DEBRIS, INDICATE WHERE THE SEDIMENT AND DEBRIS WAS DISPOSED AFTER REMOVAL. THE LOG MUST BE MADE ACCESSIBLE TO DEPARTMENT STAFF AND A COPY PROVIDED TO THE DEPARTMENT UPON REQUEST. THE PERMITTEE SHALL RETAIN A COPY OF THE LOG FOR A PERIOD OF AT LEAST FIVE YEARS FROM THE COMPLETION OF PERMANENT STABILIZATION.

EROSION CONTROL APPLICATIONS & MEASURES

THE PLACEMENT OF EROSION CONTROL MEASURES SHALL BE ACCOMPLISHED IN ACCORDANCE WITH GUIDELINES ESTABLISHED WITHIN THE CURRENT MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION CHAPTER 500 RULES. THE DEPARTMENTS BEST MANAGEMENT PRACTICES AND IN ACCORDANCE WITH THE EROSION CONTROL PLAN AND DETAILS ON THE PLAN SET. EROSION CONTROL MEASURES MUST BE IN PLACE BEFORE THE ACTIVITY BEGINS. MEASURES MUST REMAIN IN PLACE AND FUNCTIONAL UNTIL THE SITE IS PERMANENTLY STABILIZED. ADEQUATE AND TIMELY TEMPORARY AND PERMANENT STABILIZATION MEASURES MUST BE TAKEN.

1. POLLUTION PREVENTION:
WHENEVER PRACTICABLE, NO DISTURBANCE ACTIVITIES SHOULD TAKE PLACE WITHIN 50 FEET OF ANY PROTECTED NATURAL RESOURCE. IF DISTURBANCE ACTIVITIES TAKE PLACE BETWEEN 30 FEET AND 50 FEET OF ANY PROTECTED NATURAL RESOURCE, AND STORMWATER DISCHARGES THROUGH THE DISTURBED AREA TOWARD THE PROTECTED NATURAL RESOURCE, PERIMETER EROSION CONTROLS MUST BE DOUBLED. IF DISTURBANCE ACTIVITIES TAKE PLACE LESS THAN 30 FEET FROM ANY PROTECTED NATURAL RESOURCE, AND STORMWATER DISCHARGES THROUGH THE DISTURBED AREA TOWARD THE PROTECTED NATURAL RESOURCE, PERIMETER EROSION CONTROLS MUST BE DOUBLED AND DISTURBED AREAS MUST BE TEMPORARILY OR PERMANENTLY STABILIZED WITHIN 48 HOURS.

2. TEMPORARY MULCHING:
ALL DISTURBED AREAS SHALL BE MULCHED WITH MATERIALS SPECIFIED BELOW PRIOR TO ANY STORM EVENT. ALL DISTURBED AREAS NOT FINAL GRADED WITHIN 7 DAYS SHALL BE MULCHED. ALSO, AREAS, WHICH HAVE BEEN TEMPORARILY OR PERMANENTLY SEEDED, SHALL BE MULCHED IMMEDIATELY FOLLOWING SEEDING. EROSION CONTROL BLANKETS ARE RECOMMENDED TO BE USED AT THE BASE OF GRASSED WATERWAYS AND ON SLOPES GREATER THAN 15%. MULCH ANCHORING SHOULD BE USED ON SLOPES GREATER THAN 5% AFTER SEPTEMBER 15TH OF THE CONSTRUCTION YEAR (SEE WINTER EROSION SECTION, BELOW).
TYPES OF MULCH
HAY OR STRAW SHALL BE APPLIED AT A RATE OF 75 LBS/1,000 S.F. (1.5 TONS PER ACRE).
EROSION CONTROL MIX: SHALL BE PLACED EVENLY AND MUST PROVIDE 100% SOIL COVERAGE. EROSION CONTROL MIX SHALL BE APPLIED SUCH THAT THE THICKNESS ON SLOPES 3:1 OR LESS IS 2 INCHES PLUS 1/2 INCH PER 20 FEET OF SLOPE UP TO 150 FEET. THE THICKNESS ON SLOPES BETWEEN 3:1 AND 2:1 SHALL BE 4 INCHES. EROSION CONTROL MIX ON SLOPES STEEPER THAN 2:1 SHALL NOT BE USED ON SLOPES GREATER THAN 2:1.
EROSION CONTROL BLANKET: SHALL BE INSTALLED SUCH THAT CONTINUOUS CONTACT BETWEEN THE MAT AND THE SOIL IS OBTAINED. INSTALL BLANKETS AND STAPLE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

3. SOIL STOCKPILES:
STOCKPILES OF SOIL OR SUBSOIL SHALL BE MULCHED WITH HAY OR STRAW AT A RATE OF 75 LBS/1,000 S.F. (1.5 TONS PER ACRE) OR WITH A FOUR-INCH LAYER OF WOOD WASTE. EROSION CONTROL MIX THIS WILL BE DONE WITHIN 24 HOURS OF STOCKING AND RE-ESTABLISHED PRIOR TO ANY RAINFALL. ANY SOIL STOCKPILE WILL NOT BE PLACED (EVEN COVERED WITH HAY OR STRAW) WITHIN 100 FEET FROM ANY NATURAL RESOURCES.

4. NATURAL RESOURCES PROTECTION:
ANY AREAS WITHIN 100 FEET FROM ANY NATURAL RESOURCES, IF NOT STABILIZED WITH A MINIMUM OF 75% MATURE VEGETATION CATCH, SHALL BE STABILIZED USING TEMPORARY MULCHING (AS DESCRIBED IN PART 1 OF THIS SECTION) OR OTHER NON-ERODIBLE COVER WITHIN 48 HOURS OF EXPOSURE OR PRIOR TO ANY STORM EVENT (SEDIMENT BARRIERS (AS DESCRIBED IN PART 4 OF THIS SECTION) SHALL BE PLACED BETWEEN ANY NATURAL RESOURCE AND THE DISTURBED AREA. PROJECTS CROSSING THE NATURAL RESOURCE SHALL BE PROTECTED A MINIMUM DISTANCE OF 100 FEET ON EITHER SIDE FROM THE RESOURCE. IF DISTURBANCE TAKES PLACE LESS THAN 30 FEET FROM A PROTECTED RESOURCE AND STORMWATER DISCHARGES THROUGH THE DISTURBED AREAS TO THE RESOURCE, PERIMETER EROSION CONTROLS MUST BE DOUBLED.

5. SEDIMENT BARRIERS:
PRIOR TO THE BEGINNING OF ANY CONSTRUCTION, SEDIMENT BARRIERS SHALL BE STAKED ACROSS THE SLOPE(S), ON THE CONTOUR AT OR JUST BELOW THE LIMITS OF CLEARING OR GRUBBING, AND/OR JUST ABOVE ANY ADJACENT PROPERTY LINE OR WATERCOURSE TO PROTECT ADJACENT PROPERTIES AND WATERS FROM SEDIMENT DURING CONSTRUCTION AND UNTIL THE CONTRACTOR IS SATISFIED THAT ALL EXPOSED SLOPES HAVE AT LEAST 85%-90% VIGOROUS PERENNIAL VEGETATIVE COVER TO PREVENT EROSION

SILT FENCE: SHALL BE INSTALLED PER THE DETAIL ON THE PLANS. THE EFFECTIVE HEIGHT OF THE FENCE SHALL NOT EXCEED 36 INCHES. IT IS RECOMMENDED THAT SILT FENCE BE REMOVED BY CUTTING THE FENCE MATERIALS AT GROUND LEVEL SO AS TO AVOID ADDITIONAL SOIL DISTURBANCE.

HAY BALES: SHALL BE INSTALLED PER THE DETAIL ON THE PLANS. BALES SHALL BE WIRE-BOUND OR STRING-TIED AND THESE BINDINGS MUST REMAIN PARALLEL WITH THE GROUND SURFACE DURING INSTALLATION TO PREVENT DETERIORATION OF THE BINDINGS. BALES SHALL BE INSTALLED IN A SHALLOW TRENCH LINE WITH ENDS OF ADJACENT BALES TIGHTLY ABUTTING ONE ANOTHER.

EROSION CONTROL MIX: SHALL BE INSTALLED PER THE DETAIL ON THE PLANS. THE MIX SHALL CONSIST PRIMARILY OF ORGANIC MATERIAL, AND CONTAIN A WELL-GRADED MIXTURE OF PARTICLE SIZES AND MAY CONTAIN ROCKS LESS THAN 4 INCHES IN DIAMETER. THE MIX COMPOSITION SHALL MEET THE STANDARDS DESCRIBED WITHIN THE MDEP BEST MANAGEMENT PRACTICES. NO TRENCHING IS REQUIRED FOR INSTALLATION OF THIS BARRIER.

CONTINUOUS CONTAINED BERM: SHALL BE INSTALLED PER THE DETAIL ON THE PLANS. THIS SEDIMENT BARRIER IS EROSION CONTROL MIX PLACED WITHIN A SYNTHETIC TUBULAR NETTING AND PERFORMS AS A STURDY SEDIMENT BARRIER THAT WORKS WELL ON HARD GROUND SUCH AS FROZEN CONDITIONS, TRAVELED AREAS OR PAVEMENT. NO TRENCHING IS REQUIRED FOR INSTALLATION OF THIS BARRIER.

6. TEMPORARY CHECK DAMS:
SHALL BE INSTALLED PER THE DETAIL ON THE PLANS. CHECK DAMS ARE TO BE PLACED WITHIN DITCHES/ SWALES AS SPECIFIED ON THE DESIGN PLANS IMMEDIATELY AFTER FINAL GRADING. CHECK DAMS SHALL BE 2 FEET HIGH. TEMPORARY CHECK DAMS MAY BE REMOVED ONLY AFTER THE ROADWAYS ARE PAVED AND THE VEGETATED SWALE ARE ESTABLISHED WITH AT LEAST 85%-90% OF VIGOROUS PERENNIAL GROWTH. THE AREA BENEATH THE CHECK DAM MUST BE SEEDED AND MULCHED IMMEDIATELY AFTER REMOVAL OF THE CHECK DAM.

STONE CHECK DAMS: SHOULD BE CONSTRUCTED OF 2 TO 3 INCH STONE AND PLACED SUCH THAT COMPLETE COVERAGE OF THE SWALE IS OBTAINED AND THAT THE CENTER OF THE DAM IS 6 INCHES LOWER THAT THE OUTER EDGES.

HAY BALE CHECK DAMS: WE DO NOT RECOMMEND THE USE OF HAY BALES AS CHECK DAMS.

MANUFACTURED CHECK DAMS: MANUFACTURED CHECK DAMS, AS SPECIFIED IN THE DETAIL ON THE PLANS, MAY BE USED IF AUTHORIZED BY THE PROPER LOCAL, STATE OR FEDERAL REGULATING AGENCIES. THESE UNITS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURE'S RECOMMENDATIONS.

1. STORMDRAIN INLET PROTECTION:
INLET PROTECTION SHALL BE PLACED AROUND A STORMDRAIN DROP INLET OR CURB INLET PRIOR TO PERMANENT STABILIZATION OF THE IMMEDIATE AND UPSTREAM DISTURBED AREAS. ANY SWALE BE CONSTRUCTED IN A MANNER THAT WILL FACILITATE CLEAN-OUT AND DISPOSAL OF TRAPPED SEDIMENTS AND MINIMIZE INTERFERENCE WITH CONSTRUCTION ACTIVITIES. ANY RESULTANT PONDING OF WATER FROM THE PROTECTION METHOD MUST NOT CAUSE EXCESSIVE UNDERMINEMENT OR DAMAGE TO ADJACENT AREAS OR STRUCTURES

HAY BALE DROP INLET PROTECTION: WE DO NOT RECOMMEND THE USE OF HAY BALES AS INLET PROTECTION.

CONCRETE BLOCK AND STONE INLET SEDIMENT FILTER (DROP OR CURB INLET): SHALL BE INSTALLED PER THE DETAIL ON THE PLANS. THE HEIGHT OF THE CONCRETE BLOCK BARRIER CAN VARY BUT MUST BE BETWEEN 12 AND 24 INCHES TALL. A MINIMUM OF 1 INCH CRUSHED STONE SHALL BE USED.

MANUFACTURED SEDIMENT BARRIERS AND FILTER (DROP OR CURB INLET): MANUFACTURED FILTERS, AS SPECIFIED IN THE DETAIL ON THE PLANS, MAY BE USED IF INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS

2. STABILIZED CONSTRUCTION EXIT:
PRIOR TO CLEARING AND/OR GRUBBING THE SITE A STABILIZED CONSTRUCTION ENTRANCE/EXIT SHALL BE CONSTRUCTED WHEREVER TRAFFIC WILL EXIT THE CONSTRUCTION SITE ONTO A PAVED ROADWAY IN ORDER TO MINIMIZE THE TRACKING OF SEDIMENT AND DEBRIS FROM THE CONSTRUCTION SITE ONTO PUBLIC ROADWAYS. THE ENTRANCES AND ADJACENT ROADWAY AREAS SHALL BE PERIODICALLY SWEPT OR WASHED TO FURTHER MINIMIZE THE TRACKING OF MUD, DUST OR DEBRIS FROM THE CONSTRUCTION AREA. STABILIZED CONSTRUCTION EXITS SHALL BE CONSTRUCTED IN AREAS SPECIFIED ON THE PLANS AND AS DETAILED ON THE PLANS.

3. DUST CONTROL:
DUST CONTROL DURING CONSTRUCTION SHALL BE ACHIEVED BY THE USE OF A WATERING TRUCK TO PERIODICALLY SPRINKLE THE EXPOSED ROADWAY AREAS AS NECESSARY TO REDUCE DUST DURING THE DRY MONTHS. APPLYING OTHER DUST CONTROL PRODUCTS SUCH AS CALCIUM CHLORIDE OR OTHER MANUFACTURED PRODUCTS ARE ALLOWED IF AUTHORIZED BY THE PROPER LOCAL, STATE AND/OR FEDERAL REGULATING AGENCIES. HOWEVER, IT IS THE CONTRACTOR'S ULTIMATE RESPONSIBILITY TO MITIGATE DUST AND SOIL LOSS FROM THE SITE.

4. TEMPORARY VEGETATION:
TEMPORARY VEGETATION SHALL BE APPLIED TO DISTURBED AREAS THAT WILL NOT RECEIVE FINAL GRADING FOR PERIODS UP TO 12 MONTHS. THIS PROCEDURE SHOULD BE USED EXTENSIVELY IN AREAS ADJACENT TO NATURAL RESOURCES. SEEDBED PREPARATION AND APPLICATION OF SEED SHALL BE CONDUCTED AS INDICATED IN THE PERMANENT VEGETATION SECTION OF THIS NARRATIVE. SPECIFIC SEEDS (FAST GROWING AND SHORT LIVING) SHALL BE SELECTED FROM THE MAINE EROSION AND SEDIMENT CONTROL BMP MANUAL DATED 3/2003 OR LATER. ALTERNATIVE EROSION CONTROL MEASURES SHOULD BE USED IF SEEDING CAN NOT BE DONE BEFORE SEPTEMBER 15TH OF THE CONSTRUCTION YEAR.

5. PERMANENT VEGETATION:
REVEGETATION MEASURES SHALL COMMENCE IMMEDIATELY UPON COMPLETION OF FINAL GRADING OF AREAS TO BE LOAMED AND SEEDED. THE APPLICATION OF SEED SHALL BE CONDUCTED BETWEEN APRIL 1ST AND OCTOBER 1ST OF THE CONSTRUCTION YEAR. PLEASE REFER TO THE WINTER EROSION CONTROL NOTES FOR MORE DETAIL. REVEGETATION MEASURES SHALL CONSIST OF THE FOLLOWING:

SEEDBED PREPARATION:
A. FOUR (4) INCHES OF LOAM SHALL BE SPREAD OVER DISTURBED AREAS AND SMOOTHED TO A UNIFORM SURFACE. LOAM SHALL BE FREE OF SUBSOIL, CLAY LUMPS, STONES AND OTHER OBJECTS OVER 2 INCHES OR LARGER IN ANY DIMENSION, AND WITHOUT WEEDS, ROOTS OR OTHER OBJECTIONABLE PLANT MATERIAL

B. SOILS TESTS SHALL BE TAKEN AT THE TIME OF SOIL STRIPPING TO DETERMINE FERTILIZATION REQUIREMENTS. SOILS TESTS SHALL BE TAKEN PROMPTLY AS TO NOT INTERFERE WITH THE 14-DAY LIMIT ON SOIL EXPOSURE. BASED UPON TEST RESULTS, SOIL AMENDMENTS SHALL BE INCORPORATED INTO THE SOIL PRIOR TO FINAL SEEDING. IN LIEU OF SOIL TESTS, SOIL AMENDMENTS MAY BE APPLIED AS FOLLOWS:

ITEM	APPLICATION RATE
10-20-20 FERTILIZER (N-P205-K20 OR EQUAL)	18.4 LBS /1,000 S.F
GROUND LIMESTONE (50% CALCIUM & MAGNESIUM OXIDE)	138 LBS /1,000 S.F.

C. WORK LIME AND FERTILIZER INTO THE SOIL AS NEARLY AS PRACTICAL TO A DEPTH OF 4 INCHES WITH PROPER EQUIPMENT. ROLL THE AREA TO FIRM THE SEEDBED EXCEPT ON CLAY OR SILTY SOILS OR COARSE SAND.

APPLICATION OF SEED:
A. SEEDING: SHALL BE CONDUCTED BETWEEN APRIL 1ST AND OCTOBER 1ST OF THE CONSTRUCTION YEAR. GENERALLY A SEED MIXTURE MAY BE APPLIED AS FOLLOWS (MDEP SEED MIX 2 IS DISPLAYED)

SEED TYPE	APPLICATION RATE
CREEPING RED FESCUE	0.46 LBS /1,000 S.F. (20 LBS/ACRE)
REDTOP	0.05 LBS/1,000 S.F. (2 LBS/ACRE)
TALL FESCUE	0.46 LBS /1,000 S.F. (20 LBS/ACRE)
TOTAL	0.97 LBS /1,000 S.F. (42 LBS/ACRE)

NOTE: A SPECIFIC SEED MIXTURE SHOULD BE CHOSEN TO MATCH THE SOILS CONDITION OF THE SITE. VARIOUS AGENCIES CAN RECOMMEND SEED MIXTURES. MDEP RECOMMENDED SEED MIXTURES ARE IN THE EROSION AND SEDIMENT CONTROL BMP MANUAL DATED 3/2003 OR LATER

B. HYDROSEEDING: SHALL BE CONDUCTED ON PREPARED AREAS WITH SLOPES LESS THAN 2:1. LIME AND FERTILIZER MAY BE APPLIED SIMULTANEOUSLY WITH SEED. RECOMMENDED SEED MIXTURES ARE THE SAME AS ABOVE BUT MUST BE INCREASED BY 10% WHEN HYDROSEEDING.

C. MULCHING: SHALL COMMENCE IMMEDIATELY AFTER SEED IS APPLIED. REFER TO THE TEMPORARY MULCHING SECTION OF THIS NARRATIVE FOR DETAILS

SODDING

FOLLOWING SEEDBED PREPARATION, SOD CAN BE APPLIED IN LIEU OF SEEDING IN AREAS WHERE IMMEDIATE VEGETATION IS MOST BENEFICIAL SUCH AS DITCHES. AROUND STORMWATER DROP INLETS AND AREAS OF AESTHETIC VALUE. SOD SHOULD BE LAID AT RIGHT ANGLES TO THE DIRECTION OF FLOW. STAGGER THE STRIPS AT THE LOWER ELEVATION. SOD SHOULD BE ROLLED OR TAMPED DOWN TO EVEN OUT THE JOINTS ONCE LAID DOWN. WHERE FLOW IS PREVALENT THE SOD MUST BE PROPERLY ANCHORED DOWN. IRRIGATE THE SOD IMMEDIATELY AFTER INSTALLATION. IN MOST CASES, SOD CAN BE ESTABLISHED BETWEEN APRIL 1ST AND NOVEMBER 15TH OF THE CONSTRUCTION YEAR, HOWEVER, REFER TO THE WINTER EROSION CONTROL NOTES FOR ANY ACTIVITIES AFTER OCTOBER 1ST.

TRENCH DEWATERING AND TEMPORARY STREAM DIVERSION

WATER FROM CONSTRUCTION TRENCH DEWATERING OR TEMPORARY STREAM DIVERSION WILL PASS FIRST THROUGH A FILTER BAG OR SECONDARY CONTAINMENT STRUCTURE (E.G. HAY BALE LINED POOL) PRIOR TO DISCHARGE. THE DISCHARGE SITE SHALL BE SELECTED TO AVOID FLOODING AND SEDIMENT DISCHARGES TO A PROTECTED RESOURCE. IN NO CASE SHALL THE FILTER BAG OR CONTAINMENT STRUCTURE BE LOCATED WITHIN 100 FEET OF A PROTECTED NATURAL RESOURCE

STANDARDS FOR TIMELY STABILIZATION:

STANDARD FOR THE TIMELY STABILIZATION OF DISTURBED SLOPES -- THE CONTRACTOR WILL CONSTRUCT AND STABILIZE STONE-COVERED SLOPES BY NOVEMBER 15. THE CONTRACTOR WILL SEED AND MULCH ALL SLOPES TO BE VEGETATED BY SEPTEMBER 15. THE MDEP WILL CONSIDER ANY AREA HAVING A GRADE GREATER THAN 8% (1:SH:1V) TO BE A SLOPE. IF THE CONTRACTOR FAILS TO STABILIZE ANY SLOPE TO BE VEGETATED BY SEPTEMBER 15, THEN THE CONTRACTOR WILL TAKE ONE OF THE FOLLOWING ACTIONS TO STABILIZE THE SLOPE FOR LATE FALL AND WINTER.

A. STABILIZE THE SOIL WITH TEMPORARY VEGETATION AND EROSION CONTROL MATS -- BY OCTOBER 1 THE CONTRACTOR WILL SEED THE DISTURBED SLOPE WITH WINTER RYE AT A SEEDING RATE OF 3 POUNDS PER 1000 SQUARE FEET. LIGHTLY MULCH THE SEEDED SOIL WITH HAY OR STRAW AT 75 POUNDS PER 1000 SQUARE FEET, AND ANCHOR THE MULCH WITH PLASTIC NETTING. THE CONTRACTOR WILL MONITOR GROWTH OF THE RYE OVER THE NEXT 20 DAYS. IF THE RYE FAILS TO GROW AT LEAST THREE INCHES OR COVER AT LEAST 75% OF THE DISTURBED SOIL BEFORE NOVEMBER 15, THEN THE APPLICANT WILL MULCH THE AREA FOR 0° WINTER PROTECTION AS DESCRIBED IN ITEM 2(C) OF THIS STANDARD.

B. STABILIZE THE SOIL WITH SOD -- THE CONTRACTOR WILL STABILIZE THE DISTURBED SOIL WITH PROPERLY INSTALLED SOD BY OCTOBER 1. PROPER INSTALLATION INCLUDES THE APPLICANT 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. THE APPLICANT WILL NOT USE LATE-SEASON SOD INSTALLATION TO STABILIZE SLOPES HAVING A GRADE GREATER THAN 33% (3H:1V).

C. STABILIZE THE SLOPE WITH EROSION CONTROL MIX -- THE CONTRACTOR WILL PLACE A SIX-INCH LAYER OF EROSION CONTROL MIX ON THE SLOPE BY NOVEMBER 15. PRIOR TO PLACING THE EROSION CONTROL MIX, THE APPLICANT WILL REMOVE ANY SNOW ACCUMULATION ON THE DISTURBED SLOPE. DO NOT USE EROSION CONTROL MIX TO STABILIZE SLOPES HAVING GRADES GREATER THAN 1H:1V OR HAVING GROUNDWATER SEEPS ON THE SLOPE FACE.

D. STABILIZE THE SLOPE WITH STONE RIPRAP -- THE CONTRACTOR WILL PLACE A LAYER OF STONE RIPRAP ON THE SLOPE BY NOVEMBER 15. THE APPLICANT WILL HIRE A REGISTERED PROFESSIONAL ENGINEER TO DETERMINE THE STONE SIZE NEEDED FOR STABILITY AND TO DESIGN A FILTER LAYER FOR UNDERNEATH THE RIPRAP

STANDARD FOR THE TIMELY STABILIZATION OF DISTURBED SOILS -- BY SEPTEMBER 15 THE CONTRACTOR WILL SEED AND MULCH ALL DISTURBED SOILS ON AREAS HAVING A SLOPE LESS THAN 8%. IF THE CONTRACTOR FAILS TO STABILIZE THESE SOILS BY THIS DATE, THEN THE CONTRACTOR WILL TAKE ONE OF THE FOLLOWING ACTION'S TO STABILIZE THE SOIL FOR LATE FALL AND WINTER.

A. STABILIZE THE SOIL WITH TEMPORARY VEGETATION -- BY OCTOBER 1 THE CONTRACTOR WILL SEED THE DISTURBED SOIL WITH WINTER RYE AT A SEEDING RATE OF 3 POUNDS PER 1000 SQUARE FEET. LIGHTLY MULCH THE SEEDED SOIL WITH HAY OR STRAW AT 75 POUNDS PER 1000 SQUARE FEET, AND ANCHOR THE MULCH WITH PLASTIC NETTING. THE APPLICANT WILL MONITOR GROWTH OF THE RYE OVER THE NEXT 20 DAYS. IF THE RYE FAILS TO GROW AT LEAST THREE INCHES OR COVER AT LEAST 75% OF THE DISTURBED SOIL BEFORE NOVEMBER 15, THEN THE APPLICANT WILL MULCH THE AREA FOR 0° WINTER PROTECTION AS DESCRIBED IN ITEM 2(C) OF THIS STANDARD.

B. STABILIZE THE SOIL WITH SOD -- THE CONTRACTOR WILL STABILIZE THE DISTURBED SOIL WITH PROPERLY INSTALLED SOD BY OCTOBER 1. PROPER INSTALLATION INCLUDES THE APPLICANT 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.

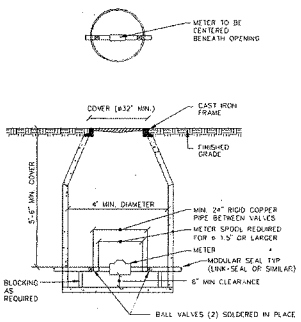
C. STABILIZE THE SOIL WITH MULCH -- BY NOVEMBER 15 THE APPLICANT WILL MULCH THE DISTURBED SOIL BY SPREADING HAY OR STRAW AT A RATE OF AT LEAST 150 POUNDS PER 1000 SQUARE FEET ON THE AREA SO THAT NO SOIL IS VISIBLE THROUGH THE MULCH. PRIOR TO APPLYING THE MULCH, THE APPLICANT WILL REMOVE ANY SNOW ACCUMULATION ON THE DISTURBED AREA. IMMEDIATELY AFTER APPLYING THE MULCH, THE APPLICANT WILL ANCHOR THE MULCH WITH PLASTIC NETTING TO PREVENT WIND FROM MOVING THE MULCH OFF THE DISTURBED SOIL.

D. STABILIZE THE SOIL WITH EROSION CONTROL MIX -- THE CONTRACTOR WILL PLACE A MINIMUM TWO-INCH LAYER OF EROSION CONTROL MIX ON THE SOIL BY NOVEMBER 15. PRIOR TO PLACING THE EROSION CONTROL MIX, THE APPLICANT WILL REMOVE ANY SNOW ACCUMULATION ON THE DISTURBED SLOPE.

CONSTRUCTION SCHEDULE

SITE IMPROVEMENTS WILL MOST LIKELY BEGIN IN _____ DEPENDING UPON FINAL PROJECT APPROVAL. THE FOLLOWING SCHEDULE IS ANTICIPATED:

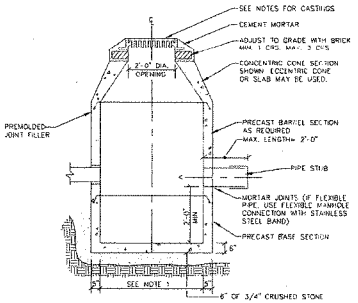
1.	ESTIMATED CONSTRUCTION TIME:	-- MONTHS
2.	EROSION CONTROL MEASURES PLACED	WEEK 1 - WEEK 2
3.	SITE CLEARING AND GRUBBING	WEEK 2 - WEEK 3
4.	CONSTRUCTION OF ROAD SUBBASE FOR ACCESS	WEEK 5 - WEEK 13
5.	STORMWATER MANAGEMENT AREA CONSTRUCTION	WEEK 7 - WEEK 8
6.	UTILITY IMPROVEMENTS AND ROADWAY CONSTRUCTION	WEEK 7 - WEEK 24
7.	MULCH SPREAD FOR EROSION CONTROL	--



METER PIT AND COVER NOTES:

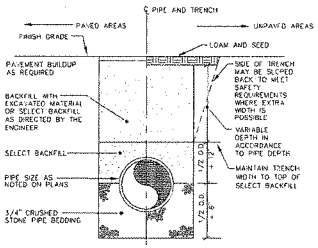
1. THE METER PIT SHALL BE SUPPLIED AND INSTALLED BY THE CUSTOMER AND SHALL BE LOCATED ON PRIVATE PROPERTY BETWEEN 10'-0" AND 20'-0" FROM THE PROPERTY LINE
2. THE METER PIT SHALL BE MADE OF PRECAST CONCRETE OF SUFFICIENT SIZE TO PROVIDE 5'-7" MINIMUM GROUND COVER FROM FINISHED GRADE TO THE TOP OF THE SERVICE PIPE. ANY SEAMS BETWEEN CONCRETE SECTIONS SHALL BE SEALED WITH MASTIC JOINT. ALL OPENINGS IN THE CONCRETE FOR SERVICE PIPING SHALL BE SEALED WITH A MODULAR SEAL (LINK-SEAL OR SIMILAR)
3. THE INTERIOR OF THE METER PIT SHALL BE A MINIMUM OF 4'-0" IN DIAMETER AND THE METER PIT OPENING SHALL BE A MINIMUM OF 30" IN DIAMETER WITH A CAST IRON FRAME. THE METER PIT COVER SHALL BE CAST IRON 32" MINIMUM IN DIAMETER, AND BE WETHER PERMANENTLY LABELED "WATER" OR HAVE NO LABEL. ANY STEEL PLATE MATERIAL SHALL BE COATED WITH A RUST INHIBITOR PAINT.
4. WALL-MOUNTED LADDER RUNGS SHOULD NOT BE INSTALLED WITHIN METER PIT.
5. ALL PIPING INSIDE AND EXTENDING THROUGH THE METER PIT SHALL BE MADE OF COPPER, WITH A MINIMUM OF 5" CLEARANCE FROM THE METER PIT FLOOR. BLOCKING SHALL BE INSTALLED AS REQUIRED TO SUPPORT THE PIPE.
6. CUSTOMER SHALL ENSURE THE METER PIT AND COVER ARE PROPERLY RATED FOR TRAFFIC FLOW IF APPLICABLE.
7. ONLY PORTLAND WATER DISTRICT PERSONNEL ARE AUTHORIZED TO INSTALL WATER METERS. PORTLAND WATER DISTRICT PERSONNEL WILL BE ADDITIONALLY AUTHORIZED TO OPERATE METER VALVES AS NEEDED FOR INSTALLATION AND MAINTENANCE.
8. PORTLAND WATER DISTRICT WILL SUPPLY THE WATER METER AND NECESSARY FITTINGS FOR INSTALLATION. IF REQUIRED, A FLANGED METER SPOOL WILL BE AVAILABLE FOR CUSTOMER PICKUP AT DOUGLASS STREET CUSTOMER SERVICE AND MUST BE INSTALLED BY CUSTOMER PRIOR TO METER SET. ALL OTHER MATERIALS INCLUDING VALVES, SHALL BE SUPPLIED AND INSTALLED BY THE CUSTOMER.
9. CUSTOMER WILL INSTALL TWO (2) BALL VALVES 24" APART FOR METER INSTALLATION ALLOWING FOR THE WATER METER TO BE CENTERED UNDER THE METER PIT OPENING. BALL VALVES SHALL BE SOLDERED IN PLACE FOR A SERVICE PIPE WITH A DIAMETER OF 1" OR LESS. CUSTOMER WILL INSTALL RIGID COPPER PIPE (24" MINIMUM) BETWEEN THE BALL VALVES.
10. FOR PIPING WITH A DIAMETER OF 1-1/2" OR LARGER, THE CUSTOMER WILL OBTAIN A FLANGED METER SPOOL PIECE FROM THE PORTLAND WATER DISTRICT. THE CUSTOMER IS RESPONSIBLE FOR ENSURING THAT THE SPOOL PIECE IS INSTALLED PRIOR TO METER INSTALLATION.
11. THE METER PIT MAY HOUSE UP TO TWO 5/8", 3/4" OR 1" METERS. INSTALLATION OF MULTIPLE METERS IN A METER PIT MUST RECEIVE PRIOR APPROVAL FROM THE PORTLAND WATER DISTRICT.

TYPICAL METER PIT (2" METERS)
NOT TO SCALE

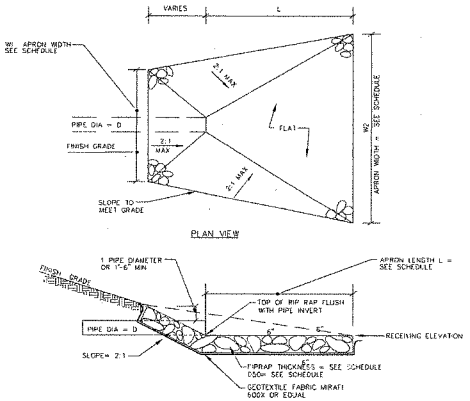


NOTES:
1. 4'-0" I.D. TYPICAL. SOME STRUCTURES MAY REQUIRE LARGER I.D. PROVIDE SHOP DRAWINGS.
2. DRAINAGE STRUCTURES TO BE DESIGNED FOR H-20 LOADING.
3. PIPE SIZES AND INVERTS AS NOTED ON PLANS
4. CATCH BASIN FRAME AND GRATE TO BE NEENAH FOUNDRY R-2554, OR APPROVED EQUAL

TYPICAL CATCH BASIN
NOT TO SCALE



TYPICAL TRENCH SECTION
NOT TO SCALE

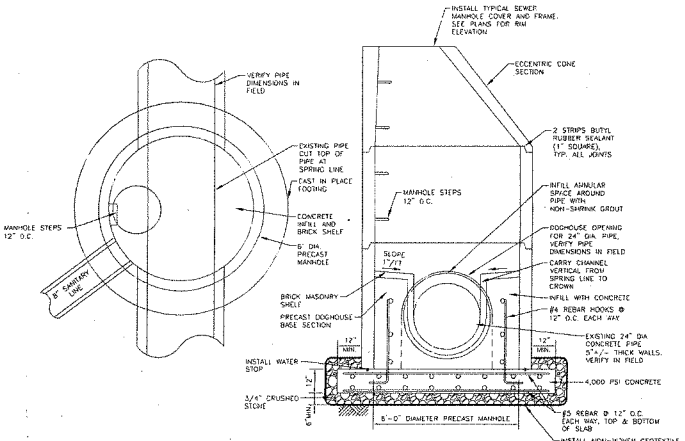


NOTES
1. RIPRAP TO BE PROCESSED ANGULAR ROCK
2. RIPRAP GRADATION SHALL BE A WELL GRADED MIX FROM ABOUT 1.5 TIMES D SIZE TO 25 PERCENT OF THE D SIZE
3. THE RIPRAP STONES SHALL BE CAREFULLY PLACED FROM THE TOE OF THE SLOPE UPWARD
4. STONES SHALL BE LOWERED TO THE SLOPE AND NOT BE ALLOWED TO DROP MORE THAN 12" ONTO THE GEOTEXTILE
5. THE FINISHED SURFACE SHALL BE A RELATIVELY SMOOTH, UNIFORMLY SLOPED SURFACE

TYPICAL RIPRAP APRON SCHEDULE

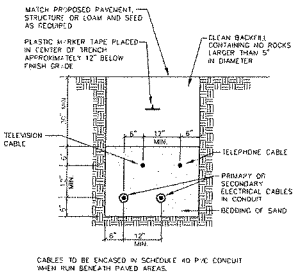
CULVERT DIAMETER - D (IN.)	APRON LENGTH - L (FT.)	WIDTH - W1 (FT.)	WIDTH - W2 (FT.)	RIPRAP D50 (IN.)	RIPRAP THICKNESS (IN.)
12	8	3	9	5	14
15	10	4	12	6	14
18	13	5	15	7	18
24	18	8	20	8	18
36	29	9	32	11	25
42	33	11	37	12	27
48	38	12	43	16	36

RIPRAP APRON
NOT TO SCALE



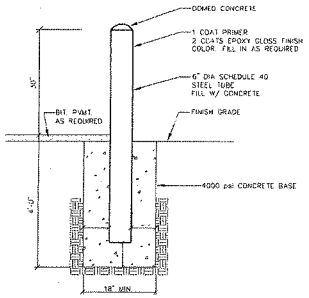
NOTES:
1. CUT EXISTING PIPE AND REMOVE TOP HALF OF PIPE PRIOR TO CONSTRUCTING BRICK SHELF
2. ALL BACKFILL WITHIN 3' OF STRUCTURE SHALL BE GRANULAR BORROW PLACED IN 8" LIFTS COMPACTED TO 95% OPTIMUM DENSITY.
3. VERIFY PIPE DIMENSIONS IN FIELD AND SUBMIT SHOP DRAWINGS FOR ENGINEER'S APPROVAL

DOGHOUSE MANHOLE
NOT TO SCALE

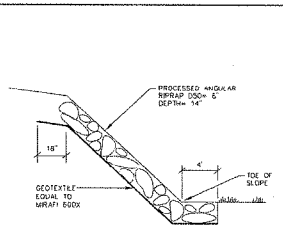


CABLES TO BE ENCASED IN SCHEDULE 40 PVC CONDUIT WHEN RUN BENEATH PAVED AREAS.

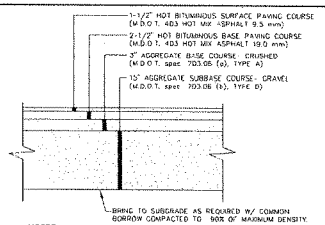
TYPICAL UNDERGROUND CABLE INSTALLATION
NOT TO SCALE



METAL BOLLARD
NOT TO SCALE

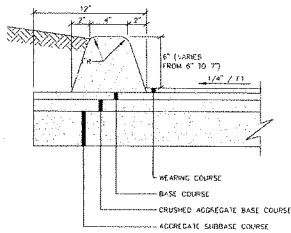


SIDE SLOPE RIPRAP
NOT TO SCALE



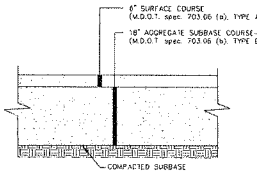
NOTES:
1. COMPACT GRAVEL SUBBASE, BASE COURSE TO 92% OF MAXIMUM DENSITY USING HEAVY ROLLER COMPACTION
2. CONTRACTOR SHALL SET GRADE STAKES MARKING SUBBASE AND FINISH GRADE ELEVATIONS FOR CONSTRUCTION REFERENCE
3. CONTRACTOR MAY REPLACE BITUMINOUS PAVING SECTION WITH TWO (2) 1-1/2" LIFTS OF 12.5mm SUPERPAVE MIX. SUBMIT PAVEMENT MIX DESIGN PRIOR TO CONSTRUCTION

TYP. PAVED PARKING LOT SECTION
NOT TO SCALE

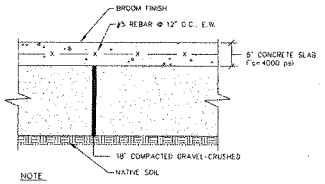


(SEE TYPICAL ROAD SECTION FOR MATERIAL SPECIFICATIONS AND DEPTHS)

BITUMINOUS CURB SECTION
NOT TO SCALE

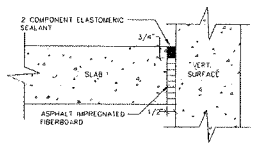


TYP. GRAVEL PARKING AREA
NOT TO SCALE



NOTE
1. PROVIDE CONTRACTION CONTROL JOINTS EVERY 6' IN EACH DIRECTION

TYPICAL CONCRETE SLAB
NOT TO SCALE



ISOLATION JOINT
NOT TO SCALE

PROGRESS PRINT

SHAWN M. FRANK, PE, 6326
STATE OF MAINE — SHAWN M. FRANK — No. 6326 — REGISTERED PROFESSIONAL ENGINEER
07/13/18

DESIGNED	CHECKED
SAH	SMF

REV'D	BY	DATE	STATUS
A	SMF	7-13-18	ISSUED TO CITY

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SEBAGO TECHNICS INC
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd
Suite 4A
South Portland, ME 04106
Tel: 207-200-2100

DETAILS
OF
250 RIVERSIDE INDUSTRIAL PARKWAY
RIVERSIDE INDUSTRIAL PARKWAY
PORTLAND, MAINE
FOR:
TWO EISENHOWER DRIVE, LLC
P.O. BOX 1120
PORTLAND, MAINE 04104

PROJECT NO.	SCALE
16380	N.T.S.

SHEET 8 OF 12

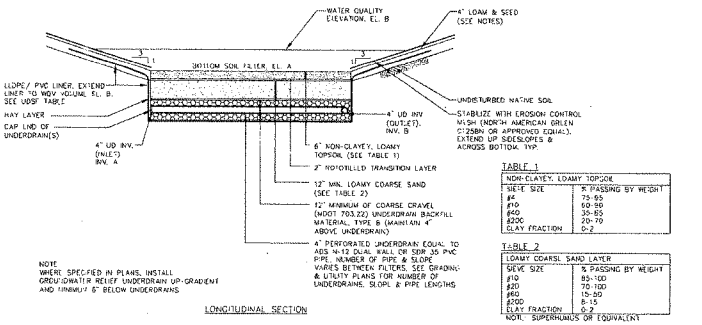


TABLE 1

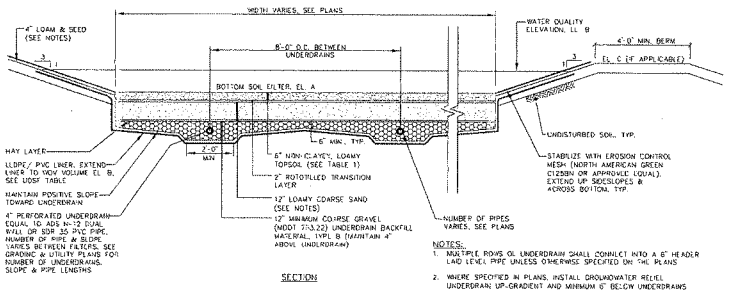
NON-CLAYEY, LOAMY TOPSOIL	
SIEVE SIZE	% PASSING BY WEIGHT
#4	75-95
#10	60-80
#40	35-65
#200	20-70
CLAY FRACTION	0-2

TABLE 2

LOAMY COARSE SAND LAYER	
SIEVE SIZE	% PASSING BY WEIGHT
#10	85-100
#20	70-100
#60	15-30
#200	5-15
CLAY FRACTION	0-2

NOTE: SUPERNAVAUS OR EQUIVALENT

LONGITUDINAL SECTION



NOTES:
1. MULTIPLE ROWS OF UNDERDRAIN SHALL CONNECT INTO A 6" HEADER LAID LEVEL PIPE UNLESS OTHERWISE SPECIFIED ON THE PLANS
2. WHERE SPECIFIED IN PLANS, INSTALL GROUNDWATER RELIEF UNDERDRAIN UP-GRADIENT AND MINIMUM 6" BELOW UNDERDRAINS

SECTION

UNDERDRAINED SOIL FILTER DETAIL
NOT TO SCALE

UNDERDRAINED SOIL FILTER CONSTRUCTION OVERSIGHT NOTES:

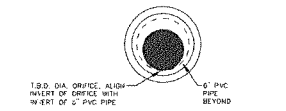
THE APPLICANT WILL RETAIN THE SERVICES OF A PROFESSIONAL ENGINEER TO INSPECT THE CONSTRUCTION AND STABILIZATION OF THE UNDERDRAIN, IF NECESSARY, THE INSPECTING ENGINEER WILL INTERPRET THE UNDERDRAIN'S CONSTRUCTION PLAN FOR THE CONTRACTOR. ONCE ALL STORMWATER MANAGEMENT STRUCTURES ARE CONSTRUCTED AND STABILIZED, THE INSPECTING ENGINEER WILL NOTIFY THE DEPARTMENT IN WRITING WITHIN 30 DAYS TO STATE THAT THE POND HAS BEEN COMPLETED. ACCOMPANYING THE ENGINEER'S NOTIFICATION MUST BE A LOG OF THE ENGINEER'S INSPECTIONS GIVING THE DATE OF EACH INSPECTION, THE TIME OF EACH INSPECTION, AND THE ITEMS INSPECTED ON EACH VISIT, AND INCLUDE ANY TESTING DATA OR SIEVE ANALYSIS DATA ON EVERY MINERAL SOIL AND SOIL MEDIA SPECIFIED IN THE PLANS AND USED ON SITE.

1. CONSTRUCTION SEQUENCE: THE UNDERDRAIN AND VEGETATION MUST NOT BE INSTALLED UNTIL THE AREA THAT DRAINS TO THE UNDERDRAIN HAS BEEN PERMANENTLY STABILIZED WITH PAVEMENT OR OTHER STRUCTURE, SOD, VEGETATION COVER, OR OTHER PERMANENT STABILIZATION UNLESS THE RUNOFF FROM THE CONTRIBUTING DRAINAGE AREA IS DIVERTED AROUND THE FILTER UNTIL STABILIZATION IS COMPLETED.
2. COMPACTION OF UNDERGRADE: UNDERDRAIN BEDDING MATERIAL MUST BE COMPACTED TO BETWEEN 90% AND 92% STANDARD PROCTOR. THE BED SHOULD BE INSTALLED IN AT LEAST 2 LIFTS OF 6 INCHES TO PREVENT POCKETS OF LOOSE MEDIA.
3. CONSTRUCTION OVERSIGHT: INSPECTION BY A PROFESSIONAL ENGINEER WILL OCCUR AT A MINIMUM:
   A. FOR FIRST UNDERDRAIN CONSTRUCTED, AFTER UNDERDRAIN PIPE IS INSTALLED AT GRADE, AND BUT NOT BACKFILLED. AFTER THE UNDERDRAIN PIPE IS COMPLETELY BACKFILLED AND BEFORE PLACEMENT OF LOAMY COARSE SAND LAYER
   B. AFTER THE LOAMY COARSE SAND LAYER AND SOD/ LOAM HAS BEEN INSTALLED.
   C. AFTER ONE YEAR TO INSPECT HEALTH OF THE VEGETATION AND MAKE CORRECTIONS.
   D. ALL MATERIAL USED FOR THE CONSTRUCTION OF THE UNDERDRAIN MUST BE CONFIRMED AS SUITABLE BY THE DESIGN ENGINEER. TESTING MUST BE DONE BY A CERTIFIED LABORATORY.

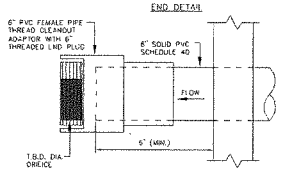
TESTING AND SUBMITTALS
1. THE UNDERDRAIN SHALL CONSIST OF THE TOP THREE LAYERS IDENTIFIED AS LOAMY TOPSOIL, 2" TRANSITION AND 12" LOAMY COARSE SAND. THE CONTRACTOR SHALL IDENTIFY THE LOCATION OF THE SOURCE FOR EACH COMPONENT OF THE UNDERDRAIN AND SUBMIT GRADATIONS FOR THE UNDERDRAIN MATERIALS TO THE ENGINEER FOR APPROVAL. SAMPLES MUST BE A COMPOSITE OF THREE DIFFERENT LOCATIONS (GRABS) FROM THE STOCKPILE OR PIT FACE. SAMPLE SIZE REQUIRED WILL BE DETERMINED BY THE TESTING LABORATORY.

UNDERDRAINED SOIL FILTER MATERIAL NOTES:

1. ONSITE LOAM SHALL BE SCREENED FOR STONES LARGER THAN 1 INCH AND BE TESTED TO VERIFY THERE IS LESS THAN 2% CLAY CONTENT AND 5-8% ORGANIC MATTER. IF ONSITE LOAM DOES NOT MEET REQUIREMENTS, THEN LOAM FROM OFFSITE SHALL BE A NON-CLAYEY, LOAMY TOPSOIL SUCH AS A USDA SANDY LOAM TOPSOIL WITH 5-8% HUMIFIED ORGANIC MATTER AND 3-10% CLAY CONTENT.
2. 2" TRANSITION LAYER OF THE LOAM/SOD LAYER SHALL BE ROTOTILLED INTO THE LOAMY COARSE SAND LAYER BELOW.
3. THE LOAMY COARSE SAND LAYER SHALL BE TESTED IN ACCORDANCE WITH THE TESTING AND SUBMITTALS NOTES ABOVE.
4. A LAYER OF HAY SHALL BE PLACED BETWEEN 12" LOAMY COARSE LAYER AND UNDERDRAIN STONE BEDDING TO PREVENT SUBSIDENCE OR PLUGGING OF THE SAND/GRAVEL/STONE LAYER AND/OR PIPE.
5. UNDERDRAIN STONE BEDDING MATERIAL MUST CONFORM TO THE MDOT SPECIFICATION 703.22 UNDERDRAIN TYPE B FOR UNDERDRAIN BACKFILL MATERIAL. THE BEDDING MATERIAL MUST HAVE NO MORE THAN 5% PASSING THE 200 SIEVE.
6. MATERIAL LAYERS ABOVE THE UNDERDRAIN BACKFILL LAYER SHALL BE A UNIFORM MIX, FREE OF STONES, STUMPS, ROOTS, OR OTHER SIMILAR OBJECTS LARGER THAN TWO INCHES. NO OTHER MATERIALS OR SUBSTANCES THAT MAY BE HARMFUL TO PLANT GROWTH, OR PROVE A HINDRANCE TO THE PLANTING OR MAINTENANCE OPERATIONS CAN BE MIXED WITHIN THE FILTER. DURING CONSTRUCTION, CARE SHOULD BE TAKEN TO AVOID COMPACTION OF BOTH THE GRAVEL AND SOIL FILTER.
7. OVER COMPACTION OF UNDERDRAIN MATERIAL SHALL BE AVOIDED. IF OVER COMPACTION OCCURS, ROTOTILL AGAIN PRIOR TO SEEDING OR SODDING

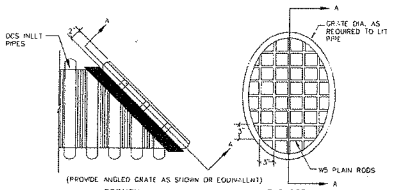


END DETAIL



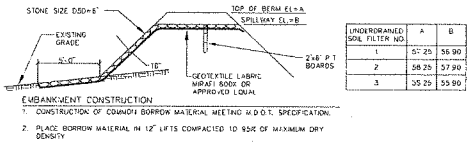
CONNECTION DETAIL

FLANGE ADAPTOR DETAIL
NOT TO SCALE



NOTES:
1. RODS CONFORM TO SECTION 709.1
2. 3/8" GRADE 304 STAINLESS STEEL BOLT AND NUT (4 EA.)
3. GRATE AND HARDWARE SHALL BE CONSTRUCTED OF ALUMINUM OR STAINLESS STEEL
4. ALTERNATIVE TO SCREEN: ADS DRAIN ADB12 OR APPROVED EQUAL

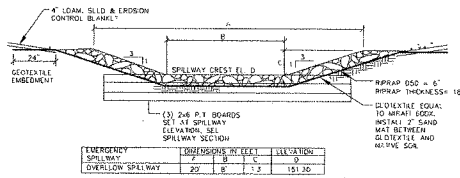
ANIMAL SCREEN DETAIL
NOT TO SCALE



UNDERDRAINED SOIL FILTER NO.	A	B
1	57.25	56.90
2	58.25	57.90
3	59.25	59.90

EMBANKMENT CONSTRUCTION
1. CONSTRUCTION OF COMMON BORROW MATERIAL MEETING M.D.O.T. SPECIFICATION.
2. PLACE BORROW MATERIAL IN 12" LIFTS COMPACTED TO 95% OF MAXIMUM DRY DENSITY
3. INSTALL RIPRAP AND EROSION CONTROL MESH WHERE SPECIFIED ON PLANS
4. LOAM, SEED, AND STABILIZE IN ACCORDANCE WITH SEDIMENTATION AND EROSION CONTROL PLAN

SPILLWAY SECTION
NOT TO SCALE



EMERGENCY SPILLWAY	DIMENSIONS IN FEET			ELEVATION
	A	B	C	D
OVERFLOW SPILLWAY	20'	8'	1:3	151.20

EMERGENCY/ FOREBAY SPILLWAY CROSS-SECTION
NOT TO SCALE

PROGRESS PRINT

STATE OF MAINE — SHAWN M. FRANK — No. 9396 — REGISTERED PROFESSIONAL ENGINEER — 07/13/18

SHAWN M. FRANK, PE 9396

DESIGNED	CHECKED
SAH	SMF

REV'D	BY	DATE	STATUS
A	SMF	7.13.18	ISSUED TO CITY

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SEBAGO TECHNICS
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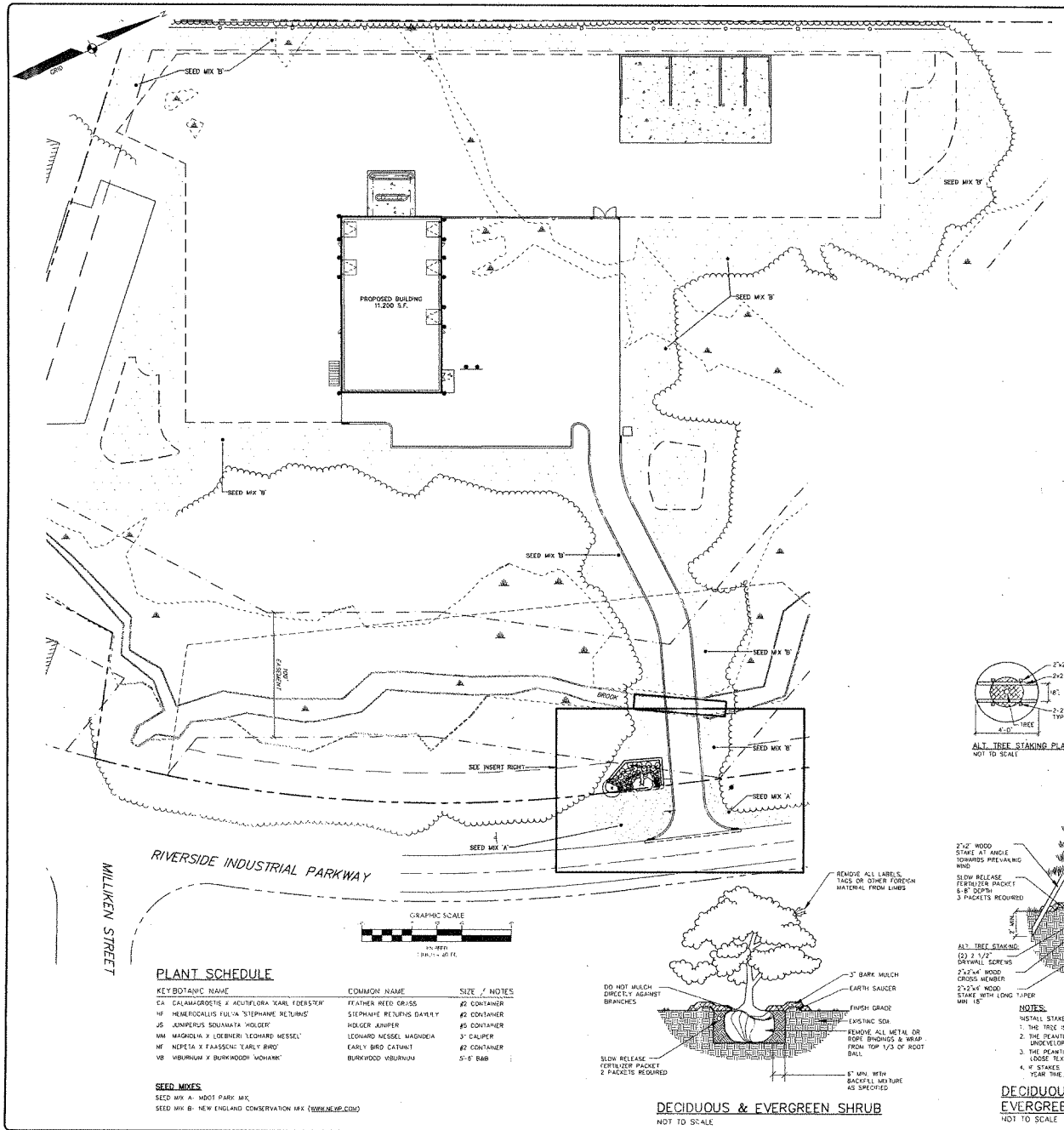
Suite E
South Portland, ME 04106
Tel: 207-200-2100
WWW.SEBAGOTECHNICS.COM

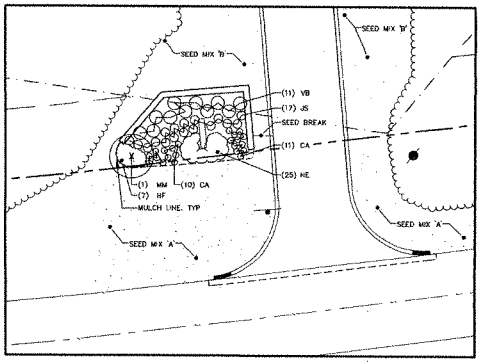
DETAILS
OF 250 RIVERSIDE INDUSTRIAL PARKWAY
RIVERSIDE INDUSTRIAL PARKWAY
PORTLAND, MAINE

FOR:
TWO EISENHOWER DRIVE, LLC
P.O. BOX 1123
PORTLAND, MAINE 04104

PROJECT NO.	SCALE
16360	N.T.S.

SHEET 9 OF 12





INSERT:
SCALE: 1" = 20'

PLANT SCHEDULE

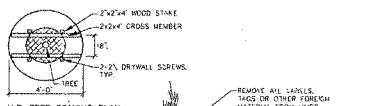
KEY	BOTANIC NAME	COMMON NAME	SIZE / NOTES
CA	CALAMAGROSTIS X ACUTIFLORA 'KARL FOERSTER'	FEATHER REED GRASS	#2 CONTAINER
HF	HEMEROCALLIS FULVA 'STEPHANIE RETURNS'	STEPHANIE RETURNS DAYLILY	#2 CONTAINER
JS	JUNIPERUS SQUAMATA 'HOLGER'	HOLGER JUNIPER	#5 CONTAINER
MM	MAGNOLIA X LOEBNERI 'LEONARD MESSEL'	LEONARD MESSEL MAGNOLIA	3" CALIPER
NF	NEPETA X FAASSENII 'EARLY BIRD'	EARLY BIRD CATMINT	#2 CONTAINER
VB	VIBURNUM X BURKWOODII 'MOHAWK'	BURKWOOD VIBURNUM	5'-6' B&B

SEED MIXES

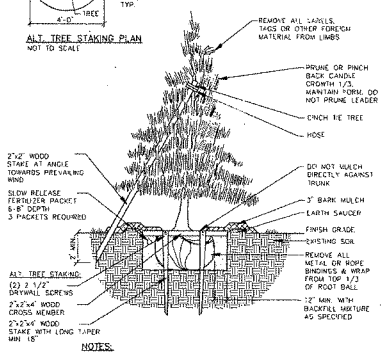
SEED MIX A- MDOT PARK MIX

SEED MIX B- NEW ENGLAND CONSERVATION MIX (WWW.NEWP.COM)

DECIDUOUS & EVERGREEN SHRUB
NOT TO SCALE



ALT. TREE STAKING PLAN
NOT TO SCALE



NOTES:

INSTALL STAKES AND GUYS TO TREES IF THE FOLLOWING APPLY:

1. THE TREE IS OF SUBSTANTIAL SIZE
2. THE PLANTING LOCATION IS EXTREMELY WINDY, AS ON OPEN UNDEVELOPED SITES.
3. THE PLANTING LOCATION IS COMPRISED OF SAND OR OTHER LOOSE TEXTURED SOILS.
4. IF STAKES AND GUYS ARE REQUIRED, REMOVE AFTER ONE YEAR TIME.

DECIDUOUS TREES — UNDER 3" CALIPER OR UNDER 8' IN HEIGHT
EVERGREEN TREES — 7'-0" IN HEIGHT & UNDER
NOT TO SCALE

LANDSCAPE NOTES

1. PLANT QUANTITIES SHOWN ON PLANT LISTS ARE FOR CONVENIENCE TO THE CONTRACTOR ONLY. THE CONTRACTOR IS RESPONSIBLE FOR ALL PLANT MATERIAL INSTALLATION AS SHOWN ON PLANS.
2. SIZE AND GRADING STANDARDS OF PLANT MATERIALS SHALL CONFORM TO THE LATEST EDITION OF "U.S.A. STANDARD FOR NURSERY STOCK" BY THE AMERICAN ASSOCIATION OF NURSERYMEN, INC.
3. ALL PLANT MATERIAL SHALL BE FREE FROM INSECTS AND DISEASE.
4. ALL PLANTING SHALL BE DONE IN ACCORDANCE WITH ACCEPTABLE HORTICULTURAL PRACTICES. THIS IS TO INCLUDE PROPER PLANTING MIX, PLANT BED AND TREE PIT PREPARATION, PRUNING, STAKING OR GUYING, WRAPPING, SPRAYING, FERTILIZATION, PLANTING AND ADEQUATE MAINTENANCE UNTIL ACCEPTANCE BY THE OWNER.
5. PLANT MATERIAL SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR BY THE CONTRACTOR AND A PERIOD OF TWO YEARS THEREAFTER BY THE OWNER FROM DATE OF INSTALLATION. DURING THE ONE YEAR GUARANTEE PERIOD, DEAD PLANT MATERIAL SHALL BE REPLACED AT NO COST TO THE OWNER, AT THE END OF THE ONE YEAR PERIOD, THE CONTRACTOR SHALL OBTAIN FINAL ACCEPTANCE FROM THE OWNER.
6. ALL GRASS, OTHER VEGETATION AND DEBRIS SHALL BE REMOVED FROM ALL PLANTING AREAS PRIOR TO PLANTING.
7. EXISTING TREES TO BE PRESERVED WILL BE PROTECTED DURING CONSTRUCTION AND SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR.
8. THE LANDSCAPE CONTRACTOR IS ADVISED OF THE PRESENCE OF THE UNDERGROUND UTILITIES AND SHALL VERIFY THE EXISTENCE AND LOCATION OF SAME BEFORE COMMENCING ANY DIGGING OPERATIONS. THE LANDSCAPE CONTRACTOR SHALL REPLACE OR REPAIR UTILITIES, PAVING, WALKS, CURBING, ETC. DAMAGED IN PERFORMANCE OF THIS JOB AT NO ADDITIONAL COST TO THE OWNER.
9. ALL SHRUB BEDS SHALL BE MULCHED WITH 3" CLEAN SHREDDED DARK BROWN BARK MULCH.
10. THE CONTRACTOR SHALL PROVIDE 4" LOAM FOR ALL AREAS TO BE SODDED OR SEEDED. PLANTING AREAS SHALL RECEIVE 12" ROLLED THICKNESS OF LOAM. THE LANDSCAPE CONTRACTOR SHALL COORDINATE SUBGRADE PREPARATION WITH THE GENERAL CONTRACTOR PRIOR TO PLACING LOAM.
11. ANY DEVIATION FROM THE LANDSCAPE PLAN, INCLUDING PLANT LOCATION, SELECTION, SIZE, QUANTITY OR CONDITION SHALL BE REVIEWED AND APPROVED BY THE OWNER AND LANDSCAPE ARCHITECT (AND MUNICIPAL AUTHORITY, IF APPLICABLE) PRIOR TO INSTALLATION ON SITE.
12. WHERE INDICATED ON PLAN, PLANTING SOIL MIXTURE FOR PERENNIAL AND ANNUAL FLOWER BED AREAS SHALL CONSIST OF FOUR PARTS TOPSOIL, TWO PARTS SPHAGNUM PEAT MOSS, AND ONE PART HORTICULTURAL PERLITE BY VOLUME. PEAT MOSS MAY BE SUBSTITUTED WITH WELL-ROTTED OR DEHYDRATED MANURE OR COMPOST. ROTOTILL BEDS TO A DEPTH OF 8 INCHES.

LEGEND

EXISTING	PROPOSED
	PROPERTY LINE/R.O.W.
	ABUTTER LINE/R.O.W.
	FENCE LINE/R.O.W.
	EASEMENT
	EDGE WETLAND
	WETLANDS
	BUILDING
	EDGE PAVEMENT
	EDGE CONCRETE
	PAVEMENT PAINT
	EDGE GRAVEL
	CURB LINE
	CHAIN LINK FENCE
	RETAINING WALL
	SIGN
	DECIDUOUS TREE
	CONIFEROUS TREE
	MULCH LINE

PLS OR PE

PROGRESS PRINT

WILLIAM T. CONWAY — LANDSCAPE ARCHITECT — STATE OF MAINE

DESIGNED	CHECKED
DMD	WTC

REV#	BY	DATE	STATUS
B	WTC	8-27-18	REVISED PER CITY COMMENTS
A	WTC	7-13-18	ISSUED TO CITY

THIS PLAN SHALL NOT BE MODIFIED IN WHOLE OR PART WITHOUT 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.

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75 John Roberts Rd.
Suite E
South Portland, ME 04106
Tel: 207.200.2100

LANDSCAPING PLAN
OF
250 RIVERSIDE INDUSTRIAL PARKWAY
RIVERSIDE INDUSTRIAL PARKWAY
PORTLAND, MAINE

FOR:
TWO EISENHOWER DRIVE, LLC
P.O. BOX 120
PORTLAND, MAINE 04104

PROJECT NO.	SCALE
16380	1" = 40'

SHEET 10 OF 12

PRE-DEVELOPMENT WATERSHED PLAN

250 RIVERSIDE INDUSTRIAL PARKWAY

RIVERSIDE INDUSTRIAL PARKWAY
PORTLAND, MAINE

FOR:
TWO EISENHOWER DRIVE, LLC
P.O. BOX 1120
PORTLAND, MAINE 04104

SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd
Suite 1A
South Portland, ME 04106
Tel: 207-200-2100

REV.	BY	DATE	STATUS
A	SMF	7-13-18	ISSUED TO CITY

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DESIGNED: SMF
CHECKED: RLW

RICHARD L. MEEK PE.10668

STATE OF MAINE
RICHARD L. MEEK
No. 10668
PROFESSIONAL ENGINEER
7/13/18

PROGRESS PRINT

PROJECT NO.: 15360
SCALE: 1" = 40'

SHEET 11 OF 12

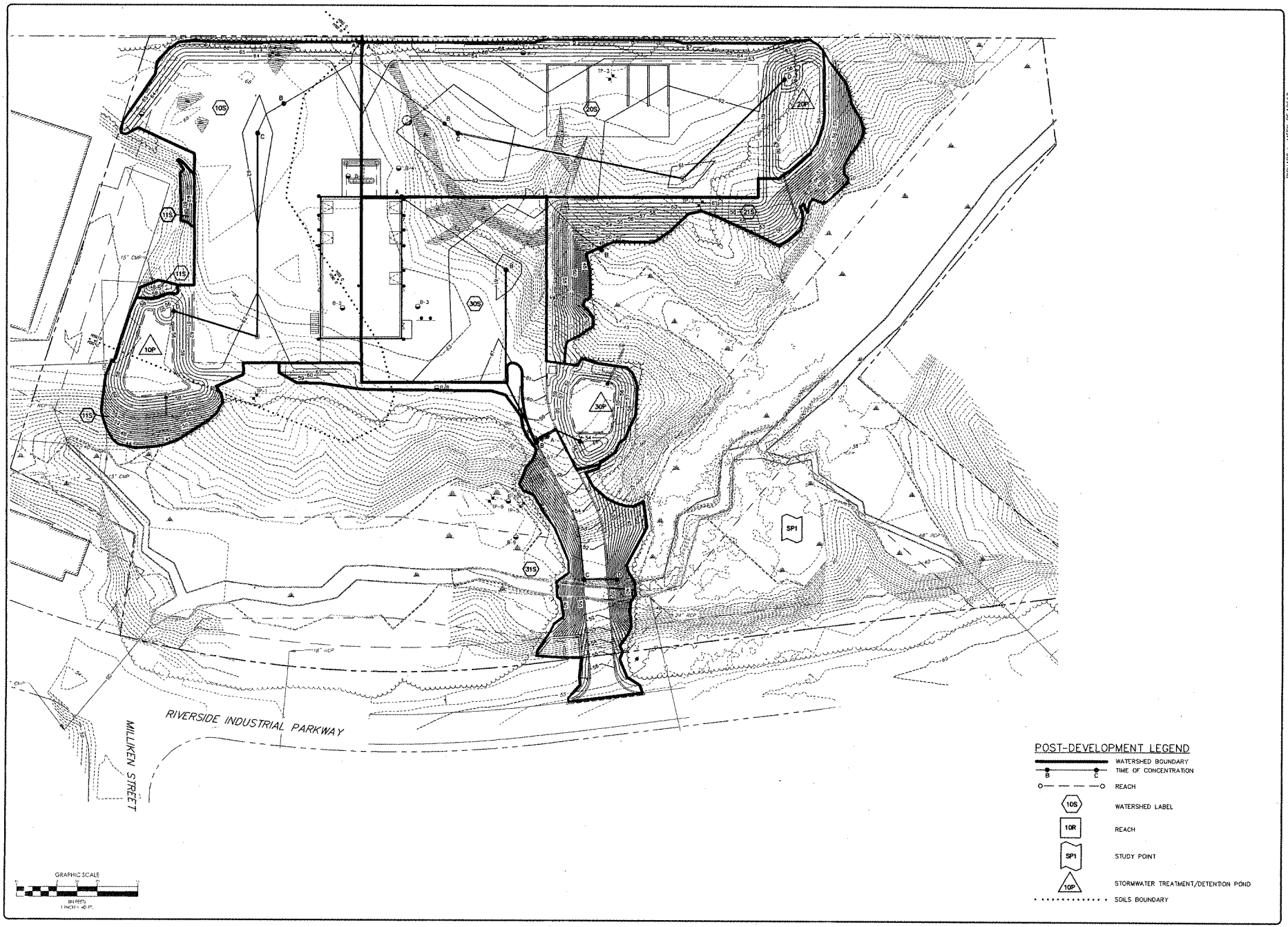
PRE-DEVELOPMENT LEGEND

- WATERSHED BOUNDARY
- TIME OF CONCENTRATION
- REACH
- WATERSHED LABEL
- REACH
- STUDY POINT
- STORMWATER TREATMENT/DETENTION POND
- SOILS BOUNDARY

RIVERSIDE INDUSTRIAL PARKWAY

MILLIKEN STREET

GRAPHIC SCALE



PROGRESS PRINT

RICHARD L. MEEK, PE 10668

STATE OF MAINE
RICHARD L. MEEK
10668
REGISTERED PROFESSIONAL ENGINEER
8/27/18

DESIGNED	CHECKED
SAH	RLM

REV#	BY	DATE	STATUS
B	SMF	8-27-18	REVISED PER CITY COMMENTS
A	SMF	7-13-18	ISSUED TO CITY

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75 John Roberts Rd
Suite B
South Portland, ME 04106
tel: (207) 200-2100

POST-DEVELOPMENT WATERSHED PLAN
OF
250 RIVERSIDE INDUSTRIAL PARKWAY
RIVERSIDE INDUSTRIAL PARKWAY
PORTLAND, MAINE
FOR
TWO EISENHOWER DRIVE, LLC
P.O. BOX 4900
PORTLAND, MAINE 04104

PROJECT NO.	SCALE
16360	1" = 40'

SHEET 12 OF 12

Section 2

Title, Right or Interest

Section 2: Right, Title, Interest

The record owner of the parcel(s) is Two Eisenhower Drive, LLC by deed 32031/039 recorded at the Cumberland County Registry of Deeds (CCRD) on 01/15/2015. The parcels are identified by the City of Portland Assessor as follows: 330A-B-1, 330A-B-4 and 330A-B-11. A copy of the referenced deed is included in this section.

Section 3

Financial Capacity

Section 3: Financial Capacity

A. Estimated Costs

The budget set forth is for the full construction cost of the new property management services business. The following is preliminary estimate of probable cost for site work only:

1.	Mobilization and Erosion Controls	$ 5,000.00
2.	Site Preparation	$ 25,000.00
3.	Earthwork, Soils, Stream Crossing	$ 200,000.00
4.	Site Utilities (Water, Sewer, Storm)	$ 300,000.00
5.	Site electrical	$ 50,000.00
6.	Pavement	$ 200,000.00
7.	Landscape and Lighting	$ 20,000.00
	Total	$ 800,000.00

B. Financing 3.Other.c.Letter

The applicant for the development of this project is the record owner, Two Eisenhower Drive, LLC c/o Mr. David Machesney. A letter from Biddeford Savings written on behalf of the applicant is enclosed as demonstration of financial capability.

Biddeford Savings

June 21, 2018

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

RE: Mr. David Machesney and 2 Eisenhower Drive, LLC, 250 Industrial Parkway.

To whom it may concern:

Biddeford Savings is pleased to entertain a request for financing by **2 Eisenhower Drive, LLC and David Machesney** on the development of a commercial building at 250 Industrial Parkway, Portland Maine. David Machesney and 2 Eisenhower Drive, LLC are customers in good standing and have the track record to engage in a project of this size.

The Bank is currently entertaining financing of the above referenced project and based on the current information on the project and subject to completion of underwriting and approval I am supportive of the request and it is my view that they have the financial capacity and wherewithal to complete the proposed project.

If you have any questions or comments regarding this letter, please call me at 571-5673, or send an e-mail to djones@biddefordsavings.com.

Sincerely,

Doug Jones
Senior Vice President
Business Banking Officer

Section 4

Technical Ability

04: Technical Ability

A. Prior experience / B. Personnel

The applicant has retained Sebago Technics, Inc., (STI) a consulting engineering firm, to assist in all aspects of the proposed site development. A firm introduction and key STI personnel resumes are included in this section.

Section 5

Noise

05: Noise

A. Developments producing a minor noise impact

The proposed property services facility is an allowed use and is consistent with City zoning and adjacent uses. No residential areas are located adjacent to the proposed project site. Plans are included in the SLODA submittal, Section 1 and appended.

Per local zoning, the IM District maximum permissible sound levels of any continuous, regular or frequent source of sound produced by an activity shall be as follows:

a. Seventy (70) dBA between the hours of 7:00a.m. and 10:00 p.m.

b. Fifty-five (55) dBA between the hours of 10:00 p.m. and 7:00 a.m., as measured at or within the boundaries of any residential zone.

It is anticipated that the noise from the site will not exceed the Municipal threshold.

B. Developments potentially producing a major noise impact.

Not applicable. The proposed site development does not meet the definition of a project producing a major noise impact.

Section 6

Visual Quality and Scenic Character

06: Visual Quality and Scenic Character

The proposed new property services facility will not significantly impact the visual quality of the surrounding landscape, nor will it significantly affect the scenic character of the area. Visual impact to surrounding area is minimized by construction of a lower height building and by preservation of vegetation where practicable. The project is not adjacent to residential areas.

The development does not impact areas of significant scenic character, therefore a Visual Impact Analysis has not been prepared. The site meets the NRPA standards for no unreasonable impact on scenic resources, and the proposed site activity will not be visible from scenic resources as defined by Chapter 315 of the relevant Maine DEP regulations.

Section 7

Wildlife & Fisheries

Section 7: Wildlife & Fisheries

Correspondence with Maine Department of Inland Fisheries and Wildlife indicates that there are no mapped essential habitats that will be affected by the project nor do they anticipate significant impact to any of the bat species. No tree removal is proposed during the spring/summer bat rearing season. The proposed stream crossing design includes an open bottom concrete box culvert as recommended by MDIFW to allow for full fish passage. Impact has been minimized by including the smallest stream crossing area that will allow for safe vehicular passage to the development area.

Per MDIFW suggestion, STI contacted USFWS. The Maine Ecological Services Field Office indicates no critical habitats within the project area under their jurisdiction. There is one threatened species identified, the Northern long-eared bat (*Myotis septentrionalis)* that appears on the species list. As previously stated, no tree removal will take place during the pup rearing season. Reference is made to the MDIFW and USFWS letters included in this section.

Section 8

Historic Sites

Section 8: Historic Sites

The proposed development is not located in a City Historic District and will not affect a Designated Landmark. Per the enclosed inquiry response from Maine Historic Preservation, dated 07/17/17, the project will not affect identified historic or archaeological features.

Section 9

Unusual Natural Areas

Section 9: Unusual Natural Areas

Per the State of Maine Department of Agriculture, Conservation and Forestry Natural Areas Program (MNAP), there are no known mapped significant natural features within the project site. Reference is made to the enclosed inquiry reply received from MNAP, this section.

Section 10

Buffers

Section 10: Buffers

None of the proposed work area is located in a previously designated buffer area and no new dedicated buffering is proposed as part of this site development project. The portion of the site outside of the development area is wooded and provides vegetative buffering between resources and neighboring properties. Disturbed areas adjacent to the building/parking will be seeded with New England Conservation Mix providing a permanent cover of grasses and wildflowers for erosion control, wildlife habitat value and aesthetics.

Section 11

Soils

Section 11: Soils

Soils were obtained from the USDA Web Soil Survey (WSS) for Cumberland County. Soils identified on the site as follows:

Table 1 – Proximity Soil Types and Characteristics		
Soil Type	**Symbol**	**HSG**
Suffield Silt Loam, 25 to 45% slopes, eroded	SuE2	C
Buxton Silt Loam, 3 to 8% slopes	BuB	C/D
Scantic silt loam	Sn	D

Reference is made to the WSS survey documents, this section and Section 12, Stormwater.

Hydric Soils

Sebago Technics, Inc. mapped wetland areas in 2017 and the areas are shown on the enclosed existing conditions and site plans. Alteration of hydric soils is limited to the 7,448 square feet shown within the proposed building/parking precinct. The proposed wetland impact area is being permitted via a MDEP Tier 1 NRPA.

Section 12

Stormwater Management

Section 13

Urban Impaired Stream Submissions

Section 13: Urban Impaired Streams

Stormwater drainage from the project site is tributary to Dole Brook, an Urban Impaired Stream identified by the Maine Department of Environmental Protection, the development will be required to contribute to the Compensation Fee Utilization Program for Dole Brook. Additionally, an NRPA PBR – Section 10, Stream Crossing permit application will be filed for impact resulting from the proposed access drive.

Section 14

Basic Standardds

Section 14: Basic Standards

A. Narrative

Site specific Erosion and Sedimentation Control (ESC) plans for the proposed development site have been prepared by Sebago Technics and are shown on the enclosed site drawings. The plans address temporary and permanent erosion control measures including location, details and a written plan. During construction a variety of stabilization measures will be used to prevent mobilization of soil due to water or wind action. All ESC and stabilization measures have been prepared to address the requirements of the basic stabilization standards as defined by Maine DEP Chapter 500, Stormwater Management regulations. Maintenance, inspections and Housekeeping is addressed in the Stormwater Management Plan, Section 12.

B. Implementation schedule

Final stabilization removals are anticipated during spring/summer 2019.

C./D./E. ESC Plan, Details and Work Limits

All of the required and specified ESC measures are shown on the enclosed site plans. The proposed measures include the drainage and erosion control elements, their locations and the work/disturbance limits, as required.

F. Design Drawings

The enclosed design drawings include ESC measures designed in accordance with the *Erosion and Sediment Control Handbook for Construction: Best Management Practices*, latest edition.

G. ESC Calculations for sizing, spacing or stabilizing ESC measures.

Reference is made to Section 12-Stormwater for calculations related to sizing and spacing of ESC measures, as applicable.

Section 15

Groundwater

Section 15: Groundwater

A. Narrative and Report

The proposed property maintenance facility with not draw from, or eject to aquifers. No groundwater degradation is anticipated as a result of the site development.

(1) Location and Maps

The site is not located in a Significant Sand and Gravel Aquifer. Surficial Geology indicates that the site is located in a Presumpscot Formation, typical of the adjacent area and the Bedrock Geological Maps indicates that the project is within an area identified as SOb – Bucksport Formation. See maps, this section.

(2) Quantity

We do not anticipate large volumes of construction period dewatering discharge. No other draw or discharge is anticipated as part of the site development.

(3) Sources

Potential sources of contamination are limited to the following:

Solid waste: All solid waste will be collected internal to the building and will be disposed of off-site at a licensed facility by the tenant. No liquid solid waste is anticipated.

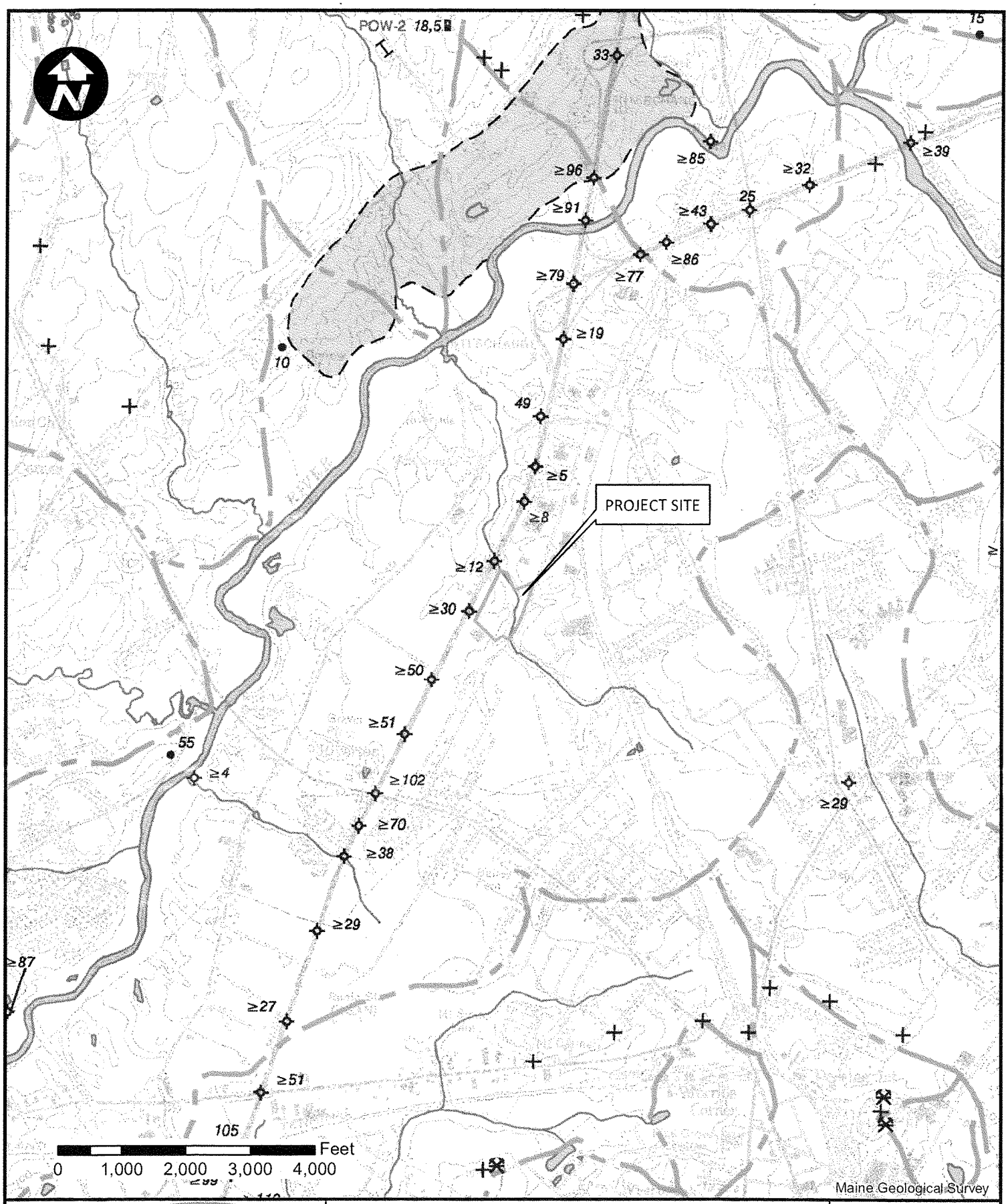
Hazardous materials: No hazardous materials will be generated by the facility. Anticipated hazardous materials are limited to the following:

Fuel: An underground fuel storage tank will be installated to serve the private gasoline needs of the facility. Construction and maintenance of the fueling area, tanks, etc. will be performed in accordance with applicable regulations.

(4) Measures to prevent degradation.

A Spill Prevention Plan will be utilized by the tenant. The plan will be submitted to the Department under separate cover.

B. Groundwater Protection Plan



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Tel. 207-200-2100

TITLE FOR: AQUIFER MAP

250 Riverside Industrial Parkway

SCALE: 1 " = 2,000 '

DATE: 08/27/2018

LOCATION:

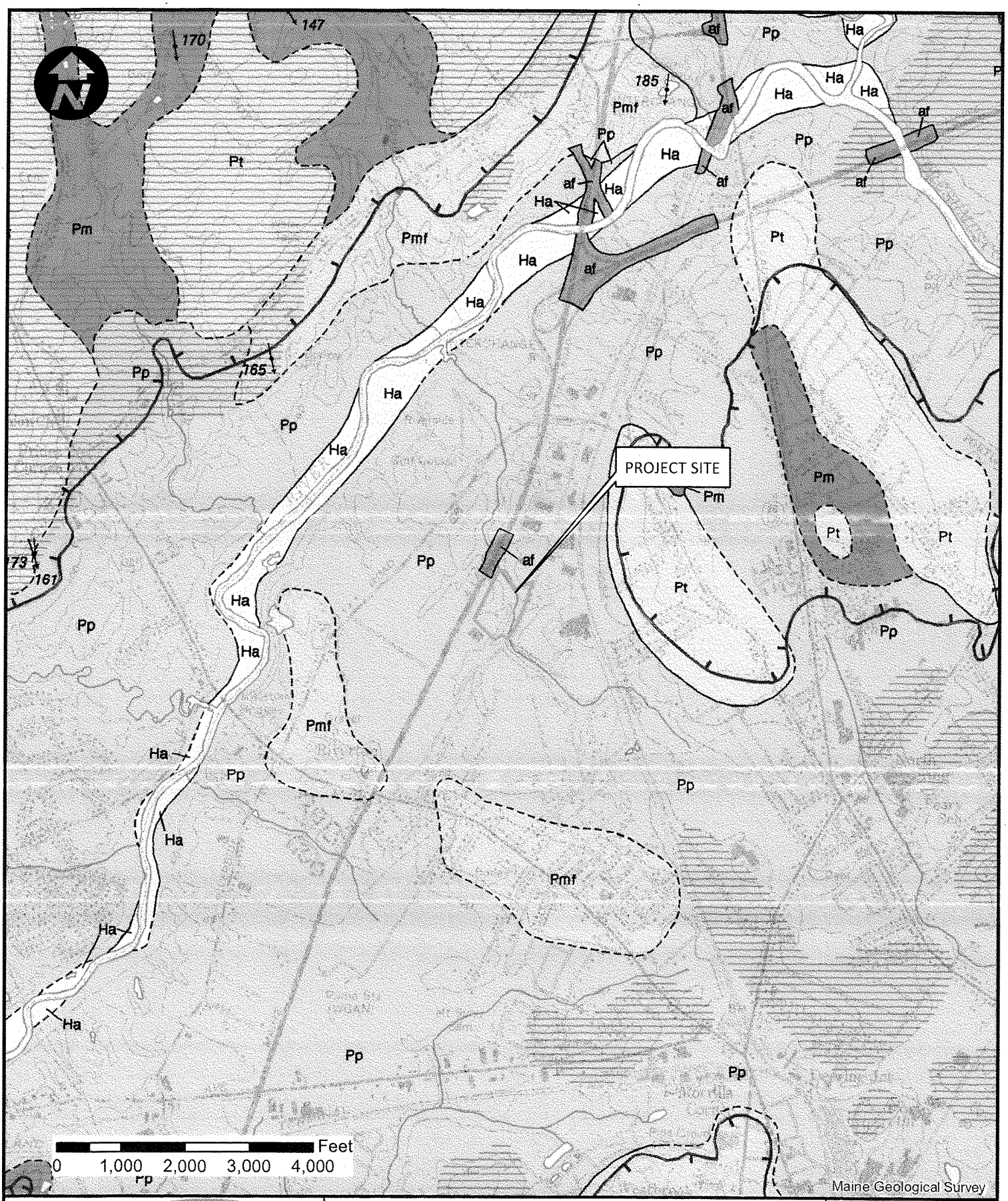
250 Riverside Industrial Parkway
Portland, ME 04103

INFORMATION:

Maine Geological Survey: Aquifer Maps_24K
USGS Quadrangle: Portland West

16360_Aquifer Map.mxd

PROJECT NUMBER: 16360



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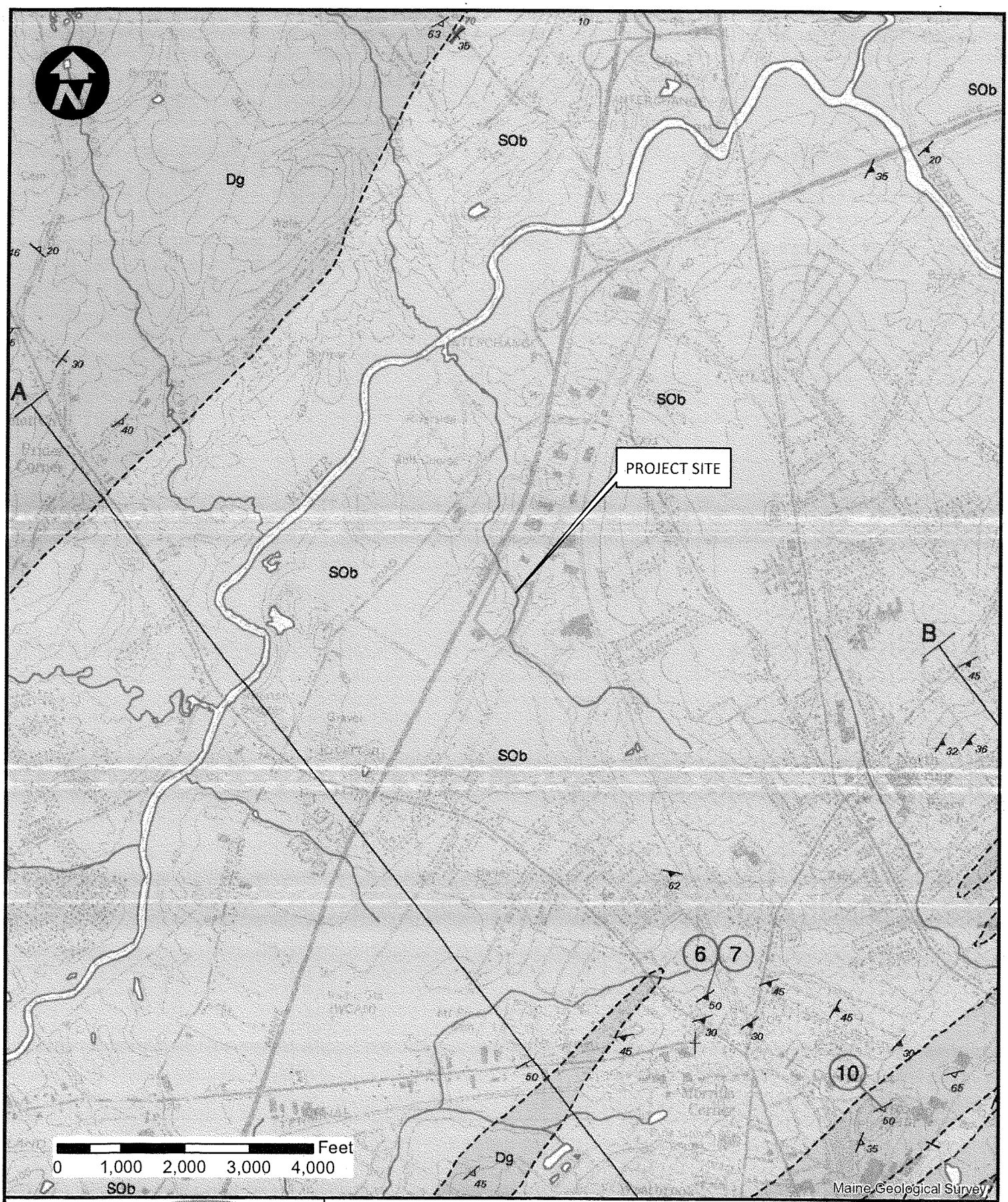
Tel. 207-200-2100

TITLE FOR:	SURFICIAL GEOLOGY MAP 250 Riverside Industrial Parkway	SCALE:	1 " = 2,000 '
		DATE:	08/27/2018
LOCATION:	250 Riverside Industrial Parkway Portland, ME 04103	INFORMATION:	Maine Geological Survey_Bedrock Geology Maps: Portland West

16360_Bedrock Geology Map.mxd

PROJECT NUMBER: 16360



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South Portland, ME 04106
Tel. 207-200-2100

TITLE FOR:	BEDROCK GEOLOGY MAP 250 Riverside Industrial Parkway	SCALE:	1 " = 2,000 '
		DATE:	08/27/2018
LOCATION:	250 Riverside Industrial Parkway Portland, ME 04103	INFORMATION:	Maine Geological Survey_Bedrock Geology Maps: Portland West

16360_Bedrock Geology Map.mxd

PROJECT NUMBER: 16360

Section 16

Water Supply

Section 16: Water Supply

Domestic and fire water service will be supplied by the available public water supply within Riverside Industrial Parkway provided by the Portland Water District (PWD). Please refer to the enclosed letter from the District indicating that there is sufficient capacity to serve the proposed site development. No on-site wastewater disposal is proposed as part of the project.

Section 17

Wastewater Disposal

Section 17: Wastewater Disposal

A municipal facility with provide sewage disposal. A *City of Portland Wastewater Capacity Application* has been submitted to the City in the Site Plan Application. The site plan shows the proposed sewer connection location, as required. A copy of the response regarding wastewater ability/capacity will be forwarded upon receipt.

Section 18

Solid Waste

Section 18: Solid Waste

Solid waste removal will be provided by the property services facility. The majority of the solid waste will be generated by the office uses and will be recycled to the greatest extent practicable. Solid waste will be stored inside the building.

Section 19

Flooding

Section 19: Flooding

The project site is not located in a flood plain and will not cause an unreasonable flood hazard to any structure. A copy of the Portland GIS Map View Flood Map based on 1986 FEMA flood boundaries is enclosed in this section.

Section 20

Blasting

Section 20: Blasting

Given the nature of the site and the proposed project, it is not anticipated that blasting will be required. Should ledge be encountered during construction, a blasting plan will be submitted for approval that has been developed to be in compliance with the accepted limit for safe levels of blasting vibrations as developed by the U.S. Bureau of Mines as presented in Appendix B of the U.S. Bureau of Mines, RI 8507.

Blasting Requirements

Should blasting be necessary, we recommend that the following controls be implemented for the project:

The Contractor should comply with all applicable laws, rules, ordinances, and regulations of the federal government, the State of Maine, and the City of Portland governing transportation, storage, handling and use of explosives.

Prior to the start of rock excavation or blasting work, notices should be sent to residents and businesses in the area describing the blasting and rock excavation work, indicating the approximate schedule of work, and describing blasting procedures, mitigation measures, and blast warning signals.

Prior to the start of blasting work, pre-blast condition surveys should be conducted of all existing structures and conditions on the site, adjacent to the site, or in the vicinity of the site. These surveys should extend to such structures, wells, or an item that may be affected by the Contractor's blasting operations. As a minimum, condition surveys should be performed on all structures within a half-mile of anticipated blasting areas.

Prior to the start of blasting work, the Contractor should submit to the engineer for review a blasting plan containing details of proposed blasting and construction operations including:

A. Sequence and schedule of blasting rounds including the general sequence of drilling, blasting, excavating, etc.

B. Specifics of typical blast rounds and open cut blast rounds in deepest rock cut areas and areas closest to existing structures.

C. In each area specified, include the following blast round details:

- Diameter, spacing, burden, depth and orientation of each blast hole for each round design.
- Nomenclature and amount (in terms of weight and number of cartridges) of explosives and distribution of charge to be used within each hole, on each delay, and the total for the blast.
- Nomenclature and type of detonators and delay pattern for the round.
- Type and location of stemming to be used in holes.
- Calculations of anticipated vibration levels at nearest adjacent structure or well.

D. Specifics of Test Blasts to check effectiveness and vibration characteristics of typical trench and open cut blasting rounds.

E. Methods of matting or covering the blast area to prevent fly rock and excessive air blast overpressure.

F. Name and qualifications of licensed blaster who will be on site at all times directly supervising the loading and detonation of each blast.

G. Name and qualifications of the person responsible for conducting pre-blast condition surveys.

H. Name and qualifications of the person responsible for monitoring and reporting blast vibrations.

I. Details of an audible advance signal system to be employed at the job site as a means of informing workers, Engineer, Architect, Owner, and the general public that a blast is about to occur. Details of access control during blasting.

The Contractor should conduct all blasting activity in such a manner that the peak particle velocity of ground vibration measured at the locations of the nearest structures or wells to the blast does not exceed the "safe limits" recommended by the U.S. Bureau of Mines as presented in Figure B-1 of Appendix B of U.S. Bureau of Mines, RI 8507.

The Contractor should conduct all blasting activities in such a way that sound levels from blasting shall not exceed the limits given in the Maine Department of Environmental Protection Rules, Chapter 375.10 (c)(4)(c).

# of Blasts Per Day	Sound Level Limit
1	129 dBL
2	126 dBL
3	124 dBL
4	123 dBL

Blast monitoring should be conducted by an independent firm trained in the use of a seismograph, and records should be analyzed and results reported by persons familiar with analyzing and reporting the frequency content of a seismograph record. A minimum of two (2) engineering seismographs shall be used for each blast, one each adjacent to the nearest off-site structures or wells which lie within a 300-foot radius of blasting activities.

Blast Monitoring Equipment: All instrumentation proposed for use on the project shall have been calibrated within the previous six (6) months to a standard traceable to the National Bureau of Standards. Characteristics of required instrumentation are listed below:

- Measure the three (3) mutually perpendicular components of particle velocity in the directions vertical, radial and perpendicular to the vibration source.

- Measure and display the maximum peak particle velocity component and air blast overpressure. These readings must be displayed and be able to be read in the field, immediately after each blast.

- Furnish a permanent time history record of particle velocity waveforms and air blast overpressure waveforms, so that frequency and time of maximum peak particle velocity or air blast overpressure can be determined.

Blast Monitoring Reports: Within 24 hours following each blast, the Contractor should submit to the Engineer a Blast Monitoring Report. Each Blast Monitoring Report should include all of the following applicable items:

- Blast round design data, as indicate in Section C of the Blasting Requirements.

- Blast Monitoring Location Plan, indicating the location of the blast, the monitoring locations, and the distances from the blast to monitoring locations.

- Vibration and air blast overpressure data from each seismograph, including a copy of the strip chart (or other permanent record of velocity/time waveform) with calibration and monitoring record marked with the date, time and location of the blast.

- In the event that the Contractor's design round results in ground vibrations and/or air blast overpressures exceed the blasting limit criteria presented herein, the Contractor should immediately revise the round design appropriately and submit the revised round design to the Engineer for review. Allow sufficient time for review.

- The Contractor should report to the Engineer in writing all blasting complaints received by the Contractor within 24 hours of receipt. Each blast complaint report should include the name and address of the complaint, time received, date and time of blast complained about, and a description of the circumstances, which led to the complaint. Upon receipt of a written complaint from a resident alleging damage from the blasting, the Contractor's representative or a representative of the Blaster's Insurance Company should investigate the claim and a written report should be issued to the homeowner, with a copy to the Engineer, of the results of the investigation and the response of the Contractor. This written report should be received by the resident and the Engineer within 15 work days of receipt of the written complaint.

Review by the owner and the owner's consultant of the blast designs and techniques shall not relieve the Contractor of his responsibility for the accuracy, adequacy and safety of the blasting, exercising proper supervision and field judgment and producing the results within the blasting limits required by the requirements.

Blasting shall be limited to between the hours of 9:00 a.m. and 4:00 p.m., Monday through Friday.

Blasting mats shall be utilized for all blast rounds detonated to prevent the throw of fly rock from the blasting area, unless the Contractor's independent professional engineer/seismologist determines that the overburden is sufficient enough to prevent fly rock.

Ammonium Nitrate Fuel Oil (ANFO) shall not be permitted for blasting.

At the start of blasting, the Contractor shall perform a series of test blast to establish a site-specific relationship between the charge weight per millisecond delay and peak ground vibration levels at various distances from the blast. The results of the test blasts will form the basis for selection of maximum permissible charge weights during production blasting.

Sections 21, 22, 23 and 24

Air Emissions
Odors
Water Vapor
Sunlight

SECTION 21: Air Emissions

No unreasonable adverse environmental effect on air quality is anticipated as part of the proposed site development activities. Vehicular traffic will be limited to paved and gravel areas as shown on the enclosed plans and the heating/ventilation source for the proposed building will be a small-scale commercial unit. This project does not require an Air Emission License.

SECTION 22: Odors

The proposed site improvements will not result in the creation of any significant odors during or after construction.

SECTION 23: Water Vapor

No large-scale water vapor emissions are proposed as part of the site development, therefore, no adverse effect or unreasonable alteration of climate is associated with this project.

SECTION 24: Sunlight

The proposed new building will not block access to direct sunlight by neighboring structures that utilize solar energy through active or passive systems.

October 5, 2018

Proposed Property Services Facility - 250 Riverside Industrial Parkway, Portland

Dear Neighbors and Interested Parties:

Please join us for a neighborhood meeting to discuss plans for a proposed new property services facility to be located at 250 Riverside Industrial Parkway.

Meeting Location: **NAPA Distribution Center Annex, Lunch Room**
216 Riverside Industrial Parkway

Meeting Date: **October 18, 2018**

Meeting Time: 3 P.M.

The City requires that property owners within proximity to the proposed development and residents of an "interested parties list" provided by the City, 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.

We look forward to meeting with you to discuss the proposed project in person. If you have any questions, please call the site design Project Manager, Shawn M. Frank, P.E., Senior Vice President, Commercial Development at Sebago Technics, Inc. at (207) 200-2062.

Sincerely,

David Machesney
Two Eisenhower Drive, LLC

Neighborhood Meeting Sign-In Sheet

16360

Date of Meeting: October 18, 2018, 3 P.M.

Location: NAPA Distribution Annex, Lunch Room
216 Riverside Industrial Parkway

Re: Proposed New Property Services Facility at 250 Riverside Industrial Parkway

Members of the Public in Attendance	
Name	**E-mail**
David E. Machesney	DMachesney@pattabbott.com
Shannon Frank, Sebago Technics	SFrank@sebagotechnics.com
Jon Bell, PATCO	jbell@patco.com
WILLIAM THUN	NONE (201 Riverside Industrial Parkway)
Developer and Consultant Team in Attendance:	

SEBAGO TECHNICS

CIVIL ENGINEERING ▪ SURVEYING ▪ LANDSCAPE ARCHITECTURE

October 18, 2018

Neighborhood Meeting Minutes

Proposed Property Services Facility - 250 Riverside Industrial Parkway, Portland

Meeting start: 3:04 PM

Meeting Location: NAPA Distribution Center Annex, Lunch Room
216 Riverside Industrial Parkway

Discussion

Shawn Frank, P.E. and design Project Manager from Sebago Technics provided a detailed project overview to the meeting attendees.

Attendance was limited to one member of the community, Mr. William Thun, who owns a nearby residence and has interest in the development. The other two attendees included Jon Bell, a representative of the General Contractor, PATCO, and the applicant/owner, Mr. David Machesney of Two Eisenhower Drive, LLC. Reference is made to the attached Sign-In Sheet.

Mr. Thun specifically questioned the tree cutting required for development of the parcel and was pleased to learn that trees located along the stream will be preserved with the exception of the stream crossing location. Mr. Frank also explained that the proposed stormwater treatment, in regard to runoff, is being treated through a series of three soil filters prior to outletting.

Additional discussion continued between the project team members until the meeting adjourned at 4:15 PM.

MAINE TURNPIKE AUTHORITY

INDUSTRIAL PARKWAY

RICE STREET

MILLIKEN STREET

TUKEY AVENUE

BEVERLY STREET

RIVERSIDE STREET

COMPANY TERMINAL

PORTLAND WATER DISTRICT

Land Now or Formerly Rufus H. Jones

Land Now or Formerly Rufus H. Jones

Land Now or Formerly Rufus H. Jones

LOT 1

LOT 2

LOT A

LOT C

LOT 'B'

100' Sewer Right of Way

75' Sewer Right of Way

Portland Water District Right of Way

Greater Portland Building Fund Inc. To City of Portland Rec. Bk. 3102 Pg. 324 Dec. 18, 1970

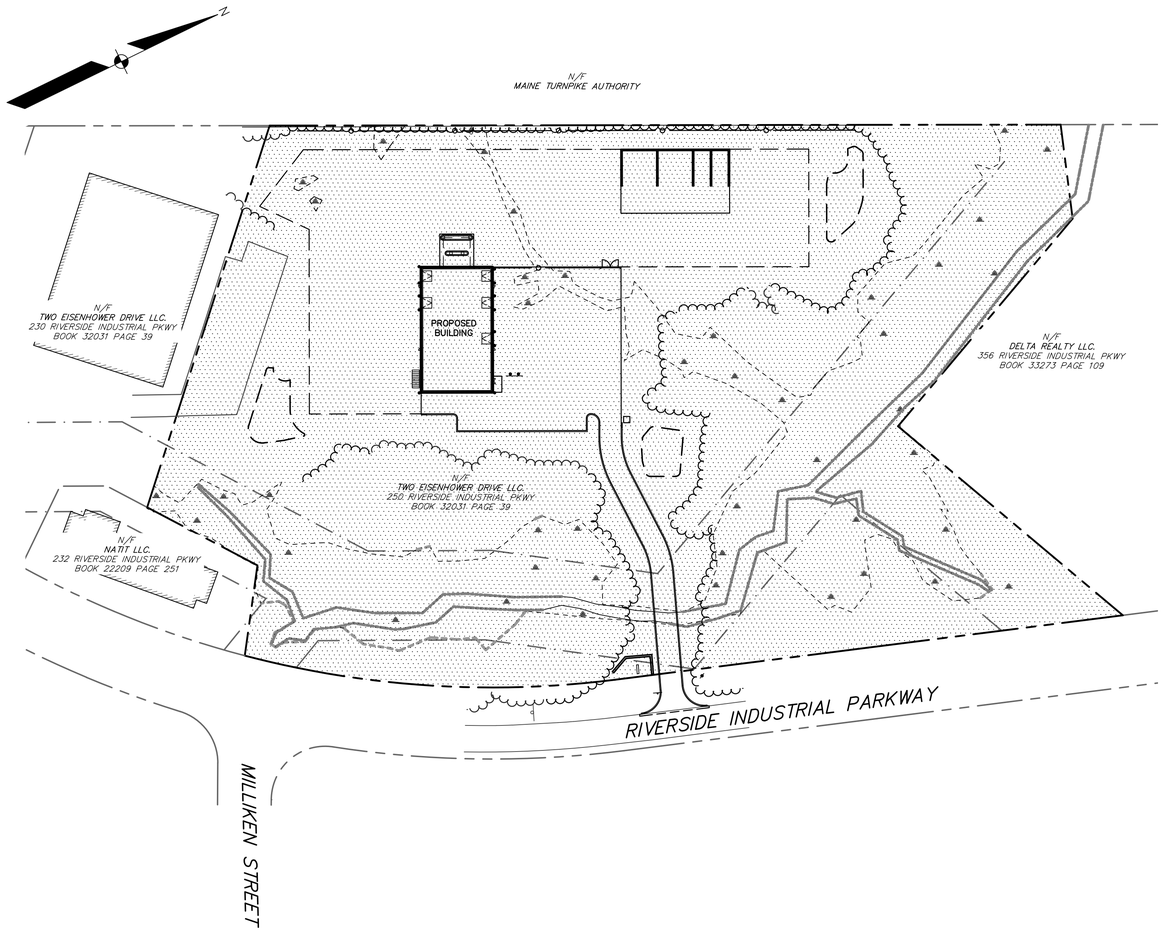
250 RIVERSIDE INDUSTRIAL PARKWAY

RIVERSIDE INDUSTRIAL PARKWAY
PORTLAND, MAINE

OWNER/APPLICANT:
TWO EISENHOWER DRIVE, LLC
P.O. BOX 1120
PORTLAND, MAINE 04104

ENGINEER/SURVEYOR/ LANDSCAPE ARCHITECT:

SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd.
Suite 4A
South Portland, ME 04106
Tel. 207-200-2100



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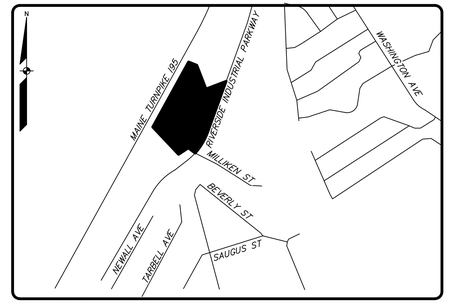


LOCATION MAP NTS

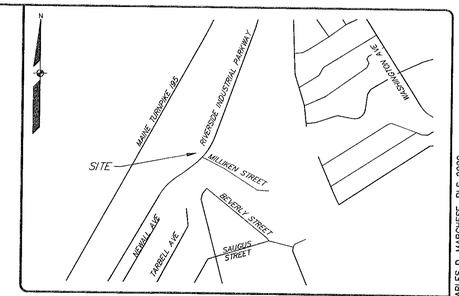
SHEET INDEX

SHEET	DESCRIPTION
1	COVER SHEET
2	EXISTING CONDITIONS PLAN
3	SITE PLAN
4	UTILITY PLAN
5	GRADING AND EROSION CONTROL PLAN
6	POND CONSTRUCTION PLANS
7	DETAILS
8	DETAILS
9	DETAILS
10	LANDSCAPING PLAN
11	PRE-DEVELOPMENT WATERSHED PLAN
12	POST-DEVELOPMENT WATERSHED PLAN

REVISED THROUGH 8-27-18

16360 C.dwg, TAB: COVER





LOCATION MAP N.T.S.

GENERAL NOTES:

1. THE RECORD OWNER OF THE PARCEL IS TWO EISENHOWER DRIVE LLC., BY DEED DATED JANUARY 10, 2015 AND RECORDED AT THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN BOOK 32031, PAGE 39.
2. THE PROPERTY IS SHOWN AS LOT B001 ON THE CITY OF PORTLAND TAX MAP 330A AND IS LOCATED IN THE IM DISTRICT.
3. SPACE AND BULK CRITERIA FOR THE IM DISTRICT ARE AS FOLLOWS:

NET RESIDENTIAL DENSITY:	
MINIMUM LOT SIZE:	10,000 SQ. FT.
MINIMUM STREET FRONTAGE:	60 FT.
MINIMUM FRONT YARD:	1 FT. PER 1FT. HEIGHT OF BUILDING (MAX 25 FT.)
MINIMUM SIDE YARD:	1 FT. PER 1FT. HEIGHT OF BUILDING (MAX 25 FT.)
MINIMUM REAR YARD:	1 FT. PER 1FT. HEIGHT OF BUILDING (MAX 25 FT.)
MAXIMUM BUILDING HEIGHT:	75 FT.
MAXIMUM IMPERVIOUS RATIO:	75%

* SEE ORDINANCE FOR MORE PARTICULAR INFORMATION.

4. TOTAL AREA OF PARCEL IS APPROXIMATELY 12.4 ACRES.
5. NO INDEPENDENT BOUNDARY RETRACEMENT SURVEY WAS PERFORMED BY SEBAGO TECHNICS, INC. BOUNDARY INFORMATION SHOWN IS BASED SOLELY UPON INFORMATION FROM PLAN REFERENCE 7A.
6. TOPOGRAPHIC INFORMATION SHOWN HEREON IS BASED UPON FIELD WORK PERFORMED BY SEBAGO TECHNICS, INC. ON MARCH 20, 2018 AND IN PART FROM A WORKSHEET PROVIDED BY NORTHEAST CIVIL SOLUTIONS.
7. PLAN REFERENCES:
   A. CONCEPTUAL SITE PLAN FOR COMMERCIAL/INDUSTRIAL DEVELOPMENT FOR RECORD OWNER R.M. DAVIS, INC. C/O ARTHUR DORDUAS" PREPARED BY NORTHEAST CIVIL SOLUTIONS, DATED JULY, 2010.
7. PLAN ORIENTATION IS GRID NORTH, MAINE STATE PLANE COORDINATE SYSTEM, WEST ZONE 1802-NAD83. ELEVATIONS DEPICTED HEREON ARE NAVD88 BASED ON DUAL FREQUENCY GPS OBSERVATIONS. TO CONVERT TO THE CITY OF PORTLAND DATUM, ADD 0.69 FEET BASED ON U.S. ARMY CORPS OF ENGINEERS CORPSCON 6.0.1 SOFTWARE IN THIS VICINITY.
8. UTILITY INFORMATION DEPICTED HEREON IS COMPILED USING PHYSICAL EVIDENCE LOCATED IN THE FIELD. UTILITIES DEPICTED HEREON MAY NOT NECESSARILY REPRESENT ALL EXISTING UTILITIES. CONTRACTORS AND/OR DESIGNERS NEED TO CONTACT DIG-SAFE SYSTEMS, INC. (1-888-DIG-SAFE) AND FIELD VERIFY EXISTING UTILITIES PRIOR TO CONSTRUCTION AND/OR EXCAVATION.
9. WETLAND INFORMATION DEPICTED HEREON WAS TAKEN FROM PLAN REFERENCE 7A. THE WETLANDS ON THIS SITE WERE REVIEWED AND UPDATED ON JULY 25, 2018 BY GARY M. FULLERTON, CSS OF SEBAGO TECHNICS, INC. THIS DELINEATION CONFORMS TO THE STANDARDS AND METHODS OUTLINED IN THE 1987 WETLANDS DELINEATION MANUAL AND 2012 NORTHEAST REGIONAL SUPPLEMENT AUTHORED AND PUBLISHED BY THE U.S. ARMY CORPS OF ENGINEERS. ALL WETLAND FLAGS WERE LOCATED USING A GPS BACKPACK UNIT CAPABLE OF SUBMETER ACCURACY.

SURVEYOR'S STATEMENT

THIS SURVEY WAS PERFORMED UNDER MY DIRECT SUPERVISION AND TO THE BEST OF MY KNOWLEDGE AND BELIEF, IT WAS DONE IN ACCORDANCE WITH CHAPTER 90, PART 1 (PROFESSIONAL STANDARDS OF PRACTICE) AND PART 2 (TECHNICAL STANDARDS OF PRACTICE) OF THE MAINE BOARD OF LICENSURE FOR PROFESSIONAL LAND SURVEYORS.

CHARLES D. MARCHESE, PLS 2009 *JULY 17, 2018*

STATE OF MAINE * CHARLES D. MARCHESE * 2009 * REGISTERED PROFESSIONAL LAND SURVEYOR

CHARLES D. MARCHESE, PLS 2009

DRAWN	CHECKED
MAC/BKW	CDM

REV.	BY:	DATE:	STATUS:
C	CDM	7-25-18	REVIEWED WETLAND UPDATE & EDITED NOTE 9
B	SMF	7-13-18	ISSUED TO CITY
A	BKW	3-28-18	ISSUED 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.

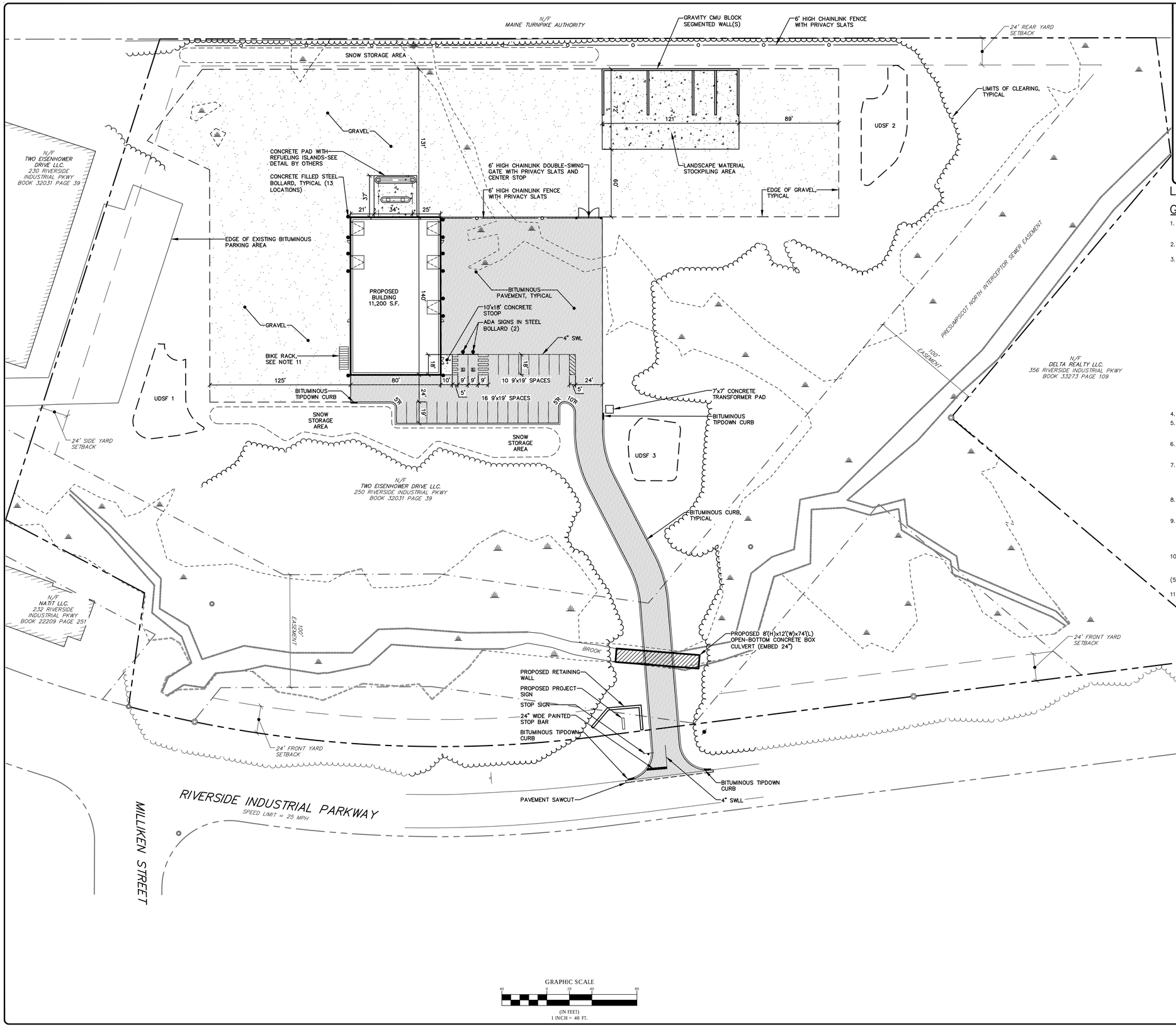
SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd.
Suite 4A
South Portland, ME 04106
Tel. 207-200-2100

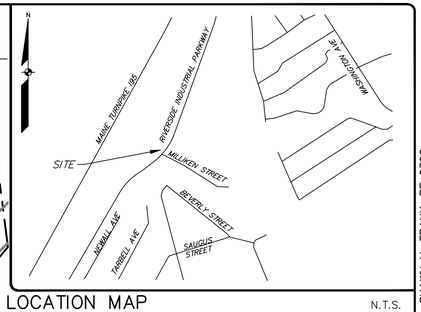
EXISTING CONDITIONS PLAN
OF:
250 RIVERSIDE INDUSTRIAL PARKWAY
RIVERSIDE INDUSTRIAL PARKWAY
PORTLAND, MAINE
FOR:
TWO EISENHOWER DRIVE, LLC
P.O. BOX 1120
PORTLAND, MAINE 04104

PROJECT NO.	SCALE
16360	1" = 50'

SHEET 2 OF 12

16360EC.dwg, TAB: 16360EC





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2. THE PROPERTY IS SHOWN AS LOT B001 ON THE CITY OF PORTLAND TAX MAP 330A AND IS LOCATED IN THE IM DISTRICT.
3. SPACE AND BULK CRITERIA FOR THE IM DISTRICT ARE AS FOLLOWS:

	REQUIRED	PROVIDED
NET RESIDENTIAL DENSITY:		
MIN. LOT SIZE:	10,000 SQ. FT.	539,151 SQ. FT. (12.38 ACRES)
MIN. STREET FRONTAGE:	60 FT.	989.62 FT.
MIN. FRONT YARD:	24 FT. (1 FT. PER 1FT. HEIGHT OF BUILDING MAX 25 FT.)	325.9 FT.
MIN. SIDE YARD:	24 FT. (1 FT. PER 1FT. HEIGHT OF BUILDING MAX 25 FT.)	209.4 FT.
MIN. REAR YARD:	24 FT. (1 FT. PER 1FT. HEIGHT OF BUILDING MAX 25 FT.)	158.5 FT.
MAX. BUILDING HEIGHT:	75 FT.	24 FT.
MAX. IMPERVIOUS RATIO:	75%	
MIN. SIGHT DISTANCE:	200 FT.	>500 FT. LEFT >425 FT. RIGHT

* SEE ORDINANCE FOR MORE PARTICULAR INFORMATION.

4. TOTAL AREA OF PARCEL IS APPROXIMATELY 10.5 ACRES.
5. NO BOUNDARY SURVEY WAS PERFORMED BY SEBAGO TECHNICS, INC. BOUNDARY INFORMATION SHOWN IS BASED SOLELY UPON INFORMATION FROM PLAN REFERENCE 6A.
6. TOPOGRAPHIC INFORMATION SHOWN HEREON IS BASED UPON FIELD WORK PERFORMED BY SEBAGO TECHNICS, INC. ON MARCH 20, 2018 AND PARTLY FROM A WORKSHEET PROVIDED BY NORTHEAST CIVIL SOLUTIONS.
7. PLAN REFERENCES:
   A. CONCEPTUAL SITE PLAN FOR COMMERCIAL/INDUSTRIAL DEVELOPMENT FOR RECORD OWNER R.M. DAVIS, INC. C/O ARTHUR DORDUAS" PREPARED BY NORTHEAST CIVIL SOLUTIONS, DATED JULY, 2010.
8. PLAN ORIENTATION IS GRID NORTH, MAINE STATE PLANE COORDINATE SYSTEM, WEST ZONE 1802-NAD83, ELEVATIONS DEPICTED HEREON ARE CITY OF PORTLAND DATUM, BASED ON DUAL FREQUENCY GPS OBSERVATIONS.
9. UTILITY INFORMATION DEPICTED HEREON IS COMPILED USING PHYSICAL EVIDENCE LOCATED IN THE FIELD. UTILITIES DEPICTED HEREON MAY NOT NECESSARILY REPRESENT ALL EXISTING UTILITIES. CONTRACTORS AND/OR DESIGNERS NEED TO CONTACT DIG-SAFE SYSTEMS, INC. (1-888-DIG-SAFE) AND FIELD VERIFY EXISTING UTILITIES PRIOR TO CONSTRUCTION AND/OR EXCAVATION.
10. THE LAND USE CODE DOES NOT SPECIFY REQUIRED OFF STREET PARKING FOR THIS TYPE OF FACILITY. THE APPLICANT IS PROPOSING (45) PARKING SPACES, ONE PER EMPLOYEE AT MAXIMUM SHIFT, PLUS (5) PARKING SPACES FOR VISITORS.

(50) TOTAL PARKING SPACES ARE PROPOSED, WITH (2) ADA ACCESSIBLE SPACES.

11. PLAN DEPICTS (5) DERO DOWNTOWN BIKE RACKS, TO ACCOMMODATE (10) BICYCLE PARKING SPACES.

LEGEND

EXISTING	PROPOSED
PROPERTY LINE/R.O.W.	
ABUTTER LINE/R.O.W.	
DEED LINE/R.O.W.	
EASEMENT	
IRON PIPE/ROD	
EDGE WETLAND	
WETLANDS	
BUILDING	
EDGE PAVEMENT	
EDGE CONCRETE	
PAVEMENT PAINT	
EDGE GRAVEL	
CURB LINE	
CHAIN LINK FENCE	
RETAINING WALL	
SIGN	
TREELINE	

SHAWN M. FRANK, PE 6396

PROGRESS PRINT

STATE OF MAINE SHAWN M. FRANK No. 6396 REGISTERED PROFESSIONAL ENGINEER 8/27/18

DESIGNED	CHECKED
SAH	SMF

REV.	BY:	DATE:	STATUS
B	SMF	8-27-18	REVISED PER CITY COMMENTS
A	SMF	7-13-18	ISSUED TO CITY

THIS PLAN IS NOT TO BE USED OR REVISED 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.

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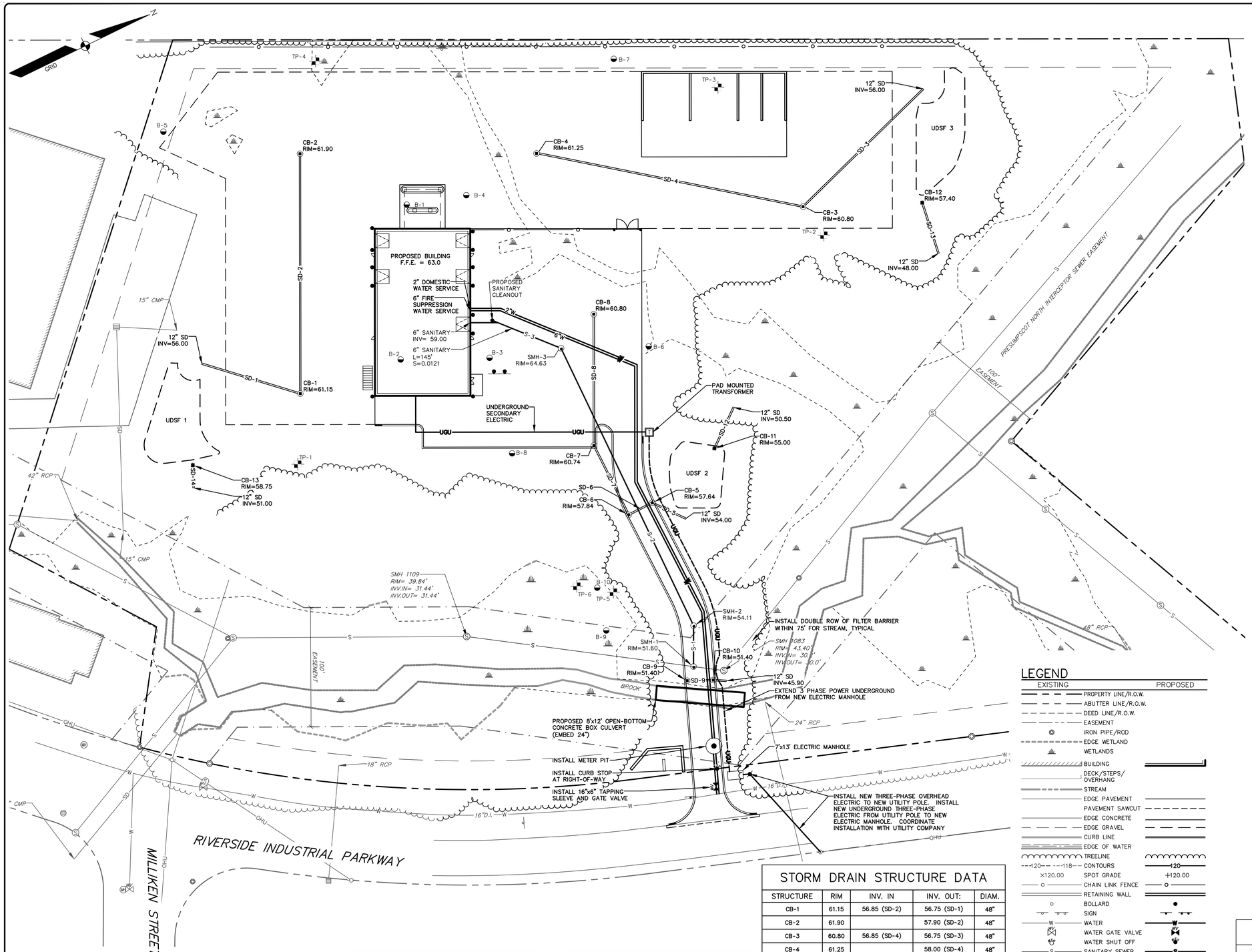
75 John Roberts Rd.
Suite 4A
South Portland, ME 04106
Tel: 207-200-2100

SITE PLAN
OF:
250 RIVERSIDE INDUSTRIAL PARKWAY
RIVERSIDE INDUSTRIAL PARKWAY
PORTLAND, MAINE
FOR:
TWO EISENHOWER DRIVE, LLC
P.O. BOX 1120
PORTLAND, MAINE 04104

PROJECT NO.	SCALE
16360	1" = 40'

SHEET 3 OF 12

16360 S.dwg, TAB: S



CONSTRUCTION NOTES

1. ALL WORK SHALL CONFORM TO THE APPLICABLE CODES AND ORDINANCES.

2. CONTRACTOR SHALL VISIT THE SITE AND FAMILIARIZE HIM OR HERSELF WITH ALL CONDITIONS AFFECTING THE PROPOSED WORK AND SHALL MAKE PROVISIONS AS TO THE COST THEREOF. CONTRACTOR SHALL BE RESPONSIBLE FOR FAMILIARIZING HIM OR HERSELF WITH ALL CONTRACT DOCUMENTS, FIELD CONDITIONS AND DIMENSIONS AND CONFIRMING THAT THE WORK MAY BE ACCOMPLISHED AS SHOWN PRIOR TO PROCEEDING WITH CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO THE COMMENCEMENT OF WORK.

3. CONTRACTOR SHALL NOTIFY ENGINEER OF ALL PRODUCTS OR ITEMS NOTED AS "EXISTING" WHICH ARE NOT FOUND IN THE FIELD.

4. INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND OWNER'S REQUIREMENTS UNLESS SPECIFICALLY OTHERWISE INDICATED OR WHERE LOCAL CODES OR REGULATIONS TAKE PRECEDENCE.

5. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO FABRICATION AND ERECTION OF ANY MATERIAL. ANY UNUSUAL CONDITIONS SHALL BE REPORTED TO THE ATTENTION OF THE ENGINEER.

6. CONTRACTOR SHALL CLEAN AND REMOVE DEBRIS AND SEDIMENT DEPOSITED ON PUBLIC STREETS, SIDEWALKS, ADJACENT AREAS, OR OTHER PUBLIC WAYS DUE TO CONSTRUCTION.

7. CONTRACTOR SHALL INCORPORATE PROVISIONS AS NECESSARY IN CONSTRUCTION TO PROTECT EXISTING STRUCTURES, PHYSICAL FEATURES, AND MAINTAIN SITE STABILITY DURING CONSTRUCTION. CONTRACTOR SHALL RESTORE ALL AREAS TO ORIGINAL CONDITION AND AS DIRECTED BY DESIGN DRAWINGS.

8. SITE CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS PRIOR TO CONSTRUCTION.

9. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH "MAINE EROSION AND SEDIMENT CONTROL BMPS" PUBLISHED BY THE BUREAU OF LAND AND WATER QUALITY OF THE MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION, MARCH 2003 OR LATEST EDITION. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO POSSESS A COPY OF THE EROSION CONTROL PLAN AT ALL TIMES.

10. THE CONTRACTOR IS HEREBY CAUTIONED THAT ALL SITE FEATURES SHOWN HEREON ARE BASED ON FIELD OBSERVATIONS BY THE SURVEYOR AND BY INFORMATION PROVIDED BY UTILITY COMPANIES. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR SHALL CONTACT DIG SAFE (811) AT LEAST THREE (3) BUT NOT MORE THAN THIRTY (30) DAYS PRIOR TO COMMENCEMENT OF EXCAVATION OR DEMOLITION TO VERIFY HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITIES.

11. CONTRACTOR SHALL BE AWARE THAT DIG SAFE ONLY NOTIFIES ITS "MEMBER" UTILITIES ABOUT THE DIG. WHEN NOTIFIED, DIG SAFE WILL ADVISE CONTRACTOR OF MEMBER UTILITIES IN THE AREA. CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING AND CONTACTING NON-MEMBER UTILITIES DIRECTLY. NON-MEMBER UTILITIES MAY INCLUDE TOWN OR CITY WATER AND SEWER DISTRICTS AND SMALL LOCAL UTILITIES, AS WELL AS USG PUBLIC WORKS SYSTEMS.

12. CONTRACTORS SHALL BE RESPONSIBLE FOR COMPLIANCE WITH THE REQUIREMENTS OF 23 MRSA 3360-A. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH THE APPROPRIATE UTILITIES TO OBTAIN AUTHORIZATION PRIOR TO RELOCATION OF ANY EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THESE PLANS. IF A UTILITY CONFLICT ARISES, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER, THE MUNICIPALITY AND APPROPRIATE UTILITY COMPANY PRIOR TO PROCEEDING WITH ANY RELOCATION.

13. ALL PAVEMENT MARKINGS AND DIRECTIONAL SIGNAGE SHOWN ON THE PLAN SHALL CONFORM TO THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) STANDARDS.

14. ALL PAVEMENT JOINTS SHALL BE SAWCUT PRIOR TO PAVING TO PROVIDE A DURABLE AND UNIFORM JOINT.

15. NO HOLES, TRENCHES OR STRUCTURES SHALL BE LEFT OPEN OVERNIGHT IN ANY EXCAVATION ACCESSIBLE TO THE PUBLIC OR IN PUBLIC RIGHTS-OF-WAY.

16. ALL WORK WITHIN THE PUBLIC RIGHT-OF-WAY SHALL REQUIRE A M.D.O.T. PERMIT AS WELL AS PERMITS FROM THE MUNICIPALITY AS APPLICABLE.

17. THE PROPOSED LIMITS OF CLEARING SHOWN HEREON ARE APPROXIMATE BASED UPON THE PROPOSED LIMITS OF SITE GRADING. THE APPLICANT RESERVES THE RIGHT TO PERFORM NORMAL FOREST MANAGEMENT ACTIVITIES OUTSIDE OF THE CLEARING LIMIT AS SHOWN. TREE REMOVAL OUTSIDE OF THE LIMITS OF CLEARING MAY BE NECESSARY TO REMOVE DEAD OR DYING TREES OR TREE LIMBS. THIS REMOVAL IS DUE TO POTENTIAL SAFETY HAZARDS AND TO PROMOTE PROPER FOREST GROWTH.

18. IMMEDIATELY UPON COMPLETION OF CUTS/FILLS, THE CONTRACTOR SHALL STABILIZE DISTURBED AREAS IN ACCORDANCE WITH EROSION CONTROL NOTES AND AS SPECIFIED ON PLANS.

19. THE CONTRACTOR SHALL BE FULLY AND SOLELY RESPONSIBLE FOR THE REMOVAL, REPLACEMENT AND RECTIFICATION OF ALL DAMAGED AND DEFECTIVE MATERIAL AND WORKMANSHIP IN CONNECTION WITH THE CONTRACT WORK. THE CONTRACTOR SHALL REPLACE OR REPAIR AS DIRECTED BY THE OWNER ALL SUCH DAMAGED OR DEFECTIVE MATERIALS WHICH APPEAR WITHIN A PERIOD OF ONE YEAR FROM THE DATE OF SUBSTANTIAL COMPLETION.

20. ALL WORK PERFORMED BY THE GENERAL CONTRACTOR AND/OR TRADE SUBCONTRACTOR SHALL CONFORM TO THE REQUIREMENTS OF LOCAL, STATE OR FEDERAL LAWS, AS WELL AS ANY OTHER GOVERNING REQUIREMENTS, WHETHER OR NOT SPECIFIED ON THE DRAWINGS.

21. WHERE THE TERMS "APPROVED EQUAL", "OTHER APPROVED", "EQUAL TO", "ACCEPTABLE" OR OTHER GENERAL QUALIFYING TERMS ARE USED IN THESE NOTES, IT SHALL BE UNDERSTOOD THAT REFERENCE IS MADE TO THE RULING AND JUDGMENT OF SEBAGO TECHNICS, INC.

22. THE GENERAL CONTRACTOR SHALL PROVIDE ALL NECESSARY PROTECTION FOR THE WORK UNTIL TURNED OVER TO THE OWNER.

23. THE GENERAL CONTRACTOR SHALL MAINTAIN A CURRENT AND COMPLETE SET OF CONSTRUCTION DRAWINGS ON SITE DURING ALL PHASES OF CONSTRUCTION FOR USE OF ALL TRADES.

24. THE CONTRACTOR SHALL TAKE FULL RESPONSIBILITY FOR ANY CHANGES AND DEVIATION OF APPROVED PLANS NOT AUTHORIZED BY THE ARCHITECT/ENGINEER AND/OR CLIENT/OWNER.

25. DETAILS ARE INTENDED TO SHOW END RESULT OF DESIGN. ANY MODIFICATION TO SUIT FIELD DIMENSION AND CONDITION SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO ANY WORK.

26. BEFORE THE FINAL ACCEPTANCE OF THE PROJECT, THE CONTRACTOR SHALL REMOVE ALL EQUIPMENT AND MATERIALS, REPAIR OR REPLACE PRIVATE OR PUBLIC PROPERTY WHICH MAY HAVE BEEN DAMAGED OR DESTROYED DURING CONSTRUCTION, CLEAN THE AREAS WITHIN AND ADJACENT TO THE PROJECT WHICH HAVE BEEN OBSTRUCTED BY HIS/HER OPERATIONS, AND LEAVE THE PROJECT AREA NEAT AND PRESENTABLE.

27. ALL SUBSURFACE UTILITY LINES SHOWN HEREON ARE BASED SOLELY ON THE FIELD LOCATION OF VISIBLE STRUCTURES, SMH'S, CB'S, HYDRANTS, ETC.. IN CONJUNCTION WITH DESIGN AND OR AS-BUILT PLANS SUPPLIED TO SEBAGO TECHNICS INC. BY OTHERS. PRIOR TO ANY CONSTRUCTION, EXCAVATION, TEST BORINGS, DRILLING, ETC., DIG SAFE MUST BE NOTIFIED AND A SITE IDENTIFICATION NUMBER ALONG WITH A SAFE TO DIG DATE OBTAINED. THE SITE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFYING THE LOCATION, DEPTH AND MATERIAL OF ALL SUBSURFACE UTILITY LINES SHOWN HEREON AND ANY AND ALL OTHERS LOCATED ON SITE WITHIN THE CONSTRUCTION AREA.

LEGEND

EXISTING		PROPOSED
	PROPERTY LINE/R.O.W.	
	ABUTTER LINE/R.O.W.	
	DEED LINE/R.O.W.	
	EASEMENT	
⊗	IRON PIPE/ROD	
	EDGE WETLAND	
	WETLANDS	
	BUILDING	
	DECK/STEPS/ OVERHANG	
	STREAM	
	EDGE PAVEMENT	
	PAVEMENT SAWCUT	
	EDGE CONCRETE	
	EDGE GRAVEL	
	CURB LINE	
	EDGE OF WATER	
	TREELINE	
120 118	CONTOURS	120
×120.00	SPOT GRADE	+120.00
	CHAIN LINK FENCE	
	RETAINING WALL	
○	BOLLARD	●
	SIGN	
W	WATER	W
	WATER GATE VALVE	
	WATER SHUT OFF	
S	SANITARY SEWER	S
Ⓢ	SANITARY MANHOLE	
SD	STORM DRAIN	SD
UD	UNDER DRAIN	UD
Ⓓ	DRAINAGE MANHOLE	
	CATCH BASIN	
OHU	OVERHEAD UTILITY	OHU
UGU	UNDERGROUND UTILITY	UGU
T	TRANSFORMER PAD	T
	LIGHT POLE	
	UTILITY POLE	
	GUY WIRE	

STORM DRAIN STRUCTURE DATA

STRUCTURE	RIM	INV. IN	INV. OUT:	DIAM.
CB-1	61.15	56.85 (SD-2)	56.75 (SD-1)	48"
CB-2	61.90		57.90 (SD-2)	48"
CB-3	60.80	56.85 (SD-4)	56.75 (SD-3)	48"
CB-4	61.25		58.00 (SD-4)	48"
CB-5	57.64	54.30 (SD-6)	54.20 (SD-5)	48"
CB-6	57.84	55.50 (SD-7)	54.40 (SD-6)	48"
CB-7	60.74	56.20 (SD-8)	56.10 (SD-7)	48"
CB-8	60.80		56.80 (SD-8)	48"
CB-9	51.40		46.40 (SD-9)	48"
CB-10	51.40	46.20 (SD-9)	46.10 (SD-10)	48"
CB-11	55.00	51.67 (6" UD)	51.07 (SD-12)	24" F-BASIN
CB-12	57.40	53.67 (6" UD)	53.57 (SD-13)	24" F-BASIN
CB-13	58.75	53.07 (6" UD)	52.57 (SD-14)	24" F-BASIN

STORM DRAIN PIPE DATA

NAME	SIZE	LENGTH	SLOPE
SD-1	12"	84'	0.87%
SD-2	12"	197'	0.52%
SD-3	12"	139'	0.53%
SD-4	12"	224'	0.51%
SD-5	12"	29'	0.64%
SD-6	12"	18'	0.45%
SD-7	12"	61'	0.93%

STORM DRAIN PIPE DATA

NAME	SIZE	LENGTH	SLOPE
SD-8	12"	106'	0.57%
SD-9	12"	18'	0.91%
SD-10	12"	9'	1.81%
SD-12	12"	37'	1.49%
SD-13	12"	44'	12.48%
SD-14	12"	18'	8.42%

SANITARY SEWER STRUCTURE DATA

STRUCTURE	RIM	INV. IN	INV. OUT:	DIAM.
SMH-1	51.60	47.10 (S-1)		48"
SMH-2	54.11	48.55 (S-2)	48.45 (S-1)	48"
SMH-3	64.63	58.50 (S-3)	58.40 (S-2)	48"

SANITARY SEWER PIPE DATA

NAME	SIZE	LENGTH	SLOPE
S-1	6"	30'	3.93%
S-2	6"	254'	3.82%
S-3	6"	80'	0.006%

GRAPHIC SCALE
40 0 20 40 80
(IN FEET)
1 INCH = 40 FT.

PROGRESS PRINT

SHAWN M. FRANK, PE 6396

STATE OF MAINE · SHAWN M. FRANK · No. 6396 · REGISTERED PROFESSIONAL ENGINEER · 8/27/18

DESIGNED	CHECKED
SAH	SMF

REV.	BY:	DATE:	STATUS
B	SMF	8-27-18	REVISED PER CITY COMMENTS
A	SMF	7-13-18	ISSUED TO CITY

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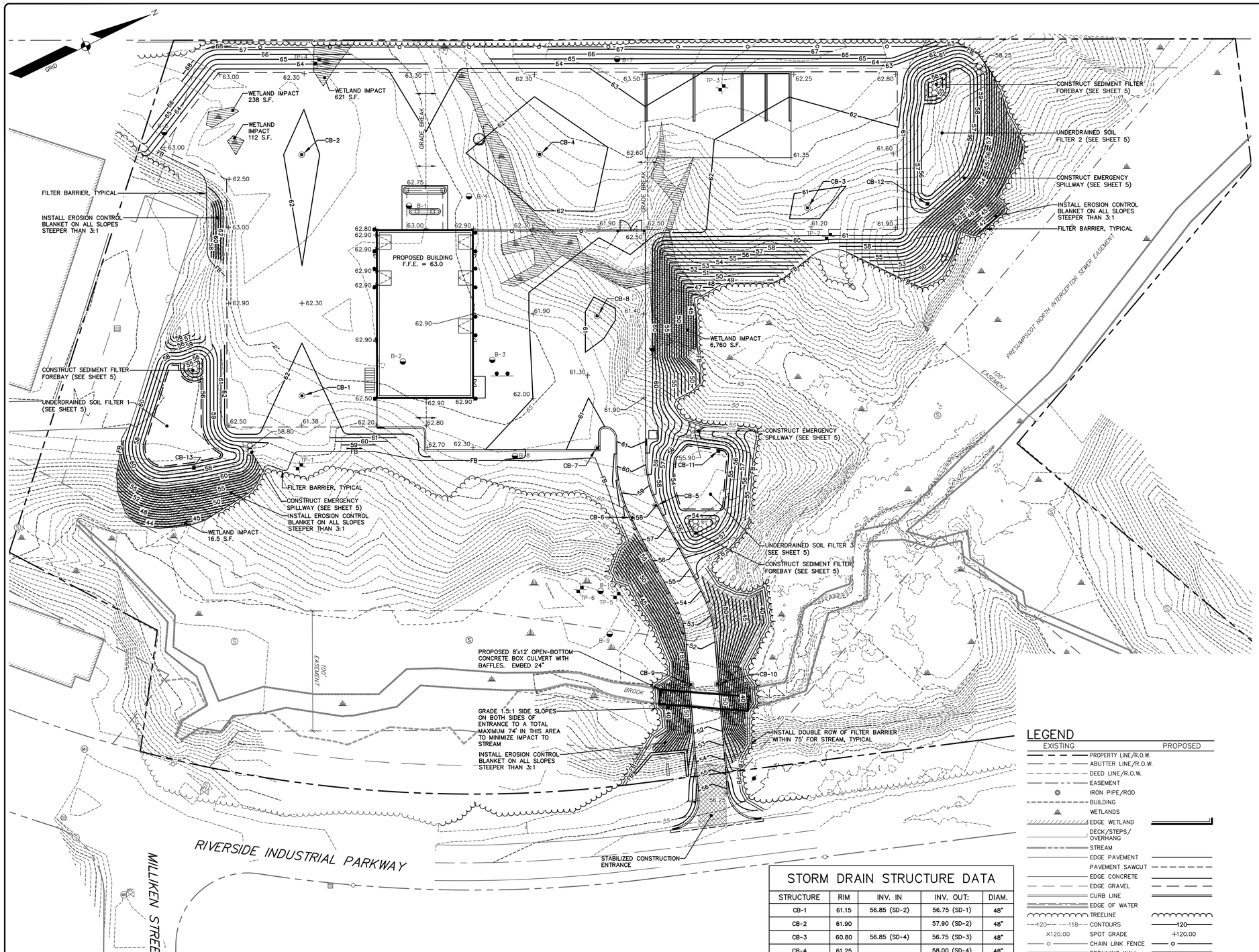
SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd.
Suite 4A
South Portland, ME 04106
Tel. (207) 200-2100

UTILITY PLAN
OF:
250 RIVERSIDE INDUSTRIAL PARKWAY
RIVERSIDE INDUSTRIAL PARKWAY
PORTLAND, MAINE
FOR:
TWO EISENHOWER DRIVE, LLC
P.O. BOX 1120
PORTLAND, MAINE 04104

PROJECT NO.	SCALE
16360	1" = 40'

SHEET 4 OF 12

16360 U.dwg, TAB:U



GRAPHIC SCALE

40 0 20 40 80

(IN FEET)
1 INCH = 40 FT.

STORM DRAIN STRUCTURE DATA

STRUCTURE	RIM	INV. IN	INV. OUT:	DIAM.
CB-1	61.15	56.85 (SD-2)	56.75 (SD-1)	48"
CB-2	61.90		57.90 (SD-2)	48"
CB-3	60.80	56.85 (SD-4)	56.75 (SD-3)	48"
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CB-11	55.00	51.67 (6" UD)	51.07 (SD-12)	24" F-BASIN
CB-12	57.40	53.67 (6" UD)	53.57 (SD-13)	24" F-BASIN
CB-13	58.75	53.07 (6" UD)	52.57 (SD-14)	24" F-BASIN

LEGEND

EXISTING	PROPOSED
PROPERTY LINE/R.O.W.	
ABUTTER LINE/R.O.W.	
DEED LINE/R.O.W.	
EASEMENT	
IRON PIPE/ROD	
BUILDING	
WETLANDS	
EDGE WETLAND	
DECK/STEPS/ OVERHANG	
STREAM	
EDGE PAVEMENT	
PAVEMENT SAWCUT	
EDGE CONCRETE	
EDGE GRAVEL	
CURB LINE	
EDGE OF WATER	
TREELINE	
120 118 CONTOURS	120
×120.00 SPOT GRADE	+120.00
CHAIN LINK FENCE	
RETAINING WALL	
BOLLARD	
SIGN	
WATER GATE VALVE	
SANITARY MANHOLE	
DRAINAGE MANHOLE	
CATCH BASIN	
UTILITY POLE	
BLANKET	
FILTER BARRIER	FB
RIPRAP	

CONSTRUCTION NOTES

1. ALL WORK SHALL CONFORM TO THE APPLICABLE CODES AND ORDINANCES.

2. CONTRACTOR SHALL VISIT THE SITE AND FAMILIARIZE HIM OR HERSELF WITH ALL CONDITIONS AFFECTING THE PROPOSED WORK AND SHALL MAKE PROVISIONS AS TO THE COST THEREOF. CONTRACTOR SHALL BE RESPONSIBLE FOR FAMILIARIZING HIM OR HERSELF WITH ALL CONTRACT DOCUMENTS, FIELD CONDITIONS AND DIMENSIONS AND CONFIRMING THAT THE WORK MAY BE ACCOMPLISHED AS SHOWN PRIOR TO PROCEEDING WITH CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO THE COMMENCEMENT OF WORK.

3. CONTRACTOR SHALL NOTIFY ENGINEER OF ALL PRODUCTS OR ITEMS NOTED AS "EXISTING" WHICH ARE NOT FOUND IN THE FIELD.

4. INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND OWNER'S REQUIREMENTS UNLESS SPECIFICALLY OTHERWISE INDICATED OR WHERE LOCAL CODES OR REGULATIONS TAKE PRECEDENCE.

5. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO FABRICATION AND ERECTION OF ANY MATERIAL. ANY UNUSUAL CONDITIONS SHALL BE REPORTED TO THE ATTENTION OF THE ENGINEER.

6. CONTRACTOR SHALL CLEAN AND REMOVE DEBRIS AND SEDIMENT DEPOSITED ON PUBLIC STREETS, SIDEWALKS, ADJACENT AREAS, OR OTHER PUBLIC WAYS DUE TO CONSTRUCTION.

7. CONTRACTOR SHALL INCORPORATE PROVISIONS AS NECESSARY IN CONSTRUCTION TO PROTECT EXISTING STRUCTURES, PHYSICAL FEATURES, AND MAINTAIN SITE STABILITY DURING CONSTRUCTION. CONTRACTOR SHALL RESTORE ALL AREAS TO ORIGINAL CONDITION AND AS DIRECTED BY DESIGN DRAWINGS.

8. SITE CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS PRIOR TO CONSTRUCTION.

9. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH "MAINE EROSION AND SEDIMENT CONTROL BMPS" PUBLISHED BY THE BUREAU OF LAND AND WATER QUALITY OF THE MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION, MARCH 2003 OR LATEST EDITION. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO POSSESS A COPY OF THE EROSION CONTROL PLAN AT ALL TIMES.

10. THE CONTRACTOR IS HEREBY CAUTIONED THAT ALL SITE FEATURES SHOWN HEREON ARE BASED ON FIELD OBSERVATIONS BY THE SURVEYOR AND BY INFORMATION PROVIDED BY UTILITY COMPANIES. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR SHALL CONTACT DIG SAFE (811) AT LEAST THREE (3) BUT NOT MORE THAN THIRTY (30) DAYS PRIOR TO COMMENCEMENT OF EXCAVATION OR DEMOLITION TO VERIFY HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITIES.

11. CONTRACTOR SHALL BE AWARE THAT DIG SAFE ONLY NOTIFIES ITS "MEMBER" UTILITIES ABOUT THE DIG. WHEN NOTIFIED, DIG SAFE WILL ADVISE CONTRACTOR OF MEMBER UTILITIES IN THE AREA. CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING AND CONTACTING NON-MEMBER UTILITIES DIRECTLY. NON-MEMBER UTILITIES MAY INCLUDE TOWN OR CITY WATER AND SEWER DISTRICTS AND SMALL LOCAL UTILITIES, AS WELL AS USG PUBLIC WORKS SYSTEMS.

12. CONTRACTORS SHALL BE RESPONSIBLE FOR COMPLIANCE WITH THE REQUIREMENTS OF 23 MRSA 3360-A. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH THE APPROPRIATE UTILITIES TO OBTAIN AUTHORIZATION PRIOR TO RELOCATION OF ANY EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THESE PLANS. IF A UTILITY CONFLICT ARISES, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER, THE MUNICIPALITY AND APPROPRIATE UTILITY COMPANY PRIOR TO PROCEEDING WITH ANY RELOCATION.

13. ALL PAVEMENT MARKINGS AND DIRECTIONAL SIGNAGE SHOWN ON THE PLAN SHALL CONFORM TO THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) STANDARDS.

14. ALL PAVEMENT JOINTS SHALL BE SAWCUT PRIOR TO PAVING TO PROVIDE A DURABLE AND UNIFORM JOINT.

15. NO HOLES, TRENCHES OR STRUCTURES SHALL BE LEFT OPEN OVERNIGHT IN ANY EXCAVATION ACCESSIBLE TO THE PUBLIC OR IN PUBLIC RIGHTS-OF-WAY.

16. ALL WORK WITHIN THE PUBLIC RIGHT-OF-WAY SHALL REQUIRE A M.D.O.T. PERMIT AS WELL AS PERMITS FROM THE MUNICIPALITY AS APPLICABLE.

17. THE PROPOSED LIMITS OF CLEARING SHOWN HEREON ARE APPROXIMATE BASED UPON THE PROPOSED LIMITS OF SITE GRADING. THE APPLICANT RESERVES THE RIGHT TO PERFORM NORMAL FOREST MANAGEMENT ACTIVITIES OUTSIDE OF THE CLEARING LIMIT AS SHOWN. TREE REMOVAL OUTSIDE OF THE LIMITS OF CLEARING MAY BE NECESSARY TO REMOVE DEAD OR DYING TREES OR TREE LIMBS. THIS REMOVAL IS DUE TO POTENTIAL SAFETY HAZARDS AND TO PROMOTE PROPER FOREST GROWTH.

18. IMMEDIATELY UPON COMPLETION OF CUTS/FILLS, THE CONTRACTOR SHALL STABILIZE DISTURBED AREAS IN ACCORDANCE WITH EROSION CONTROL NOTES AND AS SPECIFIED ON PLANS.

19. THE CONTRACTOR SHALL BE FULLY AND SOLELY RESPONSIBLE FOR THE REMOVAL, REPLACEMENT AND RECTIFICATION OF ALL DAMAGED AND DEFECTIVE MATERIAL AND WORKMANSHIP IN CONNECTION WITH THE CONTRACT WORK. THE CONTRACTOR SHALL REPLACE OR REPAIR AS DIRECTED BY THE OWNER ALL SUCH DAMAGED OR DEFECTIVE MATERIALS WHICH APPEAR WITHIN A PERIOD OF ONE YEAR FROM THE DATE OF SUBSTANTIAL COMPLETION.

20. ALL WORK PERFORMED BY THE GENERAL CONTRACTOR AND/OR TRADE SUBCONTRACTOR SHALL CONFORM TO THE REQUIREMENTS OF LOCAL, STATE OR FEDERAL LAWS, AS WELL AS ANY OTHER GOVERNING REQUIREMENTS, WHETHER OR NOT SPECIFIED ON THE DRAWINGS.

21. WHERE THE TERMS "APPROVED EQUAL", "OTHER APPROVED", "EQUAL TO", "ACCEPTABLE" OR OTHER GENERAL QUALIFYING TERMS ARE USED IN THESE NOTES, IT SHALL BE UNDERSTOOD THAT REFERENCE IS MADE TO THE RULING AND JUDGMENT OF SEBAGO TECHNICS, INC.

22. THE GENERAL CONTRACTOR SHALL PROVIDE ALL NECESSARY PROTECTION FOR THE WORK UNTIL TURNED OVER TO THE OWNER.

23. THE GENERAL CONTRACTOR SHALL MAINTAIN A CURRENT AND COMPLETE SET OF CONSTRUCTION DRAWINGS ON SITE DURING ALL PHASES OF CONSTRUCTION FOR USE OF ALL TRADES.

24. THE CONTRACTOR SHALL TAKE FULL RESPONSIBILITY FOR ANY CHANGES AND DEVIATION OF APPROVED PLANS NOT AUTHORIZED BY THE ARCHITECT/ENGINEER AND/OR CLIENT/OWNER.

25. DETAILS ARE INTENDED TO SHOW END RESULT OF DESIGN. ANY MODIFICATION TO SUIT FIELD DIMENSION AND CONDITION SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO ANY WORK.

26. BEFORE THE FINAL ACCEPTANCE OF THE PROJECT, THE CONTRACTOR SHALL REMOVE ALL EQUIPMENT AND MATERIALS, REPAIR OR REPLACE PRIVATE OR PUBLIC PROPERTY WHICH MAY HAVE BEEN DAMAGED OR DESTROYED DURING CONSTRUCTION, CLEAN THE AREAS WITHIN AND ADJACENT TO THE PROJECT WHICH HAVE BEEN OBSTRUCTED BY HIS/HER OPERATIONS, AND LEAVE THE PROJECT AREA NEAT AND PRESENTABLE.

27. ALL SUBSURFACE UTILITY LINES SHOWN HEREON ARE BASED SOLELY ON THE FIELD LOCATION OF VISIBLE STRUCTURES, SMH'S, CB'S, HYDRANTS, ETC.. IN CONJUNCTION WITH DESIGN AND OR AS-BUILT PLANS SUPPLIED TO SEBAGO TECHNICS INC. BY OTHERS. PRIOR TO ANY CONSTRUCTION, EXCAVATION, TEST BORINGS, DRILLING, ETC., DIG SAFE MUST BE NOTIFIED AND A SITE IDENTIFICATION NUMBER ALONG WITH A SAFE TO DIG DATE OBTAINED. THE SITE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFYING THE LOCATION, DEPTH AND MATERIAL OF ALL SUBSURFACE UTILITY LINES SHOWN HEREON AND ANY AND ALL OTHERS LOCATED ON SITE WITHIN THE CONSTRUCTION AREA.

SHAWN M. FRANK, PE 6396

PROGRESS PRINT

STATE OF MAINE SHAWN M. FRANK No. 6396 REGISTERED PROFESSIONAL ENGINEER 8/27/18

DESIGNED	CHECKED
SAH	SMF

REV.	BY:	DATE:	STATUS
B	SMF	8-27-18	REVISED PER CITY COMMENTS
A	SMF	7-13-18	ISSUED TO CITY

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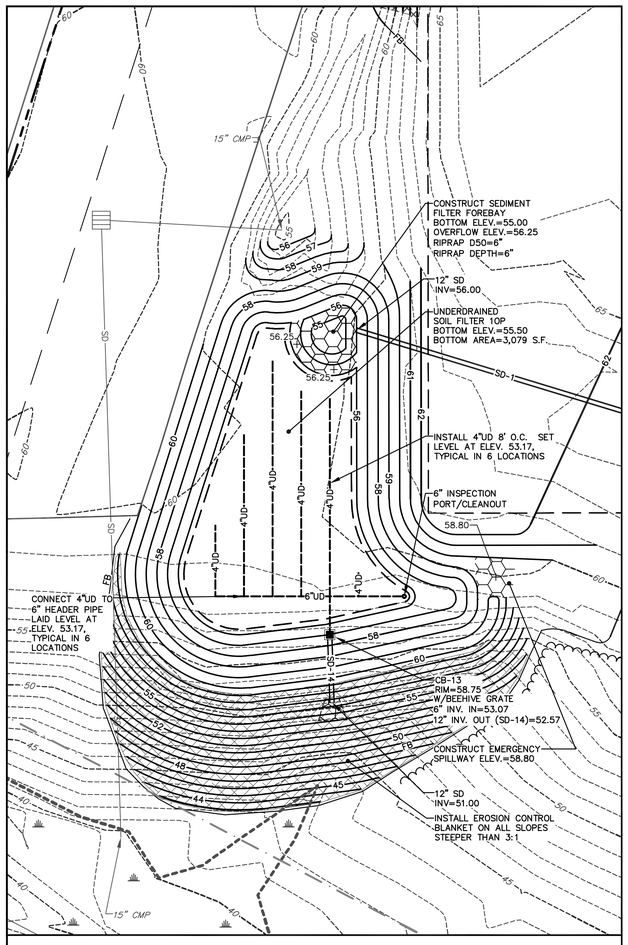
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd.
Suite 4A
South Portland, ME 04106
Tel: 207-200-2100

GRADING AND EROSION CONTROL PLAN
OF:
250 RIVERSIDE INDUSTRIAL PARKWAY
RIVERSIDE INDUSTRIAL PARKWAY
PORTLAND, MAINE
FOR:
TWO EISENHOWER DRIVE, LLC
P.O. BOX 1120
PORTLAND, MAINE 04104

PROJECT NO.	SCALE
16360	1" = 40'

SHEET 5 OF 12

16360 G.dwg, TAB: G

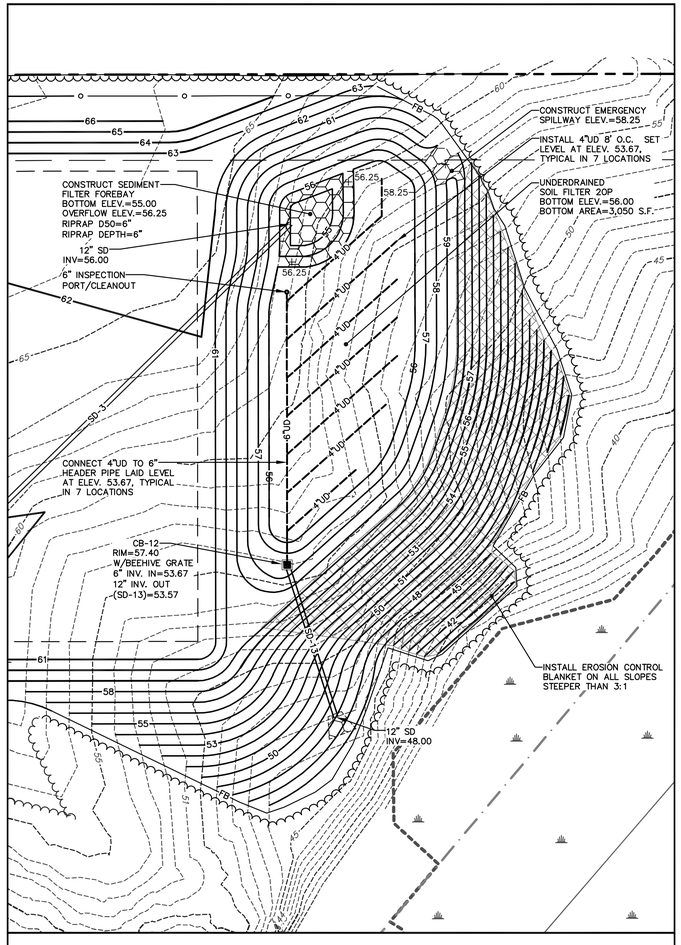


GRASSED UNDERDRAINED SOIL FILTER 1OP

SCALE: 1"=20'

STORM DRAIN STRUCTURE DATA				
STRUCTURE	RIM	INV. IN	INV. OUT:	DIAM.
CB-13	58.75	53.07 (6" UD)	52.57 (SD-14)	24" F-BASIN

STORM DRAIN PIPE DATA			
NAME	SIZE	LENGTH	SLOPE
SD-1	12"	84'	0.87%
SD-14	12"	18'	8.42%

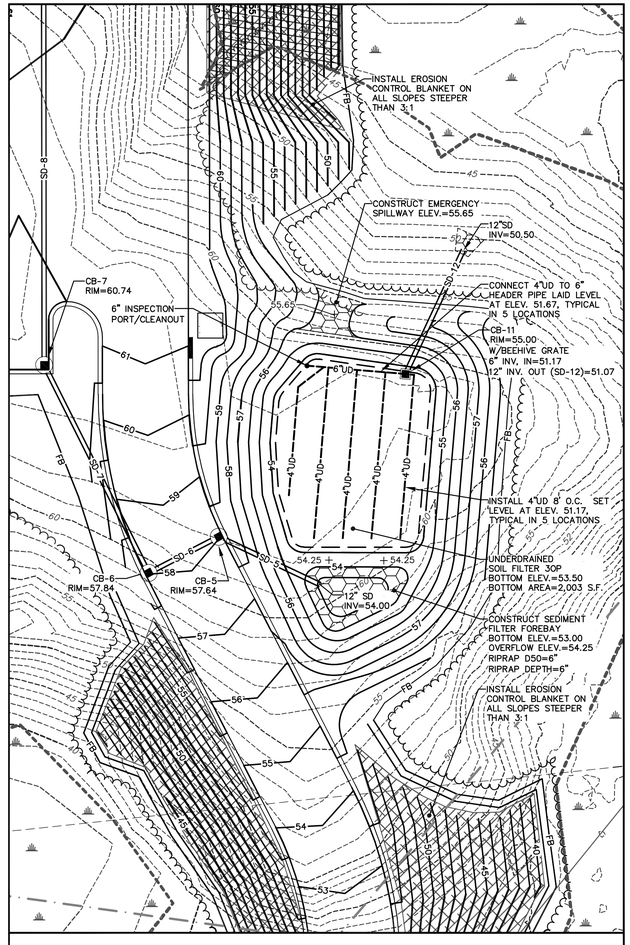


GRASSED UNDERDRAINED SOIL FILTER 2OP

SCALE: 1"=20'

STORM DRAIN STRUCTURE DATA				
STRUCTURE	RIM	INV. IN	INV. OUT:	DIAM.
CB-12	57.40	53.67 (6" UD)	53.57 (SD-13)	24" F-BASIN

STORM DRAIN PIPE DATA			
NAME	SIZE	LENGTH	SLOPE
SD-3	12"	139'	0.53%
SD-13	12"	44'	12.48%



GRASSED UNDERDRAINED SOIL FILTER 3OP

SCALE: 1"=20'

STORM DRAIN STRUCTURE DATA				
STRUCTURE	RIM	INV. IN	INV. OUT:	DIAM.
CB-5	57.64	54.30 (SD-6)	54.20 (SD-5)	48"
CB-6	57.84	55.50 (SD-7)	54.40 (SD-6)	48"
CB-7	60.74	56.20 (SD-8)	56.10 (SD-7)	48"
CB-11	55.00	51.67 (6" UD)	51.07 (SD-12)	24" F-BASIN

STORM DRAIN PIPE DATA			
NAME	SIZE	LENGTH	SLOPE
SD-5	12"	29'	0.64%
SD-6	12"	18'	0.45%
SD-7	12"	61'	0.93%
SD-8	12"	106'	0.57%
SD-12	12"	37'	1.49%

GENERAL POND CONSTRUCTION NOTES:

1. INSTALL HAY BALE BARRIER AROUND ALL CATCH BASINS NOT IN PAVEMENT.
2. SEE DETAIL SHEETS FOR EROSION CONTROL NOTES.
3. SOIL STOCKPILES SHALL NOT BE LOCATED WITHIN 100 FEET OF ANY NATURAL RESOURCES. STOCKPILES SHALL BE CONTAINED WITH A DOUBLE BOUNDARY OF FILTRATION BARRIER. SEE EROSION CONTROL NOTES.
4. PIPE MATERIALS:
   a) STORM DRAIN: SMOOTH WALL CORRUGATED HDPE
   b) UNDER DRAIN: 6" PERFORATED HDPE
   c) SANITARY SEWER: SDR-35 HDPE
5. SEE DETAIL SHEETS FOR ADDITIONAL DETAILS.

GENERAL NOTES:

1. BORINGS SHOWN ARE REFERENCED FROM A REPORT, 14-0209 DATED MAY 7, 2014, GEOTECHNICAL ENGINEERING SERVICES, PROPOSED CONDOMINIUM DEVELOPMENT PHASE II (WOODS EDGE) AND PHASE III (RIDGEFIELD), FOR HILL ROAD, GORHAM, MAINE. REPORT WAS PREPARED BY S.W. COLE ENGINEERING SERVICES, INC. BY MICHAEL ST. PIERRE, GEOTECHNICAL ENGINEER, MAINE PE #12519. THE REPORT ALSO INCLUDES SUBSURFACE DATA AND NARRATIVE OF THE FINDINGS AND RECOMMENDATIONS.

LEGEND

EXISTING		PROPOSED
120 118	CONTOURS	120
×120.00	SPOT GRADE	+120.00
SD	STORM DRAIN	SD
UD	UNDER DRAIN	UD
S	DRAINAGE MANHOLE	●
▤	CATCH BASIN	■
	EDGE WETLAND	
	WETLANDS	

GRAPHIC SCALE

20 0 10 20 40

(IN FEET)
1 INCH = 20 FT.

PROGRESS PRINT

SHAWN M. FRANK, PE 6396

STATE OF MAINE ★ SHAWN M. FRANK No. 6396 ★ REGISTERED PROFESSIONAL ENGINEER 07/13/18

DESIGNED	CHECKED
SAH	SMF

REV:	BY:	DATE:	STATUS:
A	SMF	7-13-18	ISSUED TO CITY

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SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd.
Suite 4A
South Portland, ME 04106
Tel: 207-200-2100

POND CONSTRUCTION PLANS
OF:
250 RIVERSIDE INDUSTRIAL PARKWAY
RIVERSIDE INDUSTRIAL PARKWAY
PORTLAND, MAINE
FOR:
TWO EISENHOWER DRIVE, LLC
P.O. BOX 1120
PORTLAND, MAINE 04104

PROJECT NO.	SCALE
16360	1" = 20'

SHEET 6 OF 12

16360 P.dwg, TAB:POND

EROSION CONTROL MEASURES

PRE-CONSTRUCTION PHASE

PRIOR TO CONSTRUCTION, PROPERLY INSTALL SEDIMENT BARRIERS AT THE DOWNGRADIENT EDGE OF ANY AREA TO BE DISTURBED AND ADJACENT TO ANY DRAINAGE CHANNELS WITHIN THE DISTURBED AREA. SEDIMENT BARRIERS SHOULD BE INSTALLED DOWNGRADIENT OF SOIL OR SEDIMENT STOCKPILES AND STORMWATER PREVENTED FROM RUNNING ONTO THE STOCKPILE. MAINTAIN THE SEDIMENT BARRIERS BY REMOVING ACCUMULATED SEDIMENT, OR REMOVING AND REPLACING THE BARRIER, UNTIL THE DISTURBED AREA IS PERMANENTLY STABILIZED. WHERE A DISCHARGE TO A STORM DRAIN INLET OCCURS, IF THE STORM DRAIN CARRIES WATER DIRECTLY TO A SURFACE WATER AND YOU HAVE AUTHORITY TO ACCESS THE STORM DRAIN INLET, YOU MUST INSTALL AND MAINTAIN PROTECTION MEASURES THAT REMOVE SEDIMENT FROM THE DISCHARGE.

PRIOR TO CONSTRUCTION, PROPERLY INSTALL A STABILIZED CONSTRUCTION ENTRANCE (SCE) AT ALL POINTS OF EGRESS FROM THE SITE. THE SCE IS A STABILIZED PAD OF AGGREGATE, UNDERLAIN BY A GEOTEXTILE FILTER FABRIC, USED TO PREVENT TRAFFIC FROM TRACKING MATERIAL AWAY FROM THE SITE ONTO PUBLIC ROWS. MAINTAIN THE SCE UNTIL ALL DISTURBED AREAS ARE STABILIZED.

PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL PREPARE A DETAILED SCHEDULE AND MARKED UP PLAN INDICATING AREAS AND COMPONENTS OF THE WORK AND KEY DATES SHOWING DATE OF DISTURBANCE AND COMPLETION OF THE WORK. THE CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING WITH THE MUNICIPAL STAFF. THREE COPIES OF THE SCHEDULE AND MARKED UP PLAN SHALL BE PROVIDED TO THE MUNICIPALITY THREE DAYS PRIOR TO THE SCHEDULED PRE-CONSTRUCTION MEETING. SPECIAL ATTENTION SHALL BE GIVEN TO THE 14 DAY LIMIT OF DISTURBANCE IN THE SCHEDULE ADDRESSING TEMPORARY AND PERMANENT VEGETATION MEASURES.

CONSTRUCTION AND POST-CONSTRUCTION PHASE

DURING CONSTRUCTION

1. INSPECTION AND CORRECTIVE ACTION:
   INSPECT DISTURBED AND IMPERWOUS AREAS, EROSION CONTROL MEASURES, MATERIALS STORAGE AREAS THAT ARE EXPOSED TO PRECIPITATION, AND LOCATIONS WHERE VEHICLES ENTER OR EXIT THE SITE. INSPECT THESE AREAS AT LEAST ONCE A WEEK AS WELL AS BEFORE AND WITHIN 24 HOURS AFTER A STORM EVENT (RAINFALL), AND PRIOR TO COMPLETING PERMANENT STABILIZATION MEASURES. A PERSON WITH KNOWLEDGE OF EROSION AND STORMWATER CONTROL, INCLUDING THE STANDARDS AND CONDITIONS IN THE PERMIT, SHALL CONDUCT THE INSPECTIONS.
2. MAINTENANCE:
   IF BEST MANAGEMENT PRACTICES (BMPS) NEED TO BE REPAIRED, THE REPAIR WORK SHOULD BE INITIATED UPON DISCOVERY OF THE PROBLEM BUT NO LATER THAN THE END OF THE NEXT WORKDAY. IF ADDITIONAL BMPS OR SIGNIFICANT REPAIR OF BMPS ARE NECESSARY, IMPLEMENTATION MUST BE COMPLETED WITHIN 7 CALENDAR DAYS AND PRIOR TO ANY STORM EVENT (RAINFALL). ALL MEASURES MUST BE MAINTAINED IN EFFECTIVE OPERATING CONDITION UNTIL AREAS ARE PERMANENTLY STABILIZED.
3. DOCUMENTATION:
   KEEP A LOG (REPORT) SUMMARIZING THE INSPECTIONS AND ANY CORRECTIVE ACTION TAKEN. THE LOG MUST INCLUDE THE NAME(S) AND QUALIFICATIONS OF THE PERSON MAKING THE INSPECTIONS, THE DATE(S) OF THE INSPECTIONS, AND MAJOR OBSERVATIONS ABOUT THE OPERATION AND MAINTENANCE OF EROSION AND SEDIMENTATION CONTROLS, MATERIALS STORAGE AREAS, AND VEHICLES ACCESS POINTS TO THE PARCEL. MAJOR OBSERVATIONS MUST INCLUDE BMPS THAT NEED MAINTENANCE, BMPS THAT FAILED TO OPERATE AS DESIGNED OR PROVED INADEQUATE FOR A PARTICULAR LOCATION, AND LOCATION(S) WHERE ADDITIONAL BMPS ARE NEEDED. FOR EACH BMP REQUIRING MAINTENANCE, BMP NEEDING REPLACEMENT, AND LOCATION NEEDING ADDITIONAL BMPS, NOTE IN THE LOG THE CORRECTIVE ACTION TAKEN AND WHEN IT WAS TAKEN.

   THE LOG MUST BE MADE ACCESSIBLE TO DEPARTMENT STAFF AND A COPY MUST BE PROVIDED UPON REQUEST. THE PERMITTEE SHALL RETAIN A COPY OF THE LOG FOR A PERIOD OF AT LEAST THREE YEARS FROM THE COMPLETION OF PERMANENT STABILIZATION.

POST-CONSTRUCTION

1. PLAN:
   CARRY OUT AN APPROVED INSPECTION AND MAINTENANCE PLAN THAT IS CONSISTENT WITH THE MINIMUM REQUIREMENTS OF THIS SECTION. THE PLAN MUST ADDRESS INSPECTION AND MAINTENANCE OF THE PROJECT'S PERMANENT EROSION CONTROL MEASURES AND STORMWATER MANAGEMENT SYSTEM. THIS PLAN MAY BE COMBINED WITH THE PLAN LISTED IN SECTION 2(A) OF THIS APPENDIX. SEE SECTION 7(C)(2) FOR SUBMISSION REQUIREMENTS.
2. INSPECTION AND MAINTENANCE:
   ALL MEASURES MUST BE MAINTAINED IN EFFECTIVE OPERATING CONDITION. A PERSON WITH KNOWLEDGE OF EROSION AND STORMWATER CONTROL, INCLUDING THE STANDARDS AND CONDITIONS IN THE PERMIT, SHALL CONDUCT THE INSPECTIONS. THE FOLLOWING AREAS, FACILITIES, AND MEASURES MUST BE INSPECTED AND IDENTIFIED DEFICIENCIES MUST BE CORRECTED. AREAS, FACILITIES, AND MEASURES OTHER THAN THOSE LISTED BELOW MAY ALSO REQUIRE INSPECTION ON A SPECIFIC SITE. INSPECTION OR MAINTENANCE TASKS OTHER THAN THOSE DISCUSSED BELOW MUST BE INCLUDED IN THE MAINTENANCE PLAN DEVELOPED FOR A SPECIFIC SITE.
3. REGULAR MAINTENANCE:
   CLEAR ACCUMULATIONS OF WINTER SAND IN PARKING LOTS AND ALONG ROADWAYS AT LEAST ONCE A YEAR, PREFERABLY IN THE SPRING. ACCUMULATIONS ON PAVEMENT MAY BE REMOVED BY PAVEMENT SWEEPING. ACCUMULATIONS OF SAND ALONG ROAD SHOULDERS MAY BE REMOVED BY GRADING EXCESS SAND TO THE PAVEMENT EDGE AND REMOVING IT MANUALLY OR BY A FRONT-END LOADER. GRADING OF GRAVEL ROADS, OR GRADING OF THE GRAVEL SHOULDERS OF GRAVEL OR PAVED ROADS, MUST BE ROUTINELY PERFORMED TO ENSURE THAT STORMWATER DRAINS IMMEDIATELY OFF THE ROAD SURFACE TO ADJACENT BUFFER AREAS OR STABLE DITCHES, AND IS NOT IMPEDED BY ACCUMULATIONS OF GRADED MATERIAL ON THE ROAD SHOULDER OR BY EXCAVATION OF FALSE DITCHES IN THE SHOULDER. IF WATER BARS OR OPEN-TOP CULVERTS ARE USED TO DIVERT RUNOFF FROM ROAD SURFACES, CLEAN-OUT ANY SEDIMENTS WITHIN OR AT THE OUTLET OF THESE STRUCTURES TO RESTORE THEIR FUNCTION.
4. DOCUMENTATION:
   KEEP A LOG (REPORT) SUMMARIZING INSPECTIONS, MAINTENANCE, AND ANY CORRECTIVE ACTIONS TAKEN. THE LOG MUST INCLUDE THE DATE ON WHICH EACH INSPECTION OR MAINTENANCE TASK WAS PERFORMED, A DESCRIPTION OF THE INSPECTION FINDINGS OR MAINTENANCE COMPLETED, AND THE NAME OF THE INSPECTOR OR MAINTENANCE PERSONNEL PERFORMING THE TASK. IF A MAINTENANCE TASK REQUIRES THE CLEAN-OUT OF ANY SEDIMENTS OR DEBRIS, INDICATE WHERE THE SEDIMENT AND DEBRIS WAS DISPOSED AFTER REMOVAL. THE LOG MUST BE MADE ACCESSIBLE TO DEPARTMENT STAFF AND A COPY PROVIDED TO THE DEPARTMENT UPON REQUEST. THE PERMITTEE SHALL RETAIN A COPY OF THE LOG FOR A PERIOD OF AT LEAST FIVE YEARS FROM THE COMPLETION OF PERMANENT STABILIZATION.

EROSION CONTROL APPLICATIONS & MEASURES

THE PLACEMENT OF EROSION CONTROL MEASURES SHALL BE COMPLETED IN ACCORDANCE WITH GUIDELINES ESTABLISHED WITHIN THE CURRENT MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION CHAPTER 500 RULES, THE DEPARTMENTS BEST MANAGEMENT PRACTICES AND IN ACCORDANCE WITH THE EROSION CONTROL PLAN AND DETAILS IN THE PLAN SET. EROSION CONTROL MEASURES MUST BE IN PLACE BEFORE THE ACTIVITY BEGINS. MEASURES MUST REMAIN IN PLACE AND FUNCTIONAL UNTIL THE SITE IS PERMANENTLY STABILIZED. ADEQUATE AND TIMELY TEMPORARY AND PERMANENT STABILIZATION MEASURES MUST BE TAKEN.

1. POLLUTION PREVENTION:
   WHENEVER PRACTICABLE, NO DISTURBANCE ACTIVITIES SHOULD TAKE PLACE WITHIN 50 FEET OF ANY PROTECTED NATURAL RESOURCE. IF DISTURBANCE ACTIVITIES TAKE PLACE BETWEEN 30 FEET AND 50 FEET OF ANY PROTECTED NATURAL RESOURCE, AND STORMWATER DISCHARGES THROUGH THE DISTURBED AREAS TOWARD THE PROTECTED NATURAL RESOURCE, PERIMETER EROSION CONTROLS MUST BE DOUBLED. IF DISTURBANCE ACTIVITIES TAKE PLACE LESS THAN 30 FEET FROM ANY PROTECTED NATURAL RESOURCE, AND STORMWATER DISCHARGES THROUGH THE DISTURBED AREAS TOWARD THE PROTECTED NATURAL RESOURCE, PERIMETER EROSION CONTROLS MUST BE DOUBLED AND DISTURBED AREAS MUST BE TEMPORARILY OR PERMANENTLY STABILIZED WITHIN 48 HOURS.
2. TEMPORARY MULCHING:
   ALL DISTURBED AREAS SHALL BE MULCHED WITH MATERIALS SPECIFIED BELOW PRIOR TO ANY STORM EVENT. ALL DISTURBED AREAS NOT FINAL GRADED WITHIN 7 DAYS SHALL BE MULCHED. ALSO, AREAS, WHICH HAVE BEEN TEMPORARILY OR PERMANENTLY SEEDED, SHALL BE MULCHED IMMEDIATELY FOLLOWING SEEDING. EROSION CONTROL BLANKETS ARE RECOMMENDED TO BE USED AT THE BASE OF GRASSED WATERWAYS AND ON SLOPES GREATER THAN 15%. MULCH ANCHORING SHOULD BE USED ON SLOPES GREATER THAN 5% AFTER SEPTEMBER 15TH OF THE CONSTRUCTION YEAR (SEE WINTER EROSION CONTROL NOTES).
   TYPES OF MULCH:
   HAY OR STRAW: SHALL BE APPLIED AT A RATE OF 75 LBS/1,000 S.F. (1.5 TONS PER ACRE).
   EROSION CONTROL MIX: SHALL BE PLACED EVENLY AND MUST PROVIDE 100% SOIL COVERAGE. EROSION CONTROL MIX SHALL BE APPLIED SUCH THAT THE THICKNESS ON SLOPES 3:1 OR LESS IS 2 INCHES PLUS 1/2 INCH PER 20 FEET OF SLOPE UP TO 100 FEET. THE THICKNESS ON SLOPES BETWEEN 3:1 AND 2:1 SHALL BE 4 INCHES PLUS 1/2 INCH PER 20 FEET OF SLOPE UP TO 100 FEET. THIS SHALL NOT BE USED ON SLOPES GREATER THAN 2:1.
   EROSION CONTROL BLANKET: SHALL BE INSTALLED SUCH THAT CONTINUOUS CONTACT BETWEEN THE MAT AND THE SOIL IS OBTAINED. INSTALL BLANKETS AND STAPLE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
3. SOIL STOCKPILES:
   STOCKPILES OF SOIL OR SUBSOIL SHALL BE MULCHED WITH HAY OR STRAW AT A RATE OF 75 LBS/1,000 S.F. (1.5 TONS PER ACRE) OR WITH A FOUR-INCH LAYER OF WOOD WASTE EROSION CONTROL MIX. THIS WILL BE DONE WITHIN 24 HOURS OF STOCKING AND RE-ESTABLISHED PRIOR TO ANY RAINFALL. ANY SOIL STOCKPILE WILL NOT BE PLACED (EVEN COVERED WITH HAY OR STRAW) WITHIN 100 FEET FROM ANY NATURAL RESOURCES.
4. NATURAL RESOURCES PROTECTION:
   ANY AREAS WITHIN 100 FEET FROM ANY NATURAL RESOURCES, IF NOT STABILIZED WITH A MINIMUM OF 75% MATURE VEGETATION CATCH, SHALL BE STABILIZED USING TEMPORARY MULCHING (AS DESCRIBED IN PART 1. OF THIS SECTION) OR OTHER NON-ERODIBLE COVER WITHIN 48 HOURS OF EXPOSURE OR PRIOR TO ANY STORM EVENT. SEDIMENT BARRIERS (AS DESCRIBED IN PART 4. OF THIS SECTION) SHALL BE PLACED BETWEEN ANY NATURAL RESOURCE AND THE DISTURBED AREA. PROJECTS CROSSING THE NATURAL RESOURCE SHALL BE PROTECTED A MINIMUM DISTANCE OF 100 FEET ON EITHER SIDE FROM THE RESOURCE. IF DISTURBANCE TAKES PLACE LESS THAN 30 FEET FROM A PROTECTED RESOURCE AND STORMWATER DISCHARGES THROUGH THE DISTURBED AREAS TO THE RESOURCE, PERIMETER EROSION CONTROLS MUST BE DOUBLED.
5. SEDIMENT BARRIERS:
   PRIOR TO THE BEGINNING OF ANY CONSTRUCTION, SEDIMENT BARRIERS SHALL BE STAKED ACROSS THE SLOPE(S), ON THE CONTOUR AT OR JUST BELOW THE LIMITS OF CLEARING OR GRUBBING, AND/OR JUST ABOVE ANY ADJACENT PROPERTY LINE OR WATERCOURSE TO PROTECT AGAINST CONSTRUCTION RELATED EROSION. SEDIMENT BARRIERS SHALL BE MAINTAINED BY THE CONTRACTOR UNTIL ALL EXPOSED SLOPES HAVE AT LEAST 85%-90% VIGOROUS PERENNIAL VEGETATIVE COVER TO PREVENT EROSION.

   SILT FENCE: SHALL BE INSTALLED PER THE DETAIL ON THE PLANS. THE EFFECTIVE HEIGHT OF THE FENCE SHALL NOT EXCEED 36 INCHES. IT IS RECOMMENDED THAT SILT FENCE BE REMOVED BY CUTTING THE FENCE MATERIALS AT GROUND LEVEL SO AS TO AVOID ADDITIONAL SOIL DISTURBANCE.

   HAY BALES: SHALL BE INSTALLED PER THE DETAIL ON THE PLANS. BALES SHALL BE WIRE-BOUND OR STRING-TIED AND THESE BINDINGS MUST REMAIN PARALLEL WITH THE GROUND SURFACE DURING INSTALLATION TO PREVENT DETERIORATION OF THE BINDINGS. BALES SHALL BE INSTALLED WITHIN A MINIMUM 4 INCH DEEP TRENCH LINE WITH ENDS OF ADJACENT BALES TIGHTLY ABUTTING ONE ANOTHER.

   EROSION CONTROL MIX: SHALL BE INSTALLED PER THE DETAIL ON THE PLANS. THE MIX SHALL CONSIST PRIMARILY OF ORGANIC MATERIAL AND CONTAIN A WELL-GRADED MIXTURE OF PARTICLE SIZES AND MAY CONTAIN ROCKS LESS THAN 4 INCHES IN DIAMETER. THE MIX COMPOSITION SHALL MEET THE STANDARDS DESCRIBED WITHIN THE MDEP BEST MANAGEMENT PRACTICES. NO TRENCHING IS REQUIRED FOR INSTALLATION OF THIS BARRIER.

   CONTINUOUS CONTAINED BERM: SHALL BE INSTALLED PER THE DETAIL ON THE PLANS. THIS SEDIMENT BARRIER IS EROSION CONTROL MIX PLACED WITHIN A SYNTHETIC TUBULAR NETTING AND PERFORMS AS A STURDY SEDIMENT BARRIER THAT WORKS WELL ON HARD GROUND SUCH AS FROZEN CONDITIONS, TRAVELED AREAS OR PAVEMENT. NO TRENCHING IS REQUIRED FOR INSTALLATION OF THIS BARRIER.
6. TEMPORARY CHECK DAMS:
   SHALL BE INSTALLED PER THE DETAIL ON THE PLANS. CHECK DAMS ARE TO BE PLACED WITHIN DITCHES/ SWALES AS SPECIFIED ON THE DESIGN PLANS IMMEDIATELY AFTER FINAL GRADING. CHECK DAMS SHALL BE 2 FEET HIGH. TEMPORARY CHECK DAMS MAY BE REMOVED ONLY AFTER THE ROADWAYS ARE PAVED AND THE VEGETATED SWALE ARE ESTABLISHED WITH AT LEAST 85%-90% OF VIGOROUS PERENNIAL GROWTH. THE AREA BENEATH THE CHECK DAM MUST BE SEEDED AND MULCHED IMMEDIATELY AFTER REMOVAL OF THE CHECK DAM.

STONE CHECK DAMS: SHOULD BE CONSTRUCTED OF 2 TO 3 INCH STONE AND PLACED SUCH THAT COMPLETE COVERAGE OF THE SWALE IS OBTAINED AND THAT THE CENTER OF THE DAM IS 6 INCHES LOWER THAT THE OUTER EDGES.

HAY BALE CHECK DAMS: WE DO NOT RECOMMEND THE USE OF HAY BALES AS CHECK DAMS.

MANUFACTURED CHECK DAMS: MANUFACTURED CHECK DAMS, AS SPECIFIED IN THE DETAIL ON THE PLANS, MAY BE USED IF AUTHORIZED BY THE PROPER LOCAL, STATE OR FEDERAL REGULATING AGENCIES. THESE UNITS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURE'S RECOMMENDATIONS.

1. STORMDRAIN INLET PROTECTION:
   INLET PROTECTION SHALL BE PLACED AROUND A STORMDRAIN DROP INLETOR CURB INLET PRIOR TO PERMANENT STABILIZATION OF THE IMMEDIATE AND UPSTREAM DISTURBED AREAS. THEY SHALL BE CONSTRUCTED IN A MANNER THAT WILL FACILITATE CLEAN-OUT AND DISPOSAL OF TRAPPED SEDIMENTS AND MINIMIZE INTERFERENCE WITH CONSTRUCTION ACTIVITIES. ANY RESULTANT PONDING OF WATER FROM THE PROTECTION METHOD MUST NOT CAUSE EXCESSIVE INCONVENIENCE OR DAMAGE TO ADJACENT AREAS OR STRUCTURES.

   HAY BALE DROP INLET PROTECTION: WE DO NOT RECOMMEND THE USE OF HAY BALES AS INLET PROTECTION.

   CONCRETE BLOCK AND STONE INLET SEDIMENT FILTER (DROP OR CURB INLET): SHALL BE INSTALLED PER THE DETAIL ON THE PLANS. THE HEIGHT OF THE CONCRETE BLOCK BARRIER CAN VARY BUT MUST BE BETWEEN 12 AND 24 INCHES TALL. A MINIMUM OF 1 INCH CRUSHED STONE SHALL BE USED.

   MANUFACTURED SEDIMENT BARRIERS AND FILTER (DROP OR CURB INLET): MANUFACTURED FILTERS, AS SPECIFIED IN THE DETAIL ON THE PLANS, MAY BE USED IF INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
2. STABILIZED CONSTRUCTION EXIT:
   PRIOR TO CLEARING AND/OR GRUBBING THE SITE A STABILIZED CONSTRUCTION ENTRANCE/EXIT SHALL BE CONSTRUCTED WHEREVER TRAFFIC WILL EXIT THE CONSTRUCTION SITE ONTO A PAVED ROADWAY IN ORDER TO MINIMIZE THE TRACKING OF SEDIMENT AND DEBRIS FROM THE CONSTRUCTION SITE ONTO PUBLIC ROADWAYS. THE ENTRANCES AND ADJACENT ROADWAY AREAS SHALL BE PERIODICALLY SWEPT OR WASHED TO FURTHER MINIMIZE THE TRACKING OF MUD, DUST OR DEBRIS FROM THE CONSTRUCTION AREA. STABILIZED CONSTRUCTION EXITS SHALL BE CONSTRUCTED IN AREAS SPECIFIED ON THE PLANS AND AS DETAILED ON THE PLANS.
3. DUST CONTROL:
   DUST CONTROL DURING CONSTRUCTION SHALL BE ACHIEVED BY THE USE OF A WATERING TRUCK TO PERIODICALLY SPRINKLE THE EXPOSED ROADWAY AREAS AS NECESSARY TO REDUCE DUST DURING THE DRY MONTHS. APPLYING OTHER DUST CONTROL PRODUCTS SUCH AS CALCIUM CHLORIDE OR OTHER MANUFACTURED PRODUCTS ARE ALLOWED IF AUTHORIZED BY THE PROPER LOCAL, STATE AND/OR FEDERAL REGULATING AGENCIES. HOWEVER, IT IS THE CONTRACTOR'S ULTIMATE RESPONSIBILITY TO MITIGATE DUST AND SOIL LOSS FROM THE SITE.
4. TEMPORARY VEGETATION:
   TEMPORARY VEGETATION SHALL BE APPLIED TO DISTURBED AREAS THAT WILL NOT RECEIVE FINAL GRADING FOR PERIODS UP TO 12 MONTHS. THIS PROCEDURE SHOULD BE USED EXTENSIVELY IN AREAS ADJACENT TO NATURAL RESOURCES. SEEDBED PREPARATION AND APPLICATION OF SEED SHALL BE CONDUCTED AS INDICATED IN THE PERMANENT VEGETATION SECTION OF THIS NARRATIVE. SPECIFIC SEEDS (FAST GROWING AND SHORT LIVING) SHALL BE SELECTED FROM THE MAINE EROSION AND SEDIMENT CONTROL BMP MANUAL DATED 3/2003 OR LATER. ALTERNATIVE EROSION CONTROL MEASURES SHOULD BE USED IF SEEDING CAN NOT BE DONE BEFORE SEPTEMBER 15TH OF THE CONSTRUCTION YEAR.
5. PERMANENT VEGETATION:
   REVEGETATION MEASURES SHALL COMMENCE IMMEDIATELY UPON COMPLETION OF FINAL GRADING OF AREAS TO BE LOAMED AND SEEDED. THE APPLICATION OF SEED SHALL BE CONDUCTED BETWEEN APRIL 1ST AND OCTOBER 1ST OF THE CONSTRUCTION YEAR, PLEASE REFER TO THE WINTER EROSION CONTROL NOTES FOR MORE DETAIL. REVEGETATION MEASURES SHALL CONSIST OF THE FOLLOWING:

   SEEDBED PREPARATION:
   A. FOUR (4) INCHES OF LOAM SHALL BE SPREAD OVER DISTURBED AREAS AND SMOOTHED TO A UNIFORM SURFACE. LOAM SHALL BE FREE OF SUBSOIL, CLAY LUMPS, STONES AND OTHER OBJECTS OVER 2 INCHES OR LARGER IN ANY DIMENSION, AND WITHOUT WEEDS, ROOTS OR OTHER OBJECTIONABLE MATERIAL.
   B. SOILS TESTS SHALL BE TAKEN AT THE TIME OF SOIL STRIPPING TO DETERMINE FERTILIZATION REQUIREMENTS. SOILS TESTS SHALL BE TAKEN PROMPTLY AS TO NOT INTERFERE WITH THE 14-DAY LIMIT ON SOIL EXPOSURE. BASED UPON TEST RESULTS, SOIL AMENDMENTS SHALL BE INCORPORATED INTO THE SOIL PRIOR TO FINAL SEEDING. IN LIEU OF SOIL TESTS, SOIL AMENDMENTS MAY BE APPLIED AS FOLLOWS:

ITEM	APPLICATION RATE
10-20-20 FERTILIZER (N-P205-K20 OR EQUAL)	18.4 LBS./1,000 S.F.
GROUND LIMESTONE (50% CALCIUM & MAGNESIUM OXIDE)	138 LBS./1,000 S.F.

   C. WORK LIME AND FERTILIZER INTO THE SOIL AS NEARLY AS PRACTICAL TO A DEPTH OF 4 INCHES WITH PROPER EQUIPMENT. ROLL THE AREA TO FIRM THE SEEDBED EXCEPT ON CLAY OR SILTY SOILS OR COARSE SAND.

   APPLICATION OF SEED:
   A. SEEDING: SHALL BE CONDUCTED BETWEEN APRIL 1ST AND OCTOBER 1ST OF THE CONSTRUCTION YEAR. GENERALLY A SEED MIXTURE MAY BE APPLIED AS FOLLOWS: (MDEP SEED MIX 2 IS DISPLAYED)

SEED TYPE	APPLICATION RATE
CREEPING RED FESCUE	0.46 LBS/1,000 S.F. (20 LBS/ACRE)
REDTOP	0.05 LBS/1,000 S.F. (2 LBS/ACRE)
TALL FESCUE	0.46 LBS/1,000 S.F. (20 LBS/ACRE)
TOTAL:	0.97 LBS/1,000 S.F. (42 LBS/ACRE)

   NOTE: A SPECIFIC SEED MIXTURE SHOULD BE CHOSEN TO MATCH THE SOILS CONDITION OF THE SITE. VARIOUS AGENCIES CAN RECOMMEND SEED MIXTURES. MDEP RECOMMENDED SEED MIXTURES ARE IN THE EROSION AND SEDIMENT CONTROL BMP MANUAL DATED 3/2003 OR LATER.

   B. HYDROSEEDING: SHALL BE CONDUCTED ON PREPARED AREAS WITH SLOPES LESS THAN 2:1. LIME AND FERTILIZER MAY BE APPLIED SIMULTANEOUSLY WITH THE SEED. RECOMMENDED SEEDING RATES MUST BE INCREASED BY 10% WHEN HYDROSEEDING.

   C. MULCHING: SHALL COMMENCE IMMEDIATELY AFTER SEED IS APPLIED. REFER TO THE TEMPORARY MULCHING SECTION OF THIS NARRATIVE FOR DETAILS.

SODDING:

FOLLOWING SEEDBED PREPARATION, SOD CAN BE APPLIED IN LIEU OF SEEDING IN AREAS WHERE IMMEDIATE VEGETATION IS MOST BENEFICIAL SUCH AS DITCHES, AROUND STORMWATER DROP INLETS AND AREAS OF AESTHETIC VALUE. SOD SHOULD BE LAID AT RIGHT ANGLES TO THE DIRECTION OF FLOW, STARTING AT THE LOWEST ELEVATION. SOD SHOULD BE ROLLED OR TAMPED DOWN TO EVEN OUT THE JOINTS AND DOWN SLOPE FLOW. SOD MUST BE PROPERLY ANCHORED DOWN. IRRIGATE THE SOD IMMEDIATELY AFTER INSTALLATION. IN MOST CASES, SOD CAN BE ESTABLISHED BETWEEN APRIL 1ST AND NOVEMBER 15TH OF THE CONSTRUCTION YEAR, HOWEVER, REFER TO THE WINTER EROSION CONTROL NOTES FOR ANY ACTIVITIES AFTER OCTOBER 1ST.

TRENCH DEWATERING AND TEMPORARY STREAM DIVERSION:

WATER FROM CONSTRUCTION TRENCH DEWATERING OR TEMPORARY STREAM DIVERSION WILL PASS FIRST THROUGH A FILTER BAG OR SECONDARY CONTAINMENT STRUCTURE (E.G. HAY BALE LINED POOL) PRIOR TO DISCHARGE. THE DISCHARGE SITE SHALL BE SELECTED TO AVOID FLOODING AND SEDIMENT DISCHARGES TO A PROTECTED RESOURCE. IN NO CASE SHALL THE FILTER BAG OR CONTAINMENT STRUCTURE BE LOCATED WITHIN 100 FEET OF A PROTECTED NATURAL RESOURCE.

STANDARDS FOR TIMELY STABILIZATION:

STANDARD FOR THE TIMELY STABILIZATION OF DISTURBED SLOPES -- THE CONTRACTOR WILL CONSTRUCT AND STABILIZE STONE-COVERED SLOPES BY NOVEMBER 15. THE CONTRACTOR WILL SEED AND MULCH ALL SLOPES TO BE VEGETATED BY SEPTEMBER 15. THE MDEP WILL CONSIDER ANY AREA HAVING A GRADE GREATER THAN 8% (12.5H:1V) TO BE A SLOPE. IF THE CONTRACTOR FAILS TO STABILIZE ANY SLOPE TO BE VEGETATED BY SEPTEMBER 15, THEN THE CONTRACTOR WILL TAKE ONE OF THE FOLLOWING ACTIONS TO STABILIZE THE SLOPE FOR LATE FALL AND WINTER.

   A. STABILIZE THE SOIL WITH TEMPORARY VEGETATION AND EROSION CONTROL MATS -- BY OCTOBER 1 THE CONTRACTOR WILL SEED THE DISTURBED SLOPE WITH WINTER RYE AT A SEEDING RATE OF 3 POUNDS PER 1,000 SQUARE FEET AND APPLY EROSION CONTROL MATS OVER THE MULCHED SLOPE. THE CONTRACTOR WILL MONITOR GROWTH OF THE RYE OVER THE NEXT 30 DAYS. IF THE RYE FAILS TO GROW AT LEAST THREE INCHES OR COVER AT LEAST 75% OF THE DISTURBED SLOPE BY NOVEMBER 1, THEN THE APPLICANT WILL COVER THE SLOPE WITH A LAYER OF EROSION CONTROL MIX AS DESCRIBED IN ITEM 2(C.) OF THIS STANDARD OR WITH STONE RIPRAP AS DESCRIBED IN ITEM 2(D.) OF THIS STANDARD.
   B. STABILIZE THE SLOPE WITH SOD -- THE CONTRACTOR WILL STABILIZE THE DISTURBED SLOPE WITH PROPERLY INSTALLED SOD BY NOVEMBER 15. PROPER INSTALLATION INCLUDES THE APPLICANT 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 APPLICANT WILL NOT USE LATE-SEASON SOD INSTALLATION TO STABILIZE SLOPES HAVING A GRADE GREATER THAN 33% (3H:1V).
   C. STABILIZE THE SLOPE WITH EROSION CONTROL MIX -- THE CONTRACTOR WILL PLACE A SIX-INCH LAYER OF EROSION CONTROL MIX ON THE SLOPE BY NOVEMBER 15. PRIOR TO PLACING THE EROSION CONTROL MIX, THE APPLICANT WILL REMOVE ANY SNOW ACCUMULATION ON THE DISTURBED SLOPE. DO NOT USE EROSION CONTROL MIX TO STABILIZE SLOPES HAVING GRADES GREATER THAN 1H:1V OR HAVING GROUNDWATER SEEPS ON THE SLOPE FACE.
   D. STABILIZE THE SLOPE WITH STONE RIPRAP -- THE CONTRACTOR WILL PLACE A LAYER OF STONE RIPRAP ON THE SLOPE BY NOVEMBER 15. THE APPLICANT WILL HIRE A REGISTERED PROFESSIONAL ENGINEER TO DETERMINE THE STONE SIZE NEEDED FOR STABILITY AND TO DESIGN A FILTER LAYER FOR UNDERNEATH THE RIPRAP.

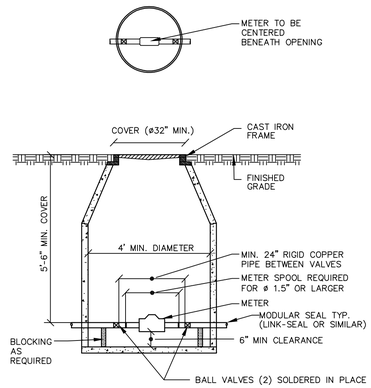
STANDARD FOR THE TIMELY STABILIZATION OF DISTURBED SOILS -- BY SEPTEMBER 15 THE CONTRACTOR WILL SEED AND MULCH ALL DISTURBED SOILS ON AREAS HAVING A SLOPE LESS THAN 8%. IF THE CONTRACTOR FAILS TO STABILIZE THESE SOILS BY THIS DATE, THEN THE CONTRACTOR WILL TAKE ONE OF THE FOLLOWING ACTIONS TO STABILIZE THE SOIL FOR LATE FALL AND WINTER.

   A. STABILIZE THE SOIL WITH TEMPORARY VEGETATION -- BY OCTOBER 1 THE CONTRACTOR WILL SEED THE DISTURBED SOIL WITH WINTER RYE AT A SEEDING RATE OF 3 POUNDS PER 1000 SQUARE FEET, LIGHTLY MULCH THE SEEDED SOIL WITH HAY OR STRAW AT 75 POUNDS PER 1000 SQUARE FEET, AND ANCHOR THE MULCH WITH PLASTIC NETTING. THE APPLICANT WILL MONITOR GROWTH OF THE RYE OVER THE NEXT 30 DAYS. IF THE RYE FAILS TO GROW AT LEAST THREE INCHES OR COVER AT LEAST 75% OF THE DISTURBED SOIL BEFORE NOVEMBER 15, THEN THE APPLICANT WILL MULCH THE AREA FOR OVER-WINTER PROTECTION AS DESCRIBED IN ITEM 3(C.) OF THIS STANDARD.
   B. STABILIZE THE SOIL WITH SOD -- THE APPLICANT WILL STABILIZE THE DISTURBED SOIL WITH PROPERLY INSTALLED SOD BY OCTOBER 1. PROPER INSTALLATION INCLUDES THE APPLICANT PINNING THE SOD ONTO THE SOIL WTH 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.
   C. STABILIZE THE SOIL WITH MULCH -- BY NOVEMBER 15 THE APPLICANT WILL MULCH THE DISTURBED SOIL BY SPREADING HAY OR STRAW AT A RATE OF AT LEAST 150 POUNDS PER 1000 SQUARE FEET ON THE AREA SO THAT NO SOIL IS VISIBLE THROUGH THE MULCH. PRIOR TO APPLYING THE MULCH, THE APPLICANT WILL REMOVE ANY SNOW ACCUMULATION ON THE DISTURBED AREA. IMMEDIATELY AFTER APPLYING THE MULCH, THE APPLICANT WILL ANCHOR THE MULCH WITH PLASTIC NETTING TO PREVENT WIND FROM MOVING THE MULCH OFF THE DISTURBED SOIL.
   D. STABILIZE THE SOIL WITH EROSION CONTROL MIX -- THE CONTRACTOR WILL PLACE A MINIMUM TWO-INCH LAYER OF EROSION CONTROL MIX ON THE SOIL BY NOVEMBER 15. PRIOR TO PLACING THE EROSION CONTROL MIX, THE APPLICANT WILL REMOVE ANY SNOW ACCUMULATION ON THE DISTURBED SLOPE.

CONSTRUCTION SCHEDULE

SITE IMPROVEMENTS WILL MOST LIKELY BEGIN IN ____, DEPENDING UPON FINAL PROJECT APPROVAL. THE FOLLOWING SCHEDULE IS ANTICIPATED:

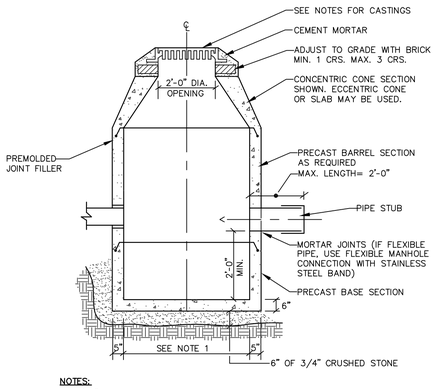
1.	ESTIMATED CONSTRUCTION TIME:	-- MONTHS
2.	EROSION CONTROL MEASURES PLACED	WEEK 1 - WEEK 2
3.	SITE CLEARING AND GRUBBING	WEEK 2 - WEEK 5
4.	CONSTRUCTION OF ROAD SUBBASE FOR ACCESS	WEEK 5 - WEEK 13
5.	STORMWATER MANAGEMENT AREA CONSTRUCTION	WEEK 7 - WEEK 9
6.	UTILITY IMPROVEMENTS AND ROADWAY CONSTRUCTION	WEEK 7



METER PIT AND COVER NOTES:

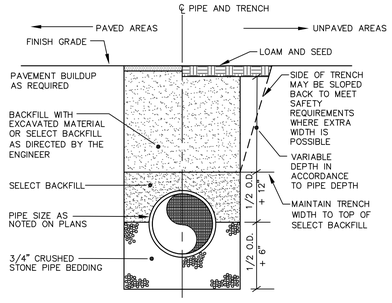
1. THE METER PIT SHALL BE SUPPLIED AND INSTALLED BY THE CUSTOMER AND SHALL BE LOCATED ON PRIVATE PROPERTY BETWEEN 10'-0" AND 20'-0" FROM THE PROPERTY LINE.
2. THE METER PIT SHALL BE MADE OF PRECAST CONCRETE OF SUFFICIENT SIZE TO PROVIDE 5'-" MINIMUM GROUND COVER FROM FINISHED GRADE TO THE TOP OF THE SERVICE PIPE. ANY SEAMS BETWEEN CONCRETE SECTIONS SHALL BE SEALED WITH MASTIC JOINT. ALL OPENINGS IN THE CONCRETE FOR SERVICE PIPING SHALL BE SEALED WITH A MODULAR SEAL. (LINK-SEAL OF SIMILAR)
3. THE INTERIOR OF THE METER PIT SHALL BE A MINIMUM OF 4'-0" IN DIAMETER. AND THE METER PIT OPENING SHALL BE A MINIMUM OF 30" IN DIAMETER WITH A CAST IRON FRAME. THE METER PIT COVER SHALL BE CAST IRON 32" MINIMUM IN DIAMETER, AND BE WITHER PERMANENTLY LABELED "WATER" OR HAVE NO LABEL ANY STEEL PLATE MATERIAL SHALL BE COATED WITH A RUST INHIBITOR PAINT.
4. WALL-MOUNTED LADDER RUNGS SHOULD NOT BE INSTALLED WITHIN METER PIT.
5. ALL PIPING INSIDE AND EXTENDING THROUGH THE METER PIT SHALL BE MADE OF COPPER, WITH A MINIMUM OF 6" CLEARANCE FROM THE METER PIT FLOOR. BLOCKING SHALL BE INSTALLED AS REQUIRED TO SUPPORT THE PIPE.
6. CUSTOMER SHALL ENSURE THE METER PIT AND COVER ARE PROPERTY RATED FOR TRAFFIC FLOW IF APPLICABLE.
7. ONLY PORTLAND WATER DISTRICT PERSONNEL ARE AUTHORIZED TO INSTALL WATER METERS. PORTLAND WATER DISTRICT PERSONNEL WILL BE ADDITIONALLY AUTHORIZED TO OPERATE METER VALVES AS NEEDED FOR INSTALLATION AND MAINTENANCE.
8. PORTLAND WATER DISTRICT WILL SUPPLY THE WATER METER AND NECESSARY FITTINGS FOR INSTALLATION. IF REQUIRED, A FLANGED METER SPOOL WILL BE AVAILABLE FOR CUSTOMER PICKUP AT DOUGLASS STREET CUSTOMER SERVICE AND MUST BE INSTALLED BY CUSTOMER PRIOR TO METER SET. ALL OTHER MATERIALS INCLUDING VALVES, SHALL BE SUPPLIED AND INSTALLED BY THE CUSTOMER.
9. CUSTOMER WILL INSTALL TWO (2) BALL VALVES 24" APART FOR METER INSTALLATION ALLOWING FOR THE WATER METER TO BE CENTERED UNDER THE METER PIT OPENING, BALL VALVES SHALL BE SOLDERED IN PLACE.
10. FOR A SERVICE PIPE WITH A DIAMETER OF 1" OR LESS, CUSTOMER WILL INSTALL RIGID COPPER PIPE (24" MINIMUM) BETWEEN THE BALL VALVES.
11. FOR PIPING WITH A DIAMETER OF 1-1/2" OR LARGER, THE CUSTOMER WILL OBTAIN A FLANGED METER SPOOL PIECE FROM THE PORTLAND WATER DISTRICT. THE CUSTOMER IS RESPONSIBLE FOR ENSURING THAT THE SPOOL PIECE IS INSTALLED PRIOR TO METER INSTALLATION.
12. THE METER PIT MAY HOUSE UP TO TWO 5/8", 3/4" OR 1" METERS. INSTALLATION OF MULTIPLE METERS IN A METER PUT MUST RECEIVE PRIOR APPROVAL FROM THE PORTLAND WATER DISTRICT.

TYPICAL METER PIT (2" METERS)
NOT TO SCALE

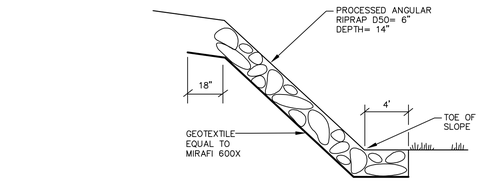


NOTES:
1. 4'-0" I.D. TYPICAL. SOME STRUCTURES MAY REQUIRE LARGER I.D. PROVIDE SHOP DRAWINGS.
2. DRAINAGE STRUCTURES TO BE DESIGNED FOR H-20 LOADING.
3. PIPE SIZES AND INVERTS AS NOTED ON PLANS.
4. CATCH BASIN FRAME AND GRATE TO BE NEENAH FOUNDRY R-2554, OR APPROVED EQUAL.

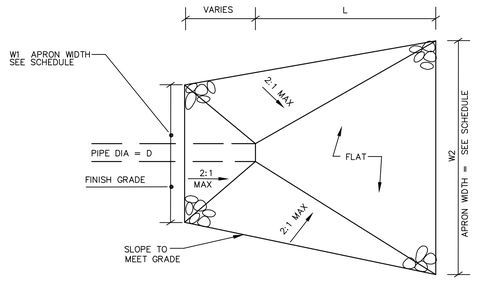
TYPICAL CATCH BASIN
NOT TO SCALE



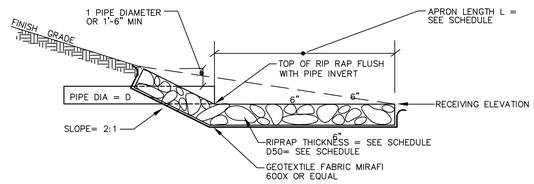
TYPICAL TRENCH SECTION
NOT TO SCALE



SIDE SLOPE RIPRAP
NOT TO SCALE



PLAN VIEW



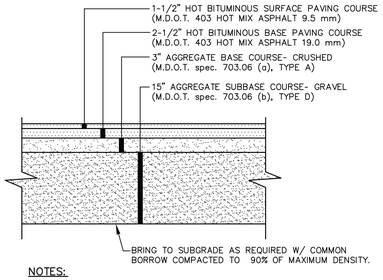
SECTION VIEW

NOTES
1. RIPRAP TO BE PROCESSED ANGULAR ROCK
2. RIPRAP GRADIATION SHALL BE A WELL GRADED MIX FROM ABOUT 1.5 TIMES D SIZE TO 25 PERCENT OF THE D SIZE
3. THE RIPRAP STONES SHALL BE CAREFULLY PLACED FROM THE TOE OF THE SLOPE UPWARD
4. STONES SHALL BE LOWERED TO THE SLOPE AND NOT BE ALLOWED TO DROP MORE THAN 12" ONTO THE GEOTEXTILE
5. THE FINISHED SURFACE SHALL BE A RELATIVELY SMOOTH, UNIFORMLY SLOPED SURFACE

TYPICAL RIPRAP APRON SCHEDULE

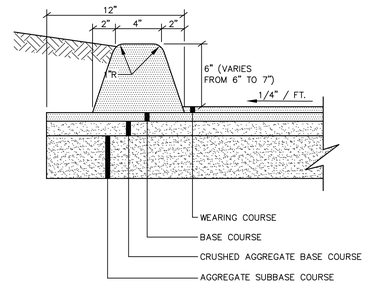
CULVERT DIAMETER - D (IN.)	APRON LENGTH - L (FT.)	WIDTH -W1 (FT)	WIDTH -W2 (FT)	RIPRAP D50 (IN.)	RIPRAP THICKNESS (IN.)
12	8	3	9	6	14
15	10	4	12	6	14
18	13	5	15	7	16
24	18	6	20	8	18
36	29	9	32	11	25
42	33	11	37	12	27
48	39	12	43	16	36

RIPRAP APRON
NOT TO SCALE



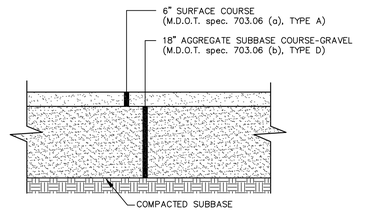
NOTES:
1. COMPACT GRAVEL SUBBASE, BASE COURSE TO 92% OF MAXIMUM DENSITY USING HEAVY ROLLER COMPACTION.
2. CONTRACTOR SHALL SET GRADE STAKES MARKING SUBBASE AND FINISH GRADE ELEVATIONS FOR CONSTRUCTION REFERENCE.
3. CONTRACTOR MAY REPLACE BITUMINOUS PAVING SECTION WITH TWO (2) 1-1/2" LIFTS OF 12.5mm SUPERPAVE MIX. SUBMIT PAVEMENT MIX DESIGN PRIOR TO CONSTRUCTION.

TYP. PAVED PARKING LOT SECTION
NOT TO SCALE

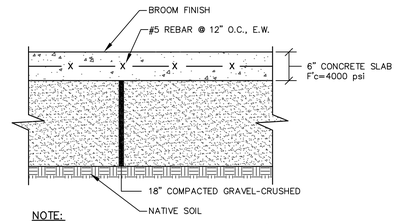


(SEE TYPICAL ROAD SECTION FOR MATERIAL SPECIFICATIONS AND DEPTHS)

BITUMINOUS CURB SECTION
NOT TO SCALE

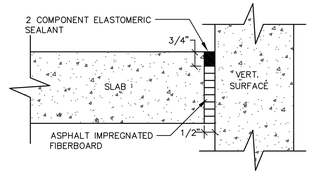


TYP. GRAVEL PARKING AREA
NOT TO SCALE



NOTE:
1. PROVIDE CONTRACTION CONTROL JOINTS EVERY 6' IN EACH DIRECTION

TYPICAL CONCRETE SLAB
NOT TO SCALE



ISOLATION JOINT
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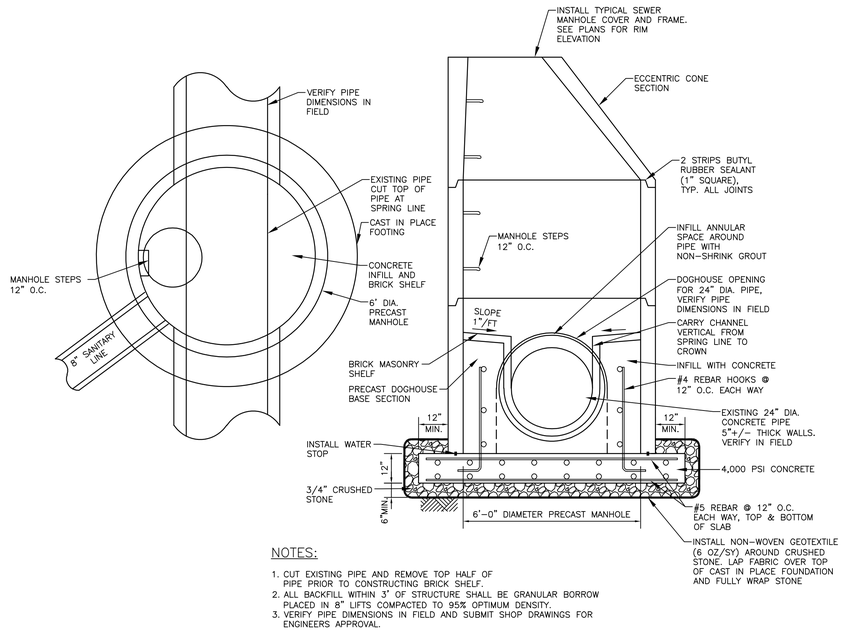
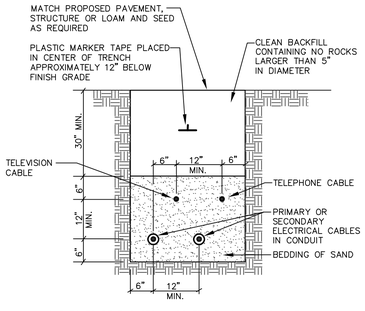


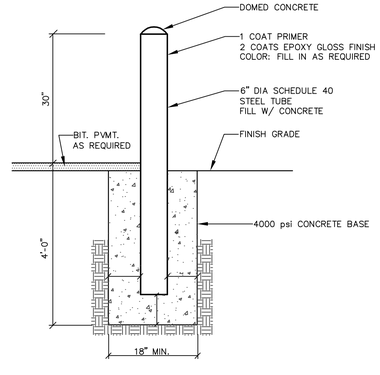
NOTES:
1. CUT EXISTING PIPE AND REMOVE TOP HALF OF PIPE PRIOR TO CONSTRUCTING BRICK SHELF.
2. ALL BACKFILL WITHIN 3' OF STRUCTURE SHALL BE GRANULAR BORROW PLACED IN 8" LIFTS COMPACTED TO 95% OPTIMUM DENSITY.
3. VERIFY PIPE DIMENSIONS IN FIELD AND SUBMIT SHOP DRAWINGS FOR ENGINEERS APPROVAL.

DOGHOUSE MANHOLE
NOT TO SCALE



CABLES TO BE ENCASED IN SCHEDULE 40 PVC CONDUIT WHEN RUN BENEATH PAVED AREAS.

TYPICAL UNDERGROUND CABLE INSTALLATION
NOT TO SCALE



METAL BOLLARD
NOT TO SCALE

SHAWN M. FRANK, PE 6396

PROGRESS PRINT

STATE OF MAINE SHAWN M. FRANK No. 6396 REGISTERED PROFESSIONAL ENGINEER 07/13/18

DESIGNED	CHECKED
SAH	SMF

REV.	BY:	DATE:	STATUS:
A	SMF	7-13-18	ISSUED TO CITY

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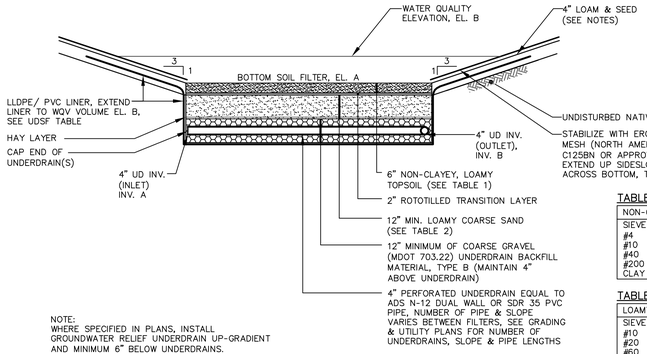
DETAILS
OF:
250 RIVERSIDE INDUSTRIAL PARKWAY
RIVERSIDE INDUSTRIAL PARKWAY
PORTLAND, MAINE
FOR:
TWO EISENHOWER DRIVE, LLC
P.O. BOX 1120
PORTLAND, MAINE 04104

PROJECT NO.	SCALE
16360	N.T.S.

SHEET 8 OF 12

16360 D.dwg, TAB:D2



LONGITUDINAL SECTION

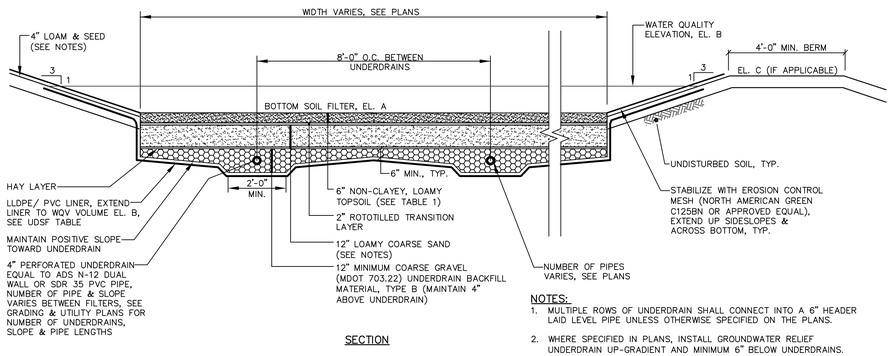
TABLE 1

NON-CLAYEY, LOAMY TOPSOIL	
SIEVE SIZE	% PASSING BY WEIGHT
#4	75-95
#10	60-90
#40	35-85
#200	20-70
CLAY FRACTION	0-2

TABLE 2

LOAMY COARSE SAND LAYER	
SIEVE SIZE	% PASSING BY WEIGHT
#10	85-100
#20	70-100
#60	15-50
#200	8-15
CLAY FRACTION	0-2

NOTE: SUPERHUMUS OR EQUIVALENT.

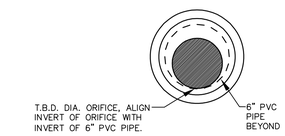


SECTION

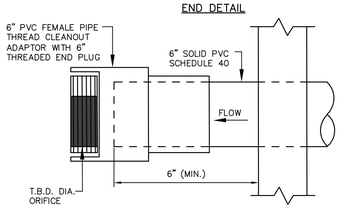
NOTES:
1. MULTIPLE ROWS OF UNDERDRAIN SHALL CONNECT INTO A 6" HEADER LAID LEVEL PIPE UNLESS OTHERWISE SPECIFIED ON THE PLANS.
2. WHERE SPECIFIED IN PLANS, INSTALL GROUNDWATER RELIEF UNDERDRAIN UP-GRADIENT AND MINIMUM 6" BELOW UNDERDRAINS.

UNDERDRAINED SOIL FILTER DETAIL

NOT TO SCALE



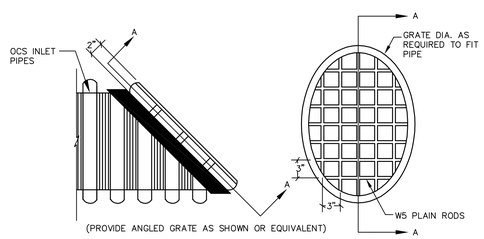
END DETAIL



CONNECTION DETAIL

FLANGE ADAPTOR DETAIL

NOT TO SCALE

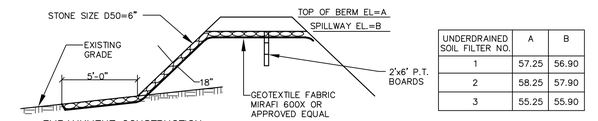


SECTION END DETAIL

NOTES:
1. RODS CONFORM TO SECTION 709.1
2. 3/8" GRADE 304 STAINLESS STEEL BOLT AND NUT (4 EA.)
3. GRATE AND HARDWARE SHALL BE CONSTRUCTED OF ALUMINUM OR STAINLESS STEEL.
4. ALTERNATIVE TO SCREEN: AGRI DRAIN AGB12 OR APPROVED EQUAL.

ANIMAL SCREEN DETAIL

NOT TO SCALE

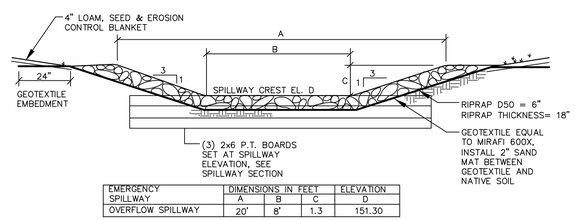


UNDERDRAINED SOIL FILTER NO.	A	B
1	57.25	56.90
2	58.25	57.90
3	55.25	55.90

EMBANKMENT CONSTRUCTION
1. CONSTRUCTION OF COMMON BORROW MATERIAL MEETING M.D.O.T. SPECIFICATION.
2. PLACE BORROW MATERIAL IN 12" LIFTS COMPACTED TO 95% OF MAXIMUM DRY DENSITY.
3. INSTALL RIPRAP AND EROSION CONTROL MESH WHERE SPECIFIED ON PLANS
4. LOAM, SEED, AND STABILIZE IN ACCORDANCE WITH SEDIMENTATION AND EROSION CONTROL PLAN.

SPILLWAY SECTION

NOT TO SCALE



EMERGENCY SPILLWAY	DIMENSIONS IN FEET			ELEVATION
	A	B	C	D
OVERFLOW SPILLWAY	20'	8'	1.3	151.30

EMERGENCY/ FOREBAY SPILLWAY CROSS-SECTION

NOT TO SCALE

UNDERDRAINED SOIL FILTER CONSTRUCTION OVERSIGHT NOTES:

THE APPLICANT WILL RETAIN THE SERVICES OF A PROFESSIONAL ENGINEER TO INSPECT THE CONSTRUCTION AND STABILIZATION OF THE UNDERDRAIN. IF NECESSARY, THE INSPECTING ENGINEER WILL INTERPRET THE UNDERDRAIN'S CONSTRUCTION PLAN FOR THE CONTRACTOR. ONCE ALL STORMWATER MANAGEMENT STRUCTURES ARE CONSTRUCTED AND STABILIZED, THE INSPECTING ENGINEER WILL NOTIFY THE DEPARTMENT IN WRITING WITHIN 30 DAYS TO STATE THAT THE POND HAS BEEN COMPLETED. ACCOMPANYING THE ENGINEER'S NOTIFICATION MUST BE A LOG OF THE ENGINEER'S INSPECTIONS GIVING THE DATE OF EACH INSPECTION, THE TIME OF EACH INSPECTION, AND THE ITEMS INSPECTED ON EACH VISIT, AND INCLUDE ANY TESTING DATA OR SIEVE ANALYSIS DATA OF EVERY MINERAL SOIL AND SOIL MEDIA SPECIFIED IN THE PLANS AND USED ON SITE.

1. CONSTRUCTION SEQUENCE: THE UNDERDRAIN AND VEGETATION MUST NOT BE INSTALLEDUNTIL THE AREA THAT DRAINS TO THE UNDERDRAIN HAS BEEN PERMANENTLY STABILIZED WITH PAVEMENT OR OTHER STRUCTURE, 90% VEGETATION COVER, OR OTHER PERMANENT STABILIZATION UNLESS THE RUNOFF FROM THE CONTRIBUTING DRAINAGE AREA IS DIVERTED AROUND THE FILTER UNTIL STABILIZATION IS COMPLETED.
2. COMPACTION OF UNDERDRAIN: UNDERDRAIN BEDDING MATERIAL MUST BE COMPACTED TO BETWEEN 90% AND 92% STANDARD PROCTOR. THE BED SHOULD BE INSTALLED IN AT LEAST 2 LIFTS OF 9 INCHES TO PREVENT POCKETS OF LOOSE MEDIA.
3. CONSTRUCTION OVERSIGHT: INSPECTION BY A PROFESSIONAL ENGINEER WILL OCCUR AT A MINIMUM:
   A. FOR FIRST UNDERDRAIN CONSTRUCTED, AFTER UNDERDRAIN PIPE IS INSTALLED AT GRADE AND BUT NOT BACKFILLED. AFTER THE UNDERDRAIN PIPE IS COMPLETELY BACKFILLED AND BEFORE PLACEMENT OF LOAMY COARSE SAND LAYER.
   B. AFTER THE LOAMY COARSE SAND LAYER AND SOD/ LOAM HAS BEEN INSTALLED.
   C. AFTER ONE YEAR TO INSPECT HEALTH OF THE VEGETATION AND MAKE CORRECTIONS.
   D. ALL MATERIAL USED FOR THE CONSTRUCTION OF THE UNDERDRAIN MUST BE CONFIRMED AS SUITABLE BY THE DESIGN ENGINEER. TESTING MUST BE DONE BY A CERTIFIED LABORATORY.

TESTING AND SUBMITTALS
1. THE UNDERDRAIN SHALL CONSIST OF THE TOP THREE LAYERS IDENTIFIED AS LOAMY TOPSOIL, 2" TRANSITION AND 12" LOAMY COARSE SAND. THE CONTRACTOR SHALL IDENTIFY THE LOCATION OF THE SOURCE FOR EACH COMPONENT OF THE UNDERDRAIN AND SUBMIT GRADATIONS FOR THE UNDERDRAIN MATERIALS TO THE ENGINEER FOR APPROVAL. SAMPLES MUST BE A COMPOSITE OF THREE DIFFERENT LOCATIONS (GRABS) FROM THE STOCKPILE OR PIT FACE. SAMPLE SIZE REQUIRED WILL BE DETERMINED BY THE TESTING LABORATORY.

UNDERDRAINED SOIL FILTER MATERIAL NOTES:

1. ONSITE LOAM SHALL BE SCREENED FOR STONES LARGER THAN 1 INCH AND BE TESTED TO VERIFY THERE IS LESS THAN 2% CLAY CONTENT AND 5-8% ORGANIC MATTER. IF ONSITE LOAM DOES NOT MEET REQUIREMENTS, THEN LOAM FROM OFFSITE SHALL BE A NON-CLAYEY, LOAMY TOPSOIL SUCH AS A USDA SANDY LOAM TOPSOIL WITH 5-8% HUMIFIED ORGANIC MATTER AND 3-10% CLAY CONTENT.
2. 2" TRANSITION LAYER OF THE LOAM/SOD LAYER SHALL BE ROTOTILLED INTO THE LOAMY COARSE SAND LAYER BELOW.
3. THE LOAMY COARSE SAND LAYER SHALL BE TESTED IN ACCORDANCE WITH THE TESTING AND SUBMITTALS NOTES ABOVE.
4. A LAYER OF HAY SHALL BE PLACED BETWEEN 12" LOAMY COARSE LAYER AND UNDERDRAIN STONE BEDDING TO PREVENT SUBSIDENCE OR PLUGGING OF THE SAND/GRAVEL/STONE LAYER AND/OR PIPE.
5. UNDERDRAIN STONE BEDDING MATERIAL MUST CONFORM TO THE MDOT SPECIFICATION 703.22 UNDERDRAIN TYPE B FOR UNDERDRAIN BACKFILL MATERIAL. THE BEDDING MATERIAL MUST HAVE NO MORE THAN 5% PASSING THE 200 SIEVE.
6. MATERIAL LAYERS ABOVE THE UNDERDRAIN BACKFILL LAYER SHALL BE A UNIFORM MIX, FREE OF STONES, STUMPS, ROOTS, OR OTHER SIMILAR OBJECTS LARGER THAN TWO INCHES. NO OTHER MATERIALS OR SUBSTANCES THAT MAY BE HARMFUL TO PLANT GROWTH, OR PROVE A HINDRANCE TO THE PLANTING OR MAINTENANCE OPERATIONS CAN BE MIXED WITHIN THE FILTER. DURING CONSTRUCTION, CARE SHOULD BE TAKEN TO AVOID COMPACTION OF BOTH THE GRAVEL AND SOIL FILTER.
7. OVER COMPACTION OF UNDERDRAIN MATERIAL SHALL BE AVOIDED. IF OVER COMPACTION OCCURS, ROTOTILL AGAIN PRIOR TO SEEDING OR SODDING.

SHAWN M. FRANK, PE 6396

PROGRESS PRINT

STATE OF MAINE · SHAWN M. FRANK · No. 6396 · PROFESSIONAL ENGINEER · 07/13/18

DESIGNED	CHECKED
SAH	SMF

REV.	BY:	DATE:	STATUS
A	SMF	7-13-18	ISSUED TO CITY

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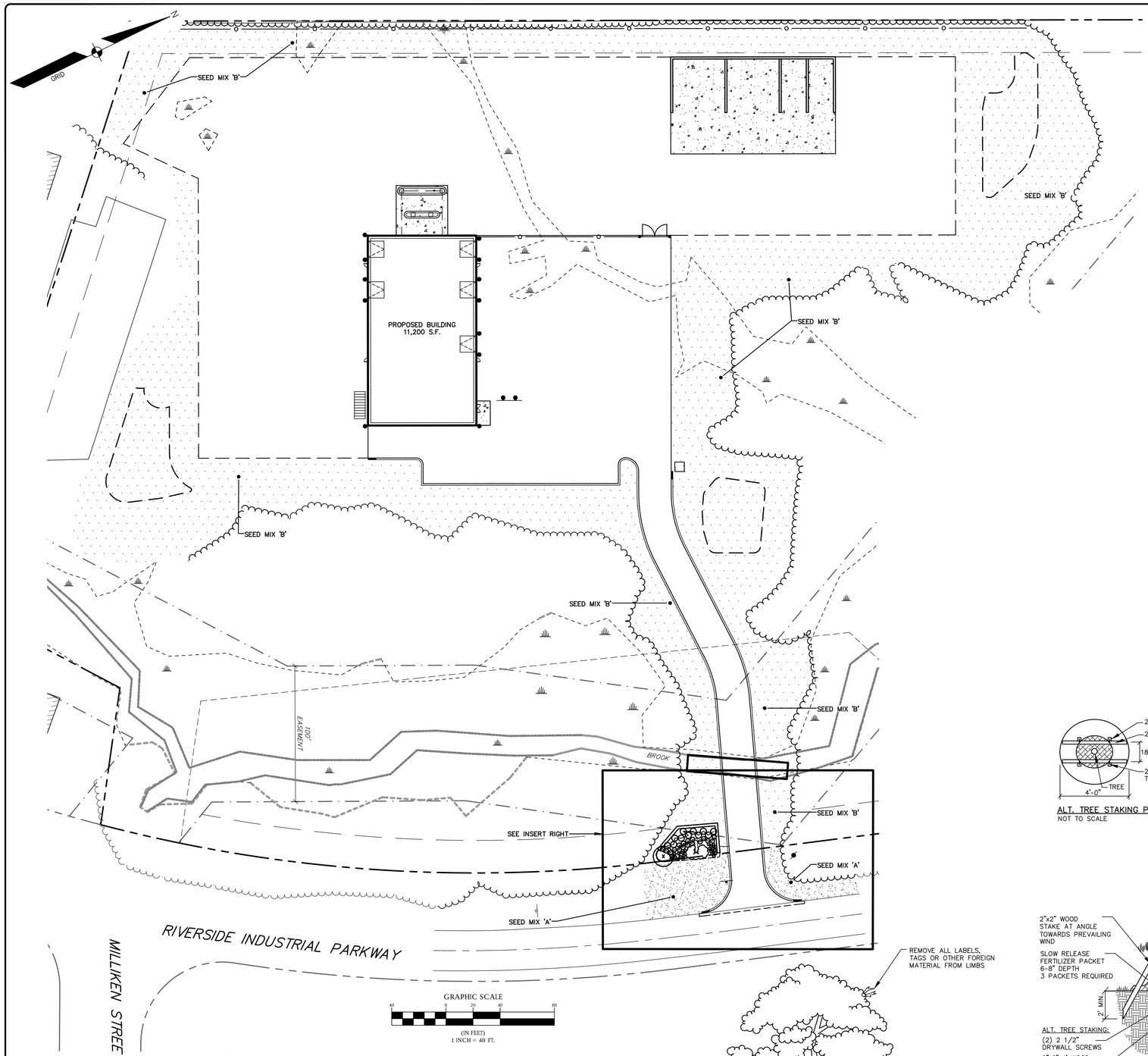
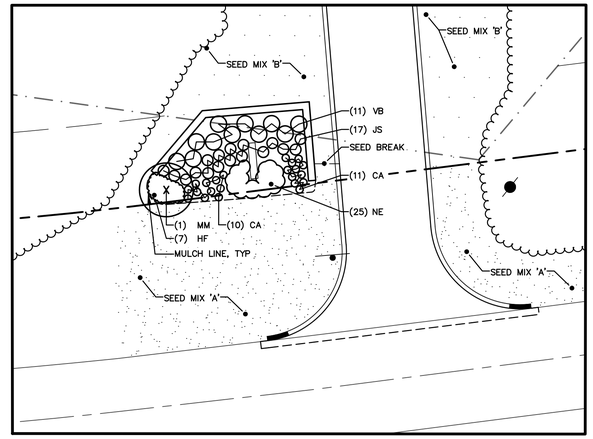
DETAILS
OF:
250 RIVERSIDE INDUSTRIAL PARKWAY
RIVERSIDE INDUSTRIAL PARKWAY
PORTLAND, MAINE
FOR:
TWO EISENHOWER DRIVE, LLC
P.O. BOX 1120
PORTLAND, MAINE 04104

PROJECT NO.	SCALE
16360	N.T.S.

SHEET 9 OF 12

16360 D.dwg, TAB:D3





INSERT:
SCALE: 1" = 20'

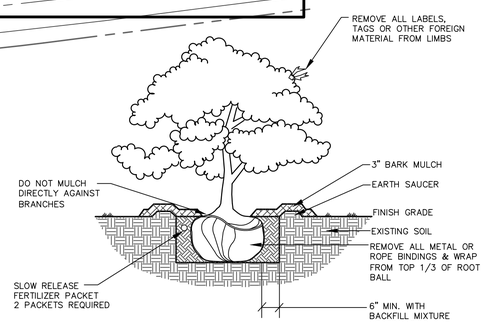
PLANT SCHEDULE

KEY	BOTANIC NAME	COMMON NAME	SIZE / NOTES
CA	CALAMAGROSTIS X ACUTIFLORA 'KARL FOERSTER'	FEATHER REED GRASS	#2 CONTAINER
HF	HEMEROCALLIS FULVA 'STEPHANIE RETURNS'	STEPHANIE RETURNS DAYLILY	#2 CONTAINER
JS	JUNIPERUS SQUAMATA 'HOLGER'	HOLGER JUNIPER	#5 CONTAINER
MM	MAGNOLIA X LOEBNERI 'LEONARD MESSEL'	LEONARD MESSEL MAGNOLIA	3" CALIPER
NF	NEPETA X FAASSENII 'EARLY BIRD'	EARLY BIRD CATMINT	#2 CONTAINER
VB	VIBURNUM X BURKWOODII 'MOHAWK'	BURKWOOD VIBURNUM	5'-6' B&B

SEED MIXES

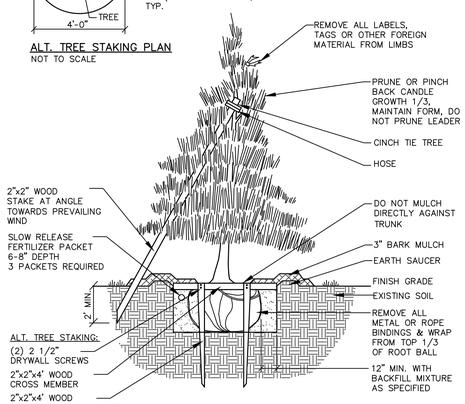
SEED MIX A- MDOT PARK MIX

SEED MIX B- NEW ENGLAND CONSERVATION MIX (WWW.NEWP.COM)



DECIDUOUS & EVERGREEN SHRUB
NOT TO SCALE

ALT. TREE STAKING PLAN
NOT TO SCALE



NOTES:

INSTALL STAKES AND GUYS TO TREES IF THE FOLLOWING APPLY:

1. THE TREE IS OF SUBSTANTIAL SIZE.
2. THE PLANTING LOCATION IS EXTREMELY WINDY, AS ON OPEN UNDEVELOPED SITES.
3. THE PLANTING LOCATION IS COMPRISED OF SAND OR OTHER LOOSE TEXTURED SOILS.
4. IF STAKES AND GUYS ARE REQUIRED, REMOVE AFTER ONE YEAR TIME.

DECIDUOUS TREES — UNDER 2" CALIPER OR UNDER 8' IN HEIGHT
EVERGREEN TREES — 7'-0" IN HEIGHT & UNDER
NOT TO SCALE

LANDSCAPE NOTES

1. PLANT QUANTITIES SHOWN ON PLANT LISTS ARE FOR CONVENIENCE TO THE CONTRACTOR ONLY. THE CONTRACTOR IS RESPONSIBLE FOR ALL PLANT MATERIAL INSTALLATION AS SHOWN ON PLANS.
2. SIZE AND GRADING STANDARDS OF PLANT MATERIALS SHALL CONFORM TO THE LATEST EDITION OF "U.S.A. STANDARD FOR NURSERY STOCK," BY THE AMERICAN ASSOCIATION OF NURSERYMEN, INC.
3. ALL PLANT MATERIAL SHALL BE FREE FROM INSECTS AND DISEASE.
4. ALL PLANTING SHALL BE DONE IN ACCORDANCE WITH ACCEPTABLE HORTICULTURAL PRACTICES. THIS IS TO INCLUDE PROPER PLANTING MIX, PLANT BED AND TREE PIT PREPARATION, PRUNING, STAKING OR GUYING, WRAPPING, SPRAYING, FERTILIZATION, PLANTING AND ADEQUATE MAINTENANCE UNTIL ACCEPTANCE BY THE OWNER.
5. PLANT MATERIAL SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR BY THE CONTRACTOR AND A PERIOD OF TWO YEARS THEREAFTER BY THE OWNER FROM DATE OF INSTALLATION. DURING THE ONE YEAR GUARANTEE PERIOD, DEAD PLANT MATERIAL SHALL BE REPLACED AT NO COST TO THE OWNER. AT THE END OF THE ONE YEAR PERIOD, THE CONTRACTOR SHALL OBTAIN FINAL ACCEPTANCE FROM THE OWNER.
6. ALL GRASS, OTHER VEGETATION AND DEBRIS SHALL BE REMOVED FROM ALL PLANTING AREAS PRIOR TO PLANTING.
7. EXISTING TREES TO BE PRESERVED WILL BE PROTECTED DURING CONSTRUCTION AND SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR.
8. THE LANDSCAPE CONTRACTOR IS ADVISED OF THE PRESENCE OF THE UNDERGROUND UTILITIES AND SHALL VERIFY THE EXISTENCE AND LOCATION OF SAME BEFORE COMMENCING AND DIGGING OPERATIONS. THE LANDSCAPE CONTRACTOR SHALL REPLACE OR REPAIR UTILITIES, PAVING, WALKS, CURBING, ETC. DAMAGED IN PERFORMANCE OF THIS JOB AT NO ADDITIONAL COST TO THE OWNER.
9. ALL SHRUB BEDS SHALL BE MULCHED WITH 3" CLEAN SHREDDED DARK BROWN BARK MULCH.
10. THE CONTRACTOR SHALL PROVIDE 4" LOAM FOR ALL AREAS TO BE SODDED OR SEEDED. PLANTING AREAS SHALL RECEIVE 12" ROLLED THICKNESS OF LOAM. THE LANDSCAPE CONTRACTOR SHALL COORDINATE SUBGRADE PREPARATION WITH THE GENERAL CONTRACTOR PRIOR TO PLACING LOAM.
11. ANY DEVIATION FROM THE LANDSCAPE PLAN, INCLUDING PLANT LOCATION, SELECTION, SIZE, QUANTITY OR CONDITION SHALL BE REVIEWED AND APPROVED BY THE OWNER AND LANDSCAPE ARCHITECT (AND MUNICIPAL AUTHORITY, IF APPLICABLE) PRIOR TO INSTALLATION ON SITE.
12. WHERE INDICATED ON PLAN, PLANTING SOIL MIXTURE FOR PERENNIAL AND ANNUAL FLOWER BED AREAS SHALL CONSIST OF FOUR PARTS TOPSOIL, TWO PARTS SPHAGNUM PEAT MOSS, AND ONE PART HORTICULTURAL PERLITE BY VOLUME. PEAT MOSS MAY BE SUBSTITUTED WITH WELL-ROTTED OR DEHYDRATED MANURE OR COMPOST. ROTOTILL BEDS TO A DEPTH OF 8 INCHES.

LEGEND

EXISTING	PROPOSED
	PROPERTY LINE/R.O.W.
	ABUTTER LINE/R.O.W.
	DEED LINE/R.O.W.
	EASEMENT
	EDGE WETLAND
	WETLANDS
	BUILDING
	EDGE PAVEMENT
	EDGE CONCRETE
	PAVEMENT PAINT
	EDGE GRAVEL
	CURB LINE
	CHAIN LINK FENCE
	RETAINING WALL
	SIGN
	DECIDUOUS TREE
	CONIFEROUS TREE
	MULCH LINE

PLS OR PE

PROGRESS PRINT

REGISTERED LANDSCAPE ARCHITECT * STATE OF MAINE * WILLIAM T. CONWAY 205

DESIGNED	CHECKED
DMD	WTC

REV	BY:	DATE:	STATUS
B	WTC	8-27-18	REVISED PER CITY COMMENTS
A	WTC	7-13-18	ISSUED TO CITY

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SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd.
Suite 4A
South Portland, ME 04106
Tel. (207) 200-2100

LANDSCAPING PLAN
OF:
250 RIVERSIDE INDUSTRIAL PARKWAY
RIVERSIDE INDUSTRIAL PARKWAY
PORTLAND, MAINE
FOR:
TWO EISENHOWER DRIVE, LLC
P.O. BOX 1120
PORTLAND, MAINE 04104

PROJECT NO.	SCALE
16360	1" = 40'

SHEET 10 OF 12

16360 L.dwg, TABL



GRAPHIC SCALE
40 0 20 40 80
(IN FEET)
1 INCH = 40 FT.

PRE-DEVELOPMENT LEGEND

- WATERSHED BOUNDARY
- TIME OF CONCENTRATION (B → C)
- REACH
- 1S — WATERSHED LABEL
- 1R — REACH
- SP1 — STUDY POINT
- 1P — STORMWATER TREATMENT/DETENTION POND
- SOILS BOUNDARY

PROGRESS PRINT

RICHARD L. MEEK PE.10668

STATE OF MAINE — RICHARD L. MEEK — No. 10668 — REGISTERED PROFESSIONAL ENGINEER — 07/13/18

DESIGNED	CHECKED
SAH	RLM

REV.	BY:	DATE:	STATUS:
A	SMF	7-13-18	ISSUED TO CITY

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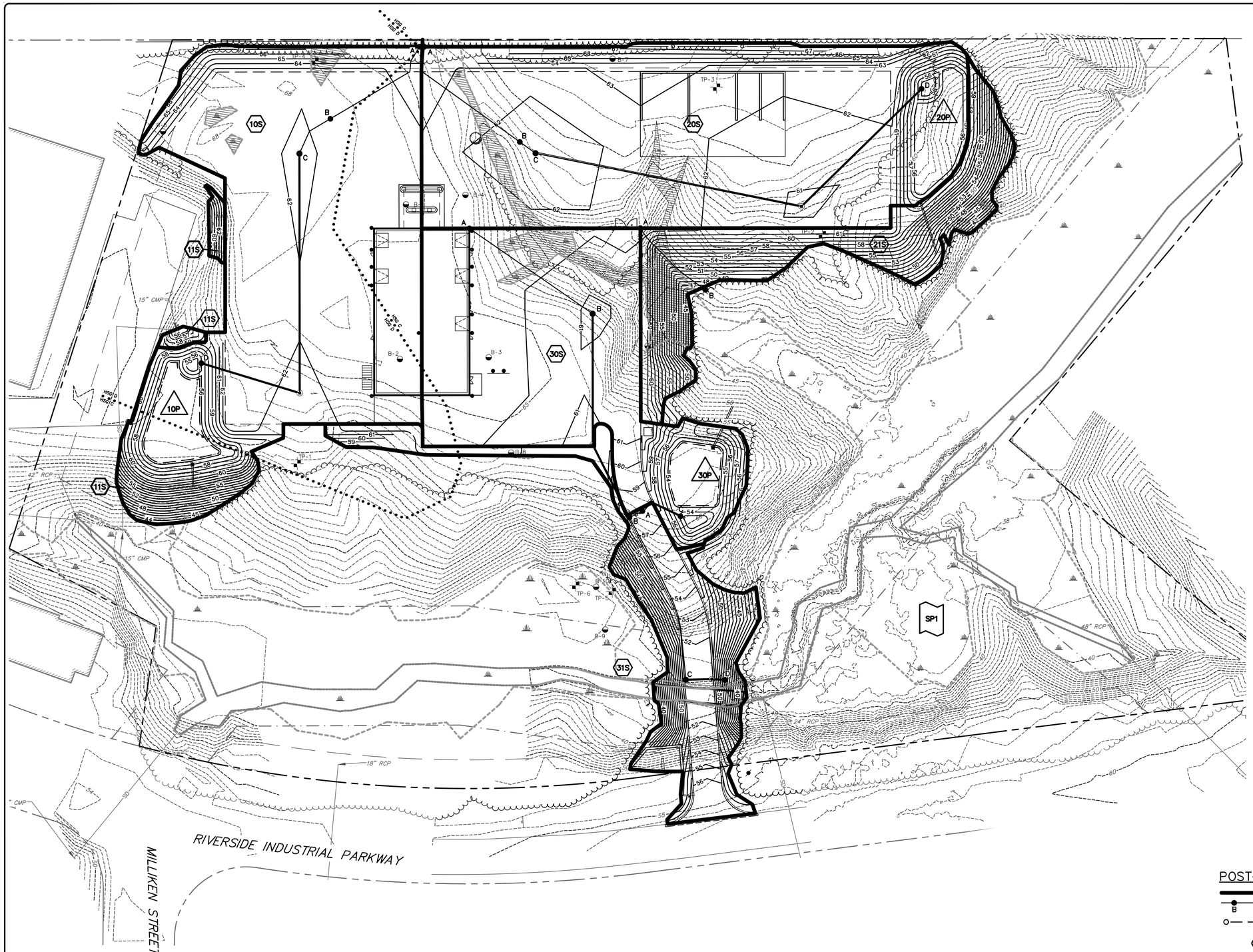
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd.
Suite 4A
South Portland, ME 04106
Tel: 207-200-2100

PRE-DEVELOPMENT WATERSHED PLAN
OF:
250 RIVERSIDE INDUSTRIAL PARKWAY
RIVERSIDE INDUSTRIAL PARKWAY
PORTLAND, MAINE
FOR:
TWO EISENHOWER DRIVE, LLC
P.O. BOX 1120
PORTLAND, MAINE 04104

PROJECT NO.	SCALE
16360	1" = 40'

SHEET 11 OF 12

16360 SMP-dwg, TAB: PRE



GRAPHIC SCALE

40 0 20 40 80

(IN FEET)
1 INCH = 40 FT.

POST-DEVELOPMENT LEGEND

- WATERSHED BOUNDARY
- TIME OF CONCENTRATION (B — C)
- REACH
- 10S — WATERSHED LABEL
- 10R — REACH
- SP1 — STUDY POINT
- 10P — STORMWATER TREATMENT/DETENTION POND
- SOILS BOUNDARY

PROGRESS PRINT

RICHARD L. MEEK PE.10668

STATE OF MAINE
RICHARD L. MEEK
No. 10668
REGISTERED PROFESSIONAL ENGINEER
8/27/18

DESIGNED	CHECKED
SAH	RLM

REV.	BY:	DATE:	STATUS
B	SMF	8-27-18	REVISED PER CITY COMMENTS
A	SMF	7-13-18	ISSUED TO CITY

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75 John Roberts Rd.
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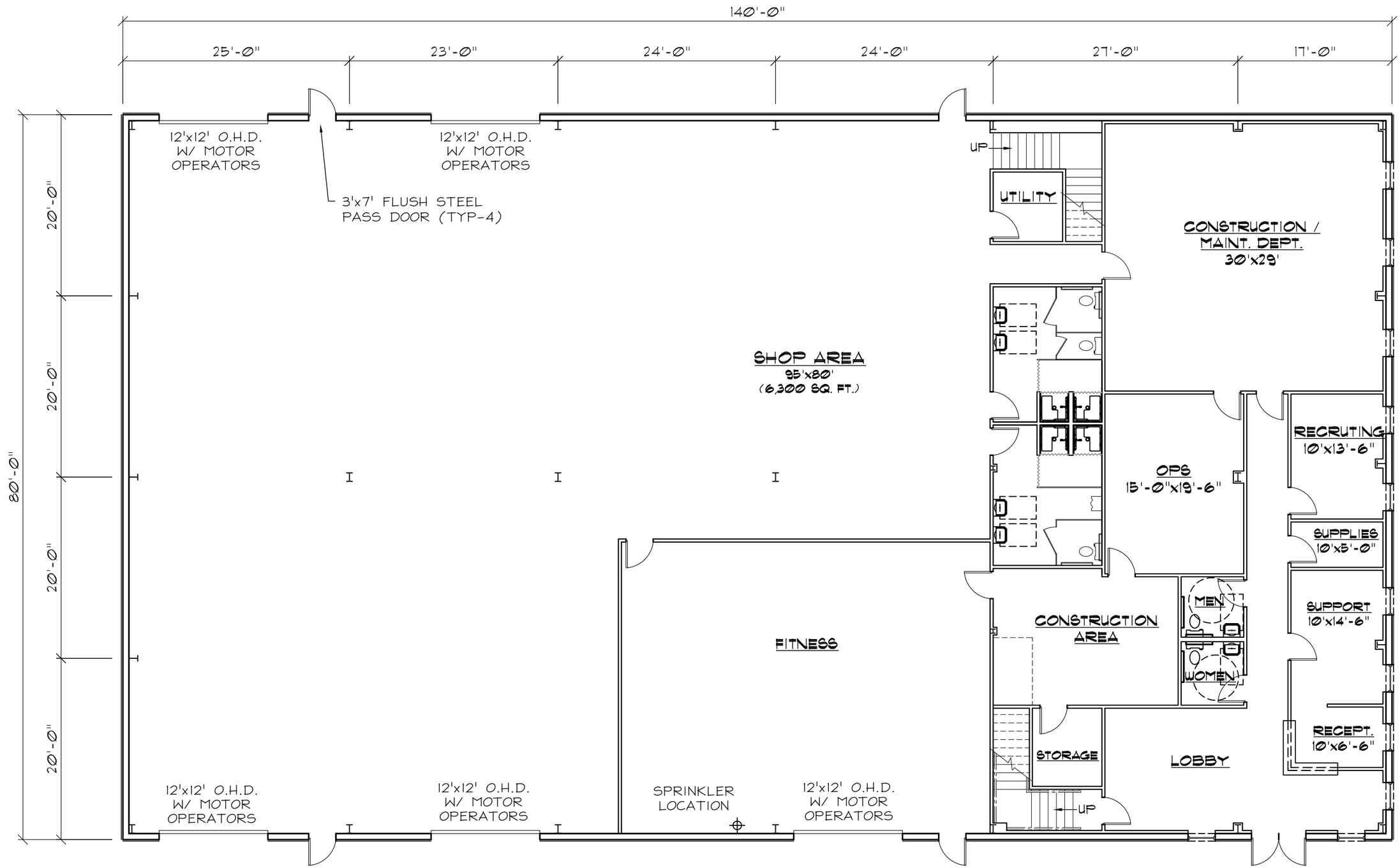
POST-DEVELOPMENT WATERSHED PLAN
OF:
250 RIVERSIDE INDUSTRIAL PARKWAY
RIVERSIDE INDUSTRIAL PARKWAY
PORTLAND, MAINE
FOR:
TWO EISENHOWER DRIVE, LLC
P.O. BOX 1120
PORTLAND, MAINE 04104

PROJECT NO.	SCALE
16360	1" = 40'

SHEET 12 OF 12

16360 SMP.dwg, TAB:POST



FIRST FLOOR PLAN

SCALE: 3/32" = 1'-0"

SCALE: AS SHOWN
DATE: MAY 16, 2018
DRWN. BY: RMA
EST.# 18028

PATCO CONSTRUCTION INC
1293 MAIN STREET SANFORD, ME 04073
TEL: (207)324-5574 FAX: (207)324-1643
www.patco.com

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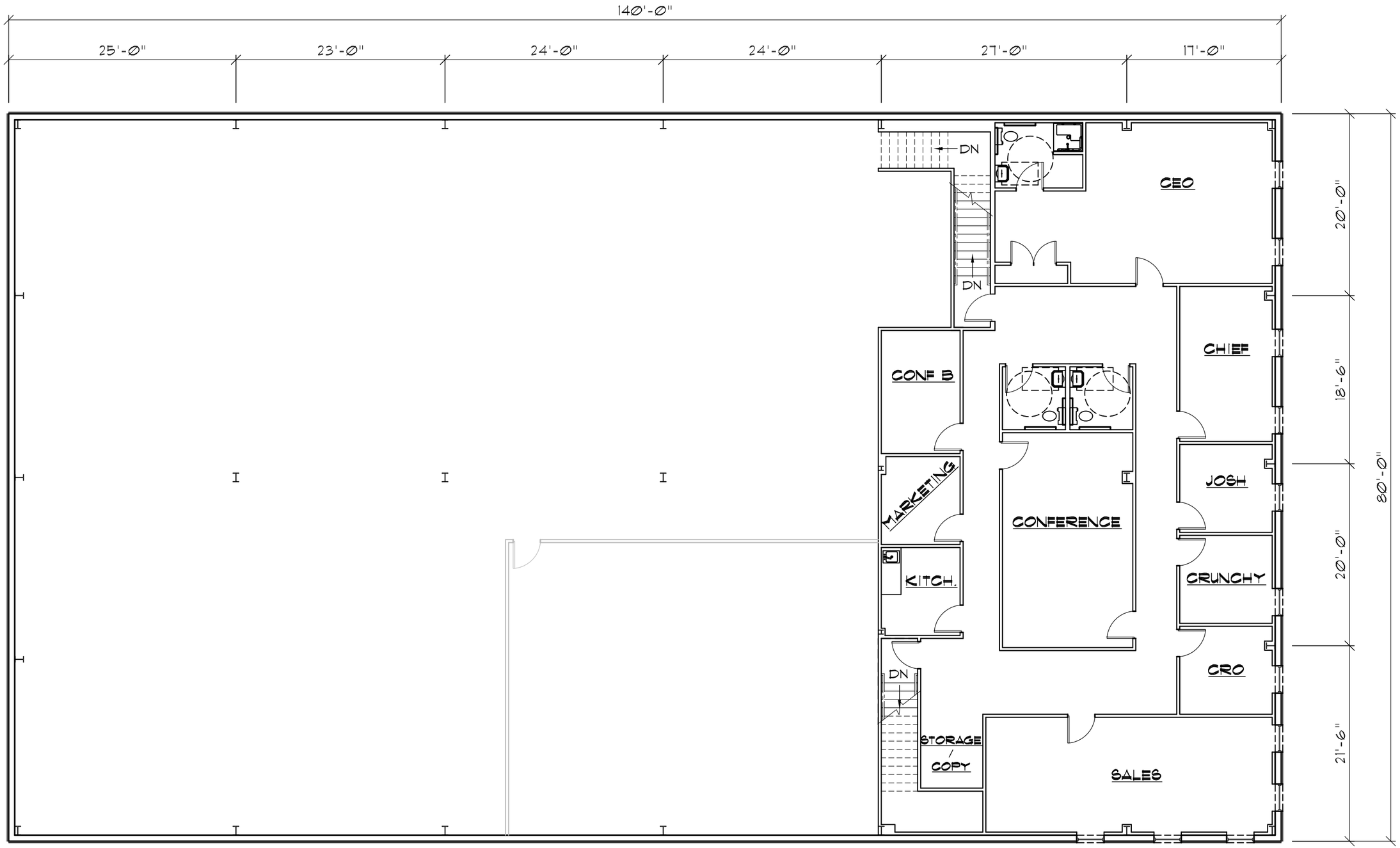
JOB # 18028

FIRST FLOOR PLAN



SECOND FLOOR PLAN

SCALE: 3/32" = 1'-0"

SCALE: AS SHOWN
DATE: MAY 16, 2018
DRWN. BY: RMA
JOB # 18028

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CONSTRUCTION INC
1293 MAIN STREET SANFORD, ME 04073
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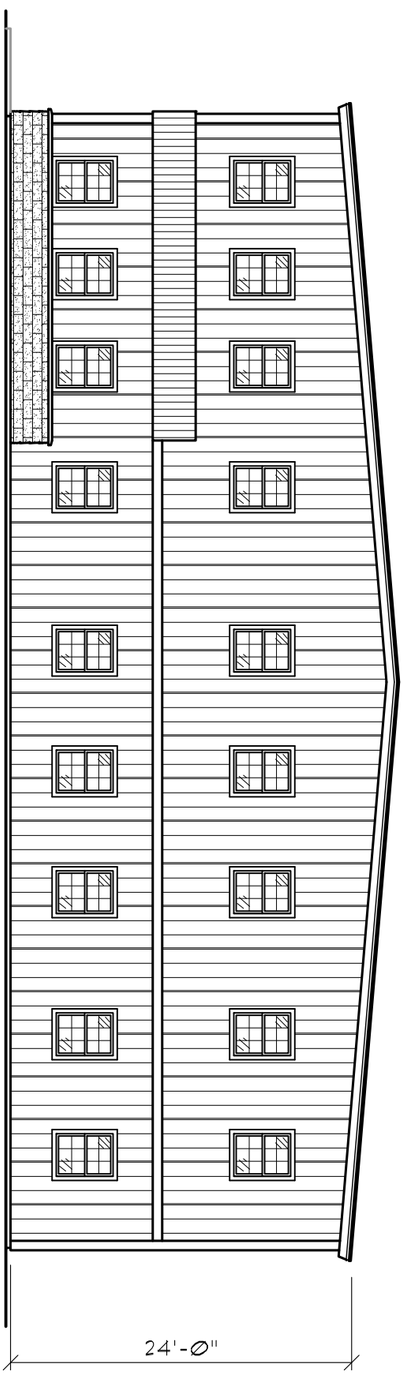
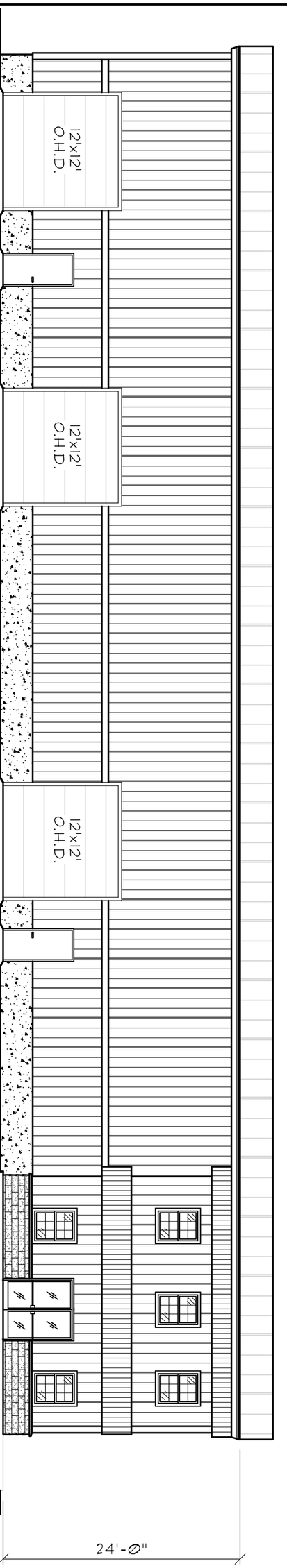
SECOND FLOOR PLAN



ENDWALL ELEVATION

SCALE: 3/32"=1'-0"



SIDEWALL ELEVATION

SCALE: 3/32"=1'-0"

JOB # 18028

ELEVATIONS

PATCO CONSTRUCTION INC

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TEL: (207)324-5574 FAX: (207)324-1643
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SCALE: AS SHOWN

DATE: MAY 16, 2018

DRWN. BY: RMA

EST.# 18028